

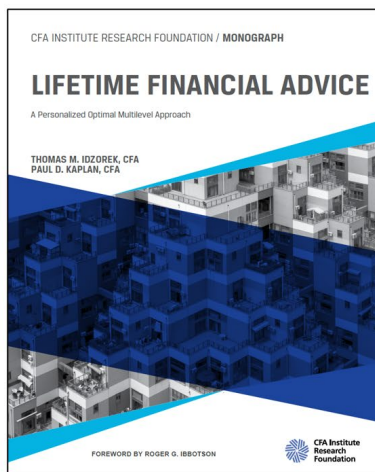
IK Excel Lifecycle Model

User Manual

February 2026

This manual explains how to use the IK Excel Lifecycle Model spreadsheet. The spreadsheet provides a working interactive model of the lifecycle model developed in Part I of *Lifetime Financial Advice: A Personalized Optimal Multilevel Approach* by Thomas Idzorek and Paul Kaplan.

<https://rpc.cfainstitute.org/research/foundation/2024/lifetime-financial-advice-a-personalized-optimal-multilevel-approach>



Overview of Tab		
Tab Name	Dashboard	This tab serves as an interactive dashboard for changing investor/household parameters. By changing the yellow cells, key graphs and the economic balance sheets update.
Key Input Tabs	ACData	This tab contains Capital Market Assumptions (CMAs), including the risk-free rate, the reference portfolio, human capital asset class exposures, liability asset class exposures, and various derived values, including discount rates for human capital and liabilities.
Calculation Tabs	HumCapData	This tab contains calculations related to the evolution of exogenous income and human capital over time.
	LiabData	This tab contains calculations related to the evolution of nondiscretionary consumption, liabilities, and life insurance over time.
	BequestData	This tab contains calculations related to the trade-off between the bequest and discretionary consumption.
	ConsumpWealthData	This tab contains calculations related to the evolution of optimal consumption, net worth, and financial wealth over time.
Charts	Total Consumption	This chart shows the evolving distribution of total real consumption.
	NonDisc Consump	This chart shows the evolving distribution of nondiscretionary real consumption.
	Disc Consump	This chart shows the evolving distribution of discretionary real consumption.
	Salary/Income	This chart shows the evolving distribution of exogenous real income based on starting salary, salary curve, and Social Security.
	Human Capital	This chart shows the evolving distribution of the real value of human capital.
	Financial Wealth	This chart shows the evolving distribution of the real value of financial wealth.
	Liabilities	This chart shows the evolving distribution of the real value of liabilities (nondiscretionary consumption).
	Net Worth	This chart shows the evolving distribution of the real value of liabilities (nondiscretionary consumption).
	BequestChart	This chart shows the bequest trade-off and corresponding indifference curve.
	Survival	This chart shows the probabilities of being alive through time based on sex and any adjustment to the mode.
	Number of IVAs	This chart shows the optimal number of immediate variable annuities (IVAs) to hold or simulate holding.
	IVA Payout	This chart shows the evolving distribution of the payout of an optimally constructed immediate variable annuity (IVA).
	Lists	This tab contains lists to populate the dropdown menus on the Dashboard tab.
	SalaryCurve	This tab contains inputs used to project future salaries as well as a table for the Social Security multiplier.

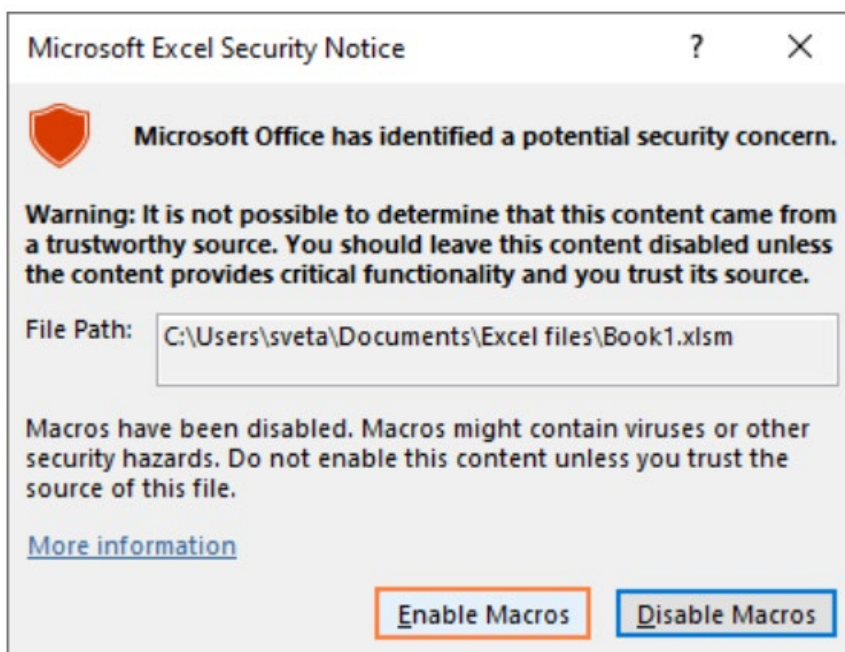
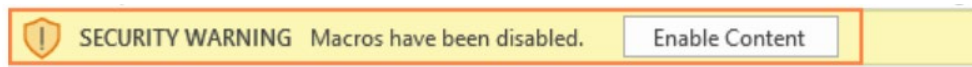
Contents

Getting Started and Enabling Macros.....	3
Guide	4
Dashboard	5
Recommended Tinkering.....	6
Annuitization	6
Human Capital.....	7
Impatience for Consumption	8
Optimal versus Fixed Bequest	9
User-Defined Functions.....	10
Resources	11
Reference	11
“Book Club” YouTube Series.....	11
Disclosure and Copyright	12

Getting Started and Enabling Macros

This spreadsheet uses various macros, which may require users to jump through several hoops. Here are some recommendations.

Rather than immediately opening the file, save the file. Then, open Excel and within Excel open the file. If prompted, make sure to “Enable” macros.



[To enable macros in Excel, click the “**Enable Content**” button on the yellow security warning bar for temporary access, or go to **File > Options > Trust Center > Trust Center Settings > Macro Settings** to permanently change settings, choosing options like “**Enable all macros.**”]

Guide

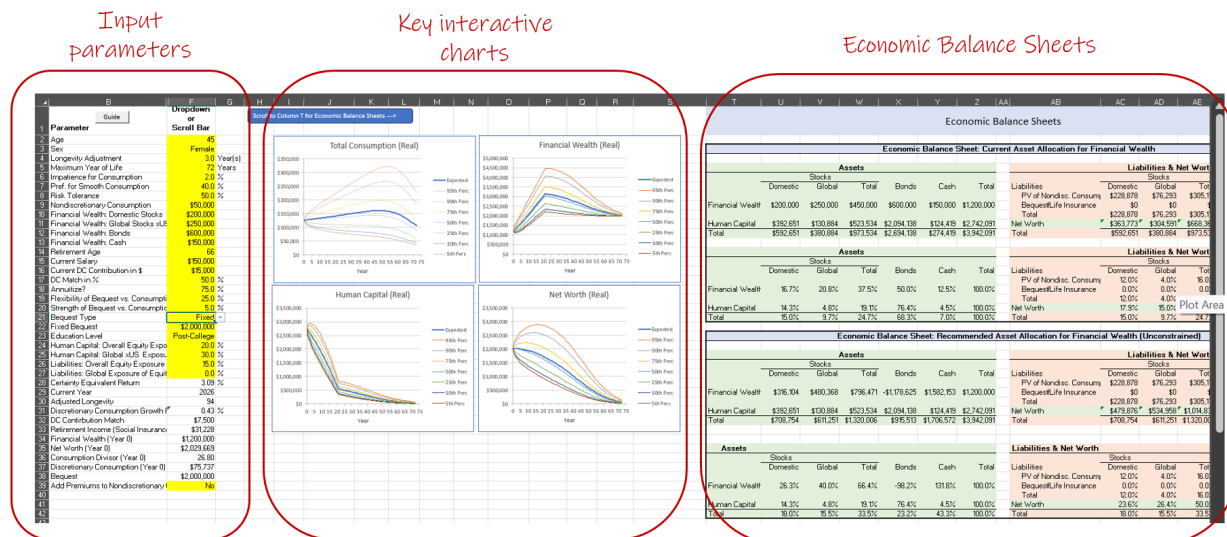
The tab called “Guide” serves as a table of contents for quickly navigating to the other tabs (hyperlinks) and embedded charts (buttons).

	A	B	C
1		Tab Name	Overview of Tab
2	Key Input Tabs	Dashboard	This tab serves as an interactive dashboard for changing investor/household parameters. By changing the yellow cells , key graphs and the economic balance sheets update.
3		ACData	This tab contains Capital Market Assumptions (CMAs), including the risk-free rate, the reference portfolio, human capital asset class exposures, liability asset class exposures, and various derived values, including discount rates for human capital and liabilities.
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19		IVA Payout	This chart shows the evolving distribution of the payout of an optimally constructed immediate variable annuity (IVA).
20		Lists	This tab contains lists to populate the dropdown menus on the Dashboard tab.
21		SalaryCurve	This tab contains inputs used to project future salaries as well as a table for the Social Security multiplier
22			
23			

The two yellow rows are for ‘input’ tabs. The four blue rows are for tabs with corresponding calculations. The green rows are for the various charts.

Dashboard

The tab called “Dashboard” is the most important interactive tab. It may be necessary to scroll to see the economic balance sheets, which begin in Column T.



The initial columns contain a variety of input parameters specific to the investor/household, in which the highlighted yellow cells are designed to be changed.

Once an input is changed, please be patient, it can take several seconds for the model to rerun and all of the calculations to update.

By changing an input parameter (and waiting several seconds), the key interactive charts, the economic balance sheets, and the rest of the charts in workbook, all update.

The reason it takes several seconds to update is that many of the calculations involve user-defined function written visual basic for applications (VBA). These user-defined functions are explained in **Appendix A** of this document.

Recommended Tinkering

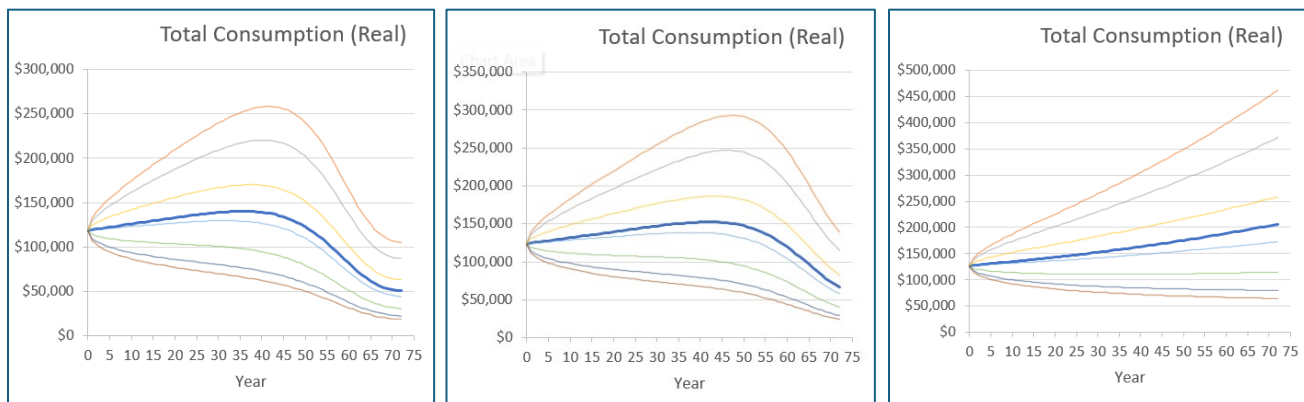
Annuitization – A key parameter influencing consumption is the use of annuities.

Experiment with 0%, 50%, and 100% and observing the impact on consumption.

18	Annuitize?	0.0%
19	Flexibility of Bequest vs. Consumption	
20	Strength of Bequest vs. Consumption	
21	Bequest Type	
22	Fixed Bequest	
23	Education Level	
24	Human Capital: Overall Equity Exposure	
25	Human Capital: Global VIX Exposure of F	20.0%

Annuitization
Enter the percentage of net worth to annuitize during retirement (0%-100%).

Consumption with Annuities set to 0%, 50%, and 100%:



Human Capital – Experiment by making human capital extremely safe (e.g. 100% bond-like) and relatively riskier (e.g. 55% equity-like) and observing the impact on recommended financial capital asset allocation and the balance sheet.

24	Human Capital: Overall Equity Exposure	55.0%	
25	Human Capital: Global xUS Exposure of E		
26	Liabilities: Overall Equity Exposure		
27	Liabilities: Global Exposure of Equities		
28	Certainty Equivalent Return		
29	Current Year		

HC: Overall Equity Exposure
 Enter a value between 0% and 100%, with a typical range between 5% and 40% See pages 72-76 of IK (2024).

Financial Equity Allocations for Different Human Capital Assumptions:

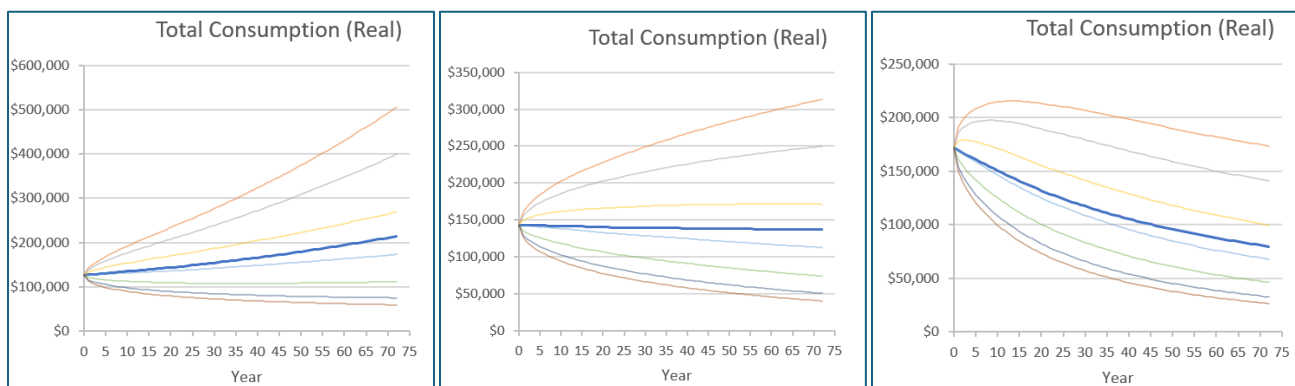
Assets				Assets			
	Stocks				Stocks		
	Domestic	Global	Total		Domestic	Global	Total
Financial Wealth	34.4%	32.6%	67.0%	Financial Wealth	0.0%	6.2%	6.2%

Impatience for Consumption – Experiment by change the Impatience for Consumption, aka the “subjective discount rate.” Low values, e.g. 1% or 2%, indicate a patient investor and generally lead to increasing real consumption overtime. High values, e.g. 9% or 10%, indicate high level of impatience and generally lead to decrease consumption overtime.

6	Impatience for Consumption	2.0%	\$4
7	Pref. for Smooth Consumption		
8	Risk Tolerance		
9	Nondiscretionary Consumption		
10	Financial Wealth: Domestic Stocks		
11	Financial Wealth: Global Stocks xUS		
12	Financial Wealth: Bonds		
13	Financial Wealth: Cash		
14	Retirement Age		

Impatience for Consumption
The Impatience for Consumption:
The Subjective Discount Rate - ρ .
The “subjective discount rate”
measures the degree to which the
investor is impatient, preferring near
-term consumption relative to future
consumption. See page 44 of IK
(2024).

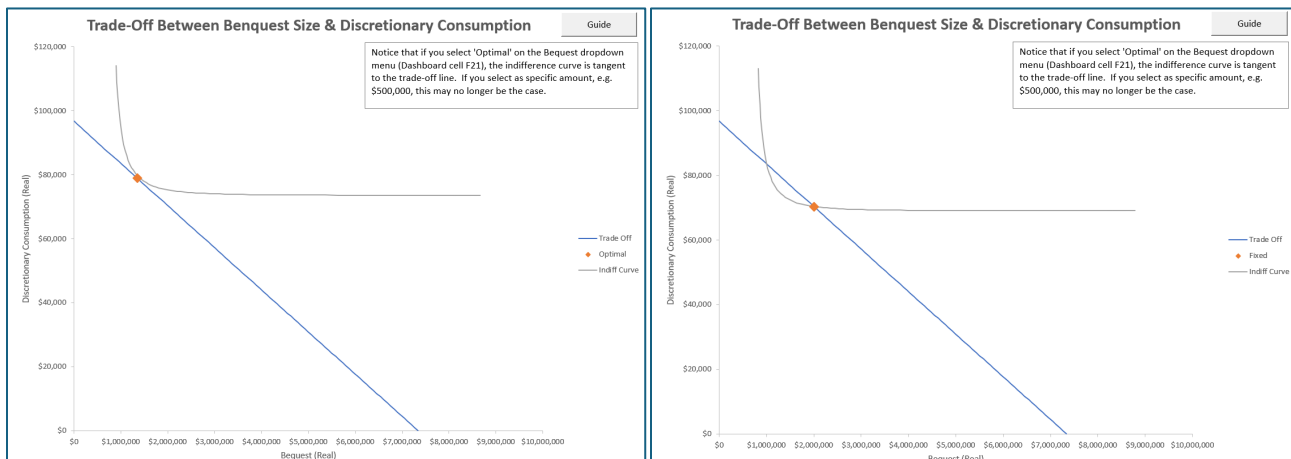
Impatience for Consumption Set to 2%, 5%, and 10%:



Optimal versus Fixed Bequest – Based on the selected parameters, the model will calculate the optimal bequest. Alternatively, one can specify a desired “Fixed” real bequest. Based on the selection, the indifference curve is / is not tangent to the trade-off line between discretionary consumption and the bequest amount.

21	Bequest Type	Optimal
22	-	Fixed
23	Education Level	Optimal

Optimal versus Fixed Bequest:



User-Defined Functions

Place Holder

Resources

Reference

Idzorek, Thomas M., and Paul D. Kaplan. 2024. *Lifetime Financial Advice: A Personalized Optimal Multi-Level Approach*. Charlottesville, VA: CFA Institute Research Foundation. <https://rpc.cfainstitute.org/sites/default/files/-/media/documents/article/rf-brief/lifetime-financial-advice.pdf>

“Book Club” YouTube Series

Session 1: <https://www.youtube.com/watch?v=dKaDOLpWbs0>
(Foreword, Part 1 Intro, Chapter 1, part of Chapter 2)

Session 2: <https://www.youtube.com/watch?v=TAIulg1kESM>
(part of Chapter 2 and part of Chapter 3)

Session 3: <https://www.youtube.com/watch?v=FAgTEExRElcE>
(part of Chapter 3 and all of Chapter 4)

Session 4: <https://www.youtube.com/watch?v=rTFA-GyTiBo>
(Chapter 5 and Chapter 6)

Session 5: https://www.youtube.com/watch?v=s03N363-I_g
(Intro to Part 2, Chapter 7, and Chapter 8)

Session 6: <https://www.youtube.com/watch?v=91RhBltnxCY>
(Intro to Part 3, Chapter 9, and Chapter 10)

Session 7: <https://www.youtube.com/watch?v=EhRY6v2HP6M>
(Chapter 11)

Session 8: <https://www.youtube.com/watch?v=fjnNYotADyl>
(Chapter 12)

Disclosure and Copyright

This manual and the sample spreadsheet are designed for educational purposes. There is no guarantee to the accuracy of the calculations. Use at your own risk.

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