Chapter 15
Very Last Thoughts

This chapter very briefly discusses some of the topics that were not covered in this book, but that nevertheless are important for retirement income planning. References to relevant research work are noted where appropriate and interested readers are directed to those sources for further information.

15.1 Annuity Puzzles

A substantial portion of this recipe book has been focused on the valuation and/or benefits of life annuities, see in particular Chaps. 10 and 12. The general topic of annuities, both variable and fixed, has been a primary research focus of mine for over two decades now. I published my first paper on annuities in the year 1998, cited as [16], which argued for the benefits of annuities using a probabilistic framework, but also showed why you shouldn’t buy them too early in life. The term pensionize—as an alternative to the word annuitize—was coined in my mass market book with A. Macqueen, originally published in 2010, revised in 2015, and cited as [17]. But alas, not everyone likes annuities as much we (academics) do, and the jaundiced group includes both financial advisors and the public. The benefits of longevity insurance, risk-pooling, and guaranteed income for life are difficult to argue with, and yet the aversion to (and bias against) these insurance products is widespread. Why? Well, the reasons for this aversion might be due to (1) product illiquidity, (2) bequest motives, (3) distrust of insurance companies, (4) anti-selection costs, and (5) most certainly the confusion surrounding the exact definition of an annuity. The widespread dislike of annuities is now a formal field of academic study (you can actually write a Ph.D. thesis on the topic) known as The Annuity Puzzle.

For more on this, start with article [1] and then [2, 3, 6, 9, 13, 19]. In particular, [20] makes the compelling argument that (the fear of) unexpected medical expenses...
can be a (very) large and rational impediment to pensionization. This gets to the topic of long-term care, which I’ll return to in a moment.

15.2 Consumption Puzzles

While on the topic of (so-called) puzzles, another fact that is hard to explain or justify within the conventional life-cycle model—the economic backbone of this book—is the observation that retirees do not consume their retirement wealth fast enough. So, while Chap. 11 introduced an intelligent drawdown scheme that is expected to deplete wealth during the retirement years, few people do in fact spend down (that) quickly. Oddly enough, a large number of retirees spend nothing more than the interest plus dividends generated by their financial capital, and many end up dying with the same wealth they started with, when they retired. Of course, not everyone behaves in this puzzling way, and the COVID-19 recession (depression) might change that behavior—or reinforce it—in a permanent manner. Nevertheless, for additional research on this consumption puzzle, linked to the above-noted annuity puzzle, start with the articles cited as [15], as well as [18]. Interestingly, the recent article [11] argues that overly optimistic longevity projections are to blame. Namely, many retirees (erroneously) believe they will live much longer than their true life horizon, which I denoted by: $T_x$. So, they spend (much) less. Of course, if retirees truly think they will live that long, why don’t these same (overly) optimistic consumers buy (more) life annuities? I guess the puzzles continue. A recent movement to covert Defined Contribution (DC) pension balances into stream of income might help individuals better optimize their consumption plans. See [10] for more.

15.3 Long-Term Care (LTC) Insurance

One retirement risk that I didn’t address in the book is the growing (concern and) need for long-term care, including nursing homes and assisted living facilities. The cost (or blessing) of longevity is amplified by the inability to care for yourself towards the end of the life-cycle. In one way or another we all need some form of assistance for that stage of our lives. And, the insurance industry has created a variety of long-term care policies that pay off if-and-when you are unable to perform the normal activities of daily living. See, for example, the article cited as [22] for a review and discussion of how such LTC products work and would be triggered. Interestingly, these products are (also) not as popular as classical life-cycle theory would suggest, and there is a growing body of research that tries to (1) develop more advanced utility-based models that can explain the aversion to LTC insurance and/or (2) focus on the flaws and problems with existing products, and how they can be improved. For more on LTC from the perspective of life-cycle economics,
see the articles cited as [5], as well as [7] more generally about the demand for insurance. It’s quite possible that given the rather subjective triggers within these LTC policies—*Can you really not dress or bathe yourself?*—consumers justifiably fear insurance companies will renege, decline, or simply deny these claims. This obviously reduces the demand for these products. See the work by Richard Thaler and Amos Tversky, cited as [21] for more on this concern as a possible justification for the reduced demand for (any type of) insurance whose payoff is probabilistic or subject to default.

### 15.4 Drawdowns with Income Taxes

Looking back with hindsight, one of the topics that didn’t receive as much attention as it should in this recipe book is the complex subject of *income taxes*, and in particular the impact on intelligent drawdown strategies. Needless to say, almost every retiree is subject to some form of explicit (or implicit) income tax, which distorts and impedes attempts to *smooth consumption* towards the end of the lifecycle. The complexities that arise from income taxes take on many forms. In practice, financial capital is held in different accounts that are taxed differently. For example, some accounts (a.k.a. “buckets”) are fully *taxable*, some accounts are *tax deferred* (similar to RRSPs in Canada, or 401k’s in the USA), and some accounts are *tax-free* (such as TFSAs in Canada or ROTH accounts in the USA). There are other accounts (or buckets) inside life insurance policies that are tax-deferred and possibly tax-free to the beneficiary, upon the death of the insured. Likewise, some pension annuity benefits are tax-free, others are taxable. Annuity taxation depends on the buckets in which the annuities are placed, etc.

What this all means is that in addition to deciding how much to withdraw in every year of retirement—a.k.a. the drawdown problem—the retiree must decide from which of the many accounts to actually make these withdrawals. This is a *devilishly* difficult mathematical problem, especially when you consider that income taxes are a non-linear function of income. Add to that the uncertainty of future tax rates themselves—as well as the stochasticity of investment returns—and it’s no wonder Professor (and economics Nobel Laureate) Bill Sharpe labeled this “one of the most difficult financial problems” he has ever tried to solve. (So, I didn’t try.)

But, for those readers who are interested in pursuing and/or reading more about this embryonic area of research, namely the overlap of retirement income optimization and tax uncertainty, see the articles cited as [4, 8, 14] and [12] and the references therein.

In conclusion, if indeed there is a sequel or second edition of this recipe book, properly modifying the *intelligent drawdown* algorithm to account for the various income tax buckets in conjunction with pension benefit entitlements, will be at the very top of my list. In the meantime, I trust there is enough *meat* (or tofu) in the current version to keep you *cooking*. 
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