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Rethinking RRIF Withdrawals: New Rates and Methodologies for New Realities

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PRÉCIS

Dans cet article, l'auteur se sert d'un cadre microéconomique pour examiner le barème de retraits du fonds enregistré de revenu de retraite (FERR) dans le cadre des taux d'intérêt actuels et des projections de l'espérance de vie. Il soutient que les réalités démographiques et économiques d'aujourd'hui exigent de revoir le barème pour qu'il demeure justifiable et juste. La méthodologie utilisée dans cet article diffère de celle d'autres arguments basés sur la politique (ou les probabilités) : l'auteur compare le barème de retraits prescrit à un barème de retraits optimal dans un modèle de cycle de vie de continuité de la consommation pour un retraité ayant une aversion pour le risque d'épuiser son actif avant sa mort. Il soutient que bien que le modèle de cycle de vie puisse justifier les taux de retrait du FERR en vigueur à la fin des années 1980 (une période où les taux d'intérêt étaient plus élevés et l'espérance de vie plus courte), un quart de siècle plus tard, le barème est périmé.

ABSTRACT

In this article, the author employs a microeconomic framework to examine the registered retirement income fund (RRIF) withdrawal schedule in the context of current interest rates and longevity projections. He argues that today's demographic and economic realities require that the schedule be revised to remain justifiable and fair. The methodology employed in this article differs from other policy-based (or probabilistic) arguments: the author compares the legislated withdrawal schedule with an optimal withdrawal schedule in a consumption-smoothing life cycle model (LCM) for a longevity risk-averse retiree. He argues that while the LCM might be able to justify the RRIF withdrawal rates in place during the late 1980s (a period with higher interest rates and lower longevity), a quarter of a century later the schedule has become outdated.

KEYWORDS: REGISTERED RETIREMENT INCOME FUND ■ RRIF ■ LIFE CYCLE MODEL ■ RETIREMENT

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INTRODUCTION AND MOTIVATION

At the age of 71, all Canadians must begin withdrawing the money that they have accumulated in their tax-sheltered registered retirement savings plans (RRSPs) by (1) using the balance in the RRSP account to purchase a life annuity, (2) converting the RRSP to a registered retirement income fund (RRIF) and making yearly withdrawals in accordance with a rigid schedule, or (3) implementing a combination of (1) and (2).

Under the withdrawal rules, when a taxpayer reaches age 71 at least 7.38 percent of the value of the account at the outset of the year must be withdrawn before the end of the year. This required minimum distribution (RMD) rate increases with age, with the result that by the time that a taxpayer reaches age 85 at least 10.33 percent of the account value at the beginning of the year must be withdrawn. Once the taxpayer reaches age 95, the RMD rate is 20 percent for the remainder of the taxpayer's life.[1]

In the current economic environment, if Canadians want a risk-free location for their investments, they can expect to earn between 1 and 2 percent in nominal returns, or between 0 percent and a negative amount in real returns after inflation.[2] The high required RRIF withdrawal rates, coupled with low real returns on safe investments, mean that many RRIF accounts are depleted rapidly—just as Canadians must collectively plan for longer lifetimes. Not surprisingly, the current RMD rules are disliked[3] by the approximately 5 million Canadians who are above the age of 65 (the fastest-growing segment of the Canadian population, which is expected to double in the next 25 years), many of whom are faced with converting their RRSPs to RRIFs in the near term.[4]

1 The term "required minimum distribution (RMD) rate" is borrowed from the American lexicon because there is no comparable term in Canada, and the phrase "RRIF rate" is often confused with the investment or interest rate earned within the account.

2 This is certainly true after taxes. See, for example, Amin Mawani, Moshe Milevsky, and Josh Landzberg, "The Erosion of GIC Returns by Income Taxes and Inflation" (2004) 52:4 *Canadian Tax Journal* 1057-75.

3 See, for example, Fred Vettese, "Why Your TFSA Is Just What Your Over-Taxed RRIF Needs," *National Post*, August 13, 2014, as well as the recent "Conference for Advanced Life Underwriting: 2015 Federal Pre-Budget Submission," August 2014, available at www.calu.com.

4 Statistics Canada, *The Canadian Population in 2011: Age and Sex*, catalogue no. 98-311-X2011001 (Ottawa: Statistics Canada, May 2012).

In this article, I employ the life cycle model (LCM) of saving and consumption to argue that the current withdrawal rates are difficult to justify in today's environment of ultra-low interest rates and increasing human longevity. Current RMD rules force retirees—and especially those with low pension income—to decrease their wealth at a faster rate than prudence allows. For example, a 71-year-old retiree with $100,000 in his or her RRIF, earning a meager 1.5 percent nominal interest rate per year (at a generous bank) and adhering to the RMD rate schedule, would be left with only $7,878 in the account by the age of 95, and the required schedule of withdrawals would cause the rapid decline of the account between the ages of 71 and 95. In contrast, with a 6.5 percent interest rate (which is a relic of the past),[5] withdrawal amounts would be relatively stable, hovering between $7,000 and $8,000 for 25 years. (See appendix A for a comparison of the withdrawal schedules and the resulting cash flows, using interest rates of 1.5 and 6.5 percent.)

Defenders of the status quo might argue that RMD rates are red herrings since retirees are not required to consume the withdrawn funds, merely to withdraw them from the tax-protected shelter of the registered account. However, there is an element of forced spending if one carefully considers the tax implications. After withdrawing the funds, retirees must pay income tax on the withdrawals at their marginal tax rate. Yes, they can then use the (after-tax) funds to repurchase the same investments, which means that they then earn after-tax returns on these investments outside the tax shelter. However, this premature taxation twice impedes the growth of the portfolio: tax is initially due on the withdrawals and then again due on any gains in the non-registered account. Moreover, the (early and high) required withdrawals, when included in yearly income, may result in a clawback of old age security (OAS) under the provisions of the Income Tax Act, as well as a possible loss of the guaranteed income supplement (GIS).

The current RMD rules were announced in the 1992 federal budget in response to concerns (and consultations during the late 1980s) that under the rules then in place, "RRIFs cannot provide a life income for the substantial number of RRIF holders who can be expected to live beyond age 90."[6] The pre-1992 rules required that a RRIF holder withdraw a minimum amount each year equal to the start-of-year balance divided by "90 minus age"; in the year that the RRIF holder attained age 90, the full balance at the beginning of the year had to be withdrawn, with the result that the account was fully depleted in the year that the RRIF holder reached age 90. The current schedule for withdrawals, which provides for gradually increasing withdrawals from ages 71 to 94, followed by a 20 percent withdrawal rate for ages

5 According to the Bank of Canada, the average interest rate offered by chartered banks for a five-year fixed term was 1.5 percent per year in August 2013 and 6.5 percent per year in August 1968, the earliest year for which data are available. See Bank of Canada, Data and Statistics Office, "Chartered Bank Administered Interest Rates—5 Year Personal Fixed Term" (www.bankofcanada.ca/wp-content/uploads/2010/09/selected_historical_page47_48.pdf).

6 Canada, Department of Finance, 1992 Budget, Budget Papers, February 25, 1992, at 143.

95 and beyond, was intended to "permit RRIF withdrawals to extend over the remaining lifetime of the RRIF holder" and to "provide a basic level of protection from the effects of inflation."[7]

If the original intent of the regulations behind the RRIF and RMD rules was to (1) reasonably limit the deferral of income taxation, and (2) encourage retirees to spread their personal pension payments evenly over their remaining lifespan, then the main argument in this article is that this intention is not being fulfilled.

As in 1992, when the rules were last updated to reflect then-current realities, the RRIF withdrawal rates should be updated once again to account for current economic and demographic changes over time and perhaps be linked to an (annuity) index or economic-based formula that changes automatically with interest rates and market conditions.[8] In this article, I offer a methodology for considering proper spending rates. In the remainder of the article, I suggest an approach for rethinking RRIF RMD rates—namely, optimal spending rates in an economic LCM.

THE LIFE CYCLE MODEL AT RETIREMENT

The LCM concept is closely associated with the work of Franco Modigliani in the 1950s and 1960s,[9] although it can ultimately be traced back to the writing of Irving Fisher in the 1930s.[10] The LCM model starts with a theory that postulates how rational people save and spend their money as they age.[11] The main practical insight of the LCM is the idea that rational people choose to spread out or "smooth" their consumption over their lifetime, in accordance with their individual preferences for consuming now or later, and their attitudes toward all types of risk. Consumption smoothers strive to even out irregularities in their income by saving or borrowing to create a stable standard of living over time.

The following is a very simple example. If a consumption smoother (or LCM devotee) expects to live for only two years and earns $30,000 in year 1 and $10,000

7 Ibid.

8 The current RMD rules are not monolithic. For example, in 2008 in recognition of exceptional market conditions and their potential effect on retirement income streams for retirees, the government of Canada permitted a one-time reduction of 25 percent in the required minimum withdrawal for RRIF annuitants, including a tax-deductible recontribution allowance for annuitants who had already withdrawn the maximum. See Canada Revenue Agency, "Economic Statement—Proposed Measure for Annuitants of Registered Retirement Income Funds (Update)," December 9, 2008 (www.cra-arc.gc.ca/whtsnw/tms/rrf-fq-eng.html).

9 See, for example, Franco Modigliani, "Life Cycle, Individual Thrift, and the Wealth of Nations" (1986) 76:3 *American Economic Review* 297-313.

10 Irving Fisher, *The Theory of Interest, as Determined by Impatience To Spend Income and Opportunity To Invest It* (New York: Macmillan, 1930).

11 I refer the interested reader to Martin Browning and Thomas F. Crossley, "The Life-Cycle Model of Consumption and Saving" (2001) 15:3 *Journal of Economic Perspectives* 3-22. In this article, I simply offer my intuition and an overview.

in year 2, he or she would smooth this income by consuming $20,000 in each year, which means saving $10,000 (a third of the income) in year 1 and spending 100 percent more than the income in year 2.[12]

As its name suggests, the life cycle model is an idealized theory about the rational distribution of resources over a human lifetime. Whether or not people actually behave in a manner that is consistent with the LCM is an (open and controversial) empirical question.[13]

Regardless of people's behaviour, most economists agree that the LCM presents a reasonable framework for giving normative financial advice. Angus Deaton wrote, in a memorial tribute to Franco Modigliani, "As far as I am aware, no one has challenged the view that, if people were capable of it, they ought to plan their consumption, saving, and retirement according to the principles enunciated by Modigliani and Brumberg."[14]

How does the LCM help us in planning for spending in retirement? Within the context of retirement spending with uncertain lifespans (and in the absence of perfect annuity markets), the LCM suggests that rational consumption smoothers should balance the low probability risk of living a very long time against the utility (or enjoyment) of consuming earlier. In the 1960s, Menahem Yaari extended the LCM by focusing his attention on how it functions in the presence of longevity risk.[15] Yaari developed a mathematical representation of the LCM that advanced the work done by Franco Modigliani in the 1950s and the insights of Irving Fisher in the 1930s by taking longevity risk into account. Yaari described how a rational person would choose to spend his or her retirement both in the presence and in the absence of actuarial notes, which can roughly be thought of as pensions or life annuities. Since the Yaari model was developed, it has been put into operation and calibrated by many financial economists, including Lachance[16] and Milevsky and Huang.[17] As

12 Without getting into the mathematical details of the LCM, this very brief example assumes that both the individual's subjective discount rate and market interest rates are zero, and of course that the individual lives and earns income for only two periods (year 1 and year 2).

13 See Browning and Crossley, supra note 11, for a review of the evidence.

14 Angus Deaton, "Franco Modigliani and the Life Cycle Theory of Consumption," paper presented at the Convegno Internazionale Franco Modigliani, Accademia Nazionale dei Lincei, Rome, February 17, 2005 (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=686475).

15 Menahem E. Yaari, "On the Consumer's Lifetime Allocation Process" (1964) 5:3 *International Economic Review* 304-17; and Menahem E. Yaari, "Uncertain Lifetime, Life Insurance, and the Theory of the Consumer" (1965) 32:2 *Review of Economic Studies* 137-50.

16 Marie-Eve Lachance, "Optimal Onset and Exhaustion of Retirement Savings in a Life-Cycle Model" (2012) 11:1 *Journal of Pension Economics and Finance* 21-52.

17 Moshe A. Milevsky and Huaxiong Huang, "Spending Retirement on Planet Vulcan: The Impact of Longevity Risk Aversion on Optimal Withdrawal Rates" (2011) 67:2 *Financial Analysts Journal* 45-58.

a result of this recent calibration work, explicit spending rates throughout retirement can now be easily obtained.[18]

Returning to the question of how pension income shapes the rational, consumption-smoothing behaviour of a retiree, one of the many insights from the LCM is that the amount of pre-existing pension annuity income should significantly affect the optimal spending and consumption plan. The basic concept is this: the more pre-existing pension income a retiree has, the more he or she can afford to withdraw from a RRIF. The retiree knows that in the event that he or she lives much longer than average, the pension income will still be there into his or her late 90s, and perhaps into centenarian territory.

A retiree's planned consumption will also depend, the LCM tells us, on his or her preference for consuming now as opposed to consuming later. It is obvious that advice or recommendations about withdrawal rates (and a mandatory RMD schedule) are meaningless without a better understanding of (1) the retiree's other income (what fraction is available as longevity-insured or pension income), (2) the retiree's longevity risk aversion (whether the retiree is concerned about the risk of living to an advanced age), and (3) the retiree's attitude toward financial and economic risks. Some retirees may not worry about a 5 percent chance of living to 100 or a 5 percent chance of losing 50 percent of his or her savings, while others are more risk-averse and will include these low-probability outcomes in their planning. In any event, risk attitudes are relevant because they affect consumption in retirement. They are especially important in a world in which true inflation-adjusted annuities (or actuarial notes, as Yaari terms them) are not available at reasonable prices.

I emphasize the importance and role of the LCM in personal financial decision making because it is central to this article, whose methodology differs from that of Robson and Laurin. These authors estimate probabilities of account depletion and the relevant RMD rates that would maintain the same probabilities as in 1992.[19] While this approach eliminates the need for a utility function or risk preferences, an insurance economist would argue that the probability of shortfall is an incomplete measure of risk. In other words, a schedule that maintains the same probability of hitting various account targets is not well grounded in economics—especially because it is related to exogenous income sources and attitudes to risk. Indeed, there

18 An early attempt to embed the specifics of the Canadian RRSP in the LCM is evident in an article by Michael J. Daly, "The Role of Registered Retirement Savings Plans in a Life-Cycle Model" (1981) 14:3 *Canadian Journal of Economics* 409-21. A related article is Siu Fai Leung, "Uncertain Lifetime, the Theory of the Consumer, and the Life Cycle Hypothesis" (1994) 62:5 *Econometrica* 1233-39, in which the author proves the existence of an optimal depletion time in a deterministic interest LCM, which implies that it is rational to deplete savings in the presence of pension income. High withdrawal rates in and of themselves are not necessarily irrational.

19 William B.P. Robson and Alexandre Laurin, *Outliving Our Savings: Registered Retirement Income Funds Rules Need a Big Update*, C.D. Howe Institute E-Brief (Toronto: C.D. Howe Institute, June 4, 2014).

are many different curves that would lead to the same probabilities. How does one choose from among many curves?

Nevertheless, Robson and Laurin are making the same point that I am making in this article—using a different framework—which is that current RRIF withdrawal rates are too high and difficult to justify.

A NUMERICAL EXAMPLE

Models and nuanced differences aside, consider the case of a 70-year-old female retiree with $200,000 in her RRSP, which she anticipates converting next year into a RRIF. She has pre-existing pension income from the Canadian Pension Plan (CPP) and OAS/GIS, including a defined benefit pension, totalling $17,000 to $20,000 per year. I analyze both the high and the low cases side by side in table 1 to illustrate the impact of more or less pension income respectively. Note that this range of pension income is close to the estimates provided by Statistics Canada for retirees, rounded for convenience.[20]

The mortality rates are calibrated to the most recent actuarial values reported by the Office of the Chief Actuary, which I explain in more detail in the next section.

I assume that the real (after-inflation) interest rate available on safe investments is 1.5 percent per year—obviously higher rates may (or may not) be anticipated from holding riskier equity-based investments and mutual funds, but I assume that this retiree is a highly risk-averse investor who wants to smooth her total retirement spending.[21] One can also think of this as a risk-adjusted return.

Understanding Mortality

In terms of mortality table assumptions, the continuous time version of the LCM requires a parametric specification of the mortality curve in order to optimize utility. I used the Gompertz-Makeham (GM) law, which is quite common in actuarial finance research and was employed by Leung in the context of the LCM.[22] The GM law assumes that instantaneous mortality rates increase by a fixed percentage every year, starting at age 20 and ending in the late 90s. The free parameters available from the GM law can be calibrated to any mortality table (with a reasonably good fit).

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20 Median income for Canadian seniors from CPP was $7,000 (92 percent of Canadian seniors received CPP income in 2011), while median income from private pensions and RRSPs was $11,800 (63 percent of Canadian seniors had income from private pensions and RRSPs in 2011). See Employment and Social Development Canada, "Indicators of Well-Being in Canada: Financial Security—Retirement Income" (www4.hrsdc.gc.ca/.3ndic.1t.4r@-eng.jsp?iid=27). I would like to thank the editor for pointing out that median income among single seniors in 2010, using microdata from the survey of labour and income dynamics, was $22,625.

21 The LCM takes these assumptions as inputs, all of which can be easily changed and/or modified. Needless to say, different inputs will change the optimal spending and withdrawal rates. For example, with lower mortality rates and/or higher interest rates, the optimal LCM withdrawal and spending rates are higher.

22 Leung, supra note 18.

TABLE 1 Optimal RRIF Spending Rates in a Life Cycle Model: Different Levels of Pension Income and High Level of Risk Aversion

		2014 Parameters base case with $17,000 total pension income			2014 Parameters base case with $20,000 total pension income		
RRIF rates, %	Age	RRIF value, $	Optimal, %	Total spending, $	RRIF value, $	Optimal, %	Total spending, $
5.00[a]	70	200,000	4.95	26,902	200,000	5.09	30,194
7.38	71	193,215	5.13	26,865	192,938	5.28	30,153
7.48	72	186,365	5.27	26,824	185,817	5.43	30,107
7.85	75	165,484	5.88	26,673	164,129	6.04	29,938
8.75	80	129,826	7.15	26,290	127,197	7.48	29,508
13.62	90	59,556	12.78	24,612	55,235	13.80	27,625
20.00	95	29,307	20.02	22,945	25,160	22.86	25,754

[a] Withdrawal not required until age 71.

For this article, I calibrated the necessary curves to the Canadian mortality tables listed in the April 2014 report issued by the Office of the Chief Actuary.[23] For example, I (and the GM law) assumed that the life expectancy of a female at retirement age 65 (in the year 2014) is 23 years. The mortality rate at age 70 is 11/1000, at age 75 is 18/1000, and at age 80 is 31/1000. These calibration[24] points coincide with values reported in the above-mentioned April 2014 report.[25] I ran various cases with other mortality rates, which I will address later.

Results Under $20,000 Pension Income

According to the LCM, a financial economist would advise this retiree to consume a total of $30,194 at her current age of 70: this optimal spending would smooth her resources over her remaining life cycle, accounting for risk preferences. The $30,194 would be composed of $20,000 in pension income and $10,194 from the RRIF portfolio. Note that this smooth spending rate leads to an annualized optimal withdrawal rate from the RRIF of 5.09 percent at age 70. When the retiree reaches the age of 71, the financial economist would advocate a slightly lower optimal spending rate of $30,153 per year, $20,000 of which would be sourced from pensions and $10,153 of which would be sourced from the investment portfolio. This requires an optimal withdrawal rate from the RRIF of 5.28 percent (and the exercise

23 Office of the Superintendent of Financial Institutions Canada, Office of the Chief Actuary, *Mortality Projections for Social Security Programs in Canada*, Actuarial Study no. 12 (Ottawa: Office of the Superintendent of Financial Institutions Canada, April 2014).

24 For those interested in the actuarial details, the GM law is driven by three parameters (λ, m, and b). The exact functional form is available in basic actuarial textbooks or the paper by Milevsky and Huang, supra note 17, for example. In this study, having calibrated to age 65 to 100 of the Canadian 2014 tables, I estimated that ($\lambda = 0$, $m = 92$, and $b = 9.5$), which induces relevant q_x values at any age.

25 Supra note 23, at table 5.

can be repeated for each following year). The 5.28 percent is lower than the mandated 7.38 percent, which is displayed in the far left column of table 1. Comparing column 1 to column 4 is really the main point of this article.

The optimal spending rate (in the LCM world) minus the yearly income from the CPP or defined benefit pension leads to the optimal withdrawal rate from the RRIF. Think of the RRIF withdrawal rate or amount as providing the means of meeting the smoothed consumption that must be sourced from the RRIF. This is how an economist would determine the appropriate amount to withdraw from a RRIF (in the absence of tax frictions).

As noted above, the smoothing process continues each year, and the optimal withdrawal rates increase slowly to 6.04 percent at age 75, 7.48 percent at age 80, and 13.80 percent at age 90. The optimal rates increase with age; the key is to notice that the LCM-derived rates are lower than the RMDs until age 90. Notice how the optimal rates converge with the mandated rates only at very advanced ages. At the lower pension income of $17,000, the optimal rates are lower than the mandated rates until age 95. The results of the corresponding account values—assuming a deterministic return, since all assets are invested in risk-free assets—are displayed in table 1.

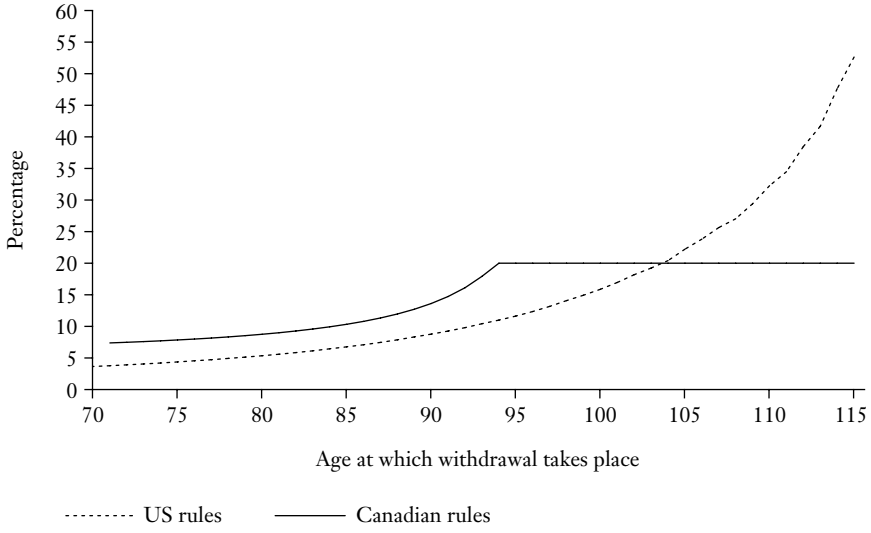
In terms of sensitivity analysis, I offer the following initial comparison points. If, for example, the 70-year-old retiree had a pension income of $15,000 (instead of the $17,000 or $20,000 displayed in table 1), her optimal withdrawal rate at the age of 75 would be even lower (5.72 percent). Therefore, a lower level of exogenous pension income, all else being equal, induces a lower optimal RRIF spending rate. Likewise, if, instead of a 1.5 percent real interest rate, I assumed a 3 percent real rate (with all other parameters in table 1 being the same), then the age 75 optimal withdrawal rate (under a lower $10,000 pension) would be 6.11 percent. Finally, if the retiree were a man with a life expectancy at retirement of 20 years (instead of 23), then the optimal age 75 withdrawal rate (again, under a lower $10,000 pension) would be 5.94 percent.

When one uses different parameter values in the LCM, most of the resulting numbers are lower than the required RRIF rates for retirees between the ages of 70 and 100. They are uniformly lower for all age ranges when pension income is lower than approximately $15,000 per year. The main point is that regardless of the exact parameters and values used for exogenous pension income, gender, or safe returns (within reason), it is very difficult to justify current RRIF withdrawal rates.

Interestingly, the financial economists who conducted a recent study in the United States using a similar LCM but working with US RMDs, which for the most part are lower than the Canadian RRIF withdrawal rates, claimed that in the United States the RMDs are more reasonable guideposts for withdrawals than the rules of thumb followed by the financial planning profession.[26] Figure 1 compares US and

26 See Wei Sun and Anthony Webb, "Should Households Base Asset Decumulation Strategies on Required Minimum Distribution Tables?" (2013) 38:4 *Geneva Papers on Risk and Insurance: Issues and Practice* 729-52, where the authors compare the US RMD to the so-called 4 percent Bengen rule for "safe" portfolio withdrawal rates in retirement. In this article, the authors argue that RMDs are better than 4 percent instead of arguing for the optimality of the RMD schedule.

FIGURE 1 RMD Factor: Percentage of Tax-Sheltered Account That Must Be Withdrawn



Canadian RMD rates. Notice that it is only at age 105 that US rates exceed the Canadian values. For the first 35 years of retirement, the Canadian RMD values are higher, which might be yet another indication of the constraints imposed by the current RMD values.

A caveat in these models is that the LCM has been calibrated assuming a risk-averse retiree who prefers to invest in safe cash assets.[27] Retirees who (1) are unhealthy with much higher mortality, (2) are more tolerant of investment risk, and/or (3) prefer not to delay their consumption would select a different path and schedule for their RRIF withdrawals.

In fact, in a Canadian study investigating wealth and spending patterns in retirement, Kevin Milligan claimed that some Canadians were actually withdrawing more than the mandated amount from their RRIF.[28] Clearly not everyone in Canada finds the current RMD schedule "constraints-binding," in the language of economics. The point here, again, is to argue for a reduction in rates—especially in the age 70-to-90 range—as opposed to justifying a particular number or schedule.

Table 2 provides an alternative case, in which the pension income is set to $10,000 (instead of $20,000), mainly for comparison with earlier periods, when CPP

27 In the language of economics, the coefficient of relative risk aversion was set equal to a value of 8, which would induce the retiree to allocate her entire RRIF to risk-free assets.

28 Kevin Milligan, "Life-Cycle Asset Accumulation and Allocation in Canada" (2005) 38:3 *Canadian Journal of Economics* 1057-1106, at 1088 and note 22.

TABLE 2 Optimal RRIF Spending Rates in a Life Cycle Model: $10,000 Pension Income with High Level of Risk Aversion

		2014 Parameters Real rate = 1.50% Retirement life expectancy 23 yrs.			1992 Parameters Real rate = 4.00% Retirement life expectancy 17 yrs.		
RRIF rates, %	Age	RRIF value, $	Optimal, %	Total spending, $	RRIF value, $	Optimal, %	Total spending, $
5.00[a]	70	200,000	4.55	19,110	200,000	7.07	24,100
7.38	71	193,960	4.69	19,080	194,240	7.27	24,070
7.48	72	187,860	4.84	19,050	188,330	7.45	24,000
7.85	75	169,200	5.27	18,950	169,610	8.06	23,700
8.75	80	137,128	6.35	18,675	135,480	9.63	23,000
13.62	90	72,073	10.38	17,484	61,600	16.31	20,050
20.00	95	42,124	14.96	16,300	28,500	25.61	17,300

[a] Withdrawal not required until age 71.

plus OAS/GIS income levels were lower than they are today. As explained earlier, lower pension income results in lower optimal withdrawal rates.

As a comparison, however, one can re-create the same exercise, using early 1990s real interest rates (which are much higher, at 4 percent) and demographic assumptions (which fix life expectancy at 17 years, as opposed to 23 years, at retirement). With these inputs, which reflect the demographic and economic realities of the day, not surprisingly the optimal withdrawal rates are much higher—and coincidentally closer to the current RRIF RMD rates. These inputs are listed in the last three columns of table 2.

For example, when a retiree is 71 (under 1992 parameter values), an LCM-wielding financial economist would suggest a 7.27 percent withdrawal rate, compared with the 7.38 percent required by law. When the retiree reaches 90, the optimal withdrawal rate would be 16.31 percent, which is actually a few percentage points higher than the mandated 13.62 percent. Therefore, whereas Ottawa would have been generous in the early 1990s in using the financial economic LCM as a benchmark for RMDs, allowing retirees to take RRIF balances into income and spreading RRIF withdrawals over a (comparatively) shorter collective lifespan in retirement, this generosity evaporated by 2014 (assuming the same $10,000 pension income), but not as a result of any deliberate policy change. Note that even with the higher ($20,000) pension income reported in table 1, the RMD constraint is binding.

CONCLUSION

What are the consequences if the current RMD schedule is maintained? There are two implications of note. First, Canadians over age 65 form the fastest-growing segment of the population. In addition, longevity for these Canadians is increasing and will continue to increase at a more rapid pace than for the rest of the population. Recent projections suggest that Canadians will continue to have one of the highest

life expectancies in the world, along with the residents of Japan, France, Switzerland, Italy, and Australia.[29] Ultimately, the current RMD schedule, if maintained, will affect a subset of the Canadian population that is growing more quickly both in terms of population numbers and in terms of expected longevity than any other group. Second, if the retirees of today and tomorrow are required to make withdrawals and pay tax on RRIF income at rates that can be expected to deplete private wealth quickly, it is also reasonable to assume that some of the costs faced by this population (such as health and long-term care) will be shifted to federal and provincial governments because retirees will be unable to fund these expenditures themselves.

In sum, I have examined the RMDs from RRIFs in the context of current interest rates and increasing longevity. The methodology is economically based, and it compares the current required RRIF RMD schedule with an optimal withdrawal schedule from a consumption-smoothing LCM for risk-averse retirees. The RMD schedule is also evaluated by modelling the outcomes if current withdrawal rates were applied to the economic and demographic conditions prevailing in the early 1990s, when these rates were designed. Under those conditions, the rates were easier to justify.

Unlike Robson and Laurin,[30] I am not arguing that required withdrawals should be abolished or that they should begin later than they currently do; both of these possibilities would have cascading implications for the entire pension system. The main contribution of this article is to illustrate that (1) an LCM can be used to determine optimal RMD values on the basis of observable economic and demographic variables, and (2) optimal withdrawal rates are lower than the required rates for most retirees with middle and lower pension incomes.

29 See *Mortality Projections for Social Security Programs in Canada*, supra note 23.

30 Supra note 19.

APPENDIX A Simple RRIF Trajectory Assuming Two Different Investment Rates

		Earning 1.5%		Earning 6.5%	
RRIF withdrawal, %	Age	RRIF withdrawal	End of year RRIF value	RRIF withdrawal	End of year RRIF value
			dollars		
7.38	71	7,380	94,120	7,380	99,120
7.48	72	7,040	88,492	7,414	98,149
7.59	73	6,717	83,102	7,449	97,079
7.71	74	6,407	77,942	7,485	95,904
7.85	75	6,118	72,993	7,528	94,609
7.99	76	5,832	68,255	7,559	93,200
8.15	77	5,563	63,716	7,596	91,662
8.33	78	5,308	59,364	7,635	89,985
8.53	79	5,064	55,191	7,676	88,158
8.75	80	4,829	51,190	7,714	86,174
8.99	81	4,602	47,356	7,747	84,029
9.27	82	4,390	43,676	7,789	81,701
9.58	83	4,184	40,147	7,827	79,185
9.93	84	3,987	36,763	7,863	76,469
10.33	85	3,798	33,517	7,899	73,540
10.79	86	3,616	30,403	7,935	70,385
11.33	87	3,445	27,414	7,975	66,985
11.96	88	3,279	24,547	8,011	63,328
12.71	89	3,120	21,795	8,049	59,395
13.62	90	2,968	19,153	8,090	55,166
14.73	91	2,821	16,619	8,126	50,626
16.12	92	2,679	14,190	8,161	45,756
17.92	93	2,543	11,860	8,199	40,531
20.00	94	2,372	9,666	8,106	35,059
20.00	95	1,933	7,878	7,012	30,326
20.00	96	1,576	6,420	6,065	26,232
20.00	97	1,284	5,232	5,246	22,691
20.00	98	1,046	4,264	4,538	19,627
20.00	99	853	3,476	3,925	16,978
20.00	100	695	2,833	3,396	14,686