Start Now

Your future self will thank you.

Building your own tax-free pension, one step at a time.

Greg M. Ostroff, CFA

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DEDICATION

For our children, Zachary, Isabel, Samuel, and Luc, and their friends

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A Gift and an Invitation to Pay It Forward

Acknowledgments

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A PERSONAL NOTE

Why I Wrote This

The letter below was written in the summer of 2026 and describes that moment. The book itself is updated continuously; the date on the cover is the current edition.

Northern California, July 15, 2026

Earlier this summer I got to talking with Francisco, a thoughtful young man who was doing some contracting work at our house. It was right after SpaceX went public, and the headlines were full of a fresh wave of enormous new fortunes. He said something I haven't been able to shake, as close as I can remember it: "When I was a kid, everyone talked about wanting to be a millionaire. Then we had billionaires. Now there's a trillionaire. What the heck? How am I supposed to build wealth? Where do I start?" I responded, "Let's go out for coffee and talk about it."

That evening I started writing this book. Because here's what I wanted him to hear, and what I'll tell you: you can **start now**. I've been having some version of that conversation for decades. I've had it with our own kids, with their friends, with lots of young people just out of school starting their careers, or ones a decade or so later, starting families. Years ago, I even tried to distill what I thought were the secrets to a wealthy life onto a single page, and I meant wealthy in the fullest sense of the word, not just money but meaning, happiness, and purpose. This book is the DNA of that page, narrowed to one piece, then expanded in depth into a simple algorithm for building a secure pension of your own.

That afternoon, this young man's question landed differently. It reminded me of NVIDIA. About ten years ago, when I was starting a virtual reality business, I went to a conference in San Jose, speakers in one hall and a room full of VR demos in another. I went there to learn, to network, and to look for investment opportunities among the demos. I walked that floor thinking like the Wall Street analyst I'd been for decades. *Forget the gadgets: who's the "Intel inside" here, the Levi Strauss of this gold rush?* In the 1990s, "Intel Inside" stickers on nearly every computer taught the world that the real fortune was in the chip inside the machines, not the

machines themselves. A century earlier, Levi Strauss got rich selling supplies to the gold miners, profiting from the rush without ever digging for gold. I had a long talk with a senior executive from NVIDIA and left certain that every idea in that building would run on their chips (as would later happen with crypto and AI, on a far larger scale). Then I went home, ran the numbers through my overly sophisticated investor lens, decided the stock which had just had a big run was overpriced, and placed a careful limit order to buy it lower. It never came down. I cancelled the order. I missed one of the greatest runs in market history.

Here's the thing, though, and it's the whole reason for this book. It didn't matter. In my own retirement account I had done the boring, disciplined thing this book teaches: I owned the entire U.S. market through a low-cost index fund. So I didn't need to be right about NVIDIA. When it soared, I already owned it anyway, along with every other winner I never saw coming. The index quietly captured the whole explosion of wealth and creativity of the last decade, without my having to pick a single stock correctly.

That's not luck. It's by design. A well-respected study found that the entire net gain of the U.S. stock market above Treasury bills, over a century, came from about 4 percent of listed companies. The other 96 percent, taken together, roughly matched T-bills*, which sounds terrifying until you see the solution: own them all. Buy the whole market, hold it for decades, reinvest the dividends, let compounding double your money again and again, and even the *worst* long stretch in the S&P 500's history builds real wealth. You don't have to find the next NVIDIA. You just have to own the haystack it's hiding in, which is how Jack Bogle, who gave ordinary investors the index fund, put it.

That alone would be reason enough to become an owner. But there's a bigger one now: more and more of the world's wealth flows to the people who own things (companies, technology, whatever AI becomes), and less to those who only earn a wage. That's really what this young man's insightful question was about: a way onto the ownership side, which on an ordinary salary is as close as opening a Roth IRA and buying one index fund, all of it tax-free.

I wish someone had sat *me* down at 25 and told me all of this plainly. Not just how markets work, but the traps: how much chasing the next hot thing costs you, how much taxes and fees quietly drain away your gains, and how much is won simply by starting early and staying put.

I’m writing this book, first, for our children — Zachary, Isabel, Samuel, and Luc — and their friends. A way to continue, in detail, a conversation I’ve been having with them for decades. And I’m writing it because I see too many other bright young people who’ve decided the game is rigged and there’s no point, so they go looking for a shortcut: meme stocks, crypto, prediction markets, the next big IPO. Some are lottery tickets; others are bets with nothing earning underneath them. None of them is a plan. (If you already hold some crypto, the Toolkit has a page for you.) Others just punt the decision a decade or two down the road. I understand the impulse. But there’s an answer, and it isn’t a secret, nor is it a gamble. It’s patient, disciplined ownership of the whole market inside a tax-advantaged account. It’s available to you, today, on an ordinary salary, and I’ll show you how.

The idea at the heart of this book isn’t complicated, and it’s not mine alone. It has been tested by a century of markets and by the best minds in finance. In these pages I tested it again, against every counterargument I could find and a few I had to invent. It held. So why do so few young Americans ever use it? Two reasons. First, nobody taught them. Personal finance is the one subject most of us were never taught. More states now require a course, and that’s progress, but a semester at seventeen rarely covers what to do with your first real paycheck. You were handed a diploma and sent into the world to figure out the most important money decisions of your life on your own. Second, the financial services industry that stepped into that gap has every reason to keep things complicated. Complication is where the fees live. It also creates a second business alongside them: being paid to uncomplicate things that never needed to be complicated in the first place. It confuses people. It paralyzes them. It knocks capable people off the path and makes it hard to find the way back. None of that is a failure of character. Here’s the part that matters. America doesn’t hand you a pension the way some other countries do. But it does hand you the tools to build your own, tax-free. And you already hold the most powerful force in personal finance: compounding. It’s yours by virtue of the years still ahead of you, a long enough stretch of time for it to really work its magic. It’s an enormous gift, but it has one condition. It’s worth the most to the people who understand it earliest, and a little less with every year that passes. This book offers the knowledge, along with a little instruction. The power has always been, and will always be, yours.

I’m not selling anything. I receive no compensation from any fund, brokerage, or company named in this book.

So this book is my coffee with you. The plan is simple. It has a century of evidence behind it. Now it’s up to you.

Start now.

** Hendrik Bessembinder, “Do Stocks Outperform Treasury Bills?” Journal of Financial Economics (2018), and “One Hundred Years in the U.S. Stock Markets” (2026). The finding is often misquoted as “96% of stocks lose money.” It is not. The other 96% collectively matched Treasury bills, their winners offsetting their losers. What the top 4% account for is the market’s entire net wealth creation above T-bills. Within that group, just 46 firms produced half of it, from 1926 to 2025.*

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THE OPENING

How Anyone Can Build a Tax-Free Pension on an Ordinary Salary

GREG M. OSTROFF, CFA

This book is educational, not investment, tax, or legal advice. A full disclaimer appears at the back.

You may be here because **you want to be a millionaire**. I’m going to show you the path, in today’s purchasing power and entirely tax-free. If the market does anything like what it has done over the past century, you get there. If it repeats the worst stretch on record, you come close. No one can promise what the next thirty will bring, but this plan doesn’t need the best of them to work. It doesn’t take a complicated strategy or a hot tip, a lottery ticket, or outsized risk. **What it takes is discipline, patience, a little knowledge I’ll share as we go, and about $20 a day.** But nobody actually sets aside $20 a day, so in practice it’s a little under $300 out of each biweekly paycheck. Set it up once, automatically, and it happens

without you. For a lot of people that is real money, and if it's out of reach, start with what isn't. The math scales down; the habit is the point.

Perhaps you're a young American just starting out in the workforce, or a few years further along, with your financial footing but no plan yet for retirement. Plenty of your peers are kicking that can down the road. This book makes the case against waiting, and an optimistic one: **the freedom to retire on your own terms is far more achievable than it looks**, and the principles that get you there are few and simple. What you do with that freedom later is your business. My job is just to show you the path. And to get you to **start now**.

If you're further along, say in your forties or fifties with a 401(k) you set up years ago and quietly left on autopilot, this is a wake-up for you, too. You have less runway, so I won't pretend the compounding is as dramatic as it is at twenty-five. For you, the bigger lever is often structure, not time: making sure your money sits in the right kind of account, so that when you spend it, more of it is yours and less goes to taxes. It's never too late. The rules have changed a lot since you signed up, and there's a good chance you're leaving real money on the table in accounts you already own. This book will show you where to look.

> *It all comes down to this: start saving early, keep the money invested in a broad-market index fund inside a Roth, and let it grow tax-free. Do that and you build your own pension, and with it your freedom, because in America, no one else will.*

And you're not just saving. **You're becoming an owner**: a small piece of the world's best businesses, the giants of today and the fastest-growing innovators shaping tomorrow, all working for you while you sleep.

"Retirement" is a terrible word for what this book is about. It sounds like an ending: a beige waiting room at the far end of a long career, if you ever get there at all. Forget that picture. What you're really building here isn't a retirement. **It's freedom**: to walk away from a job that's become a grind, to take a risk you couldn't otherwise afford, or to keep doing what you love because you choose to, not because you have to. For earlier generations, a house did much of this quietly. A mortgage was a savings plan in disguise, and the equity was the nest egg. If that door feels closed at today's prices, this path does the same job without the down payment.

And that's why this book asks one simple thing of you from the start. **It's written for the person with a self-reliant streak**, someone ambitious, who prizes independence and would rather build the tools to run their own life than wait for anyone to hand them one. If that's you, what follows is about the closest thing there is to an algorithm. Start early, own broadly, keep going, and let time do the work. Do that, and hitting your financial retirement goals stops being an ending. Instead, it becomes the moment you start really living for yourself.

Here's some good news, folded inside a sobering statistic. Nearly half of U.S. households have no retirement account at all, according to Federal Reserve data. Not because the tools are exclusive or complicated, but because almost no one is ever taught to use them. **What's missing is rarely access; it's knowledge.** That gap is the whole opportunity, because it's so fixable. This book exists to close it: to teach you the simplest, most powerful tools for building retirement wealth, and the concrete steps to use them. The Roth IRA and a low-cost index fund are open to virtually every working American; give an ordinary person an understanding of how they work and the discipline to use them, and a secure retirement stops being a distant worry and becomes a realistic goal. **This gap is yours to close. You can do this yourself.**

Who this book is for

The plan works at any income and any age, but the earlier you start, the more it rewards you. So **it's aimed first at people with decades still ahead of them to build a saving habit and let it compound.** And **it applies no matter how you earn a living**, whether you're a corporate employee, an independent contractor, a small-business owner, or working for a small business, a public company, or a nonprofit. The worked examples use a single earner at $100,000, because that's where maxing a Roth is comfortable. At $60,000 it is a stretch. The tables scale in proportion: halve the contributions and the shape is the same. The tax-advantaged account may change: a Roth IRA, a traditional IRA, a 401(k), a Roth 401(k), a solo 401(k), a 403(b). But the idea behind it never does. Own low-cost index funds, start early, and let them compound untaxed. These pages illustrate maxing a Roth IRA each year because that shows the mechanics most clearly, not because it's a requirement. If your job offers a 401(k) with an employer match, **that match comes first, free money**, before the Roth even begins. The short note right after Chapter 2 spells out the order. If maxing is out of reach, the same forces work on whatever you can set aside. And a very high earner trying to

replace a large salary will need more than a Roth alone: a 401(k), a backdoor Roth, taxable accounts. *Beyond the Roth IRA*, in the Toolkit at the back of the book, walks through each of these scenarios in plain English, so you'll have a reference when you need it.

More precisely, this book is written for readers roughly twenty to forty years old, the years when compounding has decades to work with. If you're younger still, even in your teens, so much the better: meet these ideas early, know about the new federal accounts if one was opened for you, and open a Roth the first year you have a paycheck. If you're past forty, the book still pays twice. Once in what you can change now, and once in what you can pass to the younger people in your life. And one honest boundary: this is a book about building wealth, the accumulation phase. Spending it down safely, the preservation phase, runs on different rules. Chapter 12 lays out those rules, and a fuller treatment is a book for another day.

For parents and grandparents. This book is written to the person doing the saving, but you can do something few others can. Money you give a young person for their first Roth has fifty years or more to grow, and it starts a habit: every time there's a paycheck and a little to spare, or a gift, the Roth gets funded, until it becomes a reflex. Chapter 7 shows how, and its "If you're the one giving" box puts the steps in order.

As you read, you'll meet ordinary earners from many walks of life, among them Maya, a physical therapist; Carlos, an electrician; and Emma, a working musician. You'll follow a normal paycheck all the way into a retirement they fund themselves.

As you follow this plan, keep three things top of mind:

1. **Time is the most powerful force in investing.** Money compounds: growth earns its own growth. Over thirty to forty years that turns steady, ordinary saving into extraordinary sums. **Starting early matters more than how much you earn or how clever you are.** A decade of extra time is worth more than doubling what you put in.

2. **Where you hold the money is almost as important as the money itself. Inside a Roth IRA, a lifetime of growth and every dollar you later withdraw**

are completely tax-free. That shelter is enormously valuable and highly advantageous next to an ordinary taxable account, and even a traditional IRA.

3. **In America, this is your job, but you're also given the means to do it.** The U.S. leaves retirement largely to the individual, yet it taxes you far less than most wealthy countries do, leaving more of your income in your hands. The opportunity is to take that cash flow from the relative tax savings and deliberately convert it into your own private pension. The tool is simple; the only hard parts are starting and staying the course.

NOTE

The headline result

Contribute the annual maximum into a Roth IRA (about $7,500 today) every year from age 30 to retirement, roughly $322,000 of total contributions over a career. Then build every conclusion in this book on the floor: about 8 percent a year, the worst the market has delivered over any thirty-year stretch in nearly a century. Over forty years, about the span of a working life, the worst was a little better, about 8.5 percent. Even there it grows to about $2.15 million, entirely tax-free. That's enough to support about $86,000 a year at a sustainable 4% withdrawal (in the dollars of that year; about $39,000 in today's purchasing power, on top of Social Security). The floor is the worst the past has delivered, not a promise about the future; everything above it is upside. The full range is in the chapters that follow. The amount you put in is ordinary. What time and tax-free compounding do with it is extraordinary. And because we planned on the floor, nearly every surprise runs in your favor.

Put that in perspective. To simply buy $86,000 a year of income at retirement, you'd hand an insurance company well over a million dollars for an annuity, or hold more than two million dollars in dividend stocks, and either way, that income would be **taxed**. You reach the same $86,000 a year for about $322,000 of contributions, because you started early and let it compound, and every dollar of it is **tax-free**, with the balance still yours rather than an insurance company's.

FIND YOURSELF

The chapters walk through the plan for a typical saver: someone starting out, with one income and a Roth at the center.

If that isn't you, turn to *Your Situation, Worked Through*, in the Toolkit at the back. It works through seven more situations:

- a **couple raising young kids on two incomes**
- a **gig worker** whose pay arrives unevenly
- someone who already has a 401(k), 403(b), or the federal TSP at work and wants to know **how it fits**
- a **high earner** paid partly in company stock
- an investor with a big share of their savings in **crypto**
- someone in their **mid-forties or later**, starting late
- a **teenager** with a first summer paycheck

Two other places to look:

- **A parent or grandparent** who wants to help a young person get started: Chapter 7 shows how.
- **Carrying credit-card or other debt**, and wondering how to start saving while you deal with it: Chapter 10, Part two, gives the order for doing both.

How to use this. If one of these situations sounds like yours, read that page in *Your Situation, Worked Through* first, then come back. The chapters are where the case is made: why owning the whole market, patiently, for decades, builds real wealth, and why it holds up even through the worst stretches on record. Every one of those pages applies to you too.

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THE SHORT VERSION

The Whole Plan: On One Page

If you read nothing else, read this. Everything after it is why it works and why you can trust it.

The five moves

> DO THIS FIRST
>
> - **Cash:** one month of expenses in savings to start, building toward three over time (six if your income swings a lot).
> - **Debt:** clear anything charging more than about 8 percent; Chapter 10 gives the order.
> - **The match:** if your job offers one, put in enough to get all of it. It's free money, and it beats everything below.
> - **Protection:** take the disability insurance your job offers. If anyone depends on your income, buy simple term life insurance, not the whole life or universal life policies sold as investments. Name a beneficiary on every account, and if you have children, write a simple will that names a guardian.

1. **Open a Roth IRA.** The one retirement account you can open yourself, no employer needed. Fidelity, Vanguard, or Schwab: about 15 minutes, no cost. (Earn too much for a Roth? There's a door for you too: see *Beyond the Roth IRA* and the worked example for a high earner in the Toolkit.)

2. **Put the money in one low-cost index fund** that owns the broad U.S. market, such as an S&P 500 fund (the 500 largest American companies). Every number in this book comes from the S&P 500's history. (Prefer to own the whole world? Chapter 10 shows both.)

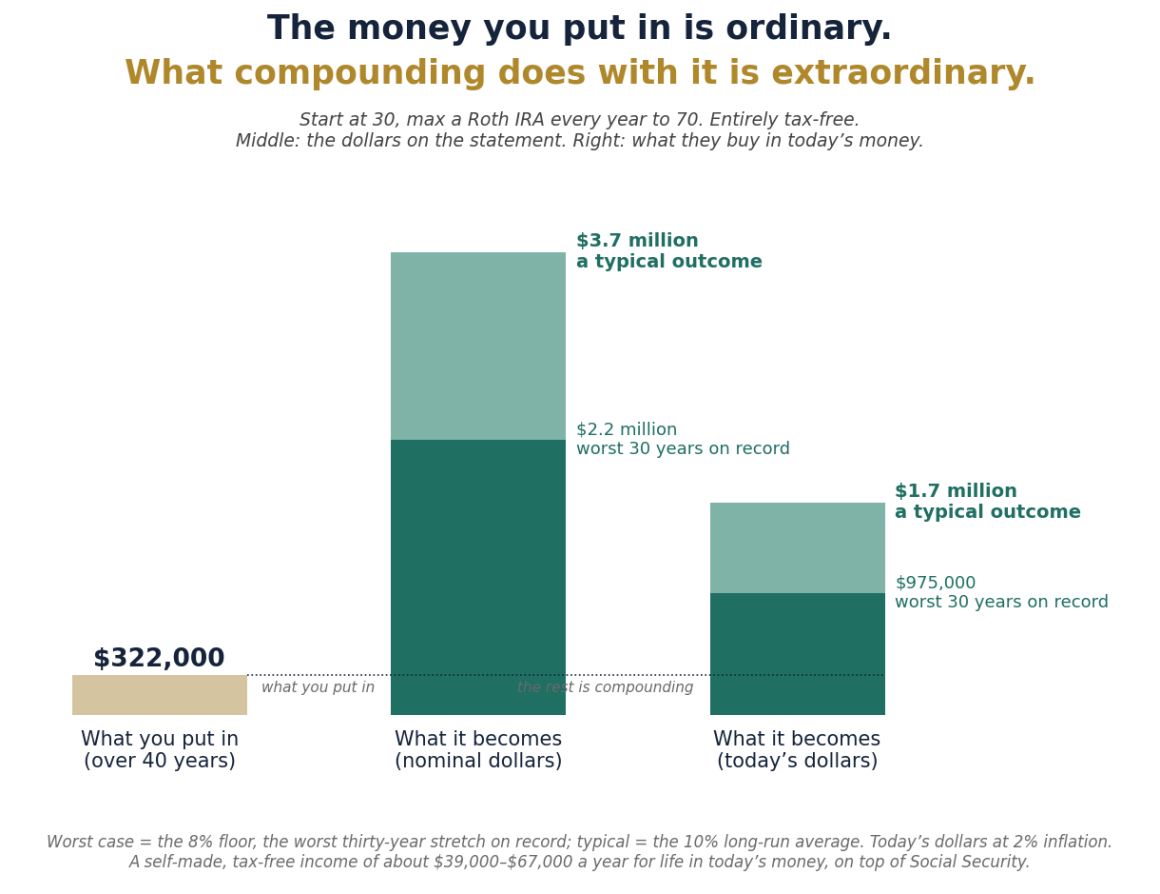
3. **Contribute what you can every year**, ideally the max ($7,500 in 2026), automatically. What you put in can come back out any time, with no tax and no penalty; only the growth has to stay.

4. **Don't sell.** Ignore the headlines. Leave it alone for decades.

5. **Start now.** The earliest dollars are worth the most.

What it becomes

You'll put into your Roth IRA about $322,000 of your own money. Invested in an S&P 500 index fund, by age 70, entirely tax-free, that grows to about $2.15 million even at the 8% floor, the worst stretch in the S&P 500's record, and about $3.7 million in a typical one, an income of $86,000 to $149,000 a year. But the number that really counts is what those dollars are worth in today's money: about $975,000 to $1.7 million, tax-free.



> What you put in versus what it becomes, on the statement and in today's money — the contributions are ordinary; what compounding does with them is extraordinary.

That's the whole idea. Not a lottery ticket, not a fortune, a private pension you build yourself, tax-free, that makes work a choice instead of a necessity. Add that to your Social Security and you have your freedom.

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BEFORE YOU BEGIN

How to Read This Book

This book comes in two halves, and a toolkit.

First, the Chapters are the book. Twelve of them, about two hours' read end to end, longer if you linger over the charts and tables. They hold the entire plan and everything you need in order to act on it: what compounding does, why the Roth beats the alternatives, what a lifetime of maxing one out actually produces, what could go wrong, the simple routine for starting, and, at the end, the shape of a whole financial life and how to spend the money down without undoing the work. **The Chapters are complete in themselves. Read them and you have the whole plan; you could open the account the same afternoon.**

1. **The Magic of** Compounding: why growth crawls for two decades, then goes vertical.

2. **Three Accounts, Three Deals With the Tax Man**: tax-free growth that, for most savers, outdoes both taxable and traditional accounts over a lifetime.

3. **How Maya Built a Tax-Free Fortune** One ordinary saver, forty years of maxed-out contributions, and the same money in a Roth, a Traditional IRA and a taxable account, in both nominal and today's-dollar (inflation-adjusted) terms.

4. **It Pays to Start Early**: the measurable price of every year you delay, and why it's never too late to start.

5. **Living in a High-Tax State? The Roth Is Worth Even More.** The plan run for a typical ~$100K earner, where state tax makes the Roth's edge larger still.

6. **The American Model: Build Your Own Pension**: how retirement landed on the individual in America, and how Social Security and a Roth combine in retirement.

7. **Hey Grandma, I Know What I Want for Christmas**: gift-funding a young American's Roth. How to give someone just starting out a head start.

8. **What Could Go Wrong?** A clear-eyed look at the risks to this plan.

9. **What Could Go Right?** The upside we deliberately left out of every number, so the surprises run in your favor.

10. **Putting It Into Practice**: turns all of this into one simple routine: open a Roth, fund it as early as you can each year, invest it in a single low-cost broad-market index fund (we offer ideas later in the book), and leave it alone.

11. **Two Hills: The Shape of a Financial Life**: the two hills, and how the job changes over time.

12. **Building It and Spending It Are Different Jobs**: the two buckets, the 4% rule used well, a bad decade at the finish, and when to claim Social Security.

Then an interlude, **Where This Began**: the story of the conversation this book grew out of, and the list it started with.

Book Two, the Evidence, is seven essays. Each takes one question a skeptic would ask and answers it in full, with a beginning, a middle, and an end. What if you start at the worst possible moment? After a century of outperformance, can America keep winning? What about America's ballooning national debt? Should you own more of the world? The biggest risk is the one in the mirror. Why not just pick the winners? And show me the numbers: every assumption behind the figures in this book, and the data underneath them. Together the essays are an evening's read, about half as long as the Chapters, and they're where the plan earns its keep. You don't need them to act. But you'll want them the first time the market, or a skeptical friend, makes you doubt.

1. **What If You Start at the Worst Possible Moment?** Three tests of the floor: Tokyo in 1989, New York in 1929, and New York in 1999.

2. **Can America Keep Winning?** The engine underneath these returns, the case for and against it lasting, and what to make of concentration risk, the handful of giants at the top of the index.

3. **What About America's Ballooning Debt?** It has been paid off only once, in 1835, and was back within three years; in practice it gets inflated away, which hurts the cash-holder, not the asset-owner.

4. **Should You Own More of the World?** Does global diversification really pay? How much of the world to own, argued both ways.

5. **The Biggest Risk Is Probably You.** What investors do to themselves, the research on why, and the mechanical defenses.

6. **Why Not Just Pick the Winners?** The case for owning the whole market, and against trying to beat it.

7. **Show Me the Numbers.** Where the 10 percent comes from, why the floor is 8, whether the average flatters itself, and the full range of outcomes.

The Start Now Toolkit is the part you'll come back to. *Beyond the Roth IRA* is for the day your life outgrows the simple plan: a raise that carries you past the Roth's income limit, a business of your own, an employer's Roth 401(k), a health savings account. It walks through every route to a tax-free retirement in plain English, with a companion tool you can run yourself. *The Retirement Account Hiding in Your Health Plan* gives the one account the tax code never touches the full treatment. *Key Terms* defines every financial term in the book in plain English. *Further Reading* is the short shelf that shaped this book, from the parable that started it in our house to the research behind the 4 percent rule, with a note on what each book is for and who should read it. And *Notes & Sources* traces every figure in the book to its source, the datasets and the calculations, so you can check any number yourself, and so that when a question comes up years from now, you know where to look.

And one word about the numbers. The large dollar figures throughout are an illustration of a financial principle, not a savings target. You don't have to start young or contribute the maximum, though it helps, and the same forces work on any amount, begun at any age. The figures come from historical market returns. Markets, taxes, and inflation all change, and the next 30 years won't look exactly like the last. But those returns have held remarkably consistently for a very long time, which is a real source of comfort. Read them as a demonstration of why starting early matters, and scale them to your own life.

Read the Chapters first; the essays defend them, and each essay stands on its own, so take whichever one answers the question you have. Financial terms are defined in plain English in Key Terms, in the Toolkit at the back of the book.

One thing to carry through all of it: **every conclusion here is built on the worst long-term performance the U.S. stock market has delivered on record.** The deck is quietly stacked in your favor, because every other outcome on record was better than the one we planned for.

You don’t need a windfall or a big salary, and to get started, you don’t need a financial advisor. Open an account, contribute what you can, invest it, and leave it alone. **Every year you wait is a year of compounding you can never recover.** The tools are sitting in front of you.

Start Now.

PART I · THE IDEA

The Idea

Why compounding and the right account are the whole game.

THE IDEA · CHAPTER ONE

The Magic of Compounding

A STORY

Years ago I tried to explain compounding to our eldest son at the kitchen table, and I could see it wasn’t landing. So we built a spreadsheet.

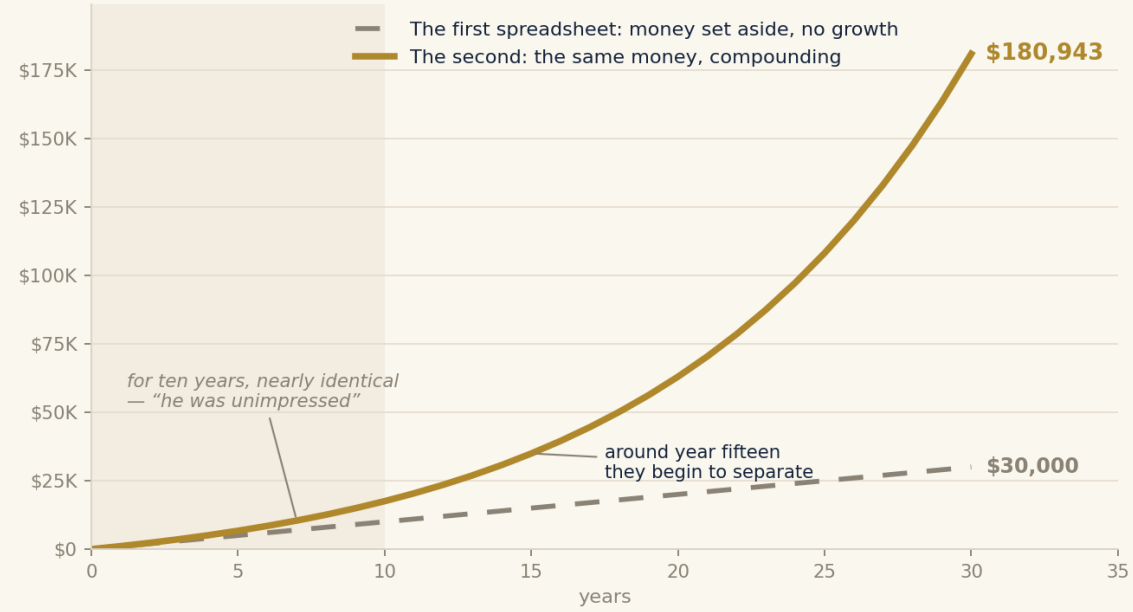
The first one showed his money growing the way a bank grows it: the same small amount added each year, a straight line marching politely across the page. Fine. Boring. Understandable.

Then we built a second one, where the growth was allowed to earn growth of its own. For the first ten years the two lines sat nearly on top of each other, and he was unimpressed. Around year fifteen they began to separate. By year thirty the first line was still marching along the bottom of the screen and the second had walked off the top of it.

That's this chapter in a single image, and it's the part almost nobody feels until they see it: **compounding is boring for a long time, and then it isn't.** The dullness of those early years isn't a sign that it isn't working. It's exactly what it looks like when it *is* working.

The two spreadsheets

$1,000 set aside each year for thirty years — flat, versus compounding at 10%



> For ten years they look like the same decision. They aren't.

✦

Compounding is the simple idea that the returns you earn begin to earn returns of their own. A dollar of gain, left invested, becomes a base for the next year's gain, and the year after that, and the year after that, etc. Over a few years the effect is almost invisible. Over a working lifetime it becomes **the single most powerful force in personal finance**. This first section builds the intuition for why

that is, why the effect becomes dramatic only after a couple of decades, and why, despite the stock market's year-to-year turbulence, long holding periods have historically been remarkably dependable.

Here's that engine in its simplest form: what a single dollar invested at age 30 becomes by various ages, at the 10% long-run return:

A SINGLE $1 INVESTED AT AGE 30…	…IS WORTH
by age 50	about $7
by age 60	about $17
by age 70	about $45
by age 85	about $189

Growth of $1 at a 10% annual return. The same multiplier applies to any contribution.

A person who invests $1,000 in a single year at age 30 has roughly $45,000 from that one year's contribution by age 70, when it grows at the 10% long-run compound return of the stock market as measured by the S&P 500. Someone who does it every year accumulates the millions shown in the case studies. *The multiplier is the lesson, not the size of the contribution.*

1.1

Linear growth versus exponential growth

It helps to start with the contrast between simple interest and compound interest – or linear growth versus compound growth. With simple interest, you earn the same fixed amount every year, because the gains are skimmed off rather than reinvested. Growth is a straight line. With compound interest, the gains stay in the account, and those gains go on to earn gains of their own. **Growth earns growth.** The line stops being straight and starts to curve upward, gently at first and then steeply.

Consider a single $10,000 investment earning 7% a year. This 7% is the stock market's long-run return after subtracting inflation, its "real" return, which is simply

the 10% nominal return used elsewhere in this book, less long-run inflation. Simple interest on it adds a flat $700 every year, forever. Compounding adds 7% of an ever-larger balance: $700 in year one, $749 in year two, $1,287 in year ten, and nearly $9,800 in year forty. The table below shows how the two diverge.

HOLDING PERIOD	SIMPLE INTEREST (7%)	COMPOUNDED (7%)	COMPOUNDING ADVANTAGE
10 years	$17,000	$19,672	$2,672
20 years	$24,000	$38,697	$14,697
30 years	$31,000	$76,123	$45,123
40 years	$38,000	$149,745	$111,745

A single $10,000 investment at 7%. The advantage of compounding is trivial early but overwhelming later on.

1.2

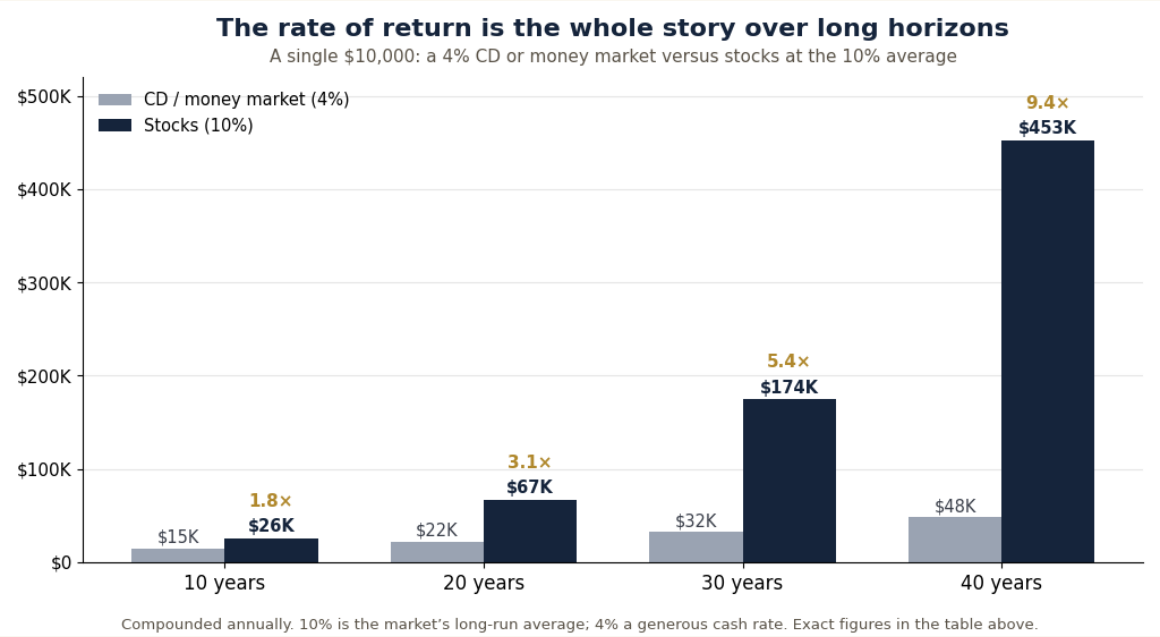
The rate of return matters enormously, eventually

Not all compounding is equal. When you invest in a bank CD or money-market fund, where your money gets reinvested daily, the returns compound too, but at a relatively low rate, call it 4%. A diversified stock portfolio has historically compounded at roughly 10% including reinvested dividends, its long-run compound return since 1928 (more on that figure shortly, and in full in *Show Me the Numbers*, in the second half of the book). In the early years these two paths look almost the same, which is exactly why the difference is so easy to underestimate. Given enough time, though, the higher rate doesn't just win. **By year forty the stock path is worth roughly nine times the CD path.**

HOLDING PERIOD	CD / MONEY MARKET (4%)	STOCKS (10%)	STOCKS ÷ CD
10 years	$14,802	$25,937	1.8×
20 years	$21,911	$67,275	3.1×
30 years	$32,434	$174,494	5.4×

HOLDING PERIOD	CD / MONEY MARKET (4%)	STOCKS (10%)	STOCKS ÷ CD
40 years	$48,010	$452,593	9.4×

A single $10,000 investment.



> The same table as a picture: the gap between 4 percent and 10 percent is modest at ten years and enormous at forty.

1.3

Why it "goes vertical" after 20–30 years

The curve's late steepness isn't an illusion or a quirk of the chart. It's the mathematics of repeated doubling.

A useful shortcut, the "Rule of 72," says money doubles in roughly 72 divided by the return rate. At 10%, that is about every 7.2 years. At 4 percent, the kind of return cash or safe bonds might earn, the same money takes about 18 years to double, about two and a half times as long.

The crucial point is that every doubling is larger in absolute dollars than all the growth that came before it combined. Going from $1 million to $2 million adds a full million dollars in a single step, as much as the entire climb from $10,000 up to $1 million put together. Because the early doublings happen on small balances, the first two decades feel slow; because the late doublings

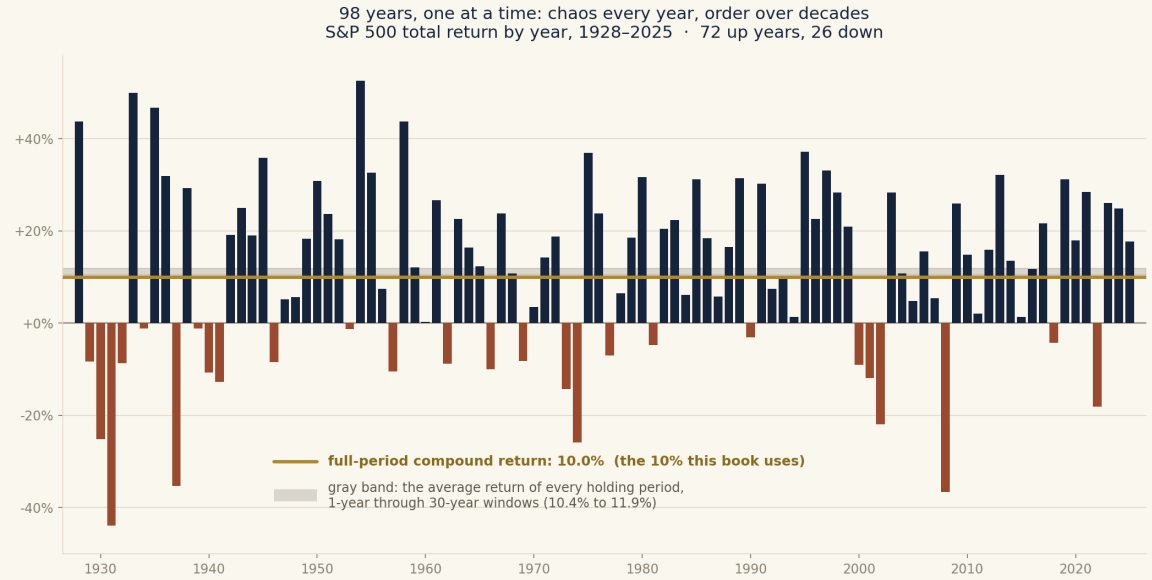
happen on large balances, the final two decades feel almost unreal. This is why **starting early is worth so much more than saving more later**: the early dollars are the ones that get to double the greatest number of times.

> NOTE
>
> ### Run your own numbers
>
> Every figure in this book comes from the same three inputs: what you put in, how long it compounds, and at what rate. Change any one of them and the answer changes, which is why the case studies ahead are illustrations rather than targets.
>
> If you want to see your own version, the U.S. Securities and Exchange Commission publishes a free compound interest calculator at **investor.gov**. It takes about thirty seconds: enter what you have now, what you plan to add each month, the number of years, and a rate. Use 8 percent to see this book's floor, 10 percent to see its average.
>
> It's a government education tool, so there are no ads, no sign-up, and nothing for sale. Just the arithmetic.

1.4

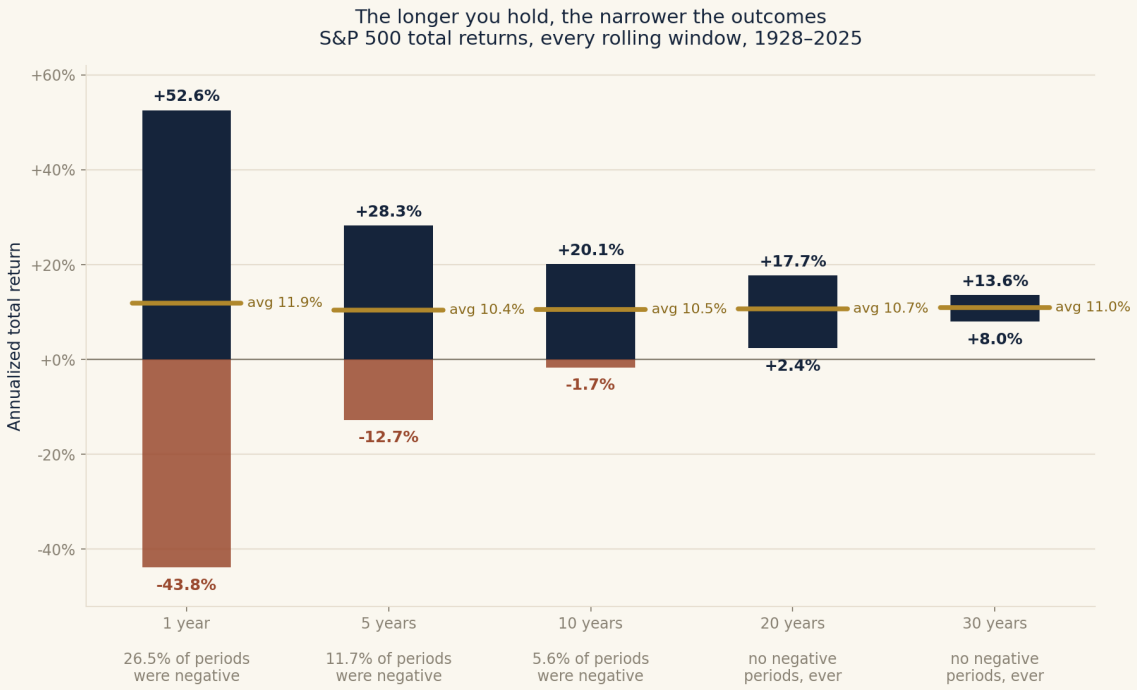
Stocks are volatile, but time tames the volatility

Everything in this book leans on the market's long-run average of about 10 percent a year, and here's the uncomfortable truth about that number: **almost no single year looks anything like it**. An average of 10 percent sounds calm, even boring. The reality it summarizes is anything but. In any single year the market might soar 50 percent or fall 40 percent, and a year that actually returns 10 percent is a rarity. So before trusting the average, look at the raw material it came from: every single year on its own.



> Every single year, 1928–2025: 72 up, 26 down, in no pattern anyone has ever traded profitably. The gold line is the full-period compound return of 10.0 percent; the gray band is the average return of every holding period from 1 to 30 years. **The chaos is real, and so is the order underneath it.** Source: Aswath Damodaran (NYU Stern), S&P 500 total returns 1928–2025; author's calculations.

Chaos, year to year. And yet **it matters far less over long horizons than most people expect**, because good and bad years tend to offset one another, and the longer the holding period, the more reliably they do so. Take those same 98 years and hold them in combinations, every possible stretch of five, ten, twenty, thirty years, and watch the chaos compress. The chart below uses S&P 500 total returns (with dividends reinvested) for every year from 1928 through 2025. We compute the annualized return an investor would have earned over every possible holding period of a given length: every one-year stretch, every five-year stretch, and so on. The pattern is striking.



> S&P 500 rolling annualized total returns, 1928–2025. Each bar spans the worst to the best outcome for that holding period; the gold mark is the average. Past performance does not guarantee future results.

Three results stand out:

1. The average return is similar across every horizon, from +10.4% to +11.8%.
2. **No 20- or 30-year period was ever negative.**
3. **Even the worst 30-year stretch in nearly a century still compounded at 8% a year**; the best reached 13.6%. Over forty-year stretches, the length of a working life, the worst was about 8.5%[1]. And for someone who saves every year, as this book's plan does, history has been kinder still; *Show Me the Numbers* runs the test.

Single-year returns can land anywhere from −44% to +53%, but stretch the horizon to thirty years and that spread collapses into a tight, entirely positive band of +8% to +13.6%. Note what narrows: the annual rate, not the dollar outcome. As *Show Me the Numbers* lays out, the ending balances still span nearly five-fold, which is why the plan is built on the floor rather than the band. (Throughout this book, "on record" means the S&P 500 total-return series since 1928, the longest clean annual series available.) **This is the empirical foundation for the**

conclusions and case studies that follow: over a multi-decade horizon, a broad stock index has behaved less like a gamble and more like a slow, dependable compounding machine.

NOTE

The base case used in this book

Because the case studies span a full saving lifetime (roughly 30–40 years), the natural return assumption comes from the historical 30-year record, which runs from a worst case of 8.0% to a best case of 13.6%. As its base case, this book uses a long-run average of about 10%, the S&P 500's compound return over the past century. **Every conclusion in this book is built on the 8% floor**; the tables show the 10% average alongside it, and Section 3.2 brackets every result with the 8% and 13.6% cases. A 10% assumption should be read as illustrative, not a forecast. *Show Me the Numbers* lays out the full record behind this figure: every rolling 30-year return since 1928, and how it has moved over time.

1.5

Why a 4% withdrawal rate?

Throughout the case studies, retirement income is illustrated as a 4% withdrawal. In plain terms: in your first year of retirement you take out 4% of your portfolio (for example, $40,000 from a $1 million balance). That figure isn't arbitrary: it comes from one of the best-known ideas in retirement research, the so-called "4% rule." In a 1994 study, financial planner William Bengen examined every 30-year retirement window in U.S. history and asked, "How much could a retiree take out in the first year, then increase by inflation each year, without running out of money?" His answer was about 4%, confirmed a few years later by three professors at Trinity University in a 1998 study that took the school's name. On a balanced stock-and-bond portfolio, an initial 4% withdrawal lasted the full thirty years in 39 of 41 historical periods; the two that ran out, retirees who began in the late 1960s just before a long stretch of high inflation, are taken up in Chapter 12, later in the book[2]. Those studies tested a balanced portfolio. The plan in this book stays mostly in stocks into retirement, with two to three years of spending set

aside in cash and short-term bonds; Chapter 12 explains why that cash bucket, rather than a large shift into bonds, is what protects the 4 percent draw.

Crucially, **4% is a worst-case-derived number**, and may even be a conservative one. Bengen himself noted that the average successful withdrawal rate across history was near 7%, and in favorable periods retirees could have safely taken even more. In his 2025 book, Bengen, the rule's own creator, goes further, arguing that most retirees today can safely take closer to **5% to 5.5%** (his updated worst-case, "never-failed" figure is about 4.7%). More cautious voices point the other way: Morningstar, weighing today's valuations and bond yields, puts its 2026 base case at roughly 3.9%, and Vanguard suggests a 3.5–4% range[3]. This book deliberately uses the lower, classic 4% anyway, widely understood and truly cautious. The gap is real money: on a $1 million portfolio, 4% is $40,000 in the first year, where Bengen's newer 5% to 5.5% would be $50,000 to $55,000. We plan on the smaller number on purpose, so that if anything, the plan understates the income these portfolios could sustainably produce.

INITIAL WITHDRAWAL RATE	APPROXIMATE OUTCOME OVER A 30-YEAR RETIREMENT
3%	Virtually never exhausted; the portfolio usually grew over the 30 years
4% (used here)	The classic "safe" rate: survived 95% of historical 30-year periods; the two that failed began in the 1960s
5%	Succeeded in most periods, but failed in a meaningful minority
6%	Roughly the historical average successful rate, yet real risk of depletion after a bad start

Balanced (≈ 50/50) stock/bond portfolio; first-year withdrawal then adjusted for inflation annually. Based on Bengen (1994) and the Trinity Study (1998). Past performance doesn't guarantee future results.

In the case studies that follow, the "4% income" columns show this first-year withdrawal at each possible starting age. Because **a Roth's withdrawals are**

entirely tax-free, that 4% is money in hand, with no further tax due, and, by the rule's own logic, is designed to last a full 30-year retirement and then some.

The one ingredient you can't buy

That's compounding: your money earns a return, the return earns its own return, and given enough years, the growth does most of the work. You don't have to be clever, and you don't have to be rich to start. It needs one ingredient, time, and time is the one thing no one can buy back. Which is why the next question is where to keep the money while it grows: somewhere the tax man can't slow it down.

✦

THE IDEA · CHAPTER TWO

Three Accounts, Three Deals With the Tax Man

Why hold investments in a tax-advantaged account

A STORY · THE SAME THOUSAND DOLLARS

Grace owns a neighborhood café she built from nothing. There's no employer plan behind her, because she's the employer: no paycheck, no withholding, just the quarter's profit and a check she writes to the IRS four times a year. Income tax is coming for this money no matter what she does. So one evening after closing, she sets aside $1,000 of profit for her future. Think of it as a seed. Planted and left alone for forty years, it will grow into something many times its size: the harvest. Grace has three places she could plant it, three doors, and the income tax was never the choice. What the taxman is allowed to touch, and *when*, is.

Behind the first door is an ordinary brokerage account. The seed is taxed before it goes in the ground, and then the taxing never stops: every dividend taxed each spring, and when she finally sells, decades from now, the harvest is taxed too. Seed taxed, growth taxed, harvest taxed. The money works its whole life with a hand reaching into its pocket.

Behind the second door is a Traditional IRA. Here the government makes her an offer: plant the seed untaxed, settle up later. It feels generous. But later means retirement, when every dollar she withdraws, seed and forty years of growth alike, is taxed as ordinary income. **The government skipped the seed to wait for the harvest**, and the harvest is the biggest pile she will ever have.

Behind the third door is a Roth. She pays her tax on the seed this year, the same as door one, and then something unusual happens: nothing. No tax on the growth. No tax on the harvest, not in her sixties, not in her nineties. The hand touches the money exactly once, while the pile is at its smallest, and never again.

Same woman. Same thousand dollars. She could even plant the identical investment behind all three doors. The only difference is when the tax lands, and over a working life that one difference is worth a lot of money; in Grace's case, as Chapter 5 will show, hundreds of thousands of dollars. The whole chapter comes down to a single question: **tax the seed, or tax the harvest? The Roth taxes the seed.**

✦

If compounding is the engine, taxes are the friction. **Every dollar paid in tax along the way is a dollar that stops compounding.** A dollar not invested early is enormously expensive in lost future growth. Tax-advantaged retirement accounts exist to remove that friction, and over a lifetime the difference is substantial.

Of the accounts this chapter compares, this book builds on one in particular: the IRA, the individual retirement account. It's the one account almost anyone with earned income can open on their own, with no employer or workplace plan required, which is exactly why it has quietly become the single largest pool of retirement savings in the country. The Roth is its fully tax-free version, and that's the account this book is built on. (Section 6.1 maps where the IRA sits within the whole U.S. retirement system.)

How the three accounts actually work

When you hold your investments in an account at a brokerage firm, there are three main kinds to choose from, each taxed in a very different way: **an ordinary taxable account, a traditional IRA, and a Roth IRA**. Which one you choose does more to shape your final result than almost any other decision in this book, so it helps to see exactly how each one works.

Imagine you have $1,000 of pre-tax earnings to put toward retirement this year, and your income-tax rate is 24%.[34]

- **Roth IRA: pay tax now, never again.** You pay income tax on the money first, so about $760 goes in. It grows for decades, and in retirement **the entire balance, your contributions *and* all of the investment growth, comes out completely tax-free**. Nothing is taxed on the way out, at any rate.
- **Traditional IRA: skip tax now, pay it later as income.** The contribution is pre-tax, so the full $1,000 goes in and your taxable income drops by $1,000 this year, a tax saving of about $240 today. The money grows untaxed. But every dollar withdrawn in retirement, contributions and growth alike, is taxed as *ordinary income*, the same schedule as a paycheck, which is higher than the capital-gains rate.
- Taxable account**: pay tax now, a little each year, then the lower capital-gains rate at the end.** Like the Roth, you invest after-tax money, so about $760 goes in. Unlike the IRAs, it is taxed *as you go*: dividends are taxed every year, a small but steady drag. When you finally sell, **your gains are taxed at the long-term *capital-gains rate*, which is lower than ordinary income rates**.

Three accounts, three different deals with the tax man:

FOR $1,000 OF PRE-TAX EARNINGS	AMOUNT INVESTED	TAXED ALONG THE WAY?	TAXED AT WITHDRAWAL?
Roth IRA	$760 (after 24% tax)	No	No, entirely tax-free
Traditional IRA		No	

FOR $1,000 OF PRE-TAX EARNINGS	AMOUNT INVESTED	TAXED ALONG THE WAY?	TAXED AT WITHDRAWAL?
	$1,000 (pre-tax)		Yes, full balance at ordinary income rates
Taxable account	$760 (after 24% tax)	Dividends, yearly	Yes, gains at capital-gains rates

The same $1,000 of pre-tax earnings enters each account differently: the deduction lets the Traditional invest the full $1,000, while the Roth and the taxable account invest $760 after tax.

Dollar for pre-tax dollar, at the same tax rate today and in retirement, the Traditional and the Roth come out exactly even. The Traditional's larger $1,000 head start is cancelled precisely by the ordinary-income tax due at the end, landing in the same place as the Roth's $760 growing tax-free.

What breaks the tie is the contribution limit. The limit caps the *nominal* amount, not the pre-tax amount: at most about $7,500 either way. And $7,500 of already-taxed Roth money shelters more real wealth than $7,500 of pre-tax Traditional money that still owes income tax. **So a saver who maxes out, as the case studies assume, quietly gets more into the Roth, and it pulls ahead.**

The Traditional saver has one way to close that gap: invest the yearly tax refund the deduction produces, in a separate account. Do that, and the Traditional roughly ties the Roth. But most people *spend* the refund. Then only the capped contribution compounds, and it's taxed at the high ordinary rate on the way out. A taxable account, whose gains face only the lower capital-gains rate, can end up *ahead* of the Traditional. **That realistic, spend-the-refund assumption is the one this book uses** (see Section 3.3). For most readers of this book, early in a career and in a low tax bracket, the Roth is the right call. If your tax rate today is high, 32 percent or more, the Traditional can come out ahead instead; the 401(k) note just after this chapter gives the simple rule.

One thing never changes: the Roth. Because it's taxed neither along the way nor at withdrawal, the Roth beats the taxable account in *every* scenario: the taxable account always pays at least the yearly dividend tax and the final capital-gains tax that the Roth escapes entirely. The interesting contest is between the Traditional IRA and the taxable account; the Roth sits above both. Inside either IRA,

dividends and gains are also never taxed year to year, so the full balance compounds untouched, the taxable account's annual drag is the price of having no contribution limit.

2.2

The advantages of the Roth

For a long-horizon investor, the Roth structure carries several distinct advantages:

- **Decades of growth come out tax-free.** In the case studies, a few hundred thousand dollars of contributions grows into millions. In a Roth, every dollar of that growth is yours.
- **No required minimum distributions (RMDs).** Traditional IRAs force taxable withdrawals beginning at age 73[4], or 75 for anyone born in 1960 or later, whether you need the money or not. Roth IRAs have no such requirement during the owner's lifetime, so the balance can keep compounding untouched, exactly the behavior modeled in these case studies.
- **A hedge against higher future tax rates.** A Roth locks in today's tax cost. If income-tax rates rise over the coming decades, the Roth holder is unaffected, while the Traditional holder pays the higher future rate on every withdrawal.
- **"Denser" dollars when you max out.** $7,500 in a Roth is $7,500 of spendable, already-taxed money. $7,500 in a Traditional IRA still has a tax bill attached. For a saver who hits the contribution limit, the Roth therefore packs more real, after-tax wealth into the same capped contribution.
- **Tax-free to heirs.** Inherited Roth assets generally pass to beneficiaries tax-free, making the Roth a powerful vehicle for transferring wealth as well as funding retirement.

One qualification sits under all of this: the entire tax-free promise rests on current law, and Congress can change tax law. Proposals to cap very large Roth balances or alter the rules surface from time to time. This is worth a sentence of awareness, not worry: wholesale repeal of a benefit that tens of millions of ordinary savers rely on is a heavy political lift, and nothing about today's law

suggests the core deal is going away. **Plan on the rules holding; just don't assume they're carved in stone.**

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✦

A NOTE FOR W-2 EMPLOYEES

If Your Job Has a 401(k)

If you have a retirement plan at work, a 401(k), a 403(b), or a 457(b), read this; they all work the same way. If you don't, skip to the next chapter.

If you're a W-2 employee, on a company's payroll, with taxes withheld from each paycheck, the first retirement account you meet probably isn't the Roth IRA; it's the 401(k), offered through your employer. That's fine. The 401(k) is a good tool, and everything this book teaches (start early, own a low-cost index fund, let it compound untaxed, don't sell) works exactly the same inside it. The one real difference is tax on the way out: a traditional 401(k) is taxed when you withdraw it, while a Roth comes out entirely tax-free. That's why this book uses the Roth to *see* the idea in its cleanest form. Here's how the 401(k) and the Roth IRA fit together. *(If you're an independent contractor, you get a 1099, not a W-2, and you're considered self-employed for retirement purposes; your version, the solo 401(k), is in Beyond the Roth IRA, in the Toolkit at the back.)*

There's one rule that comes before everything else in this book, and it applies only to you: **if your 401(k) offers an employer match, contribute enough to get the full match first.** A match is free money: your employer adds, say, fifty cents or a dollar for every dollar you put in, up to a limit. That's an instant 50% or 100% return before the market does a thing, and nothing in these pages can beat a guaranteed doubling of your money. So the order is:

1. **Contribute to the 401(k) up to the full match**, free money, first.

2. **Then fund a Roth IRA**, the account this book is built around, for its tax-free growth and flexibility.

3. **Then, if you can, put more into the 401(k)**, up to its limit.

A few things worth knowing:

- **You can do both in the same year.** A 401(k) and a Roth IRA are separate buckets with separate limits: in 2026, up to $24,500 in the 401(k) and another $7,500 in the Roth IRA. They don't reduce each other.
- **Many 401(k)s now offer a Roth option.** A "Roth 401(k)" works just like the Roth in this book (after-tax in, tax-free out) but with the much higher 401(k) limit. Same idea, bigger scale. Which one? A simple rule. If your top federal tax rate is 12 or 22 percent, as it is for most people early in a career, choose the Roth: you pay a low rate now and never again. If it's 32 percent or higher (in 2026, that starts at roughly $200,000 of taxable income for a single filer, $400,000 for a married couple), as it often is for high earners and for people at the peak of their careers, the traditional, pre-tax option usually wins, because you save tax at a high rate now and will likely withdraw at a lower one. (The Toolkit works through one such case, a 27-year-old tech earner.) At 24 percent, either works, and splitting between them is a fine answer. Whatever you choose, choose it on purpose rather than leaving it to a default.
- **The match may "vest" over time.** Some employers require you to stay a few years before their contributions are fully yours; your own money is always yours immediately.
- **When you leave a job, the 401(k) comes with you**. You can roll it into an IRA, or into your next employer's plan. Nothing is stranded. One caution: if you may ever need the backdoor Roth described in *Beyond the Roth IRA*, prefer the new employer's plan, because pre-tax money sitting in an IRA makes that conversion taxable.

> **CASE STUDY · SOPHIA, 26**
>
> Sophia is 26, a mechanical engineer at an aerospace company. When she signed her offer letter, the match was one line in the benefits packet, and

nobody at the company ever mentioned it again. She looked it up herself and realized what that line actually said: free money, every paycheck, for anyone who asks. Her employer matches 401(k) contributions dollar-for-dollar up to 5% of her salary, so her first move is to put in that 5%. She isn't leaving a 100% return on the table. Then she opens a Roth IRA and funds it for the tax-free growth and flexibility. With both running, she circles back and pushes her 401(k) higher. Same principle, three steps, no wasted dollars. **And if she eventually maxes the 401(k) too, the totals climb far higher still. It's the same math, just more fuel.** Run those three steps for a working lifetime and Sophia finishes ahead of every table in the chapters ahead: she started four years before Maya, and her employer paid for part of every mile.

That's the whole of it if you work for a company: grab the match, fund the HSA if your health plan offers one (the Toolkit explains why), then follow the same moves as everyone else. From here, the rest of the book reads the same whether your dollars sit in a Roth IRA or a 401(k). The vehicle changes, and its tax timing can too, but the engine doesn't: start early, own the index, let it compound, and don't sell.

PART II · RUNNING THE NUMBERS

Running the Numbers

What a century of market data actually shows, across every scenario.

RUNNING THE NUMBERS · CHAPTER THREE

How Maya Built a Tax-Free Fortune

Case studies: a lifetime of maxing out an IRA

This section brings it all together, following real people through the plan, dollar by dollar. If you love numbers, dig in. If you don't, relax: there aren't many, and each one is here to bring a real person's story to life.

> **CASE STUDY · MAYA, 30**
>
> At 30, she's a physical therapist at a small private clinic, no big employer, and no retirement plan waiting for her. A few years in, she's cleared her training debt, and after watching older colleagues retire on far less than they'd hoped, she decides she won't be one of them. So she opens a Roth IRA, contributes the maximum every year until she retires at 70, and then leaves the balance invested, drawing a sustainable income from it rather than cashing out.

Let's track three identical-contribution strategies side by side: a Roth IRA, a Traditional IRA, and an ordinary Taxable account, and ask two questions for each age from 70 onward: what's the after-tax lump sum worth, and what annual income would a 4% withdrawal provide? (Age 30 is used as the base because many people begin disciplined saving after a few years of working; Chapter 4 shows what changes if you start earlier or later.)

Assumptions

- **Contributions:** Maya puts in the 2026 IRA maximum of $7,500 a year, rising to $8,600 at 50 with the catch-up.[5] The first run holds that amount flat; the second grows it 2.5% a year.
- **Investment return:** Every conclusion is built on the 8% floor, the worst 30-year stretch on record (Section 1.4). The tables use the 10% long-run average; the 8% floor results are in the text, and *Show Me the Numbers* lays out the full range.
- **Taxes:** Withdrawals from the Traditional IRA are taxed at 24%. In the Taxable account, dividends are taxed each year and the remaining gain when sold, both at 15%.[6]

- **Comparability:** Every figure is after tax, meaning spendable dollars. The Roth needs no adjustment because it's already tax-free.
- **Inflation:** Some tables also state values in today's dollars, so a future balance can be read in purchasing power you recognize today.[7]
- **The age rows:** Contributions run through age 69 and stop at 70. The rows for 75 and 80 show that same balance left to compound untouched. A Roth has no required minimum distributions, so leaving it alone is a real choice, and the tax-smart order is to **draw down taxable and traditional accounts first and the Roth last**. Those rows show what the money does if left alone, not a rule that anyone must wait.
- **Total contributed over the 40 years (ages 30–69): $322,000.** Every dollar beyond that comes from compound earnings, not from saving.

3.1

The base case: the 10% average (the 8% floor is in the text)

Start at the floor, the 8 percent growth rate this book assumes. At an 8% growth rate, a maxed-out Roth reaches **about $2.15 million by age 70**. That generates about $86,000 a year at a 4% withdrawal rate during retirement. At the 10% long-run average, the same plan reaches **about $3.7 million**. The tables below use the 10% average, across all three account types. Each figure appears twice: in **nominal dollars**, the balance you'd actually see on the statement that year, and in **today's dollars**, what that balance would buy at today's prices. The second number is always smaller, because decades of inflation erode what a dollar buys.

The four tables that follow all use the 10% long-run average, not the 8% floor. The floor is what the plan is built to survive; the average is what the plan has more often actually delivered, and it's the fairer basis for comparing the three account types against each other. The 8% floor results, and the two side by side, are at the end of *Show Me the Numbers*.

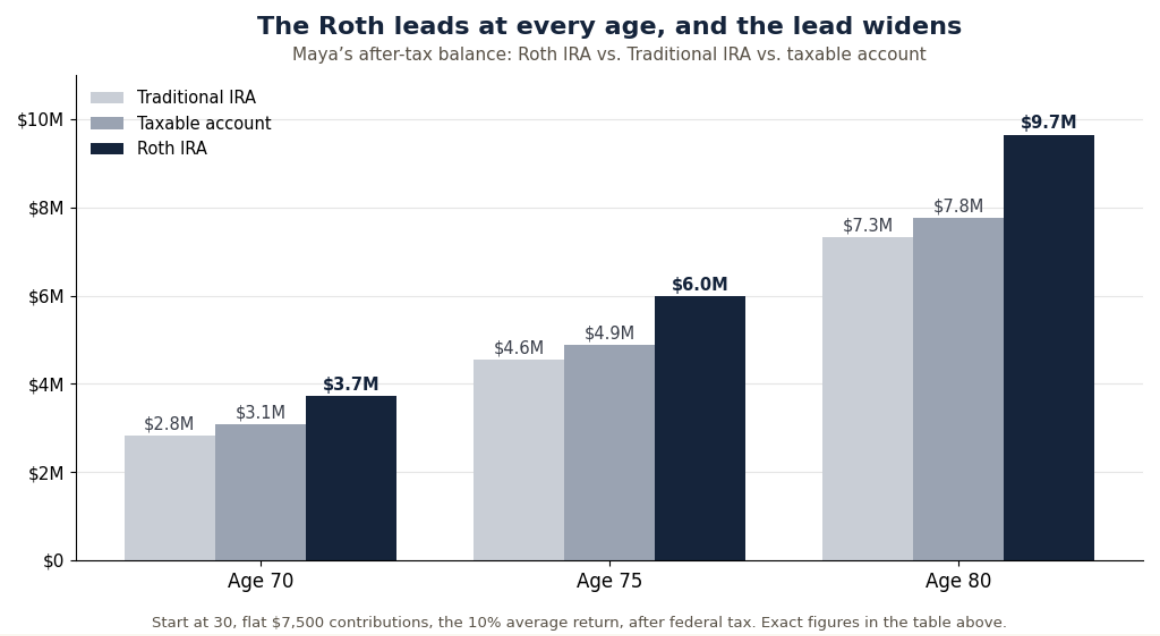
Table set one · What the balance is worth at 70 and beyond

The after-tax lump-sum value at age 70 and beyond, assuming the 10% average return, for all three accounts:

AGE	ROTH IRA	TRADITIONAL IRA	TAXABLE ACCOUNT
70	$3,720,691	$2,827,725	$3,081,517
75	$5,992,211	$4,554,080	$4,887,313
80	$9,650,515	$7,334,391	$7,765,943

After-tax lump-sum value, in nominal dollars. Start age 30, flat contributions, the 10% average return. (Selected ages shown.)

How each column is taxed. *Roth IRA: $7,500 a year ($8,600 from 50) of after-tax money, never taxed again. Traditional IRA: the same $7,500 a year, pre-tax; the tax saving is spent, not invested, and every dollar withdrawn is taxed at 24% (31% in California). Taxable account: the same $7,500 a year after tax; a 1.5% dividend yield taxed each year at 15% (24.3% in California) and reinvested, with the remaining gain taxed at 15% (24.3%) when sold at the age shown. All after-tax values assume withdrawals spread over several years at these rates; a single-year sale would face higher brackets.*



> The same table as a picture: the Roth leads at every age, and the lead widens. Rounded; exact figures in the table above.

The same table, in today's dollars (2% inflation), so the figures can be read in purchasing power you recognize:

AGE	ROTH IRA	TRADITIONAL IRA	TAXABLE ACCOUNT
70	$1,685,065	$1,280,650	$1,395,590
75	$2,457,986	$1,868,069	$2,004,760
80	$3,585,435	$2,724,931	$2,885,264

After-tax lump-sum value in today's purchasing power. Start age 30, flat contributions, the 10% average return, 2% inflation.

Table set two · What it pays out each year

And the annual income a 4% withdrawal would generate, depending on the age at which withdrawals begin:

START AGE	ROTH IRA	TRADITIONAL IRA	TAXABLE ACCOUNT
70	$148,828	$113,109	$123,261
75	$239,688	$182,163	$195,493
80	$386,021	$293,376	$310,638

First-year income from a 4% withdrawal, after tax, in nominal dollars. Start age 30, flat contributions, the 10% average return.

The same income, in today's dollars (2% inflation):

START AGE	ROTH IRA	TRADITIONAL IRA	TAXABLE ACCOUNT
70	$67,403	$51,226	$55,824
75	$98,319	$74,723	$80,190
80	$143,417	$108,997	$115,411

First-year 4% withdrawal income in today's purchasing power. Start age 30, flat contributions, the 10% average return, 2% inflation.

The lump-sum figures assume the balance is left untouched to keep compounding, while the 4% income figures show what you could instead draw in the first year if you began withdrawing at that age. You do one or the other, not both, because the two are the same pile of money: every dollar you withdraw stops compounding, so a balance you're drawing income from can't also be the balance that grew untouched to the figure in the first table.

For simplicity all three accounts are modeled as left untouched after 70. In practice a Traditional IRA faces required minimum distributions beginning at 75 for a saver Maya's age, which would draw it down somewhat; a Roth has no such requirement, so its untouched-compounding figures are exact.

Reading the tables. At age 70, assuming the 10% average return, the Roth holds about $3.7 million of tax-free wealth, the highest of the three. The Taxable account comes next at about $3.1 million. And, **perhaps surprisingly, the Traditional IRA trails** at about $2.8 million. Section 3.3 explains why. The Roth's lead is structural and percentage-based, so it widens in dollars every year: by age 80 its edge over the taxable account alone is about $1.9 million.

NOTE

Yield on Cost, the number that should matter

Most savers fixate on the size of the nest egg. **The number that actually matters is the cash flow it can sustainably throw off, measured against what you paid to get it.**

Take the 10% average case from the tables above. Over her career, Maya contributed $322,000. Her first year of retirement income, drawing 4%, is about $149,000. In one year she takes out nearly half of everything she ever put in, about 46 cents for every dollar contributed. Then she does it again the next year, and the year after that.

Investors call this yield on cost. Both percentages describe the same income, about $149,000, and each one is a yield: think of it as the interest rate the money is paying her. Measured against her balance of about $3.7 million, that income is a **4% yield**. That's the number everyone quotes, and it's the rate she's drawing from the account. Measured against the $322,000 she actually contributed, the very same income is a **46% yield**. That's the number almost nobody looks at, and it's the one that shows

what her contributions did: every year, they hand her back 46 cents for each dollar she ever put in. Because it's a Roth, that 46% is entirely tax-free, and it rises every year with inflation; wait until 80 to begin drawing and the yield on cost approaches 120%. No bond, dividend stock, or annuity bought at today's prices can be made to do this. It can only be grown into, by starting early and refusing to sell.

These are nominal figures: about 46% on the 10% average case, and about 27% even at the 8% floor. What they're worth after inflation, in today's dollars, is shown by the today's-dollars tables in Section 3.1 above.

Even after inflation, the result is life-changing. The Roth's age-70 balance of about $3.7 million is worth about $1.7 million in today's money. That throws off roughly $67,000 a year in today's purchasing power at a 4% withdrawal. It's entirely tax-free, and it comes from a lifetime contribution of $322,000. That's the magic of compounding inside a tax-free wrapper.

3.2

What you can and can't control

Section 3.1 built on the 8% floor and the 10% average. The best 30 years the market has delivered on record is 13.6 percent, the ceiling of what has actually happened. The full floor-to-ceiling tables, across ages 70 to 80, are laid out in *Show Me the Numbers*.

NOTE

You can't control the return, only whether you keep showing up

Whether the market hands you 8% or 13.6% has an enormous effect on the final number, far more than how much you contribute or which account you use. That return isn't yours to choose. The forces that set market returns, the era you invest through, the economy, the wider world, are almost entirely outside your control. So the rate you ultimately earn is largely out of your hands.

> What's fully within your control is something else. Keep investing, regularly and automatically, for as long as you can. Maximize your time in the market. Don't stop, don't panic, and don't sell before you reach retirement and are ready to draw the money down. **You can't control the return, only whether you keep showing up.** That, over a lifetime, is the whole game. And the range itself carries its own reassurance: even the pessimistic 8% case still produces a very comfortable retirement. You supply the discipline; the floor is already high.

And if the contribution limit keeps rising? Everything above holds the limit flat at today's $7,500, deliberately conservative, since the IRS does raise it over time. Let contributions grow 2.5% a year and total lifetime contributions climb from $322,000 to about $552,000, **71 percent more money**, which lifts the age-70 result from $3.72 million to $4.82 million. That is **about 30 percent more wealth**. Helpful. Hardly transformative.

Now set that against what the next chapter is about to show. Starting five years earlier, at 25 instead of 30, costs you only **12 percent more money**, but it produces **61 percent more wealth**.

Put those two results side by side. They're this entire book, compressed. Contributing 71 percent more money, later in life, buys you only 30 percent more wealth, but contributing 12 percent more money, earlier in life, buys you 61 percent more wealth. The late route costs roughly six times as much extra money and delivers less than half the extra wealth. **The dollars that build real wealth aren't the biggest ones. They're the *earliest* ones**, because they're the only dollars that get to compound for the entire run. Rising limits are a nice tailwind. Starting now is the engine. *(The full tables, and why a smooth 2.5% slightly flatters the real stair-step path, are at the end of Show Me the Numbers, under "What if contribution limits keep rising?")*

3.3

A surprising result: when a Traditional IRA trails a taxable account

The tables show the Roth comfortably ahead, but they also show something that surprises many people: the Traditional IRA finishing behind an ordinary Taxable account. This isn't an error. It follows directly from two facts. First, **this book**

assumes the realistic behavior that the Traditional IRA saver spends the annual tax deduction rather than investing it. Second, a Traditional IRA withdrawal is taxed on the full amount as ordinary income, here 24%, whereas a Taxable account is taxed only on its gains, at the lower long-term capital-gains rate of 15%. The Taxable account does pay a small tax on its dividends every year along the way. But that yearly drag is smaller than the hit the Traditional IRA takes at the end, when the entire balance is taxed at the higher ordinary rate. So the Traditional IRA finishes a step behind.

It's important not to over-read this. The Traditional IRA isn't a bad choice. Every year, its deduction puts real cash in the saver's pocket, money that funds their lifestyle along the way. **That benefit simply never appears on an end-of-life balance sheet, which is all these tables measure.** A disciplined saver who had invested each year's deduction in a side account would have finished nearly even with the Roth; most savers don't. The realistic takeaway: for the typical person who would spend a Traditional IRA's tax break, the Roth isn't merely better. It's dramatically better, because it forces every tax-advantaged dollar to keep working, tax-free, instead of leaking away as everyday spending.

One assumption deserves to be said out loud, because a careful reader will spot it. These tables tax the Traditional withdrawal at the same 24 percent rate the saver deducted at, and for many people that is not what happens. Tax brackets are indexed to inflation, and a retiree drawing the floor case's income, about $39,000 a year in today's dollars on top of Social Security, is more likely to sit in the 12 percent bracket than the 24. Run the comparison that way, deducting at a working-years rate and paying a lower retirement rate, and the Traditional IRA can pull ahead, especially in a high-tax state where the deduction is worth more. So the honest case for the Roth for a young saver isn't that it wins every arithmetic contest. It's three other things. The contribution limit is the same $7,500 either way, and a Roth dollar is worth more than a Traditional dollar inside it, because it will never be taxed, so the Roth fits more real value under the same ceiling. The Roth never forces you to withdraw. And it's insurance against the one thing a forty-year plan can't know: whether tax rates in 2066 will be higher than today's. That last point cuts both ways, which is why the 401(k) note after Chapter 2 matters more than it looks. A saver with a Roth IRA and a pre-tax 401(k) holds money under each set of rules, and is hedged against the tax code itself. That's not a hedge against the plan. It's the plan, diversified.

3.4

What happens at 70

Maya turns 70. Over forty years she has put in **$322,000**, $7,500 at a time, on a physical therapist's salary at a clinic that never offered her a plan.

At the long-run average she's sitting on **about $3.7 million**. If her forty years earn only the 8 percent floor, she has **about $2.15 million**. In today's purchasing power those are roughly $1.69 million and $975,000. She never earned a fortune, never picked a stock, and never had to be right about anything. **Even her bad case is the retirement her older colleagues never got.**

One honest wrinkle the tables leave out: real lives skip years. Suppose the clinic closed and she put in nothing at 45, 46, and 47. At the floor she arrives at 70 with about $2.01 million instead of $2.15 million, $143,000 lighter, and still enough. The plan survives a gap. What it doesn't survive is never starting.

The day the job changes

For forty years Maya's job was accumulation, and an all-stock portfolio was the right tool for it, because every decline along the way was a discount on her next purchase. At 70 that reverses. She's no longer a buyer but a seller, and a decline is no longer a discount; it's a forced sale at a bad price. So she does what a prudent retiree does and moves a share of the portfolio into bonds and cash, enough to fund several years of spending without touching stocks at all. That's also the balanced mix the withdrawal-rate research assumed in the first place. **Accumulating and drawing down are different jobs.** *(Chapter 12 takes up what that shift involves, what it costs, and what can still go wrong.)*

Doing it inside a Roth is worth a great deal. Maya's balance contains **about $3.4 million of pure gain**. In an ordinary taxable account, moving 40 percent of it into bonds and cash in one year would trigger **well over $200,000** in federal tax, once the top capital-gains rate and the 3.8% investment-income surtax kick in, and **roughly $350,000 to $400,000** with California's tax added. That's charged purely for the privilege of rearranging her own assets, at the moment she most needs

them intact. Inside the Roth she owes nothing. Every dollar stays in the account and keeps working.

A Traditional IRA wouldn't tax the trade either. But it carries a larger problem: every dollar that comes out is taxed as ordinary income. The same lifetime of contributions that leaves Maya about $3.7 million in a Roth is worth about $2.8 million in a Traditional. **About $893,000 of it was never hers. She was never as rich as the statement said, and the Roth statement is the only one that tells the truth.**

What the pension pays

Now the account has to do its actual job. At the classic 4 percent, Maya's first year is **about $149,000** on the average case and **about $86,000** at the floor. In today's money that is about $67,000 and $39,000, and not one dollar of it is taxed, ever. The payment rises with inflation every year after that.

It's worth understanding what that 4 percent is. It's not the typical outcome. It's the rate that survived the single worst retirement start in American history, someone who stopped working in the late 1960s just ahead of a decade of high inflation. Bengen's revised never-failed figure is about **4.7 percent**, which would pay her **about $175,000** in her first year. He puts the average across all other historical periods near **7 percent**. **This book plans on 4 percent anyway, on purpose, so that every surprise runs in her favor.**

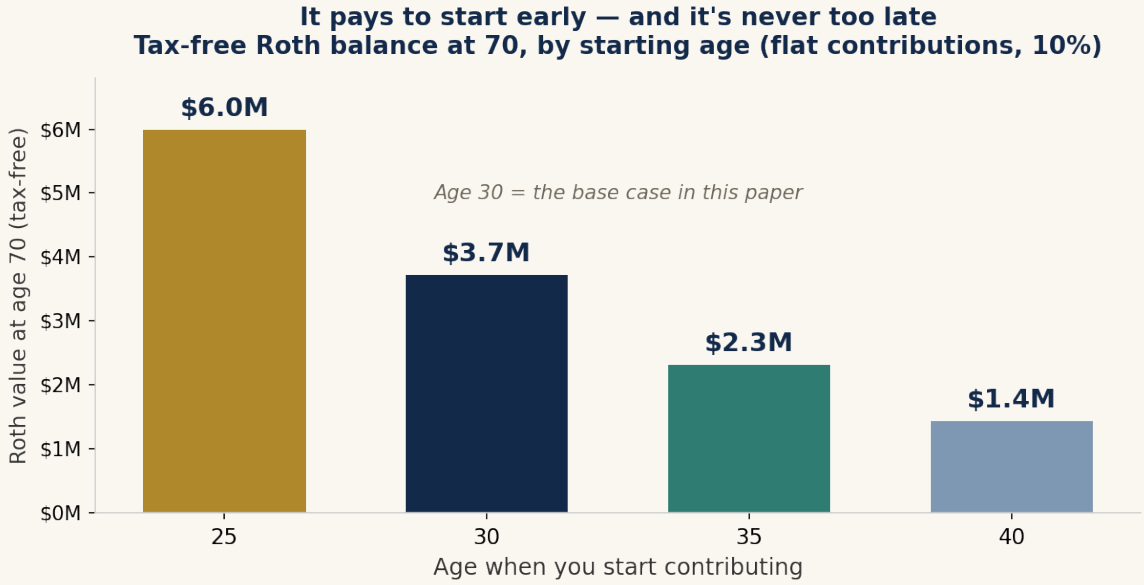
Nor was the rule ever built to leave her at zero. The Trinity Study ran every thirty-year retirement from 1926 to 1995, and a balanced portfolio drawn at 4 percent, raised each year for inflation, lasted the full thirty years in **39 of the 41 periods**. The authors' own conclusion was that at 3 and 4 percent, retirees with stock-heavy portfolios "who wish to bequeath large estates to their heirs will likely be successful." **She's not spending her wealth down. She's living on what it throws off.** Chapter 12 takes up the two periods that failed, and the things a real retiree does that the simulation doesn't.

None of this required her to be clever. She opened an account at 30, funded it every year, left it alone, and began shifting the mix in her sixties, as the job changed.

RUNNING THE NUMBERS · CHAPTER FOUR

It Pays to Start Early and It's Never Too Late

The base case starts at age 30. But **the single biggest lever in this entire analysis is when you begin**, because the earliest dollars are the ones that compound the longest. This section shows a more complete range of starting points, from an early starter at 25 to later starters at 35 and 40, so the message lands both ways: starting young is a gift, and starting late is still vastly better than not starting at all.



Tax-free Roth balance at age 70 by the age you begin. Flat contributions, the 10% average return.

4.1

The age-70 Roth by starting age

START AGE	YEARS SAVING	TOTAL CONTRIBUTED	ROTH AT 70 (TAX-FREE)	GROWTH MULTIPLE	IN TODAY'S DOLLARS
25	45 yrs	$359,500	$6,000,268	16.7×	$2,461,291
30 (base)	40 yrs	$322,000	$3,720,691	11.6×	$1,685,065

START AGE	YEARS SAVING	TOTAL CONTRIBUTED	ROTH AT 70 (TAX-FREE)	GROWTH MULTIPLE	IN TODAY'S DOLLARS
35	35 yrs	$284,500	$2,305,254	8.1×	$1,152,691
40	30 yrs	$247,000	$1,426,378	5.8×	$787,462

Flat contributions, the 10% average return, 2% inflation for the today's-dollars column.

Reading the table. **Starting at 25 instead of 30 boosts the age-70 balance by roughly 60 percent. Even though it adds only five years of contributing, those five years had the longest runway to compound.** Just as important, a saver who starts at 40 still reaches roughly $1.4 million tax-free from $247,000 of contributions. The curve rewards early starts handsomely, but **every starting age produces life-changing, tax-free wealth.**

4.2

Early starter (age 25): the full three-way comparison

> CASE STUDY · CARLOS, 25
>
> Carlos starts at 25, the year he finishes his electrician's apprenticeship and lands his first full paycheck. There's no 401(k) on a job like his, so it's on him. He wants to build the habit of investing in his future before lifestyle creep sets in. **At 25 he has forty-five years of compounding in front of him instead of forty, and that one difference boosts where he lands by roughly 60 percent.**

AGE	ROTH BALANCE	TRADITIONAL BALANCE	TAXABLE BALANCE
70	$6,000,268	$4,560,203	$4,900,888
75	$9,663,491	$7,344,253	$7,784,677
80	$15,563,149	$11,827,993	$12,381,742

After-tax lump-sum value. Start age 25, flat contributions, the 10% average return.

Carlos reaches 70 with **about $6 million**, tax-free, on an electrician's income. He's not better paid than Maya and he didn't save harder. He put in about **$37,500 more** than she did, spread across five extra years at the very beginning. **He finished with about $2.3 million more.**

4.3

Later starter (age 35)

> CASE STUDY · LAYLA, 35
>
> Layla waits until 35. She freelances as a software developer, good money, but no employer to hand her a retirement plan. It took her that long to clear her student loans; the day the last payment goes through, she opens a Roth and starts maxing it, 35 years of compounding still ahead.

AGE	ROTH BALANCE	TRADITIONAL BALANCE	TAXABLE BALANCE
70	$2,305,254	$1,751,993	$1,938,384
75	$3,712,634	$2,821,602	$3,067,943
80	$5,979,235	$4,544,218	$4,868,580

After-tax lump-sum value. Start age 35, flat contributions, the 10% average return.

Layla's ten-year wait cost her about $3.7 million against Carlos's start, and she still retires with **$2.3 million** she would never otherwise have had. The day the loans were gone, she went to the max. Nothing required her to wait: you can contribute to a Roth while paying off student loans, and all it takes is earned income. The lesson isn't to wait for that day: as Chapter 10 explains, even a small contribution during the loan years would have kept the door open.

4.4

Never too late to start (age 40)

CASE STUDY · MALIK, 40

Malik doesn't begin until 40. He runs his own small accounting practice, white-collar work, but he's his own boss, so retirement saving is on him. With two young kids, daycare had swallowed every spare dollar for years; once both start school and those bills stop, he finally has room, opens a Roth, and learns 40 isn't too late.

AGE	ROTH BALANCE	TRADITIONAL BALANCE	TAXABLE BALANCE
70	$1,426,378	$1,084,048	$1,219,461
75	$2,297,197	$1,745,870	$1,924,809
80	$3,699,658	$2,811,740	$3,049,210

After-tax lump-sum value. Start age 40, flat contributions, the 10% average return.

NOTE

It is never too late

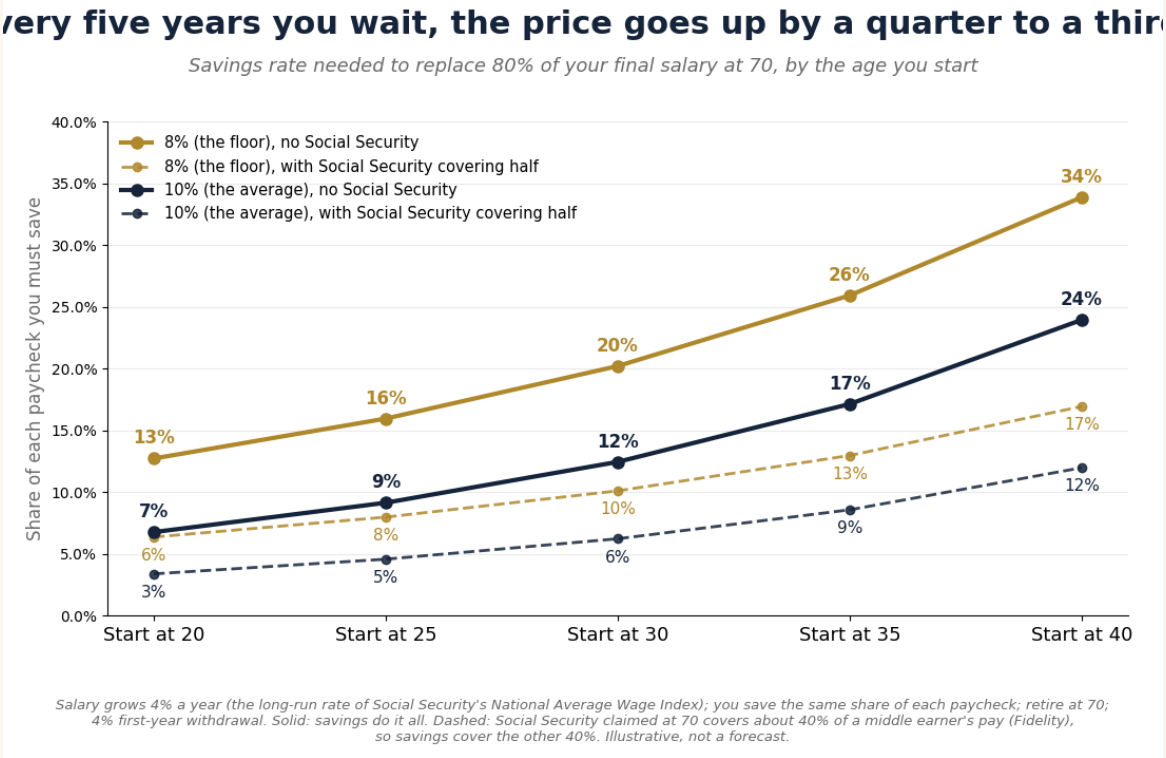
Malik began at 40, with only 30 years until retirement. A maxed-out Roth still grows to roughly $1.4 million tax-free, and holding past 70 keeps multiplying it. The worst starting age is the one that never happens. Whatever your age today, the most powerful step is to open the account and begin.

✦

The same lesson, in paychecks instead of dollars

Everything above is measured in ending balances, because that's what the Roth tables produce. Here's the same lesson measured the way you actually live it: as

a share of each paycheck. Suppose your goal is the one planners use, an income at 70 equal to about 80 percent of your last working year's pay, drawn at 4 percent a year, and suppose your salary grows 4 percent a year along the way.[48] What share of every paycheck do you have to put away to get there? If you start at 20 and the market only ever delivers its floor, 13 percent does it. Start at 25 and it's 16 percent. At 30, 20 percent. At 35, 26 percent. At 40, 34 percent, a third of everything you earn, for the rest of your working life. The chart below shows both the floor and the long-run average, and it tells the whole chapter in one line: every five years you wait, the price goes up by roughly a quarter to a third.



> The price of waiting, in paychecks: the savings rate needed to replace 80% of your final salary at 70. Salary grows 4% a year; 4% first-year withdrawal. Dashed lines assume Social Security, claimed at 70, covers about 40% of pay.

Two things make those numbers less frightening than they look, and both are in the chart's dashed lines. Social Security, claimed at 70, replaces roughly 40 percent of a middle earner's pay, so your savings only have to produce the other 40 percent, not the whole 80; on the floor, that brings the rate down to about 6 percent of each paycheck at 20, 8 percent at 25, 10 percent at 30, 13 percent at 35, and 17 percent at 40. And almost every stretch on record beat the floor, so at the long-run average the numbers are smaller still. The point isn't the exact figure,

which depends on assumptions you can argue with. The point is the shape of the line.

> **THE SHAPE OF THE LINE**
>
> A twenty-five-year-old who sets aside a tenth of each paycheck, automatically, has most likely built the foundation of a secure retirement. A forty-year-old can still solve it, but it will cost twice as much of every check, for thirty years, to land in the same place.
>
> **The cheapest retirement you'll ever buy is the one you start paying for now.**

✦

RUNNING THE NUMBERS · CHAPTER FIVE

Living in a High-Tax State? The Roth Is Worth Even More.

A middle-income earner in a high-tax state: the California example

Everywhere else in this book the tax rates are federal-only, so the numbers apply to a reader anywhere in the country, but they don't always represent the full tax picture. **Most Americans owe a second layer, state tax, and it lands on exactly the accounts a Roth lets you escape.** A Traditional IRA's withdrawals are taxed by the state as ordinary income. A Taxable account's capital gains and dividends usually are too, in most states at that same ordinary-income rate, with no federal-style preferential break. The Roth, tax-free at every level, is untouched.

Nine states levy no tax on wages, and their residents owe only the federal figures shown earlier, with one exception: Washington now taxes large long-term capital gains, so a taxable account there is no longer entirely free of state tax.† The other forty-one tax at rates that range widely, so no single example fits everyone. We use California for the rest of this section because it's the most populous state in the country, nearly forty million people, carries some of the highest rates, and is home to the author and to many of the people who ask him for this advice. **Treat California as one worked example.** Your own state,

brackets, and circumstances will differ. It's worth a look at your state's figures, or a word with a tax advisor, before applying any of these numbers to yourself.†

† The nine states with no tax on wages are Alaska, Florida, Nevada, New Hampshire, South Dakota, Tennessee, Texas, Washington, and Wyoming; note that Washington now taxes large long-term capital gains (7% above a roughly $278,000 annual deduction, more above $1 million), though gains inside a Roth or other retirement account are exempt. Washington has also enacted a 9.9% tax on individual income above $1 million, effective in 2028 and under court challenge. For state-by-state rates, see the nonpartisan Tax Foundation (taxfoundation.org) or your own state's tax agency (in California, the Franchise Tax Board, ftb.ca.gov).

This section re-runs the base case (start age 30, flat contributions, the 10% average return) for Grace, the café owner from Chapter 2, who chose her door and has been walking through it ever since.

> **CASE STUDY · GRACE, 30**
>
> A single filer who owns a neighborhood café she built from nothing and earns about $100,000. In California, state income tax adds to the federal bite. She has no employer plan behind her (she's the employer), so a Roth is the natural home for what she sets aside. How she cleared the runway to get here is worked through in Chapter 10.

Because the Roth is entirely tax-free, California's tax never touches it. The Taxable account and the Traditional IRA both give up more to the state, so the Roth's advantage widens. For a middle-income earner like Grace that widening is meaningful, though far gentler than it would be for someone in California's top bracket.

That $100,000 is a round, illustrative figure: comfortably middle-income in a higher-cost state like California, right at the state's own median household income of about $100,000, and above the national median of roughly $82,000.

Rates used. A Californian pays two layers of tax, federal and state, and they stack.

Traditional IRA withdrawals are taxed as ordinary income: 22% federal, her bracket at $100,000, plus California's 9.3%. Call it **31%** all in.

Taxable account gains are taxed at about **24%**: the 15% federal rate on long-term capital gains and qualified dividends, plus that same ~9.3% from California, because California gives investment gains no break at all, taxing them exactly like a paycheck.[8] (The federal net investment income tax doesn't apply at this income.)

The Roth pays nothing. Not federal, not state, not on the growth, not on the way out.

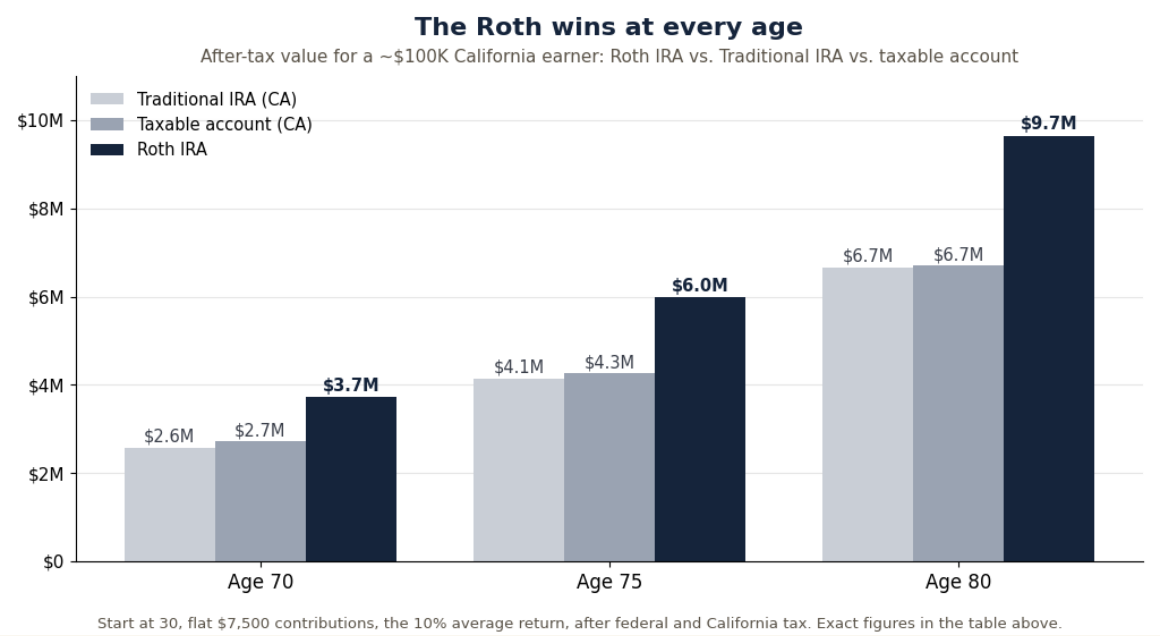
Two notes. First, these are representative blended rates for a ~$100K single filer; an individual's actual rates will vary with income, deductions, and filing status. Second, a 30-year-old earning $100K today will probably be in higher brackets by the time they retire, which is itself a classic argument for choosing a Roth while still young, locking in today's lower rate. For comparison, a top-bracket Californian at time of withdrawal (50%+ ordinary, 37% gains) would see the Roth's advantage grow far larger than the figures below.

5.1

After-tax lump-sum value (California)

AGE	ROTH IRA	TRADITIONAL IRA (CA)	TAXABLE ACCOUNT (CA)
70	$3,720,691	$2,567,277	$2,711,151
75	$5,992,211	$4,134,625	$4,254,161
80	$9,650,515	$6,658,855	$6,698,293

After-tax lump-sum value for a middle-income (~$100K) Californian. Start age 30, flat contributions, the 10% average return.



> The same table as a picture: the Roth leads at every age, and the lead widens with time. Rounded; exact figures in the table above.

5.2

First-year 4% income (California)

START AGE	ROTH IRA	TRADITIONAL IRA (CA)	TAXABLE ACCOUNT (CA)
70	$148,828	$102,691	$108,446
75	$239,688	$165,385	$170,166
80	$386,021	$266,354	$267,932

First-year income from a 4% withdrawal, after middle-income California tax (~$100K). Start age 30, flat contributions, the 10% average return.

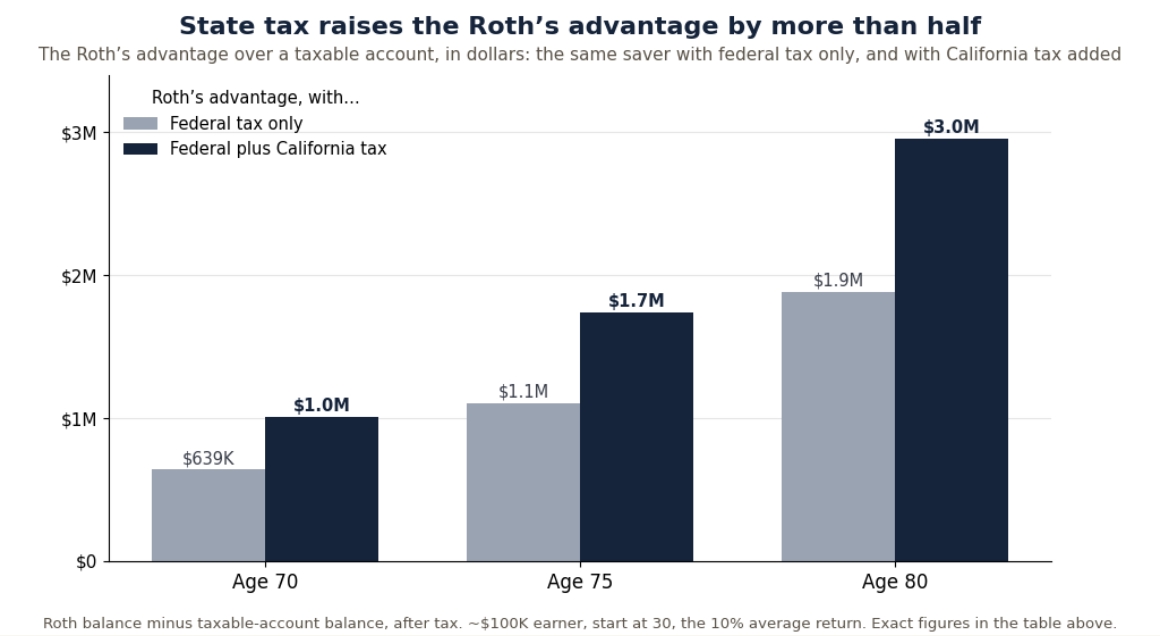
5.3

The Roth advantage: federal vs. California

The table below shows, for this middle-income Californian, the after-tax value of each investment/retirement vehicle and how far the tax-free Roth pulls ahead, with the federal-only figures alongside for comparison.

CALIFORNIA (~$100K INCOME)	AGE 70	AGE 75	AGE 80
Roth IRA (tax-free)	$3,720,691	$5,992,211	$9,650,515
Taxable account (CA)	$2,711,151	$4,254,161	$6,698,293
Traditional IRA (CA)	$2,567,277	$4,134,625	$6,658,855
Roth's lead over taxable (CA)	+ $1,009,540	+ $1,738,049	+ $2,952,222
Roth's lead over Traditional (CA)	+ $1,153,414	+ $1,857,585	+ $2,991,660
Roth's lead over taxable (federal, for comparison)	+$639,174	+ $1,104,897	+ $1,884,572

After-tax values and the Roth's dollar lead. Start age 30, flat contributions, the 10% average return. The final row repeats the federal-only Roth-vs-taxable lead for comparison.



> The same table as a picture: the Roth's advantage over a taxable account, and how much larger it is once state tax is in the picture. Rounded; exact figures in the table above.

Reading the table. At age 70 the Roth's lead over a taxable account grows from + $639,000 under federal-only rates to + $1.01 million for this middle-income Californian, and its lead over the Traditional IRA rises to + $1.2 million. **State tax**

raises the Roth's advantage by more than half. The reason: California taxes the taxable account's gains at about 24% instead of 15%, and adds state tax to Traditional withdrawals, while the Roth keeps paying nothing. The effect is real but moderate here, and it would be far larger for a top-bracket earner. Chapter 12 tells you what to do with the money once you reach retirement.

5.4

California values in today's dollars

AGE	ROTH IRA	TRADITIONAL IRA (CA)	TAXABLE ACCOUNT (CA)
70	$1,685,065	$1,162,695	$1,227,855
75	$2,457,986	$1,696,010	$1,745,043
80	$3,585,435	$2,473,950	$2,488,603

After-tax lump-sum value for a middle-income (~$100K) Californian, in today's purchasing power. Start age 30, flat contributions, the 10% average return, 2% inflation.

Grace hands over the café keys at 70 with **about $3.7 million** that California can't touch, worth about $1.7 million in today's money. Had she built the same wealth in an ordinary taxable account, Sacramento and Washington would between them have taken **about $1 million** of it, and the state alone accounts for more than a third of that gap. She never filed a special form or made a clever move. She chose the right container at 30 and then left it alone for forty years. *(Section 3.4 describes what happens next, when the job changes from building the money to living on it.)*

✦

PART III · THE BIGGER PICTURE

The Bigger Picture

Why it falls to you, and how to lift up others.

THE BIGGER PICTURE · CHAPTER SIX

The American Model: Build Your Own Pension

Why this falls to you: retirement and the American self-reliance model

The body of this book shows how to build retirement wealth. This section steps back to ask why that job falls so squarely on the individual in America in the first place, because understanding the why is part of the reason to start early. The short answer is that the United States has chosen, by design and by drift, **a retirement model that leans on personal saving more than almost any other wealthy nation**.

✦

A STORY · TWO CAREERS, FIFTY YEARS APART

Picture two people. Neither one is real, but almost everyone knows someone like both of them.

Ray went to work in 1975 and stayed at the same company for thirty-one years. He wasn't an investor and would have laughed at the word. He never chose a contribution rate. He never picked a fund. He couldn't have told you what a fund was. He signed a form on his first day and didn't think about it again. When he retired, a check arrived every month, and it kept arriving. He retired in 2006, and by then the company had long since stopped offering that pension to anyone hired after him.

He had also bought a house in 1978. That part was a decision, though he made it for the ordinary reasons people made it then. He wanted somewhere to live, and that was simply what you did. Thirty years of payments later it was his. He never once described it as a savings plan, and he never chose one. **The savings plan came disguised as a place to live.**

So Ray's retirement had three parts, and he had deliberately built none of them. A pension he was enrolled in. A house he bought because he needed somewhere to live. Social Security, withheld before he ever saw it. **His entire retirement was assembled out of decisions he made for other reasons.**

His granddaughter Abby started work in 2025, in the same line of work, at a company he wouldn't recognize. On her first day, human resources sent her a welcome packet with a login to a benefits website run by an outside firm she had never heard of. **She hasn't been enrolled in anything. She has been handed a door.**

Behind the door is a 401(k) she's eligible for. Having access to it is not the same as putting money in it, and nothing goes in until she says so. It's an account with her name on it and nothing in it. The company isn't hiding anything: there's a PDF explaining the match, a menu of about twenty funds with names that mean nothing to her, and a field asking what percentage of each paycheck she would like to contribute. Everything she needs is there. It's simply written for someone who already knows the answer.

And nobody is going to make her decide. Newer plans are now required to sign people up automatically and start the contributions for them. Her employer's plan is older than that rule, so it's exempt: nothing happens unless she acts. If she never opens that email, the account sits there exactly as it is: available, correct, and empty. In 2025, about 72 percent of private-sector workers had a retirement plan available to them at work, and about 53 percent were actually in one.[29] **The gap between those two numbers, roughly one worker in five, had the plan sitting right there and never started it.**

If she does start, the decisions don't stop. She has to choose which funds to buy and in what proportions, decide whether to change that mix as she gets older, and keep contributing through every downturn along the way. She carries the risk if the market falls in the wrong decade. And there's no guaranteed amount waiting at the end, because nobody is promising her one.

The house may not be there either. On her salary, in her city, the down payment is years away and moving away from her.

Here's the part that is easy to miss. Abby isn't being cheated. She takes home more of every paycheck than her counterpart in France or the Netherlands, where the state pension replaces far more income and the tax bill is far larger. What she has been handed isn't a smaller share. **It's a different job.**

Ray's plan ran whether or not he understood it. **Abby's runs only if she starts it, and then keeps running it.**

The work that used to be done for Ray is now Abby's own work. That's not a complaint. It's a job description, and it's fair to think the job is harder than it needs to be. She can do that job the complicated way or the simple way, and **the simple way is what the rest of this book is about**. Her benefits website will show her the options. It won't tell her which one to pick.

✦

6.1

The American bargain: lower taxes, more responsibility

In much of Europe, and across the OECD, the public pension replaces far more income. The average net replacement rate for a full-career earner is about 63%, versus roughly 50% in the United States, and several countries, the Netherlands and Portugal among them, exceed 90%[9]. Many also provide universal healthcare and subsidized elder care, the costs that rise most steeply with age. They pay for it with far higher taxes. The United States collects only about 25% of its economic output in taxes, near the bottom of the developed world, against an OECD average of roughly 34% and about 44% in France[10]. Lower taxation is the counterpart to a smaller state: an American keeps more of each paycheck but must accumulate more private wealth to reach the same security. **That extra take-home pay is precisely the raw material.** Redirected into a Roth rather than spent, that becomes the private pension the state doesn't provide.

None of this is a modern failure; it's historically normal. Funded retirement is largely a 20th-century invention that has already crested. In 1980, about 38% of private-sector workers were covered by a traditional defined-benefit pension, the kind that pays a guaranteed income for life. By 2008 that had fallen to roughly

20%, replaced by defined-contribution accounts: the 401(k) and the IRA, in which the worker contributes, chooses the investments, and bears all of the risk[11]. **The guarantee, in other words, moved from the employer to you.** And in much of Asia the model was never funded pensions at all, but a cultural expectation that adult children support their aging parents, a reminder that "the individual saves for retirement in financial markets" is a choice America made, not a fact of nature. It's simply the one we live inside, which is why, if your job offers no plan, the IRA, the account you can open yourself, is the vehicle that puts a real retirement within reach.

It helps to see where that account sits inside the whole American retirement system. The table below lays out the entire landscape, roughly **$47.6 trillion**, sorted by size. Two things stand out. First, individual IRAs are the single largest pool, about 38% of everything, and they are **the one account almost anyone with earned income can open on their own, with no employer required**. That's why this book builds everything around them. Second, most of the rest of the system is tied to where you work: a 401(k) at a company, a 403(b) at a school or nonprofit, the TSP if you're federal or military, a traditional pension if you're lucky enough to still have one. If you have one of those, use it, especially for any employer match. (The $9.9 trillion in 401(k)s counts both kinds, traditional and Roth 401(k); the short note after Chapter 2 walks through how to use them.)[40]

ACCOUNT TYPE	ASSETS (2026)	SHARE	WHO IT'S FOR
Individual IRAs (Roth + Traditional)	$18.2T	38%	Almost anyone with earned income
of which Traditional (incl. rollovers)	*≈ $15.3T*	*32%*	*The 1974 original; most 401(k) rollovers land here*
of which Roth	*≈ $1.8T*	*4%*	*The account this book is built on*
Government pensions (federal, state & local)	$10.0T	21%	Federal, state & local government employees
401(k) plans	$9.9T	21%	Private-company employees
Private-sector pensions	$3.0T	6%	Workers at firms that still offer a pension

ACCOUNT TYPE	ASSETS (2026)	SHARE	WHO IT'S FOR
Annuities (outside retirement accounts)	$2.6T	5%	Individuals buying insurance-based income
403(b) plans	$1.5T	3%	Public-school, university & nonprofit staff
Federal Thrift Savings Plan (TSP)	$1.1T	2%	Federal employees & the military
Other employer DC plans	$0.9T	2%	Various private employer plans
457 plans	$0.5T	1%	State/local government & some nonprofits
Total	**~$47.6T**	**100%**	—

Source: Investment Company Institute, *Quarterly Retirement Market Data, First Quarter 2026*; Traditional/Roth shares from ICI research (SEP and SIMPLE IRAs make up the remainder). Totals may not sum exactly due to rounding.

The Roth is still the smallest pool on this map, not because it’s the weakest but because most people have never heard the case for it. Now you have.

6.2

Home equity used to be the plan, but it’s slipping out of reach

For most of the last century, the way an ordinary American family built wealth wasn’t the stock market at all. It was the house. You bought one young, took on a big mortgage, and paid it down a little every month for thirty years. It was a forced savings plan disguised as a place to live: by retirement the mortgage was gone, and the equity, often the largest asset the family owned, was yours. For generations, that was the plan.

But that door is closing for a lot of young people. Home prices have outrun wages for two decades, down payments have ballooned, and in much of the country a house is simply out of reach on an ordinary salary. So the sensible-sounding response is, “I’ll just rent.” In the short term, that may well be the right call. But stretch it across a lifetime and notice what’s missing: the forced savings plan that a mortgage quietly ran for Ray never starts.

Here's the reassuring part. **You can build that equity yourself, without the house.** It's the same old idea, own something that quietly compounds for decades, but stripped of the barriers. No down payment, no six-figure mortgage, no property taxes or upkeep, no single illiquid asset tied to one city. A Roth IRA and a low-cost index fund let you start small and own a slice of the entire economy, compounding for decades, tax-free. If a house isn't in reach, that isn't a reason to give up on ownership. It's the strongest reason yet to start owning a piece of every major company in the country, your own *private pension*, built one contribution at a time.

No one teaches you this

Financial literacy isn't consistently taught in American schools, and most people engage with retirement seriously only as it approaches, treating it as a near-retirement problem rather than **a lifelong expense to be funded from the first paycheck, alongside rent, food, and healthcare.** That late start is especially costly because of everything in Section 1: the dollars contributed in one's twenties and thirties have the longest runway to compound, and they're the hardest to make up later.

6.3

Longer lives, and a world that rewards owners

Two trends are raising the stakes for younger savers, and both point the same way. The first is certain: people are living longer, so retirement is a longer, more expensive stretch to fund, which makes an early start matter even more for today's 30-year-olds than it did a generation ago. The second is only a possibility, but it cuts in the same direction. If the gains from new technologies like AI flow mainly to the shareholders of the companies deploying them rather than to wages, then owning a stake in that growth becomes one of the most important ways an ordinary person shares in it. A Roth is what makes that stake possible.

NOTE

The bottom line

None of this is cause for fatalism. The same self-reliant system that puts the burden on the individual also hands them a powerful funding source and tax-advantaged tool to overcome that burden. And, as the rest of this

book shows, starting early makes the task very achievable. The purpose of this section is only to make the why explicit: **in the American model, no one is coming to fund your retirement for you, so the sooner you begin, the easier it is.**

✦

6.4

Social Security was built as a floor, not a replacement

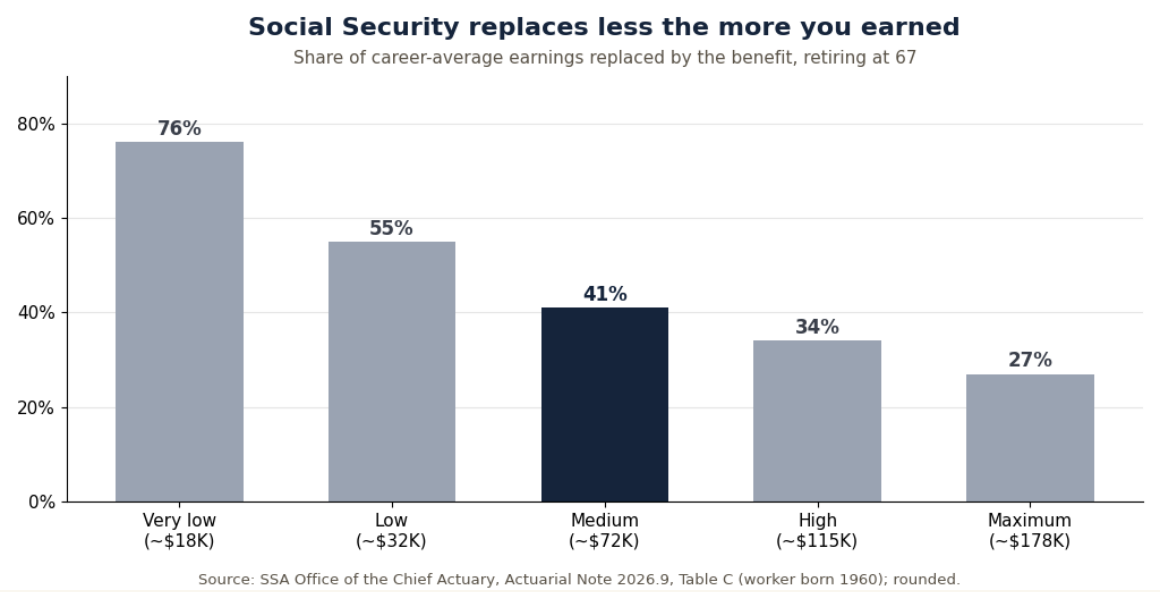
Social Security was never meant to fund a whole retirement. Its own actuaries estimate that someone retiring at 67 who earned about the national average wage has **about 41% of their prior earnings replaced**. The higher your earnings, the smaller the share. Someone who earned roughly half again as much gets about 34% replaced. Someone who earned at or above the payroll-tax cap every year gets less than 27%. Lower earners get proportionally more[12].

Financial planners, meanwhile, commonly estimate that maintaining one's standard of living takes about 70–85% of pre-retirement income[13]. The difference, often 30 to 40 percentage points, is the "retirement income gap" that individuals are expected to fill themselves. Closing that gap is what this entire book is about.

Social Security was never designed to be your whole pension. It was designed to keep you off the floor, and it does that well. The rest is meant to be yours to build, which is exactly why America hands you the tools to build it.

CAREER EARNINGS LEVEL	APPROX. ANNUAL EARNINGS	SOCIAL SECURITY REPLACES ABOUT…
Very low	~$18,000	~76%
Low	~$32,000	~55%
Medium	~$72,000	~41%
High	~$115,000	~34%
Maximum	~$178,000	~27%

Approximate Social Security replacement rates for a worker retiring at 67, by career earnings level. Source: Social Security Administration, Office of the Chief Actuary, Actuarial Note 2026.9 (June 2026), Table C: scheduled benefits for a worker born in 1960 retiring at 67, as a percent of career-average earnings; rounded. The progressive formula favors lower earners.



> The same table as a picture: the higher your earnings, the smaller the share Social Security replaces.

Two further pressures sharpen the point. Social Security's main retirement trust fund is projected to be depleted in the early 2030s (as early as 2032), after which, absent legislative changes, **it could pay only about 78% of scheduled benefits**[14]. And by international standards, U.S. public pensions rank in the bottom third of developed countries for how much income they replace[15].

6.5

Put the Two Together: Roth and Social Security

As we just saw, **Social Security was built as a floor for retirement, not a replacement.** A base you can count on, but only a base. So build on top of it.

Most people don't. Among households approaching retirement, ages 55 to 64, that have saved anything at all, the median retirement balance is only about $185,000, according to the Federal Reserve's Survey of Consumer Finances. That's far too little to fund a retirement that may last twenty or thirty years. What follows is how you end up somewhere else.

Keep funding a tax-free retirement account at a steady, reasonable level. Start by maxing the Roth IRA (about $7,500 a year, roughly 7.5% of a $100,000 income) and let that habit grow with the inflation-indexed limit. Over a 40-year career it can fund a retirement that **replaces the income you were spending the year before you retire**. Note what that target actually is. It's the income you were living on, not your gross salary. Those two numbers aren't the same. Your gross salary includes the money you were setting aside for retirement and the payroll tax you were paying on every paycheck, and in retirement you do neither. So the number you actually have to replace is meaningfully lower than the salary you retired from. Planners generally put it at 70 to 85 percent of pre-retirement income, as Section 6.4 noted. And higher earners can add bigger accounts, like the 401(k), with far higher limits than a Roth IRA alone.

So how much does the simple thing, a maxed Roth every year plus Social Security, actually replace? Here's the answer for three households on one identical plan: each earner starts at 30 on $100,000 a year, maxes the Roth every year, earns the 8 percent floor, sees pay rise 4 percent a year, retires at 70 and claims Social Security then, when it pays the most, and draws the Roth under the 4 percent rule.[41] Holding the plan identical, the household structure alone moves the result:

HOUSEHOLD	CROSSES THE ROTH WALL	NEST EGG (TODAY'S $)	RETIREMENT INCOME	REPLACES PRE-RETIREMENT SPENDING
Single	at age 52	$1.10 million	$104,000/yr	81%
Married, one earner†	never	$2.21 million	$178,000/yr	130%
Married, two earners	at age 40	$2.21 million	$209,000/yr	81%

Today's dollars. Each earner starts at $100,000 a year. Replacement is measured against what that household was spending the year before retiring, not its gross salary.

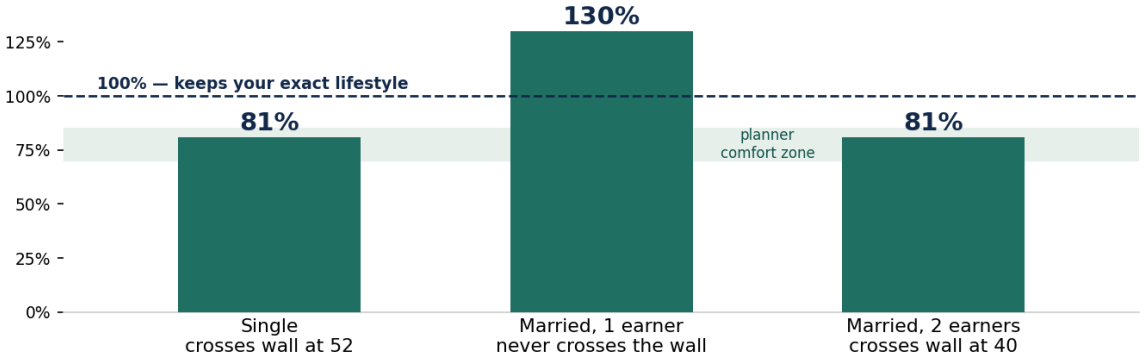
† This assumes the second spouse collects Social Security worth about half of the earner's age-70 benefit, from their own work record or as a spousal benefit. If they never worked, the spousal benefit is capped at half

of the earner's full-retirement-age benefit, which brings the couple's income to about $173,000 a year (126 percent), still well over 100 percent.

START NOW · EXHIBIT

Max the Roth IRA for 40 years — three lives

Start at 30, max the Roth IRA every year ($7,500 per person in today's dollars), retire and claim Social Security at 70. How much of the income you were spending the year before retiring does it replace?



WHAT GOES IN

$7,500/yr per IRA in today's dollars. Married couples fund two via the spousal IRA, so $15,000.

THE ONE MOVE

When income crosses the limit, the same dollars switch to a backdoor Roth — or, for a married couple, may never need to.

WHAT COMES OUT

At 70, draw 4% tax-free from the Roth plus Social Security, replacing most or all of the life you'd built.

Reading the bars. Height is retirement income as a share of pre-retirement spending (take-home the year before retiring, minus what was being saved). 100% keeps your exact lifestyle; the shaded zone marks the 70–85% planners target. The one-earner couple clears it outright; the others land near or above it.

Assumptions: income starts at $100K per earner and grows 4%/yr; 8% return (the book's worst-case floor); 2% inflation; 4% withdrawal; Social Security from the 2026 bend-point formula, claimed at 70, California-exempt; all figures real (today's dollars). Illustrative, not tax advice.

> How the maxed-Roth plan translates into retirement income, as a share of pre-retirement spending.

Why 81 percent is better than it sounds. Measured against spending rather than gross pay, and with payroll tax, retirement saving, and the costs of working all gone, the single saver's 81 percent essentially means keeping the life they were already living.

Why marriage helps. A married couple stacks four advantages: a spousal IRA lets them fund two IRAs ($15,000) even on one income; the higher $242,000 wall means a one-earner couple may never have to use the backdoor at all; wider joint tax brackets leave more take-home to save; and the second spouse's Social Security, from their own work or as a spousal benefit, adds roughly half again as much. Together, the one-earner couple clears 100 percent outright.

The lesson hiding in the numbers. Because the contribution is a flat maximum while income keeps climbing, the plan replaces a smaller share the faster you rise, about 105 percent at 3 percent income growth, 81 percent at 4 percent, nearer 60 percent at 5 percent. **That's not a flaw; it's the point. The maxed Roth is your dependable personal pension.** The faster your income grows, the more you lean on the bigger doors in *Beyond the Roth IRA* (the Roth 401(k), the solo 401(k), the backdoor) to carry the rest.

A note for higher earners. This plan works because Social Security replaces a large share of a middle income and a maxed-out IRA is a meaningful slice of it. A higher earner, past the Roth income limit, would find the same plan covers only a fraction of their income. The Toolkit's *Beyond the Roth IRA*, and its worked example of a 27-year-old tech earner, lay out the next doors: the full 401(k), the backdoor Roth, the mega backdoor, and a taxable account. Well above that, say past $400,000, a conversation with a fee-only advisor earns its cost. (Direct Roth eligibility itself phases out far earlier, around $168,000 for single filers or $252,000 for married couples; *Beyond the Roth IRA*, in the Toolkit, lays out the routes around that limit.) **For the ordinary saver this book is written for, the simple plan is enough.**

The deal America offers

Put it together and the picture is plain. The employer pension is largely gone, Social Security was built as a floor, home equity is harder to reach, and most of us are never taught any of this, at school or at work, before we need it. But America hands you something in exchange: lower taxes than the countries that still pay their workers a state pension, and the money those lower taxes leave in your paycheck is the money to fund your own personal pension. It also gives you the tax-free accounts to put it in, where compounding can do its best work. Use them, start early, and keep going, and you can build yourself a tax-free retirement income as good as, or better than, the pensions earlier generations were given.

✦

Hey Grandma, I Know What I Want for Christmas

A family strategy: gift-funding a young American's Roth

A quick note on who this chapter is for. Everything else in this book is written to you, the person doing the saving. **This chapter is the exception: it's the one worth sharing.** If a parent, grandparent, or other relative is in a position to help, funding your Roth is one of the most powerful gifts they can give, and often they simply don't know it's possible. So read it to understand the strategy, and if it fits your family, pass it along to the person who might help. What follows speaks to that giver, but the person who benefits is you.

Everything in this book points to the same conclusion: the earlier money goes into a Roth, the more time it has to compound. **One lesser-known way to act on that is for anyone in a position to help, a parent, grandparent, or other relative, to give a young American the cash to fund a Roth they might not otherwise prioritize.** It's a simple, legal, and powerful way to help the next generation start early, and it costs the giver very little in tax terms.

The most common case: a young adult just starting out.

> **CASE STUDY · EMMA, 22**
>
> Emma is 22, a working musician with gig income, no steady employer, and certainly no 401(k). She's stretched, covering rent, gear, and the cost of becoming independent, and she assumes retirement saving can wait, because there's simply no room for it now. But she's earning, which is all a Roth requires, so her grandfather John funds one for her, to compound for fifty years, long before she'd have thought to start herself.

Yet those early years are the highest-leverage ones in this entire book: **a dollar saved at 20 has the longest runway to compound, and that window never comes back.** A parent's or relative's gift lets a young person capture those irreplaceable years without sacrificing the independence they're building. They keep their own paycheck for living expenses while the gift funds the Roth. And because it grows inside a Roth, the government never takes a share of what it becomes. Once the young person is more established, they take over the

contributions themselves and carry the account for the next thirty or forty years. It's a modest gift that decades of tax-free compounding can turn into a fortune.

The core move turns on a simple fact: money is fungible. **You can give the young person cash and let them make the contribution, or you can help them by contributing directly**: the IRS doesn't care where the dollars came from, only that the contribution stays within the limits below. The practical effect is that your gift funds the Roth while the young person's own paycheck stays in their pocket.

> **THE ONE CHANGE WORTH MAKING**
>
> There's a quiet reorder hiding in this. Families who give often default to the easy thing: cash that gets spent, or a plain savings or brokerage account, to keep it simple. **The better move is to fund the Roth first.** Put in up to what the young person earned that year, and only then send anything left over wherever else you like. The size of the gift matters far less than the order: even a small amount, routed into a Roth early, becomes the most valuable dollar you could give. It's the gift most people don't realize they've been giving backwards.

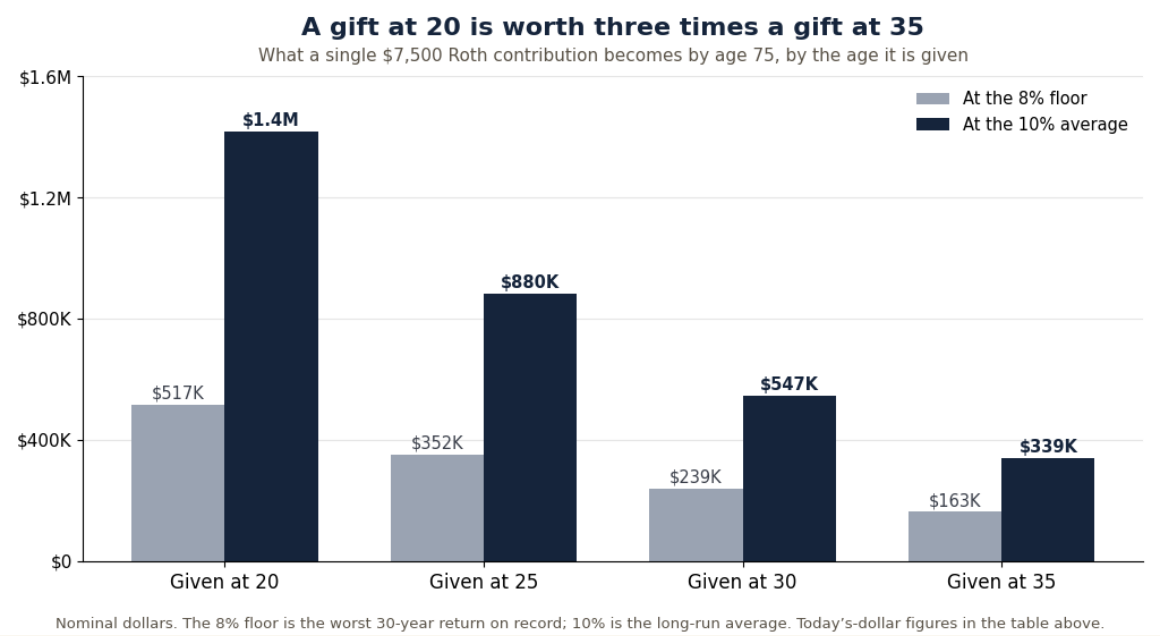
The one binding constraint is earned income. This is the rule that trips people up. To contribute to a Roth, the recipient must have *earned income* (wages, salary, or self-employment income) for the year, and the contribution is capped at the lesser of the annual limit ($7,500 in 2026 for those under 50) or their total earnings[16]. So a young person who earned $4,000 can contribute at most $4,000, no matter how large the gift. Someone with no earned income can't contribute at all that year. Allowances, investment income, and the gift itself don't count as earned income.

The gift sits well within tax-free gift limits. For 2026 you can give up to $19,000 per recipient ($38,000 for a married couple who split the gift) without using any of your lifetime gift and estate tax exemption or filing a gift tax return[17]. Since a full Roth contribution is $7,500, a gift to fund one sits comfortably inside the annual exclusion.

Why it’s worth knowing. One $7,500 gift, made at age 20 and never touched, passes half a million dollars by 75 even at the floor, about $174,000 in today’s purchasing power. **The age at which it’s given changes everything.** Three such gifts, at 20, 21, and 22, $22,500 in all, reach $1.4 million at the floor: nearly $500,000 in today’s dollars, twenty-two times the money given. At the long-run average, the same three gifts reach nearly $4 million, about $1.3 million in today’s dollars, fifty-nine times the gift. For a family, **it’s among the most efficient and powerful ways to pass wealth along**. The gift is small enough to be tax-free to the giver, and every dollar of growth it produces is tax-free to the recipient. Roth assets generally pass to heirs tax-free as well, as Section 2 noted.

GIFT AGE	YEARS TO 75	8% FLOOR	FLOOR, IN TODAY’S DOLLARS	10% AVERAGE	AVERAGE, IN TODAY’S DOLLARS
20	55 yrs	$516,854	$173,924	$1,417,943	$477,144
25	50 yrs	$351,762	$130,689	$880,431	$327,105
30	45 yrs	$239,403	$98,202	$546,679	$224,246
35	40 yrs	$162,934	$73,791	$339,445	$153,731

A single $7,500 contribution, held to age 75, shown in nominal dollars and in today’s purchasing power (2% inflation). Every dollar of it tax-free, from one contribution.



> The same table as a picture: a gift at 20 is worth about three times a gift at 35 by age 75. Rounded; exact figures in the table above.

Notice the rule hiding in the table: **every five years of delay costs about a third of the result.** Twenty to twenty-five, twenty-five to thirty, thirty to thirty-five. Each five-year wait gives up about a third of what the gift would have become, roughly 32% less at the 8% floor and 38% less at the 10% average. The exact percentage moves with the return you assume, but the compounding logic behind it doesn't.

Emma is seventy-five. The gigs came and went; the account didn't. The single $7,500 contribution John made for her, in a year she couldn't have spared the money herself, is worth **about $1.2 million** at the long-run average and **about $443,000** even at the floor. That's about $410,000 and $155,000 in today's purchasing power, every dollar of it tax-free.[30] John spent $7,500 once. **What he actually gave her was fifty-three years, which is the one thing in this book that can't be bought later.**

What if the young person is a minor? A working minor with a part-time or summer job can still have a Roth: a parent or guardian opens a *custodial Roth IRA* and funds it up to the minor's earned income, with control passing to the child at the age of majority in their state. Either way, keep a simple record. Because the contribution depends on earned income, it is worth documenting what the young person earned: a W-2, or for informal work like babysitting or yard work, a note of who paid what and when, in case the contribution is ever questioned.

What about 529 plans and 530A accounts? Two other accounts come up when people talk about saving for a child, and both are worth a moment, if only to see why the Roth still wins. A 529 plan takes after-tax money, grows it tax-free, and pays out tax-free, but only for qualified education, such as tuition. Spent on anything else, the earnings are taxed and penalized. It's an excellent tool for financing higher education, but it does nothing for retirement. However, leftover 529 money can now be rolled into the child's Roth, within limits. That makes it a useful bridge between the two.

A 530A account, created in 2025, is newer and more flexible. Since the fall of 2026, the Treasury opens one automatically for every eligible child under 18 with a Social Security number. For a child born from 2025 through 2028 who's a U.S. citizen, the government also puts in $1,000, but only once a parent claims it on

IRS Form 4547. Families can add up to $5,000 a year. The money sits in low-cost, broad stock index funds: index investing by design. But watch the tax treatment. Contributions go in after tax, the account grows tax-*deferred*, and starting the year the child turns 18 it follows the rules of a Traditional IRA, so the gains are eventually taxed as **ordinary income** on the way out.[18] It is, in effect, a nondeductible Traditional IRA for children, and it carries the exact disadvantage this book keeps returning to: **you pay tax on the growth at the end.**

Set the Roth beside them and the contrast is clean. The Roth is the only one of the three in which a lifetime of growth *and* every dollar withdrawn are **completely tax-free**, for any purpose in retirement, no education requirement, no ordinary-income tax on the gains. Its one condition, that the child have earned income, is exactly what makes the gift-funding strategy in this chapter work. So **claim the free $1,000 if your child is eligible**, use a 529 if school is the goal, but for a young person with earned income **the smartest long-run home for the money is still the Roth.**

One caveat cuts the other way. Because a Roth requires earned income, it isn't available to a young child who can't yet work, and that's where a 530A account earns its keep. The free $1,000 is worth claiming for any eligible newborn, and tax-deferred growth in a low-cost index fund still beats a plain taxable custodial account, where gains are taxed along the way. Think of it as a bridge: **the 530A account (or a 529) for the youngest children, and the moment a real paycheck arrives, a summer job, say: that's the signal to start funding a Roth.**

NOTE

A note of caution

This is a general illustration, not tax advice. Edge cases (self-employment income, the "kiddie tax," whether the young person is claimed as a dependent, and state rules on custodial accounts) can complicate the picture. The kiddie tax, for example, never touches the Roth itself; it applies only to investment income in a taxable or custodial account. A short conversation with a CPA before acting is wise.

FOR THE GIVER

If you’re the one giving: the order

0. Your own retirement first. A gift that leaves you short becomes their problem later.

1. Before they can work: for a child born 2025–2028, claim the free $1,000 in a 530A account. It’s the bridge until a Roth is possible.

2. Once they earn a paycheck, fund the Roth first: up to what they earned that year, at most $7,500. Each year’s Roth room is use-it-or-lose-it; it can’t be made up later. Under 18, a parent opens a custodial Roth. Over 18, they open it themselves and you give them the cash. A gift made by mid-April can still count for the year before.

3. Make it a match if you can: a dollar from you for every dollar they put in. The gift becomes their habit.

4. Saving for college? Add a 529 for tuition. It has its own separate limits, so it never takes away from the Roth. Leftover 529 money can later roll into the child’s Roth, within limits.

5. Anything beyond that: give it for them to use, or keep it in your own Roth to pass on later, tax-free.

Stay under $19,000 per person a year ($38,000 for a couple) and no gift-tax return is needed.

So, Grandma: skip the socks.

We all like socks from Grandma in the Christmas stocking, but they won’t last a lifetime and they won’t make anyone a millionaire. Ask for a Roth IRA instead. It’s the one gift that’s still growing fifty years after it’s opened, and the most valuable thing Santa can leave under the tree.

✦

PART IV · BOTH SIDES OF THE BET

Both Sides of the Bet

Take the plan and test it in both directions. The risks first, clear-eyed, then the upside the plan never counts on. Either way, because the numbers are anchored on the floor, nearly every surprise runs your way.

BOTH SIDES OF THE BET · CHAPTER EIGHT

What Could Go Wrong?

Every dollar figure in this book rests on one assumption: that a broad basket of American stocks will continue to compound somewhere between 8 and 13.6 percent a year over a future 30-year timeframe, as it has over the last century. An earlier chapter already stress-tested the plan against a bad market by turning the return dial all the way down to the floor, and the plan still worked. This chapter does something harder. It asks whether the historical record can be trusted at all, and what, in the real world, could break it.

The short answer is that **the plan is more robust than any single risk that threatens it**, but only because it's built on the worst the market has done on record, not because the risks are small. They're not. It's worth looking straight at them.

8.1

The best reasons not to do this, answered

Four objections are serious enough to deserve a full hearing, and each gets one in the essays of Book Two. Here they're in brief, with the answer to each.

The average return may be flattering itself. Across the 69 rolling 30-year windows since 1928, the worst compounded at about 8 percent and the mean of the windows was 11 percent. But those windows overlap heavily, the booming 1950s, 80s and 90s each get counted inside dozens of them, so a few great

stretches do most of the lifting. Strip the overlap away and the data holds only about *three* separate investing lifetimes. That's exactly why this book doesn't lean on that 11 percent: it's an average of heavily overlapping windows, not what any one investor earns over a single lifetime. **So the case studies are illustrated at 10 percent, the market's full-period compound return, and every conclusion is built on the 8 percent floor beneath even that.** *(See "Is the average flattering itself?" in Show Me the Numbers.)*

A major market could disappoint for a generation. Japan's Nikkei peaked in 1989 and didn't regain that level for 34 years, which fed the popular story of Japan's "lost decades." If it happened there, it can happen here. But the "lost decades" are a price-only story. The Japanese investor who kept buying through the wreckage (dividends reinvested, new money every year) still earned roughly 6 percent a year. And 6 percent was no consolation prize. It was *several times what the safe alternatives in Japan paid*: bank and postal savings drifted to essentially zero, and government bonds sank from 7 percent toward nothing. **So the lost decades were real. The loss just fell on the people who thought they were playing it safe.** This book's exact method, tested against the worst crash in a major developed market in modern history, still worked. *(See "What If You Start at the Worst Possible Moment?")*

America may stop winning. These returns rest on American exceptionalism: the deepest capital markets in the world, the rule of law, the dollar as the world's reserve currency, and an innovation engine of universities feeding venture capital that no rival has reproduced. **That edge is structural rather than lucky**, though it still has to be earned again in every generation.

The national debt. It's real, and it's large: roughly $300,000 for every household in the country, and climbing. It has been paid off only once, in 1835, and was back within three years. No one serious expects it to be repaid now. But the failure it produces isn't the one most people picture. A government that borrows in a currency it issues doesn't have to default, and in the century since the Federal Reserve was created in 1913, it hasn't. What it has done instead, again and again, is let inflation shrink the debt: the government kept borrowing in dollars, and the dollars kept getting smaller. That's a genuine risk to your plan, but it's a risk to the value of dollars, not to the existence of American businesses. And it argues for owning assets rather than holding cash, which is what this book

already tells you to do. *What About America's Ballooning Debt?* lays out the evidence.

Four objections down, one to go

Each of the four objections is real, and none of them breaks the plan. The average may flatter itself, but the plan is built on the floor beneath it. A market can disappoint for a generation, but the saver who keeps investing through it, year after year, can still earn a respectable return and build meaningful wealth. America's edge has to be earned again in every generation. And the debt will most likely be inflated away rather than defaulted on, which argues for owning assets rather than holding cash. The fifth risk is the one no chart can show, because it isn't the market at all; it's you.

Even if the market delivers, you might not. This is the risk most likely to actually bite you, and the only one that is almost entirely within your control. For an investor in their twenties or thirties, a crash isn't the enemy. A market that falls early in your investing life hands you the opportunity to buy companies on sale. **Over a working lifetime, an early crash is a gift, and the right instinct is to lean into it, not run from it.** The real danger is the behavior gap: selling in fear, sitting in cash, missing the handful of days that carry a decade. That costs ordinary investors more than any market risk ever has. And the falls that trigger the fear aren't rare disasters to be dreaded. They're the ordinary weather of investing: a correction most years, a bear market every several years, each one temporary, each one a discount if you keep buying. But a crash arriving just as you begin to withdraw is different, and it's a genuine problem. That's a question for your sixties, and you solve it then by adding ballast as you near the finish, not by flinching now.

The Biggest Risk Is Probably You lays out how often those falls come, how deep they go, and how quickly they pass; it's worth reading before you need it, not during the moment of a big market drawdown.

That's the whole map: four risks in the market, all survivable on a plan built for the worst the market has done, and one in the mirror that only you can manage. Next, that fifth risk up close, in a single month I have not forgotten: March 2020.

✦

A STORY · MARCH 2020

In March of 2020 I did the one thing I had spent decades telling other people never to do, and I want to tell you about it, because I had every possible reason to know better.

I had been investing in markets for nearly fifty years at that point. I spent nearly twenty years on Wall Street, though I had been gone for almost twenty more by then. I became a Chartered Financial Analyst in 1988. I've been through a lot of market cycles, including some horrific bear markets and crashes, including both Japan and the dot-com bubble. And I've never thought of myself as a trader. My philosophy has always been to invest for the long run and to choose my entry and exit points, rather than letting the market do that for me.

So for the first seven weeks, as Covid spread and the market moved lower, I was the calm one. The news had been building since the end of January, and all through February and into March, as friends and family called to talk about the markets, I told them what I believed: valuations were reasonable, this was unprecedented, and it still looked like a short-term event. Stay the course.

The market had already fallen about twenty-five percent. I had cash on the side and, as it fell, I put a good chunk of it to work. That felt like the right move, and in the accumulation years of my life it would have been. **But this wasn't that cash.** I was no longer adding to my investments; I was living off them. That money was my buffer, the reserve I spend out of so that I never have to sell into a bad market. I treated a preservation-phase reserve like an accumulation-phase opportunity fund, and I never once framed the decision that way.

It did something else for me too, which I didn't appreciate at the time. It gave the nervousness somewhere to go. When you have new money to invest, a falling market is an opportunity, and buying into it feels like doing something. It feels good. The urge to act gets an outlet, but one that actually helps you.

But then the buffer was gone. I was fully invested, watching prices fall, with no income arriving and no reserve left. **The only remaining source of cash was the portfolio itself.**

Somewhere in there an investor I knew started sending me messages. He had sold this. He had sold that. I never asked him what he was doing. He simply kept sending messages, unsolicited. He traded a lot, far more than I ever did, quick to move in and out of things, and I had told him for years that his approach didn't work for me, partly because our tax situations were nothing alike. I knew his strategy wasn't mine. Still, I kept getting these messages. Then I started checking the financial news, which I hadn't really bothered with in years. I can't tell you now whether that came before or after what happened next, which tells you something about how clearly I was thinking. Then a message came from him that said something like: *this is about capital preservation now.*

What happened next is that I sold something. Not for any good reason. **I sold my weakest position because I felt compelled to do something**, and by then selling was the only something left. The market continued to fall.

Once you've started, it is easier to continue. I began reading what the Wall Street strategists were writing about where the market would bottom. Their targets were another twenty or thirty percent below where we had already fallen. I couldn't tell you where those numbers came from. I read them anyway. Then I started watching the overseas markets at night, and the futures before the open, and somewhere in there I stopped behaving like an investor and started reacting like a trader.

One morning I woke to a hedge fund manager on the news urgently arguing that the stock market should be closed. I knew that was foolish, but I suspected he was talking his own book, trying to frighten prices down so he could buy more cheaply.

Here's the trap, and it's not the one you'd expect. I was probably right about him. **And being right is what moved me.** If people like that were driving prices lower, then lower prices were coming, and lower prices are an opportunity. I wanted to be there for it. **Seeing through the noise isn't the same as being immune to it. Sometimes it is the very thing that pulls you in.**

I had also built myself a very intelligent argument. This wasn't an ordinary recession, I reasoned, and not an ordinary bear market. Those are unknown unknowns. This was a known unknown. The government had deliberately put the economy on ice. There would be some level of pain at which policymakers would

step in, but I was convinced that level was much lower than where we were. More pain had to come first.

But I had no new money arriving, and the cash on the side was long gone. If I wanted to buy anything, I needed cash available, and since I was tapped out, that meant selling.

So I started selling positions, to create the cash to buy a bottom I was sure was still ahead.

A few trading days later the Treasury Secretary and the Fed Chair made it clear they would do whatever was required. By then the market had fallen only about a third of the way to the level I had been waiting for. But it never got the rest of the way. It gapped up about ten percent that day, and I missed it. I was away from my desk when the news came out, sitting with cash.

Then I made it worse, which is the part I'd most like to skip. The right response was obvious. Two of the most powerful officials in the country had just changed the fundamentals in front of me, and the honest move was to admit I had been wrong and reverse immediately. That's what a rational trader would have done. Instead I went looking for new reasons. I told myself I had missed that move, but that given the depth of the problem, the markets would move lower still. And I didn't simply keep the argument I had started with. I built new ones, more of them than I had needed to make the decision in the first place, and every one of them kept me out a little longer and got me back in a little higher. **It's easier to defend a mistake than to admit one, and defending it is what makes it expensive.** For weeks the market ground higher. I kept waiting for the pressure to return. It didn't. By the time I was fully invested again, stocks had risen more than twenty-five percent above where I had been selling. I had missed a couple of years' worth of good performance, handed over for nothing.

I'm an investor, not a trader — I simply wasn't being one in those weeks.

The money isn't the part I regret most. I told people what I had done. For those seven weeks I had been the calm one, telling friends and family to hold. When I reversed myself, I said so. I have no way of knowing what anyone did with that knowledge. Some of them may have raised cash because I had. The embarrassment isn't the point. Being wrong with my own money cost me a couple

of years of returns, and I can measure that. **Being wrong out loud, to people who took my judgment seriously, may have cost them something I'll never be able to measure at all.** That's what I'd take back first.

So what stops me from doing it again?

Not resolve. I had seven weeks of it, and it held right up until the day I had nothing left to buy with. The honest answer is structural, and it has two parts depending on where you stand.

If you're still adding money, this is a far easier problem than it looks, and you already have the solution. Over my investing career I've been very stoic through market corrections, even crashes, holding my positions and adding to them with new cash coming in. I wasn't braver then. Having a paycheck allowed me to add to my positions or build new ones at lower prices. Every pay period bought more shares, so a falling market arrived as a discount rather than a threat, and the urge to act had somewhere to go that actually helped me. **Your contributions are not only how the money grows. They're what keeps you steady while it falls.**

If you're no longer adding money, the rule is simpler, and I broke it. Your reserve isn't ammunition. It's the thing standing between a market decline and a forced sale, and its whole job is to sit there being boring and available. Spend it into a falling market and you've disarmed yourself at the worst possible moment. That happened before any of the rest of it did.

In both cases: set the rules while you're calm, and turn off the noise. The crash never moved me. The messages, the news I hadn't watched in years, the futures at three in the morning, those moved me.

There's one more part, and it's the part I think about most. My private investments came through all of it perfectly intact, for one reason. I couldn't sell them. **The protection wasn't my judgment. It was my inability to act.**

So build that inability on purpose. If you're still saving, automate the contributions so the good behavior needs no decision from you; Chapter Ten sets that up in about fifteen minutes. If you're drawing down, ring-fence the reserve so the bad behavior has nothing to reach for. **Either way the principle is the same: don't count on being calm. Arrange things so that calm isn't required.**

8.2

The Truly Big Risks, and What's in Your Control

Beyond markets sit the genuine catastrophes: a great-power war, a pandemic far worse than the last, an environmental shock, some dislocation no one has named yet. The useful move here is to sort every risk in this chapter into piles. Two are obvious: the risks that lower your return, and the ones that break the world. A third sits between them, and a reader taught me to see it: several hard things arriving at once, enough to overwhelm and change how we live, without ending everything.

Pile one lowers your return. A stretched starting valuation, mean reversion, the end of American exceptionalism, a return of serious inflation. These are the risks that shrink what your money earns each year: from a 10 percent compound average down to 8 percent, or, in a future worse than any on record, from 8 percent to 6 percent. They're real, and the response to all of them is the same: **expect less than the rosy case, stay diversified, and keep contributing.**

Pile two breaks the world. A civilization-ending war is real too, but it's not a portfolio problem, because **if it happens, a diversified index fund is the least of anyone's concerns**, and no savings strategy protects against it. There's no asset allocation for the end of the world. Naming that plainly is what lets you stop worrying about it: **it's not actionable, so it shouldn't drive your decisions**.

And it's worth remembering what the historical record already contains. The 1928–2025 data that produced these returns includes the Great Depression (an 86 percent collapse), a world war, the stagflation of the 1970s, the dot-com bust, the 2008 financial crisis (a 57 percent collapse), and a global pandemic. All of that is already inside the numbers, and **the worst 30-year window still cleared roughly 8 percent**. The plan wasn't built assuming calm. It was built on top of a century of disasters.

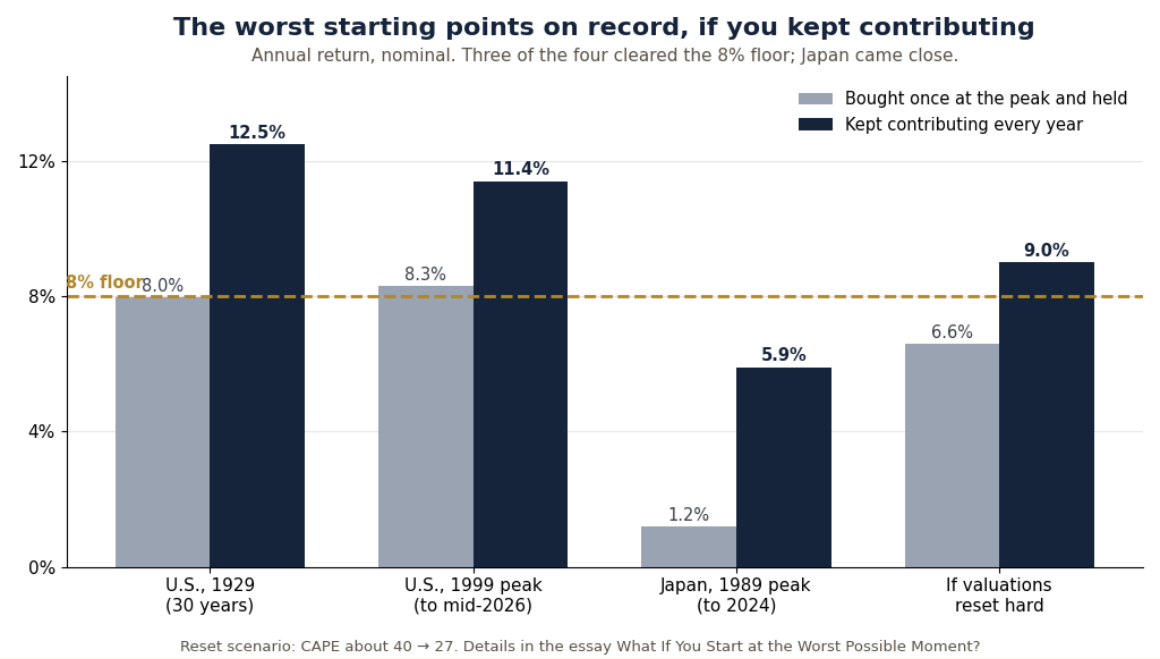
Every terrible starting point, measured the same way

The first pile is the one the record can actually test. A plan that works only for someone who started at a good moment isn't much of a plan. So instead of

averages, look at the worst moments anyone could have picked to begin: the top of the market in 1929, just before the Great Depression; the peak of the dot-com bubble at the end of 1999; and Japan's 1989 peak, the worst crash in a major developed market in modern history. Add a fourth that hasn't happened: today's high valuations snapping back hard. Each is measured two ways: buying once at the top and holding, and continuing to invest every year.

START AT THE WORST MOMENT IN…	BOUGHT ONCE AND HELD	KEPT CONTRIBUTING EVERY YEAR
The U.S., 1929 (30 years, to 1958)	7.97%/yr	**12.5%/yr**
The U.S., dot-com peak (end-1999 to mid-2026)	8.3%/yr	**11.4%/yr** (8.6% real)
Japan, 1989 peak (to 2024)	1.2%/yr (0% on price alone)	**5.9%/yr** (5.3% real)
And if today's valuations reset hard (CAPE about 40 → 27)	*6.6%/yr*	*still clears 9%/yr*

Nominal unless noted. What If You Start at the Worst Possible Moment? shows each of these in full. The pattern is the point: the worst moments on record still cleared, or nearly cleared, the 8 percent floor, and in every single case the investor who kept contributing did far better than the one who bought once.



> The same table as a picture: kept contributing, three of the four worst starting points cleared the 8 percent floor, and Japan, at 5.9 percent in yen, still beat Japanese cash and bonds many times over.

Notice what's doing the work. It's not the starting date, which was the worst available in each case. It's whether the investor kept going. Each of these stories is told in full, year by year, in the essay *What If You Start at the Worst Possible Moment?*

The Pile in Between: Getting Through the Hard Years

A reader named Jenn asked me the question that belongs here. Not the risk that trims a couple of points off your return, and not the one that ends the world, but the one in between: years of crises arriving together that change how we live without ending everything. A warming planet. Strain on food and water. A political climate that tests democracy itself. And artificial intelligence, which is already changing how people earn a living, hers included.

It helps to ask first which risk you're actually worried about. Volatility, the market's ups and downs, isn't the danger; it's the price you pay for the long-term return, and it sets the prices that let a steady saver buy more when things look worst. The worry here is different.

Nobody knows how a warming planet, strained food and water, our politics or AI will play out over the next few decades. Not me, not the billionaires, not the talking heads. Anyone who says they do is guessing. Some fears, like AI turning against humanity, belong in the pile that breaks the world, and no portfolio answers those. The rest are hard years, and those we've been through before. The record this plan is built on begins in 1928, with a crash, the Great Depression and then a world war: more than fifteen years that were brutal for anyone holding stocks. And in my own lifetime, since the 1960s, there was the Cold War, when the threat of nuclear annihilation hung over everything. I practiced hiding under my desk in grade school, and a neighbor had a bomb shelter in their house. In middle school we studied *The Limits to Growth*, the 1972 book from the Club of Rome warning that population would outrun food and resources. Then came the oil shocks and inflation of the 1970s, the 2008 financial crisis and a pandemic. All of it runs through the U.S. stock market record this plan is built on.

So I keep coming back to one question: where else would I put money today to take care of future me? She's heavily invested in the stock market herself, for the same reason: she doesn't see another way. Neither do I. Cash loses to inflation. Gold and crypto produce nothing; their return depends on the next buyer paying more. The market is the one place where your money is tied to people trying to solve these problems: water, food, energy, a hotter world, preserving freedom. And you'll own the companies not yet born, built for problems we can't picture yet. Capitalism at its best lets anyone with a good idea take on the biggest problems, because the biggest problems are also the biggest opportunities. It isn't perfect. It's fair to trust capitalism more in theory than in practice when so much of the gain goes to so few. But owning the whole market is how an ordinary saver gets a share of it, instead of only watching it.

There's a lot you can do about this pile, and the end of this chapter lists it. But one decision belongs here: how much of the world to own. It isn't a huge change, since a global fund still holds mostly American companies. But it lowers your exposure to purely American risks, and those feel more real right now, with open questions about the strength of the country's institutions. Either choice is reasonable, and the end of the chapter lays out the tradeoff.

What the plan needs from you

> NOTE
>
> Where this leaves you
>
> A chapter spent cataloguing everything that could go wrong, you might expect to end in caution. It ends in the opposite, because of one fact: the plan doesn't depend on the long-run average of about 10 percent that this book shows alongside. Even the worst investing lifetime the market has delivered on record still funds a secure retirement.
>
> It doesn't need America to stay number one. It doesn't need the bull market to go on forever, or the next decade to be kind, or your timing to be good. What it needs is five things, all of them up to you:
>
> 1. **Start now.**
> 2. **Keep contributing, even when it's frightening.**

3. **Own broadly.** An S&P 500 fund already earns a quarter to two-fifths of its revenue abroad, and it earns it through American companies, under American law, accounting and governance. A global index fund is still about two-thirds American, and those companies bring their foreign sales with them. So a global fund ends up with somewhat more of its business abroad, plus companies listed and governed under other countries' rules, some friendlier to investors than others. The two are closer than they look. The real differences are valuation, since U.S. stocks are priced well above most of the world's today, and how much you want to depend on any one country. Over the last 50 years, Dimson, Marsh and Staunton found the U.S. was the main exception: almost everywhere else, owning the world earned more for the risk taken than owning only the home market. No one knows if the next 50 years will repeat that. Either choice is reasonable, and Chapter 10 shows both. One honest caution: this book's 8 percent floor comes from the U.S. record. The index record this book uses for stocks outside the U.S. starts only in 1970, and it's lower, so if you diversify, plan on somewhat lower returns and a lower floor.
4. **Keep a cash cushion.** This is separate from your investments: an emergency fund you build first, before you invest a dollar, so you're never forced to sell stocks at depressed prices to cover a surprise. It's what lets everything else stay fully in stocks. As retirement gets close, it grows into the larger cash bucket Chapter 12 describes, and the closer you are, the more it matters. A bear market isn't a mystery: the S&P 500 has had more than a dozen since 1945, several in a lifetime. We just don't know when the next one comes. But it's a known unknown, and Chapter 12 shows how to set things up so that when one arrives unannounced, it doesn't wreck your retirement.
5. **Keep investing in yourself.** When the world changes fast, your own skills are the asset you can steer.

Most of the risks in these pages are either survivable by steady saving or out of anyone's hands, and the plan is already built on the worst they've produced. So the conclusion is the same as the rest of the book, only now you've looked the dangers in the eye and chosen it anyway: start now, keep going, own broadly, and let time do the work.

What Could Go Right?

The floor was the plan. The rest is upside.

The case studies use the 10% average, but the plan was built to hold up on far less. **At the 8% floor, the most unlucky investing lifetime on record, a maxed-out Roth still turns roughly $322,000 of contributions into just under a million dollars of tax-free spending power in today's money.**

That foundation has a consequence almost no financial plan can claim: **nearly all of the surprises run in your favor**. Because it already succeeds at the bottom of the range, almost any outcome you actually get (the 10 percent average, or anything close to it) can only make things better. This chapter is about how much better, and why that asymmetry, not any single forecast, is the real reason to start.

What could push returns higher

The last chapter named the forces that could drag returns down; several could just as plausibly push them up, and some are already underway. AI could raise productivity the way electricity and the computer once did, and shareholders own that growth. The structural advantages from Chapter 8 and *Can America Keep Winning?* (deep capital markets, the rule of law, the immigrant-founder pipeline) are all reasons the floor may prove too cautious. And as billions more consumers reach the middle class, much of what they spend flows back to the multinationals you already own.

None of these is a promise. **Each is a plausible reason the unlucky-investor case we planned around is, in fact, unlikely.**

The upside you control

Here's the part most books bury. **The market's return isn't in your control, but the three levers that matter most are**, and all three have uncapped upside.

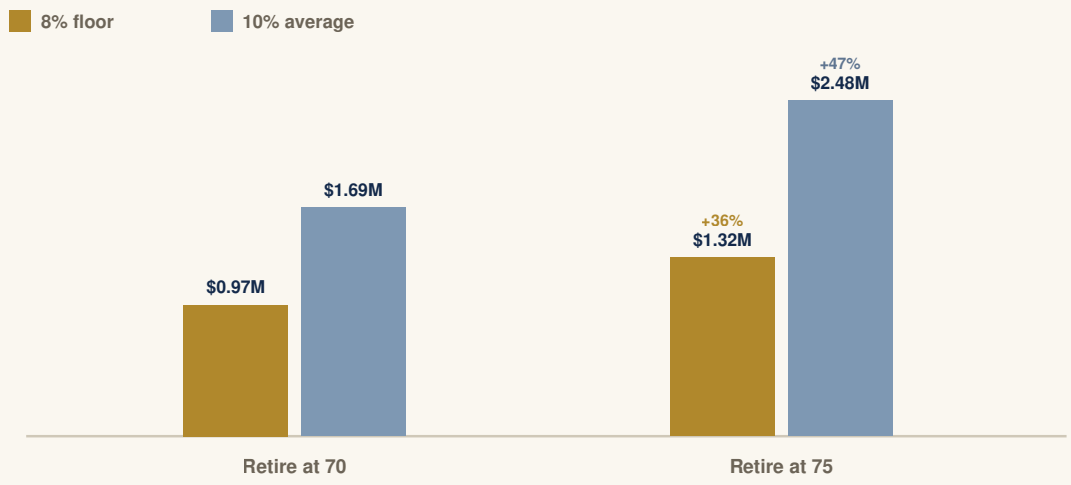
1. Starting earlier. Every year you move your start date forward adds a year on the far end, where the doublings are largest. Beginning at 25 instead of 30 doesn't add a sixth more money. At the floor it adds far more, because that early dollar earns one extra doubling.

2. Contributing more as you can. We modeled flat contributions. In the real world the IRS limit drifts upward, raises happen, and the same disciplined habit applied to a slightly larger number compounds into a materially larger result.

3. Working and contributing a little longer. Retirement isn't a fixed date, and we're living longer, healthier lives. Moving the finish line from 70 to 75 (five more years of contributions, five more years of compounding before you touch a dollar) lifts the floor outcome from just under a million in today's money to about $1.3 million, a gain of more than a third at the floor. At the typical and average rates the jump is larger still. Those may be five years you'd happily work anyway.

Retire at 75 instead of 70, today's dollars

8% floor: $975K → $1.32M · 10% average: $1.69M → $2.48M



Saver starts at 30, contributes the maximum every year, and stops at 70 or at 75. Today's dollars, 2% inflation. Returns illustrate a financial principle, not a forecast.

Starting earlier, contributing more as you can, working and contributing a little longer. These aren't market bets. They're personal choices. And unlike the forecasts, their upside sits entirely in your hands.

9.5

Don't plan on the upside

The risk chapter ended with a rule: don't let the unactionable catastrophes drive your decisions. The upside has a mirror-image rule, and it matters just as much. **Don't plan on it.** It's tempting to look at the better outcomes and think that *if the market will probably beat 8 percent, I can afford to put in less.* Do the opposite. Build the entire plan on the floor. **Fund it as though 8 percent is all you'll ever get. And then let every better outcome be exactly what it should be: a surprise you never needed.**

That's the shape of the bet this book asks you to make. You've seen the numbers: even at the floor, you retire with just under a million of today's dollars, and every better outcome, from the typical lifetime to the long-run average, simply hands you more. Past results don't guarantee future ones, but the historical margin of safety is wide, and **the only thing the bet asks of you is that you start now.**

✦

PART V · GETTING STARTED

Getting Started

The entire plan, reduced to one simple routine.

GETTING STARTED · CHAPTER TEN

Putting It Into Practice: One Simple Method

AN EXPERIMENT, REVISITED · THE MARSHMALLOW TEST

You've probably heard of the **marshmallow test**. A researcher sits a four-year-old down in front of a marshmallow and makes an offer. You can eat this one now, or you can wait about fifteen minutes by yourself, and then you can have two. Then the adult leaves the room.

For decades the story we told about that experiment was a story about willpower. The children who waited were said to have done better in life, and the lesson was that self-control is destiny.

That version hasn't held up especially well. When researchers repeated the study with a larger and more varied group of children, most of the advantage turned out to be explained by other things.

But something else in that research did hold up, and it's the part worth knowing. Whether a child waits depends a great deal on whether the adults in that child's life have been reliable. Children who had been promised things before and then let down ate the marshmallow right away. They weren't weak. They were being sensible. Waiting only makes sense if you have some reason to believe the second marshmallow is actually coming.

That's the whole of this chapter, and most of this book.

What follows takes about fifteen minutes to set up and then asks you to leave it alone for thirty years or more, which is **the longest fifteen minutes in personal finance.** Buying and selling is more interesting. It feels like doing something. Owning one index fund and then doing nothing feels like doing nothing, because it is.

So I'm not going to ask you to be more disciplined than the next person. I'm going to tell you that **the second marshmallow is real**, and everything in this book is the evidence for it.

✦

The analysis in this book is the hard part. The doing is simple, almost boringly so. But **simple isn't the same as easy**: the mechanics take minutes a year; holding your nerve through the declines along the way is the real test, and very nearly the only thing the whole plan asks of you. Stripped of jargon, the entire strategy reduces to a short routine that requires no market knowledge, no forecasting, and no ongoing decisions.

1. Open the account. **Open a Roth IRA at any major low-cost brokerage**. It takes a few minutes online, and there's no fee to have one.

2. Fund it as early as you can. **Each year, move the contribution in as soon as you have the cash**, ideally the full annual maximum early in the year rather than waiting until the following April. (The IRS sets each year's limit the previous autumn, so the maximum is already fixed and known the moment January arrives. There's nothing to wait and see.) Every month the money sits outside the account is a month it is not compounding. If you can't fund it all at once, set up an automatic transfer every payday so it happens without your having to think about it.

3. **Invest it immediately**: don't let it sit as cash. This is the step people most often miss. **Money you contribute to a Roth is *not* invested by default**; it lands in the account as cash and stays there, earning almost nothing, until you actually buy something. Put it straight into a single low-cost index fund that tracks the S&P 500 or the total U.S. stock market (or the whole world; section 10.3 shows both).[19] One fund is enough: you don't need a basket of holdings to do this well.

4. **Then leave it alone**. Don't check it daily. Don't sell when the market falls. Don't chase whatever did best last year. The discipline to do nothing, for decades, is the entire skill, and **it's harder than it sounds.**

> **First things first.** The Whole Plan's "Do this first" box comes before these four steps: a month of expenses in savings, building toward three; any debt charging more than about 8 percent paid off (Part two of this chapter gives the order); the full match if your job offers a 401(k) (see the note right after Chapter 2, "If Your Job Has a 401(k)"); and basic protection: disability insurance through work, term life insurance if anyone depends on your income, and a named beneficiary on every account. Then run these four steps with your Roth.

10.1

Invest a lump sum all at once

When you have a lump available, a year-end bonus, a gift, the new year's contribution, **the historical evidence favors investing it all at once**, rather than feeding it in over several months. Across decades of market data, putting a lump sum to work immediately beat spreading it out about two-thirds of the time, simply because the market rises more often than it falls, so money left waiting on the sidelines usually misses gains.[20] Spreading purchases out over time, called dollar-cost averaging, isn't a mistake; the automatic per-payday approach in step 2 is itself a mild form of it, and it can ease the anxiety of investing right before a possible dip. But understand the trade: it's a comfort measure, not a return-booster. The real enemy is neither method. It's paralysis, waiting for a perfect entry point that never comes.

10.2

Why all stocks, and no bonds or cash

For money you truly won't touch for decades, holding bonds or a large cash cushion mainly does one thing: it lowers your long-run return in exchange for smoothing out swings you don't actually need smoothed. **You're not going to spend this money soon, so its value bouncing around along the way doesn't matter**, only where it ends up at the finish. Recall that even the worst long stretch for U.S. stocks still compounded near 8% a year. A long-horizon Roth, funded and left untouched, is the textbook case for staying fully invested in stocks and letting time absorb the volatility.

> NOTE
>
> #### All stocks – until you near retirement
>
> The all-stock approach belongs to the long accumulation years, and it asks one thing in return: the discipline to hold through deep declines, including drops of 30% or more, without selling.
>
> As you near the years you'll actually live on the money, the logic reverses. A crash while you're still adding is a gift; a crash just as you begin to

withdraw is the opposite: you'd be selling shares into the decline to fund your spending, locking in losses instead of riding them back up. Economists call this **sequence-of-returns risk**. So as you get close to retirement, the sensible move is to build up a cushion, enough in bonds and cash to cover a few years of spending, so you never have to sell stocks into a bear market, and can simply hold on through it until the market recovers. That's also a good moment, if you don't already have one, to sit down with a financial advisor who can help you plan the transition.

If holding no cash at all feels too stark, a small allocation is a reasonable middle ground. Warren Buffett's own instruction for the money he leaves his family, 90 percent in a low-cost S&P 500 fund and 10 percent in short-term government bonds (see *Should You Own More of the World?*), is one well-known version. Keeping, say, 5 to 10 percent in risk-free assets like short-term Treasuries or money-market funds costs little over a long horizon. Its real value is mostly psychological: a little dry powder means that when the market falls hard you can do something, put cash to work at lower prices, instead of only watching. But be clear-eyed about how much that changes. If you're still in the saving phase and adding money on a schedule, **your contributions are already buying the dip for you**. The next downturn, and the one after that, simply become the moments your regular Roth contributions pick up more shares of the same index fund for the same dollars. That's dollar-cost averaging doing its quiet work, no cash pile required.

And this book is an illustration of how compounding works, not personalized investment advice. How much risk suits you is a personal decision that depends on your circumstances and temperament.

10.3

Which fund: use a low-cost ETF

Any low-cost fund that tracks the S&P 500, or the total U.S. market, will do, and the most convenient form is an *exchange-traded fund (ETF)*: a fund that trades like a stock, charges rock-bottom fees, and carries no minimum investment. ETFs are also marginally more tax-efficient than traditional index mutual funds, but that edge applies only in a taxable account. Inside an IRA, Roth

or traditional, nothing is taxed anyway. The two are equivalent, so choose on cost and convenience.[21]

Three S&P 500 ETFs, the largest and lowest-cost, one from each of the three big fund families:

TICKER	FUND	ANNUAL FEE
VOO	Vanguard S&P 500 ETF	0.03%
IVV	iShares Core S&P 500 ETF	0.03%
SPYM	State Street SPDR Portfolio S&P 500 ETF	0.02%

Three total U.S. stock market ETFs, the same idea, with thousands of smaller companies added for a little more breadth:

TICKER	FUND	ANNUAL FEE
VTI	Vanguard Total Stock Market ETF	0.03%
ITOT	iShares Core S&P Total U.S. Stock Market ETF	0.03%
SCHB	Schwab U.S. Broad Market ETF	0.03%

All three within each group track the same index and return very nearly the same thing year after year, so the choice comes down to which brokerage you already use and the small fee difference. An S&P 500 fund and a total-market fund are both sound single-fund choices. You don't need both. (The oldest and most-traded S&P 500 fund, SPY, is perfectly fine but charges about 0.09%, roughly three times the others, which makes it better suited to active traders than to long-term holders.) These are options, not recommendations; fees and fund names change, so check the current prospectus before you buy. And if some part of you is still asking why one plain index fund rather than a few good stocks or a manager with a record, the answer is in Book Two, *Why Not Just Pick the Winners?*, with the numbers.

Want more of the world? This book's default is a single U.S. fund, and that's where its numbers come from. If you'd like to diversify globally, so your savings don't ride on a single country's fortunes, there are two simple ways: keep your U.S. fund and add some international stocks with a total-international fund, or replace it with one global fund that tracks the whole world market, nearly two-thirds of it American, like the Vanguard Total World Stock ETF (VT, 0.06%) or the State Street SPDR Portfolio MSCI Global Stock Market ETF (SPGM, 0.09%). Know what you're trading. The record for stocks outside the U.S. is shorter and lower: the longest consistent index history, MSCI's for developed markets, starts only in 1970. Since 1970, stocks outside the U.S. returned about 9 percent a year and the developed world as a whole about 10, against 11 for the S&P 500. Their worst thirty years, starting in 1989, the year Japan's bubble peaked, came to about 7 percent for the developed world and under 5 percent outside the U.S. So if you diversify globally, plan on a floor somewhat below this book's 8 percent. You're giving up some of America's past returns for less dependence on any one country. Chapter 8 sums up the tradeoff, and the essay *Should You Own More of the World?* makes the full case. Like the others, these are options, not recommendations.

10.4

One catch for higher earners: the income limit

Direct Roth contributions carry an income ceiling. Above a certain modified adjusted gross income the amount you may contribute begins to phase out, and above a higher threshold it disappears entirely. For 2026, the phase-out runs from $153,000 to $168,000 for single filers and from $242,000 to $252,000 for married couples filing jointly.[22] For most savers the income limit doesn't come into play until well into a career, if ever. If you're already past it, the doors in *Beyond the Roth IRA* keep the plan going.

Crossing that line doesn't lock you out of a Roth. A widely used and entirely legal route, commonly called a *backdoor Roth*, lets higher earners contribute to a traditional IRA and then convert it to a Roth, reaching the same destination. The mechanics carry tax subtleties, notably the pro-rata rule; *Beyond the Roth IRA*, in the Toolkit, explains them in plain English, and when your income crosses the limit, it is worth confirming the details with a tax advisor about a backdoor Roth or other options. The principle of this book, get money into a tax-free account and let

it compound, still holds; only the doorway changes. For the full set of doors around that wall (the Roth 401(k), the solo 401(k), and the backdoor Roth), see *Beyond the Roth IRA* in the Toolkit.

Fifteen minutes to start, a few minutes a year

That's the setup, start to finish: open the account, buy the one fund, set up the automatic contribution, and leave it alone. It takes about fifteen minutes to start, and then a few minutes a year: make sure each year's money actually got invested in the fund, not left sitting in cash; raise your contribution when the limit goes up; and if you own two funds, bring the split back to where you want it. No one will do those for you, but none of it takes long.

But if you already owe money on a card, a car, or a student loan, the order of things matters, and that comes next.

WONDERING HOW TO START SAVING WHEN YOU ALREADY HAVE DEBT?

What if you have debt? First, clear the runway

When our son Samuel read an early draft, he asked whether the book ever addresses what someone with debt is supposed to do. It's the question most people under thirty would ask when they reach this point in the plan. The plan says fund the Roth as fully as you can; where does that money come from when you already owe it to someone else, a student loan, a car payment, a balance on the card? The answer is that debt isn't a reason to skip the plan. Dealing with it is the first step of the plan.

A generation ago, most people started their working lives with no debt to speak of. That's no longer the norm. School costs more, and student loans are common. Cars are financed. A phone, a laptop, a pair of shoes can each be split into four payments at checkout. Almost everything is a subscription. None of this makes the plan in this book wrong. It does mean a lot of readers will look at "fund it as fully as you can" and reasonably ask: with what?

So here's how to think about the order of things. It's not advice for your situation, which I don't know. It's the way the math works, and one idea sits underneath all of it: **paying off a debt is a guaranteed return equal to its interest rate.** Pay down a credit card charging 22 percent and you've earned 22 percent, risk-free and tax-free, and no investment in this book can promise that. Compare every debt you carry to the 8 percent floor, and the order mostly decides itself. And keep one other number in view while you read what follows. A maxed Roth is $7,500 a year: $625 a month, about $288 out of every biweekly paycheck, roughly $20 a day. That's the yardstick. Every subscription, every card payment, every "four easy installments" below can be measured against it.

1. **One month of expenses in an emergency savings account, before anything else.** Many planners say three months. Get to one first. Then keep building it, toward three months, while the plan runs. Give it its own account, and name it, so it's not money you see when you look at your balance. Without it, the next flat tire or dental bill goes on the card at 22 percent, and that undoes everything below.

2. **The employer match, always, even while you're in debt.** A dollar matched fifty cents or a dollar is an instant 50 or 100 percent return. No debt on earth costs that much. Contribute up to the match, and not a dollar past it until step 3 is done.

3. **Anything charging more than the floor gets paid off first.** Credit cards, which run 20 percent and up. Buy-now-pay-later plans once a payment is missed. Payday loans. Most private student loans, at 8 to 12 percent. Paying the highest rate first has the most financial impact. Paying the smallest balance first builds momentum, because clearing that first debt proves it can be done. Either order beats neither.

4. **Anything charging less than the floor gets the minimum payment, and the Roth gets the rest.** Federal student loans at 4 to 7 percent. Most car loans. A mortgage. Over thirty years the floor beats them in expectation, and there's a second reason that is specific to the Roth: **the contribution window closes every year.** You can always pay a 5 percent loan off faster in 2030. You can never go back and fund your 2026 Roth. Even fifty dollars a month keeps that door open.

5. **Between about 5 and 8 percent is a judgment call, and splitting is fine.** Half to the debt, half to the Roth. Nobody gets this exactly right, and nobody needs to.

Take Grace, the café owner from Chapter 5, and suppose she starts with $6,000 on a card at 22 percent and a $15,000 car loan at 6 percent. First, a month of expenses, about $4,500, into the emergency account. Then everything spare goes at the card, about $1,000 a month, and it's gone in six months; the car loan gets its minimum, because 6 percent is below the floor. Through all of that she puts $100 a month into the Roth, not because the math says so but because the contribution window closes every year and the habit is worth more than the arithmetic. With the card gone, she builds the cushion out, and because a café's income rises and falls with the economy, she builds it further than a salaried worker would, closer to six months than three. Then the Roth goes to the max. From a standing start with $21,000 of debt, that is about three years. It's not fast, and it's not the only reasonable order. It's a well-reasoned one for her situation, the income risk she carries that an employee doesn't, and the math, and every step of it counts.

Now take Dana, a nurse, whose situation is closer to most people's: a salary, a hospital retirement plan that matches 4 percent, $3,000 on a card, and $40,000 of federal student loans at 5.5 percent. Her order is shorter. The month of expenses first. Then the 4 percent into the plan from her next paycheck, because the match doubles it on the spot and nothing else on this list can. Then the card, gone in three months. The student loans sit in the judgment zone between 5 and 8 percent, so she splits: minimum payments plus a little extra, and the rest into the Roth. Her cushion stops at three months, because a paycheck is steadier than a café. From there the Roth goes to the max while the loans run down on schedule. Start to full speed, about eighteen months. Same order, different distances, and in both cases the account is open and compounding from the first year.

A word on student loans. Having them doesn't stop you from contributing to a Roth; all it takes is earned income. Two things are worth knowing. First, ask whether your employer will match your student loan payments. Since 2024 the law has let employers treat your loan payment as if it were a contribution to your 401(k) or 403(b), and put the match into that plan for you. You pay down the loan

and still collect the match. Not every employer offers it, so ask HR.† Second, if your federal loans are on an income-driven repayment plan, your payment is based on your income, and how you split your 401(k) between Roth and traditional can change it, so run your numbers at studentaid.gov.

† The SECURE 2.0 Act of 2022, Section 110, allows employers to make matching contributions to a 401(k), 403(b), governmental 457(b), or SIMPLE IRA based on an employee's qualified student loan payments, for plan years beginning after December 31, 2023. The IRS explains how it works in Notice 2024-63 (irs.gov). The employer must choose to offer it.

Once the high-rate debt is gone, go back and build the cushion out, three months for most people, more if your income is the kind that swings. Then the routine in this chapter takes over.

Two things worth saying that nobody needed to say a generation ago.

1. **Subscriptions.** Most people in their twenties carry eight to twelve of them: streaming, music, storage, an app or two, a gym, a delivery plan, an AI assistant, each anywhere from five to sixty dollars a month. Some are simply the cost of living now, and that's fine. But no single one is noticeable, and together they're often $150 to $300 a month, a quarter to a half of that yardstick. The money for the Roth frequently already exists in the budget; it's leaving in pieces too small to see. Make one list of every recurring charge. Most people cancel a third of it on the spot.

2. **Buy now, pay later.** A $160 pair of running shoes shows up at checkout as "four payments of $40," and $40 is the number your brain approves. Do that a few times and you're carrying six or eight overlapping payment schedules whose total you've never once seen. The answer here is older than the app, and it's the one I was taught: if you can't pay for it out of your checking account today, or put it on a credit card you'll pay in full this month, you can't afford it yet. Wait, and save up for it. The shoes will still be there.

One last fact, and it's one of the most commonly misunderstood things about the Roth. Most people believe every dollar is locked up until 59½. It's not. **The dollars you contribute can be taken back out at any time, at any age, with no tax and no penalty.** You already paid tax on them, and the IRS doesn't tax them twice. Only the *growth* is locked, until 59½ and five years after your first

contribution.[35] Withdrawals are counted as coming from your contributions first, so a thirty-year-old who has put in $20,000 that has grown to $28,000 could take out up to $20,000 tomorrow with nothing owed. That's why, once the first month of expenses is banked, the Roth can serve as your backup emergency fund, and why you don't have to wait until every dollar of your life is settled to open one. But treat it as breaking the glass, not opening a door. Dollars you take out can never be put back; that year's room is gone for good. The real penalty isn't a tax. It's every year of compounding those dollars would have earned, and taken out young, that is the most expensive money you'll ever spend. A dollar pulled at 30 is roughly $45 that never arrives at 70.

The whole of it

The entire method, one more time:

> Before any of it: **make sure you have one month of expenses in an emergency savings account and no debt charging more than the floor,** and the basic protection from the Whole Plan's first box. If your job offers a 401(k) match, **grab the full match first**, free money.

1. **Open a Roth IRA.**
2. **Put the money into a single low-cost, broad-market index fund**, an S&P 500 ETF, for example, or a global one.
3. **Fund it as early and as fully as you can, every year.**
4. **Then the hard part: leave it alone.** Don't sell, don't tinker, don't watch the headlines, for thirty years or more. Two things make this easier than willpower: don't put the brokerage app on your phone, and write one sentence on paper today, the rule you'll follow in the next crash, and sign it.

If you're past fifty, the list is the same, with four adjustments. The contribution limits are higher after fifty, so use every dollar of that room. Build the cash reserve

you'll spend from (Chapter 12) sooner, in the last few years before you draw. If you hold pre-tax money in a Traditional IRA or 401(k), the low-income years between stopping work and claiming Social Security are the time to convert some of it to a Roth, and a tax professional can size it. And the finish line is yours to move: five more years of work is the single most powerful lever a late starter has. Those years aren't promised to everyone: health, physical work, and employers all get a vote. Save as if they may not come, and count any you get as a bonus.

That's the whole of it. Everything else in this book is simply the math that explains why that plain, dull routine quietly works, **and earns you the freedom to retire on your own terms.** If that's all you ever take from this book, it is enough. You could open the account today and be done. Two chapters remain in the plan: the shape of a whole financial life, and the other half of the job, spending the money well. Everything after that is proof: read it when you want to be convinced, or come back to it the first time the market makes you doubt.

PART VI · START TO FINISH

Start to Finish

The shape of a whole financial life, and the other half of the job: spending it well.

START TO FINISH · CHAPTER ELEVEN

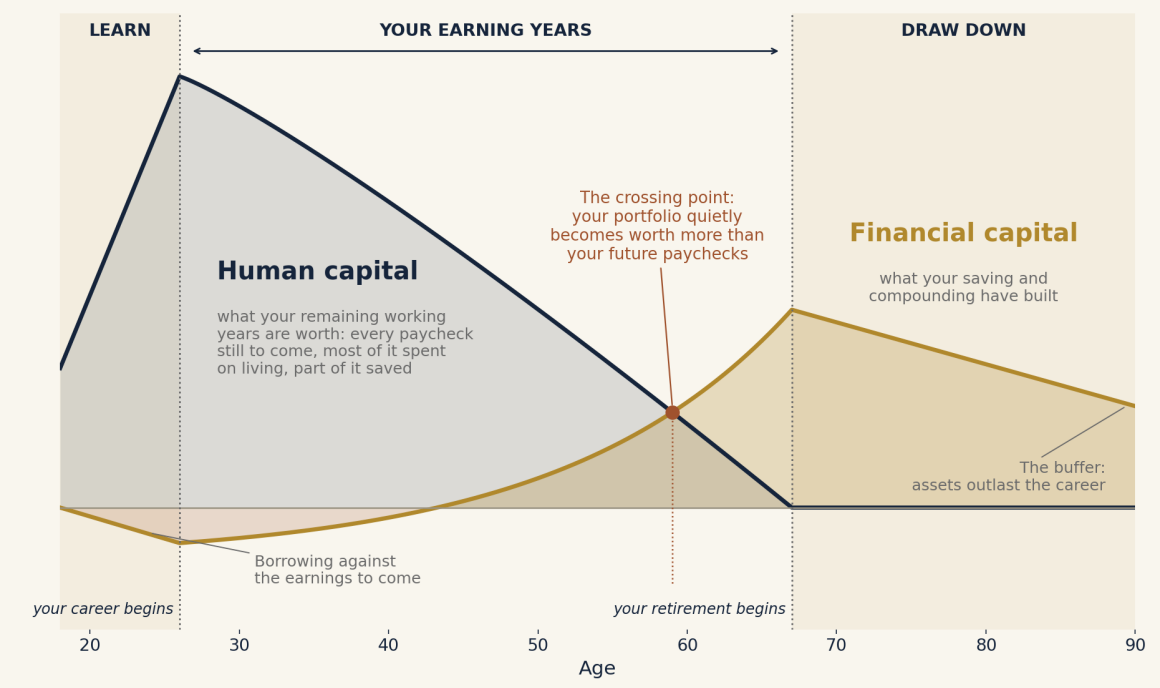
Two Hills: The Shape of a Financial Life

The ten chapters behind you're the plan for building the money. The two ahead are about the shape of the whole thing, and about the other half of the job,

spending it well. Start with a picture. Years ago, as our eldest was heading off to college, I wrote him a list of what I knew about money (it closes Book One, under the title “How to Become Wealthy, and Stay That Way”), and a couple of years later I came across an idea from economics that became that list’s companion: a single picture of a complete financial life. I’ve been drawing that picture, the chart below, for young people ever since, because something reliable happens when you see it. Many of the points on the list stop needing argument. Live below your means, carry no debt, save first, start early: once you see the shape, they become almost self-evident.

Look at the chart below. It’s not about the market. **It’s about you.**

You began your working life owning almost nothing and holding one enormous asset: the years ahead of you. Economists call it human capital, the value today of every paycheck you have not yet earned. No statement reports it. No app tracks it. And particularly early in your working life, for most people it is their single most valuable asset.



A financial life has two hills to climb. The navy hill is your human capital: built up through education and experience, then spent down as you convert it into paychecks. The gold hill is your financial capital: it starts below zero, borrowing against the earnings to come, then rises as the paychecks flow and you save part of each one. Illustrative: the shape is the lesson, not the scale.

The chart above draws two lines. The navy line is your human capital, the value of all the earning years still ahead of you. The gold line is your financial capital, the money your saving and compounding have built. And what those two lines trace together is bigger than a portfolio: it's the complete shape of a financial life cycle, the story of the first line slowly becoming the second.

Start at the left. In the learning years, the gold line is below zero. That's not failure; it's strategy. A student loan is a borrowing against the earnings to come, and a degree, within reason, raises the navy line by more than it costs. Not every year in a classroom does that; the test is whether the learning adds earning power. You're investing in the asset nobody can see. And the curve isn't drawn once: a return to school, a new skill, a change of career can redraw its shape in midlife.

Then the long middle. Every paycheck is your human capital paying out, year by year, like an owner drawing income from a business. Much of it you live on. Converting the rest is your job: human capital in, financial capital out, one contribution at a time. Live below your means and the conversion runs fast. This is all Chapter 10's routine really is, a machine for making the conversion automatic.

Here's the part almost nobody is taught. Your future paychecks aren't just an income; they're an asset with a personality. The finance professor Moshe Milevsky put it memorably: some of us are stocks, and some of us are bonds.[†] A teacher's or professor's earnings arrive steadily for decades, like interest on a bond, and tenure, when it comes, turns the bond into something close to a guarantee. A startup founder's could have huge upside or potentially be worthless, like a concentrated stock position. A surgeon's cost a decade and a mountain of tuition debt to switch on, then flow like an annuity. This is why a 25-year-old on a steady career path can hold an all-stock portfolio without recklessness: she already owns the steadiest bond there is, her own next forty years of work. Her paycheck is the safe asset. Her portfolio can do the growing. If your earnings are the volatile kind, the same logic runs in reverse, and a larger cushion of safe assets isn't timidity but balance. That cushion is really an emergency fund, sized to the swings in your income: three months of expenses for a steady paycheck, six or more when the paychecks vary.

† Moshe A. Milevsky, ***Are You a Stock or a Bond?*** *(FT Press, 2008). The research behind it is Roger G. Ibbotson, Moshe A. Milevsky, Peng Chen and Kevin X. Zhu,* ***Lifetime Financial Advice: Human Capital, Asset Allocation, and Insurance*** *(CFA Institute Research Foundation, 2007), free at cfainstitute.org.*

Then, some day in your fifties, or earlier if you save hard, the lines cross, and you'll probably never know which day it was. Your portfolio quietly becomes worth more than all your future paychecks combined. Nothing announces it, but you've entered new territory. The portfolio is now the main engine: decades of compounding have finally given it the size to do the heavy lifting, and it grows exponentially larger on its own, as long as you protect it. Protecting it mostly means two things: guarding against lifestyle creep, and not doing *a big stupid*, the one dramatic act that undoes a decade of quiet ones: borrowing against it for something shiny, betting the pile on a single idea, panic-selling a crash. Your contributions continue, and they certainly help. But compounding now does more and more of the work.

Where the navy line reaches the bottom of the chart, human capital is mostly spent. That's what retirement is. From there the task is a glide path, drawing the gold line down slowly enough that it outlasts you. These are the spending years, and they're meant to be enjoyed. You built it precisely so you could enjoy it wonderfully in this chapter of your life. But enjoying them takes a roadmap drawn in advance. Without one it is hard to protect the lifestyle, and harder still to be certain the money lasts as long as you do. Many people keep earning for a stretch, bumping the navy line off the bottom; the sums are usually smaller, and the work, at its best, is done because it matters to you, whatever the paycheck. The gold line lands not at zero but on a buffer: the insurance you never had to use, which becomes the gift you leave behind. Chapter 8 told you the rules flip at the boundary where human capital is mostly spent and the drawdown begins; the next chapter shows exactly how. This chart is why they flip.

This frame has a name: life-cycle finance. Franco Modigliani won the 1985 Nobel Prize in economics largely for it, and Robert Merton and Zvi Bodie later extended it to the asset this page is built on, human capital.[33] The theory runs deeper than one page, and we may return to it in the future. For now, and for this book, you need only the picture: a lifetime of earning power on one side, a compounding

portfolio on the other, and a plan, the one in these pages, for converting the first into the second on purpose.

Two hills, one life

One hill you're handed: your earning power, spent down a little every working year. The other you build yourself, one contribution at a time, so that it's tall enough to carry you once the first is gone. Everything before this chapter was about building that second hill. The last chapter is about what you do once you're standing on top of it.

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START TO FINISH · CHAPTER TWELVE

Building It and Spending It Are Different Jobs

> *The second job runs on different rules, and this chapter lays them out.*

Everything so far has been about the accumulation years. Spending the money down is a different problem. Buy, hold, and never sell is what built it; that rule, on its own, doesn't tell you how to live on it. This chapter does.

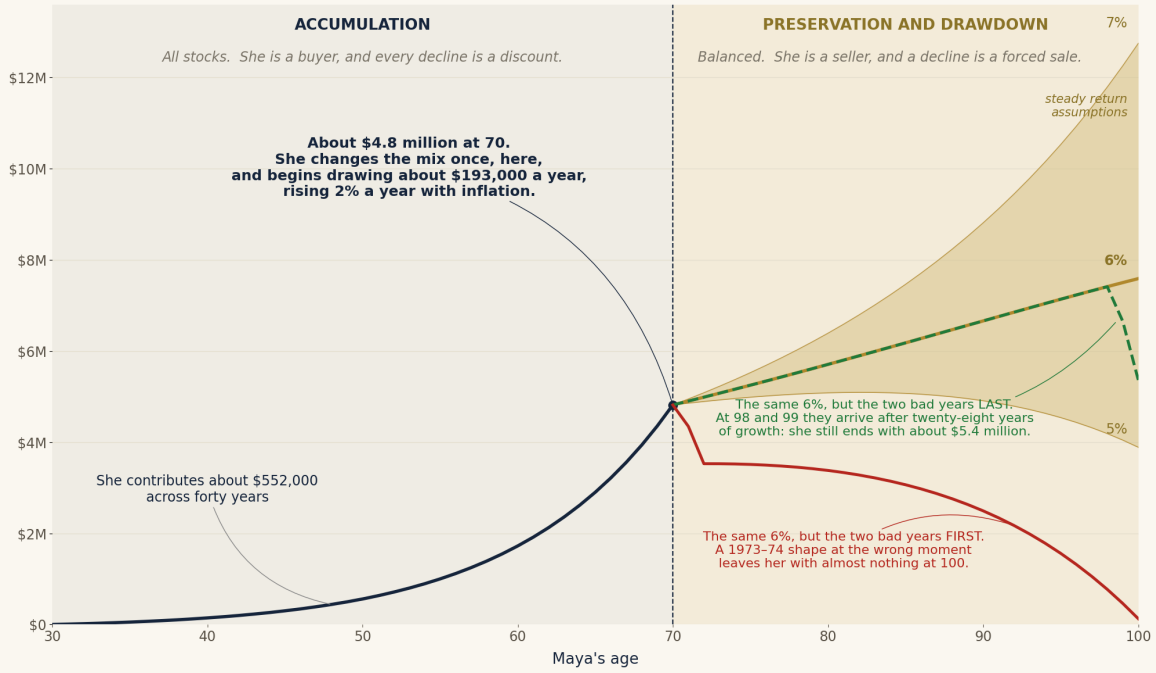
During accumulation you're a buyer, so a falling market is a discount and time repairs everything. In drawdown you're a seller. A decline is a forced sale, and the shares you sell at the bottom never come back to compound. Two retirees can earn the identical average return across thirty years and end in completely different places depending on *when* the bad years arrive. Practitioners call this **sequence-of-returns risk**, and it's the real reason a retiree holds bonds and cash: not because bonds are the better investment, but because they're what you spend from so that you're never forced to sell stocks into a decline.

A crash at the wrong moment shows what that means. A severe downturn right as you begin drawing the money down can strain even a sound retirement plan, because you're selling shares to fund the 4 percent distribution into a falling market. The U.S. "lost decade" of 2000–2009 is the cautionary case. The index returned about negative 0.9 percent a year, a total-return figure: the price fell about 2.7 percent a year, and reinvested dividends added back about 1.8. That

turned $10,000 into roughly $9,000 over a full decade, the only negative decade since the 1930s. A retiree who drew an income through that stretch from U.S. stocks alone would have felt real pain. The defenses are familiar: keep a cash cushion, stay flexible in bad years, and own more than just U.S. large-caps.

This is why a prudent investor adds ballast as retirement nears. A slice of the portfolio shifts into safe, low-volatility assets, short-term bonds or cash, earmarked for the next few years of spending. A downturn is then funded from those reserves rather than by selling stocks at the bottom. It's no accident that Bengen's original 4 percent research assumed a balanced portfolio: roughly half stocks, half bonds, not an all-stock one. **The all-stock strategy this book uses is built for the long accumulation years,** when every dip is a discount; **as you approach the years you'll actually spend the money, tempering that mix is the sensible adjustment.** Accumulating and drawing down are simply not the same job.

The chart below follows one saver across both jobs.



Illustrative only. These are possibilities, not probabilities, and none of them is a forecast. The left half uses this book's own assumptions: contributions of $7,500 rising 2.5 percent a year, a 10 percent return, all stocks. At 70 the portfolio switches to a balanced mix and the withdrawal begins at 4 percent of the age-70 balance, rising 2 percent a year with inflation. The gold band shows steady returns of 5, 6 and 7 percent. The green and red paths both earn 6 percent in twenty-eight of their thirty years and take the same two bad years, a 1973–74 shape for a balanced portfolio: the green path meets them last, at 98 and 99; the red path meets them first, at 70 and 71.

> **Steady returns are not how markets behave.** The smooth curves exist only to make the other two legible.

Read the green and red paths against each other. They earn identical returns: 6 percent in twenty-eight years, and the same two bad years. The only difference is when the bad years come. Meet them at the end, after twenty-eight years of growth, and she still holds about $5.4 million at 100. Meet them at the beginning, while the balance is largest and the withdrawals bite hardest, and she holds about $127,000. Five million dollars, give or take, separates the two, and nothing produced it but the order of the returns.

What the research found

The Trinity Study ran every thirty-year retirement between 1926 and 1995. A portfolio of half stocks and half bonds, drawn at 4 percent in the first year and raised each year with inflation, lasted the full thirty years in **39 of the 41 periods**. Two ran out.[31]

Those two deserve to be taken seriously. They're also the product of two assumptions that no real retiree lives by.

The first is that the retiree never adjusts. The simulation raises the withdrawal by the inflation rate every single year without exception, including the year after the portfolio has fallen thirty percent. Nobody behaves that way. Skipping one inflation raise after a bad year, or trimming spending modestly for a year or two, repairs most of what the fixed-rule simulation records as failure. The 4 percent rule was built as a planning benchmark, not as a set of instructions to be followed off a cliff.

The second is that spending rises with inflation for thirty straight years. It doesn't. Household survey data shows real spending in retirement *falling* by roughly 1 percent a year through most of it, as travel, restaurants and other discretionary spending taper off. A household starting at $100,000 a year reaches a real low near age 84 at about $74,000, a decline of roughly a quarter. Later it turns back up as health costs rise, which is why researchers call the shape the **retirement spending smile**.[32] A retiree who takes the inflation raise only in the years they actually need it is running a materially safer plan than the one the simulation tested.

What to do about it

None of this argues against the plan. It argues that the plan has a second half, and that the second half runs on different rules.

Hold several years of spending in something that is not stocks. Short-term bonds or cash, earmarked for exactly that. In a bad market you spend from the reserve and leave the shares alone. This is the whole defense, and it's why the withdrawal research assumes a balanced portfolio rather than an all-stock one.

Take the inflation raise only when you need it. This is the single cheapest defense available, and it costs nothing in years when your spending was going to fall anyway.

Make the shift inside a tax-free account if you possibly can. Repositioning a large portfolio means selling appreciated assets. In a taxable account that is a tax bill at the worst possible moment. In a Roth it costs nothing.

And notice what isn't on this list: predicting the market. You can't know whether your bad years arrive at 71 or at 91. You can only be built so that it matters less.

The test this book had not run: a bad decade at the finish

The stress tests in the second half of this book put the crash at the *start* of a working life: Tokyo in 1989, New York in 1929, the dot-com peak. That's the easy case. A young saver keeps buying through the wreckage, and the wreckage becomes the engine. The hard case is the mirror image, a bad decade in the last ten years before the money is needed, when the balance is largest and the contributions are too small to matter. That's the test a retiree actually fears, and it deserves the same honest arithmetic.

So run it. Take the floor case from Chapter 3: forty years of contributions at 8 percent, finishing near $2.15 million. Now replace the last ten of those years, ages 60 to 69, with the actual returns of 2000 through 2009, the worst decade in modern American history. The result at 70 is about **$940,000**, well under half. A single 2008 in the final year alone takes it to about $1.26 million. These are the numbers a plan built on all stocks must be able to look at.

Two things follow, and the second is the one that matters. First, no reshuffling of the portfolio undoes it: even a full shift from all stocks to a balanced mix across those ten years, far more than this book asks for, still ends near $1.08 million, because a balanced portfolio also fell in 2008. Second, and this is the real defense, **the finish line isn't fixed.** The saver who met that lost decade at 60 and kept working and contributing to 75, through the five strong years that history actually delivered next, ends at about $1.97 million, 92 percent of the floor case. Chapter 3 introduced the move from 70 to 75 as a way to raise the outcome. Here it is something more: it's the insurance against a bad final decade. **A bad stretch late in the game is answered less by what you own than by how flexible you can be about when you stop.**

The glide path, and when to begin it

The chart above switches from all stocks to a balanced mix on a single day at 70. Real life shouldn't, and it doesn't need to. Planners often describe a glide path that moves a third or half of the portfolio into bonds over a decade. For the plan in this book, that is more than the job requires. What the spending years actually need is the cash bucket described next: two to three years of the spending the portfolio must cover, held in cash and short-term bonds. At a 4 percent draw that is roughly 8 to 12 percent of the portfolio, not half of it.

So the glide path here is modest. Over the last three to five years before you expect to start drawing, move enough each year to have that cash bucket filled on the day you stop. Everything else stays in stocks. The cost is small: **the tables in this book assume all stocks to 70, and building the cash bucket across the final few years lowers the age-70 balance by about 1 percent, which isn't worth a second set of tables.** And if you keep working past 70, as many people who have the choice now do, the cash bucket simply waits, and the finish line moves with you. What the glide path can't do, as the numbers above show, is rescue a bad final decade. Its job is narrower and more important: to make sure that once the spending begins, a decline is never a forced sale.

Two buckets, in practice

The simplest way to run the spending years is to think in two buckets. Take a $2 million portfolio and a 4 percent draw, $80,000 a year. The cash bucket holds two to three years of that, say $240,000, in cash and short-term bonds. The stock bucket is everything else, about $1.76 million, and it stays in stocks exactly as

before. **All spending comes from the cash bucket, always.** In an ordinary year you spend $80,000 from it and sell enough from the stock bucket to fill it back up. In a bad year you spend from the cash bucket and sell nothing; you let it run down from three years to two, to one, while the stock bucket recovers, and you refill it only when stocks are back. Two things stretch the cash bucket further than it looks. The stock bucket keeps paying dividends through a downturn, roughly $20,000 a year on that portfolio at today's yields, and those flow into the cash bucket whether or not you sell a share, so the real drain is closer to $60,000 a year and three years of cash lasts four. And Social Security keeps arriving regardless. Most declines on record have recovered inside that window. For the few that ran longer, 2000 and 2008 among them, the guardrails below did the rest. It replaces prediction with a reserve.

The 4 percent rule, used well

The 4 percent rule is a benchmark, not an instruction, and it helps to know its edges. It came from Bengen's study of American history with a balanced portfolio, and Bengen himself now puts the never-failed figure closer to 4.7 percent. It's also an American result. Run on the histories of other developed countries, a 4 percent withdrawal from a balanced portfolio would have run out of money in most of them at least once.[36] That's one more reason to treat 4 percent as a starting point and to keep the reserve above it. The practical refinement most planners use is a pair of guardrails: if a bad year pushes your withdrawal above about 5 percent of what's left, trim spending by a tenth for a year; if a good run pulls it well below 4, give yourself a raise.[37] A retiree willing to flex spending by a tenth in the bad years has, in every historical period, been able to draw more than the retiree who wouldn't.

If you are fifty and reading this

This book is written first for people in their twenties and thirties, and most of its arithmetic assumes forty years of runway. If you're fifty, or fifty-five, the plan still works. It just runs on a shorter track, and four things change. First, the ceiling rises exactly when you can most afford to use it: contribution limits are higher after fifty, and higher still in a 401(k) from sixty to sixty-three. Use every dollar of that room. Second, the cash bucket described above gets built in the last few years before you draw, and for you those years are closer, so start it sooner. Third, if you hold pre-tax money in a Traditional IRA or 401(k), the years between stopping work and claiming Social Security are often low-income years, and

converting some of it to a Roth then, at a low bracket, is one of the few free lunches in retirement planning; a tax professional can size it. Fourth, and this is the one that matters most: **the finish line is yours to move, and five more years of work is the single most powerful lever a late starter has.** Those years aren't promised to everyone: health, physical work, and employers all get a vote. Save as if they may not come, and count any you get as a bonus. The numbers above show what it does to a bad decade. It does the same for a late start. You can't buy back the years you didn't save. You can add years at the other end, and they count for more than you think.

One more lever: when to claim Social Security

The last decision belongs here because it's the best annuity for sale in America, and most people take it at the worst price. Claiming at 62 instead of your full retirement age cuts the monthly benefit by about 30 percent for life. Waiting from full retirement age to 70 raises it by 8 percent a year, guaranteed, inflation-adjusted, for life. The credits stop at 70, so there's nothing to gain by waiting longer; 70 is the ceiling.[38] The benefit at 70 is roughly three-quarters larger than the benefit at 62. No insurance company will sell you an income stream on those terms. For a married couple the higher earner's delay also raises the survivor's benefit. This is where the two halves of the plan meet: the Roth you built, and the check you let grow to its full size.

The plan is complete

That's the second job: hold a few years of spending in cash, draw at a sustainable rate, adjust when the market tests you, and let Social Security grow until 70 if you can. Building the money took discipline; spending it takes a different kind. Together they're the whole plan, and the plan is complete.

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INTERLUDE · A STORY

Where This Began

This book didn't begin as a book. It began as a conversation I've been having, in one form or another, for more than twenty-five years: first with our eldest,

Zachary, then with his siblings, their friends, with our friends and with their children.

Zachary left his physical body and returned to the light in the summer of 2024. I say it here, once, clearly, so that you know who you're about to meet, and so that nothing in what follows is mistaken for a father's pride. It's something else. A Buddhist priest once called Zach a bodhisattva, and it made sense; I've come to feel I took that vow alongside him, and offering this book is one small part of keeping it. And our conversation continues unbroken.

When Zach was about seven, I gave him a slim old book called *The Richest Man in Babylon*, and one idea in it captivated him: that the income of a person who only earns a wage is capped by the rate of pay and the hours in a day. But a person who sets a little of his paycheck aside and puts it to work investing has money earning for him around the clock, even while he sleeps. That was the seed. Everything since has been an elaboration of it.

So we made it real. His allowance came in three parts: a portion to invest, a portion to gift to help others, and the rest to spend as he liked. Zach spent it well, gathering every scrap of information he could before parting with a single dollar. The banks in those years paid savers almost nothing, so I became the Bank of Dad and paid him the interest myself. We built a spreadsheet to watch it grow, then a second one to show the thing the first couldn't: the gap between simple interest and compound growth, the quiet exponential curve that only reveals itself with time.

When he came into a little money at age thirteen, we talked it through: some to spend now, some to gift, most to invest for later. At the time I hadn't yet embraced the power of broad-market index investing for the bulk of my own money. I still thought of myself as primarily a stock-picker, and believed disciplined, individual stock selection was the surest way to grow wealth in the market over time. So I taught him that craft. After doing his own research, he found his investment, but he ignored my advice to spread it across at least a few names for diversification and instead put the whole of it into that single stock: Guitar Center. And he was right. Or lucky. Probably both. Not long after his investment, the company was taken private in a buyout, at a substantial premium to what he'd paid. He took his winnings but decided that in-depth stock research to find a needle was too much effort compared to the highly attractive returns from investing in the whole

haystack through an S&P 500 index fund; he'd seen what compounding in the broad market had achieved in our research of the past. So, he bought an S&P 500 ETF, let it compound and added to it whenever he could!

I'm sure this was before many of his other friends had a brokerage account. At that age they were all "investing" in Pokémon cards and whatever fad came next, which, in their own way, taught important lessons in value, scarcity, and patience but not the power of compounding explicitly.

Somewhere in there, word got around, and in the eighth grade, before the group scattered to different high schools, Zach's teacher invited me to teach a couple of sessions to him and his classmates on personal finance. Not only about the stock market, but about money the way I wish someone had taught me. How to start and manage a bank account, why you should always pay your bills on time, how to stay out of debt, how insurance works and more. It still astonishes me that we don't require a young person to learn these things before we send them into a life that will demand this understanding of them. But of everything we covered, the thing that lit the room was seeing the charts of how the market has behaved on a broad basis over long stretches of time, making lots of money for investors through the power of compounding returns.

That was when I understood something that still moves me: this is an investment edge hiding in plain sight. You only have to turn your attention toward it to see it. Quietly friendly, almost a law of nature, waiting for anyone who goes looking.

Around that same time, one of his teachers gave the class a wonderful assignment. Imagine you're just starting out in your career, she told them, and you've just won a million dollars in the lottery! How would you spend it? Build the budget.

Zach came to me to talk it through, and we barely talked about spending at all. We talked about the fact that a million dollars at the start of a life isn't a windfall to enjoy; it's a gift that could set you up for good. Which meant the first questions weren't about money. They were about the life. What career? What would it pay? And how steady, or unsteady, would that income be? And how would you build a budget around that?

Then he went off and built it. He mapped out what it would take to be a working musician living on his own in San Francisco. He listed every piece of equipment he'd need and priced all of it twice, new and used. He found transportation that fit the job: a gently used SUV, big enough to haul gear to gigs. He found an apartment he could buy with a mortgage he believed he could afford with his earnings, and a spare bedroom he could rent out to help cover the payment. Tools of the trade, a way to get around, and a steady roof over his head.

And when he had budgeted for everything that life required, there was still a pile of money left over. He didn't spend it on anything extravagant. He gave part of it to causes he cared about and put the rest into the S&P 500, to compound for his future self.

By the time Zach became Zach Moses the musician and was heading to New York, as much to play upright bass in the jazz clubs as to go to university, the conversation had outgrown money. It had become about how to *live* the life: how to build a career you love, how to take the right risks, how to have freedom and choice in your life, and how to make your win a win for everyone. The last of those, making your win a win for everyone, was always his deepest instinct. He identified as a musician, a surfer, an entrepreneur, and a scientist, in no particular order. Whether he was leading a band or a project, spinning a story or dancing on waves, what he brought was gratitude and a gift for community, turning the spotlight onto others, making sure everyone shared in the win.

It was then, as he packed for New York, that the list got written. He asked me to put down the ideas we'd been discussing with his friends, and we distilled them into twelve points: the list this section builds to, "How to Become Wealthy, and Stay That Way." Each one could be a book of its own, and this is that book for the point about putting your money to work in the whole market and letting compounding carry it for decades.

As a Stanford-trained earth-systems scientist and storyteller, he led a team that built the world's first 3D-printed compostable surfboard. The point was never to build a company or launch a product. It was to tell a creation story, "of hope and possibility," as Zach says in the short documentary film about the project, the Dolphin Board of Awesome. The story would inspire the surf industry to build a better product in every way: better for the planet, workers, and surfers all at once, and it rippled out to businesses well beyond surfing. He held the team together

not with NDAs and licensing but with what he called a “Heart Contract”: *we don’t know where this goes, we put all our cards on the table, and if something comes of it, we all share in it.*

And when the musical world went quiet during the pandemic, with Zach and every musician he knew stranded at home and every gig canceled, he answered with creativity as much as with his music. He made a tribute to Gilberto Gil’s “Palco,” played across a dozen instruments and stitched together from family and friends recording in their separate homes. (“Palco” is Portuguese for “stage.”) For months afterward, friends told me how much it had brought them together in creative action and lifted their spirits: “hope and possibility” again.

Years later, a conversation with a bright young man doing work at our home, quietly wondering whether the whole game was rigged, sent me back to those twelve points with new resolve. I decided to stop leaning on experience and general understanding and to test the hardest objections myself, in detail. What really became of investors through Japan’s lost decades? What happened to someone who bought at the very top of the dot-com peak here at home, or in 1929 before the Great Crash, and simply kept going? I went in with an open mind, expecting most of the objections to hold, and it was a turnaround for me: again and again, under the weight of real data, they fell away, not into certainties (nothing here is a law of physics) but into something far sturdier than the received wisdom that surrounds them. Those tests became the essays in the second half of this book.

Who I am, and why now

I’ve held off telling you who I am until the argument could stand on its own. I bought my first stock, IBM, as a boy in the early 1970s, and I’ve been investing ever since, through every bear market from 1973 to today. I spent nearly twenty years on Wall Street, most of them at Goldman Sachs, as an analyst and then running research teams across the globe. None of that makes me right. It means I’ve seen what works over fifty years, and what merely sounds like it should.

I know I’m writing from a comfortable place. I didn’t start there, and the plan in this book doesn’t depend on it. It was built for our children, Zachary, Isabel, Samuel, and Luc; for Francisco, who asked the question; and for anyone at the start of a career with decades of work and investing ahead of them.

The book itself came fast, but then slow. The evening Francisco asked me his question, I went looking for the list I'd written for Zach to share with him, found it, and went to bed. But I woke at three in the morning knowing I had to go deeper, and that I'd use the new AI tools as a research partner, to test my own understanding against everything that could be thrown at it. A week later there were ten chapters; the last two, on the shape of a whole financial life and on spending the money down, came later, once I saw the plan had a second half. Then I sat with the chapters and asked the harder question: what would a skeptic say? The answers required more research, and the research became the essays. When I finished the first draft I sent it to early readers, and many of them told me the same thing in different words: "Get this out now." "I wish someone had handed me this at twenty-five." So I decided two things. I'd get it out fast. And I'd offer it as a gift, so the idea could spread as far as it could go. That meant not pursuing a publisher, which would have cost a year I didn't want to spend and put a price on something I wanted to share freely. It also meant publishing it one piece at a time, so I could hear back from readers along the way. I chose Substack as the platform on which to serialize the book. Years ago, writing as an analyst, I learned that hitting send didn't mark a conclusion. It marked the beginning of a deeper discussion, the point at which my ideas could be challenged rigorously. So, publishing it this way, openly and one piece at a time, is how I invite that discussion. What comes back goes back into the book, so it will keep updating, week by week, until the last piece has run and it settles into its final form.

So what am I really offering? Not certainty. Nobody can offer that, and anyone who says otherwise is selling something. What I can offer is a roadmap: the clearest one I know how to draw, built from a century of history, the data, my own lived experience as an investor for over fifty years, and the hard-won wisdom of people far smarter than I am. A roadmap isn't a guarantee. But an honest one is enough to start, and it gives you the two things worth starting with: hope and possibility. Those were Zach's words in the film, and they're what I want you to have when you close this book. Not a guarantee about the markets, but a clear understanding of how this system works, and good reason to believe it can work for you too.

One last thing. I offer this work as a gift, and I ask only one thing in return: if it helps you, pass it forward to someone who needs it. That's Zach's spirit at work: *make the win a win for everyone*.

The plan is simple. The evidence is deep. And it all began as a conversation that's still going, and that now includes you.

How to Become Wealthy, and Stay That Way

1. **Find work you can love.** Find a career you enjoy and are interested in enough to keep learning and advancing, and go for the win. If you do, you'll love it (most of the time), and you can stick with it long enough to build a "brand" reputation that pays dividends. It starts right here.
2. **Live below your means.** Then you're working for yourself, not the bank, and you're the living definition of wealthy.
3. **Avoid debt**, unless it's truly necessary, not just because it's available and marketed to you. If you already carry some, Chapter 10 shows the order for clearing the runway.
4. **Give every dollar of income a bucket as it comes in:**
    - **First, save for financial freedom.** There's no such thing as retirement; there's the point where you no longer *have* to work for the paycheck. No one else will do this for you. It doesn't have to be much at the start, a little goes a long way if you do it early and regularly, thanks to compounding.
    - **Then living expenses**: live below your means.
    - **Give back where you can**, particularly to those in need: a part of your earnings, your ideas, or your efforts, to make our shared world a better place.
    - **Whatever's left** can go toward big purchases or other investments.
5. **Give yourself the gift of compound interest.** It keeps giving, and the longer you wait to receive it, the more it gives.
6. **Be a capitalist, not just a wage earner.** A capitalist earns not just from her own labor but from the labor of others she backs with capital, either by risking capital as an owner who employs people and shares in the return, or by financing others. If you're not, you can only make more money by working more hours or earning higher wages.
7. **Invest safely, to minimize the risk of losing capital. Your capital.** Know the difference between shallow risk and deep risk, a distinction I owe to William Bernstein. Shallow risk can be violent in the short term, but the losses are only on paper and can turn back into gains if you can withstand the drawdown. Deep risk is a permanent loss of capital, with no path back.

8. **Understand every investment before you go in:** what it is, how it pays off, how it could fail, how it's priced against the alternatives, and what the fees and taxes are, and keep monitoring it against your plan. And the corollary: if you can't explain an investment clearly to someone else, don't make it in the first place.
9. **Keep your plan on paper.** A record, a journal, call it what you like. Write down your purpose, your principles, and your specific goals; set your asset-allocation ranges; note the current opportunities and risks; measure your returns against what you expected; review your mistakes and what they taught you. This is your strategic investment plan. Its whole purpose is to be something you can commit to, and return to, when fear or greed makes you want to do something else.
10. **Read personal finance literature.** Find a few personal finance writers who speak your language and speak to your values; emphasize those with a long-term perspective, and steer away from the near-term noise. And find an investing tribe: people in your life who think about money the way you do or aspire to, to compare notes with and to call on a bad day in the market. Some of mine are writers I've never met, but the best ones are my friends and family. Start now.
11. **Stick with your plan through the cycles of greed and fear.** The hardest and most important discipline isn't selling when it's frightening. The market's best days tend to land right next to its worst, so if you flee the bad ones you miss the good ones too, and missing just a handful of the best days can erase most of a lifetime's gains. Time *in* the market beats timing the market.
12. **Think clearly and independently.** Treat the market's mood as a barometer, not a guide. When the crowd turns fearful and prices look obviously too pessimistic, that can be the moment to put additional capital in, within the ranges your plan allows, and never from your emergency fund. But that's the only direction to lean. Never bet against the euphoria, no matter how wrong it looks: as the old warning widely attributed to the economist John Maynard Keynes goes, *the market can stay irrational longer than you can stay solvent.* Regardless, if you're a disciplined investor in the accumulation phase, regularly contributing new capital to your retirement fund, all of this is somewhat academic. What matters most is staying with the plan despite the fear and greed you'll find around you at various points in your investing journey.

That's the whole of it, from before I knew it would become a book. This book takes one point from it, the gift of compound interest, and works it out in full: put your money to work in the whole market, stuff as much of it as you can into an account the tax man never touches, and let compounding do the rest. It shows the arithmetic in full, along with the arguments on both sides that shape the conclusions. And one gentle warning before we go on: none of this is investment advice. I’m not allowed to give that, and, more to the point, I don't want to. What I hope instead is that this book does for you what point twelve asks: helps you think clearly and independently, do your own research, come to your own conclusions, and act on what’s best for you and your future self.

BOOK TWO

The Evidence

Seven questions a skeptic would ask, each answered in full: the worst possible starting point, America’s edge, the debt, the rest of the world, the investor in the mirror, why not just pick the winners, and where the numbers come from.

BOOK TWO

The Evidence

T**he chapters made the argument. What follows is the evidence behind it**, the harder half of the book, where every number gets its arithmetic and every serious objection gets a chapter of its own rather than a sentence.

Why read the harder half at all? Because the doubts are coming. Maybe not today, but the first frightening headline, the friend who swears it's all rigged, the neighbor with a hot tip, your own nerve on a bad morning: they arrive for everyone. These chapters are where you'll find the answers before you need them, so that when the moment comes, you're ready. The whole plan rests on two disciplines. You keep funding the account and buying the index fund, every year, in good markets and bad; when prices fall, the same dollars buy more shares, so a decline is a discount, not a loss. And you don't sell: not in a crash, not on a tip, not on a bad morning. Everything here is built to help you keep those two disciplines for forty years, because that's what turns the plan into financial freedom. Read the essays to be convinced, or come back to them the first time the market makes you doubt.

Each one stands on its own, so read whichever answers your question; if a chapter sent you here to settle a single doubt, start with that essay. Read in order, they build: the worst starting points on record, then whether America's run can last, then the debt everyone points to, then the case for global diversification, then the investor in the mirror, then why not just pick the winners, and last, where every number in this book comes from.

- **1 · What If You Start at the Worst Possible Moment?** Three tests of the floor: Tokyo in 1989, New York in 1929, and New York in 1999, each followed by the saver who kept going, with the arithmetic shown in full so you can check it yourself.
- **2 · Can America Keep Winning?** The engine underneath these returns, the honest case for and against it lasting, and what to make of concentration risk, the handful of giants at the top of the index.
- **3 · What About America's Ballooning Debt?** The objection everyone raises. The debt has been paid off only once, in 1835, and was back within three years; in practice it gets inflated away instead. That hurts the person holding cash, not the person owning assets, so the debt is a reason to be invested, not a reason to sit out.
- **4 · Should You Own More of the World?** Does global diversification really pay? How much of the world to own, argued both ways.

- **5 · The Biggest Risk Is Probably You.** What investors do to themselves, what the research says about why, and the mechanical defenses that need no nerve in the moment.
- **6 · Why Not Just Pick the Winners?** Why the people who try to beat the market mostly don’t, why the few who do rarely keep doing it, and why the whole market, held for decades, beats most of the professionals at almost no cost.
- **7 · Show Me the Numbers.** Every figure in this book traced to its source: where the 10 percent comes from, why the floor is 8, whether the average flatters itself, and the full range of outcomes.

> Taken together, these essays answer one fair question: *what could go wrong?*
>
> **And the answer remains: Start now.**

THE EVIDENCE · ESSAY ONE

What If You Start at the Worst Possible Moment?

> *Three tests of the floor: Tokyo in 1989, New York in 1929, and New York in 1999. Each follows the one saver the headlines never mention, the one who kept going.*

Every projection in this book assumes you start, and keep going, no matter what the market does next. The fair objection is that starting dates aren’t all alike. Some people begin the year before a crash. Some begin at the top of a bubble that takes a generation to deflate. So this essay runs the plan through the three worst starting points the modern record offers, one abroad and two at home, and follows the same saver through each: the one who bought at the worst possible moment and simply kept contributing.

Tokyo, 1989: the market that stayed down

Japan is the example every skeptic reaches for. A modern, wealthy, rule-of-law economy whose stock market peaked, on a price basis, in 1989 and didn't return to that price for 34 years: if a major market could ever strand a generation of investors, this is where it would have happened. It's the hardest case this book has to answer, so let's answer it, and follow the one investor the headlines never mention: the one who kept doing, through all of it, exactly what this book recommends.

I was there for part of it. I arrived in Tokyo in April 1992, three years into the slide, and the view from my window said more than any chart. Dozens of construction cranes stood on the rooftops, and none of them were moving. In the street below, the taxis crawled past with their lights on, which in Tokyo means empty. Meanwhile, the local economists were still forecasting a strong recovery, as they would for most of the four years I lived there. The cranes and the taxis were right; the forecasts were wrong. I've never since taken an official outlook at face value when the street in front of me so obviously says otherwise.

NOTE

Case study

the 34-year round trip

On the last trading day of 1989, Japan's Nikkei index closed at 38,915. At that moment Japan looked unstoppable: most of the ten most valuable companies on earth were Japanese, and a famous economist had just declared that the 21st century would belong to Japan.

The bubble had many causes. Years of very cheap money inflated stocks and land together, and the two were welded to each other. At the peak, the land under the Imperial Palace in central Tokyo was famously said to be worth as much as all the land in California.[†] Companies borrowed against land, banks lent against it, and every rise in price justified more of both. Japanese companies also held large stakes in one another, so a great deal of stock was never really for sale, and that scarcity pushed prices higher still. The Bank of Japan had begun raising rates in May 1989, and its new governor, who took over that December, was determined to break the fever. He pushed the official rate from 2.5 percent to 6 percent by August

1990, and regulators moved at the same time to choke off lending against property. The whole structure came down at once.

† A widely repeated estimate from the height of the bubble. The palace grounds have never been for sale, so the figure is notional, a measure of how far land prices had run.

What turned a crash into a lost generation wasn't the stock market. Collapsing land values wrecked the banks, and Japan spent the next decade refusing to recognize the losses. Meanwhile the economy slid in and out of recession and prices themselves began to fall, so corporate earnings went nowhere for years. A market priced for enormous growth was left waiting on growth that never arrived.

It didn't surpass that level again until February 2024, more than 34 years later. Three years into the slide, the market had already lost 63 percent of its value. An investor who put a lump sum in at the peak waited a third of a century just to break even, before inflation.

And yet, this is the part that matters for you, the Japanese investor who kept buying through the wreckage didn't get zero. The "34 years of nothing" is the lump-sum, no-contribution story. But a Japanese investor who kept dollar-cost averaging and reinvesting dividends across those decades **could still have earned roughly 5.9 percent a year over an investing lifetime**, and that's the worst-timed cohort of all, the one that began at the very peak. The bubble destroyed the person who bet once at the top. The person who kept showing up came through it with a solid, inflation-beating return.

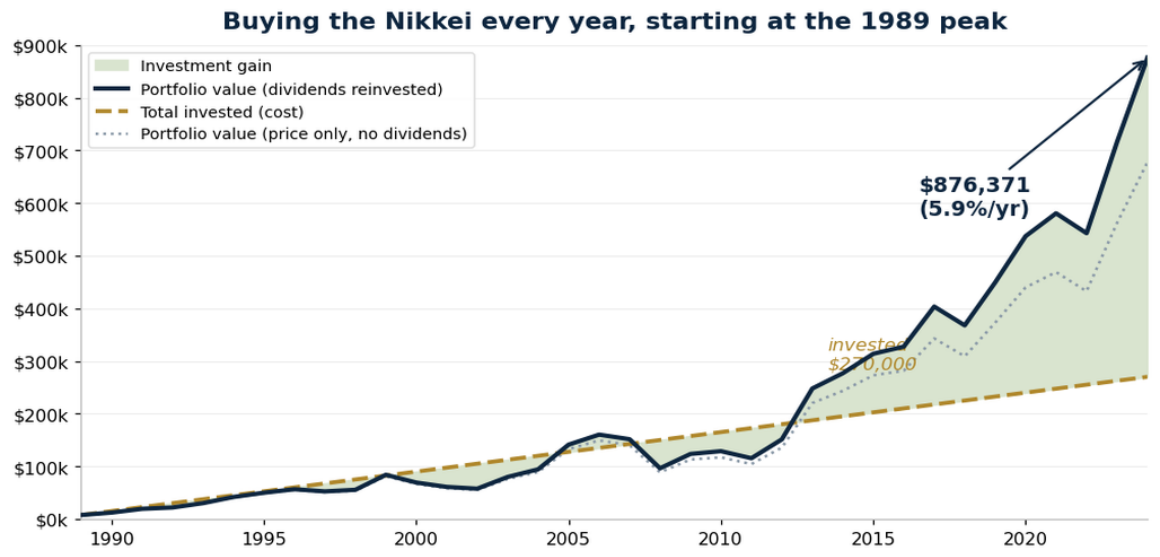
The "lost decades" are a price-only story. Almost every headline about Japan quotes one number: the bare index level, which took until 2024 to regain its 1989 high. That figure ignores two things a real saver actually does: collect and reinvest dividends, and keep adding new money. Strip those out and you get "34 years of nothing"; put them back and the picture changes completely. It's worth separating the layers, because **the difference between them is the entire lesson of this book**. Take the worst possible case, a saver who first invested at the very peak, the last trading day of 1989, and count three ways:

HOW YOU COUNTED IT	WHAT THAT MEANS	RESULT
Price only, bought once and held	The famous figure: the index, no dividends, no new money	≈ 0%/yr
Dividends reinvested, bought once and held	Same single purchase, but dividends reinvested	≈ 1.2%/yr
Dividends reinvested + new money every year	Kept buying $7,500 of the index annually (dollar-cost averaging)	≈ 5.9%/yr

Worst-case start (end of 1989). Row 1: the "lost decades" headline, a single $7,500 bought at the 1989 peak, price only, which essentially flatlines. Row 2: that same single $7,500, but with dividends reinvested, because the price went nowhere, the growth to about $11,550 by 2024 came almost entirely from those reinvested dividends. Row 3: $7,500 invested every year from 1989 to 2024 (dollar-cost averaging), dividends reinvested → about $876,000. See "The calculation, in detail," below. Source: Nikkei 225 year-end levels and historical dividend yields; author's calculations.

Read those three rows slowly, because each one answers a different question. The first is the myth everyone repeats: buy a lump sum at the very top, count only the index's price with no dividends, and you got your money back and essentially nothing more. The second adds back the dividends a real shareholder collects, and even held from the worst moment in history, you cleared a little over one percent a year. Positive, but meager; dividends alone didn't rescue you. The third row is the one almost no one runs, and it's the one that matters: **keep putting in new money every year, and the same disastrous market handed you roughly 6 percent a year.**

That third number deserves to be seen, not just stated:



> What a $7,500-a-year investor in Japan's Nikkei earned from 1989 to 2024, dividends reinvested — about 6% a year.

A $7,500 annual investment (the same maximum yearly contribution this book uses throughout, and a realistic amount a disciplined saver can set aside today) in the Nikkei, 1989–2024, with dividends reinvested at the index's actual historical yields (averaging ~1.1%). In yen terms, excluding currency effects. The dollar amount is illustrative; the ~5.9% return is the same at any contribution level. The dotted "price only" line is that same disciplined saver buying $7,500 every year, but with dividends stripped out, not a one-time purchase; the gap between it and the solid line is what reinvested dividends added. See "The calculation, in detail," below.

NOTE

The arithmetic of showing up

Thirty-six annual contributions of $7,500, from the end of 1989 through the end of 2024: our worst-timed saver put in $270,000 in total. By the end of 2024 that had grown to about $876,000, a money-weighted return of roughly 5.9 percent a year, more than three times the money put in. The new cash, buying cheap shares all through the slump, did the heavy lifting; the dividends added a steady tailwind on top.

And 6 percent, in Japan, wasn't the mediocre number it sounds like to an American ear. Judged against the U.S. risk-free rate of the moment, 4 or 5 percent, it looks like barely-better-than-cash. But that's the wrong yardstick. The right one is what a cautious Japanese saver earned by staying safe, and the answer is: almost nothing. Postal savings accounts paid about 3.5 percent in 1990, under 1.5 percent by 1993, a quarter of a point by 1995, and 0.001 percent by 2016; they hugged zero for two

decades. Even 10-year Japanese government bonds, 7 percent in 1990, sank toward zero, at times turning negative, and averaged under 2 percent over the full 35 years. So the dollar-cost-averaging investor's roughly 6 percent a year wasn't a money-market return at all; it was several times what any safe Japanese asset paid, earned in the very country held up as proof that stocks can fail. And because Japanese consumer prices barely moved over these decades, inflation averaging only about 0.6 percent a year, almost all of that 6 percent was *real*: the disciplined saver's purchasing power still compounded at more than 5 percent a year. Even in the worst of it, showing up beat sitting it out, by a wide margin.[24]

JAPAN, THE "LOST DECADES"	WHAT IT EARNED
Bank / postal savings	≈ 0% a year (about 3.5% in 1990, near zero from 1995)
10-year government bonds	about 1.7% a year on average (about 7% in 1990, sinking toward zero, at times negative)
Stocks: dollar-cost averaged, dividends reinvested	**≈ 6% a year**

What a Japanese saver earned by method, from the 1989 peak through the 2024 recovery. Even in history's most famous bust, steady stock investing paid several times what any "safe" asset did. Source: Nikkei 225 levels and dividend yields; Japanese consumer prices and government-bond and deposit rates; author's calculations.

The reason this is so little known is simple. The "lost decades" narrative fixed on the price-only number, the Nikkei's headline level, and most popular summaries stop there. They rarely follow through to what a disciplined investor who kept buying through the crash, new money in every year with dividends reinvested, would actually have earned. The headline was never wrong; it was just answering a question no real investor faces.

This is the whole argument of this book, run against the single worst crash in a major developed market in modern history, and it still worked.

Japan against the same years in America. Over the same 35 years (end of 1989 to end of 2024), an American who did the same thing (kept buying every year, reinvested dividends, never sold) earned about 10.5 percent a year, roughly 7.7 percent after inflation. The Japanese investor, in the market the whole world had written off, a country living through deflation and the worst equity collapse the developed world has seen since the 1930s, starting at the worst possible moment, earned about 6 percent nominal and 5.3 percent real.

THE SAME 35 YEARS, END-1989 TO END-2024	NOMINAL / YR	INFLATION / YR	REAL / YR
United States: S&P 500	~10.5%	~2.7%	~7.7%
Japan: disciplined investor, worst start	~6%	~0.6%	~5.3%

Both are money-weighted returns for a saver contributing every year with dividends reinvested, the identical basis. U.S. from Shiller/BLS data; Japan from the calculation below. The American did better. A few points a year compounds into a large gap over decades, so this isn't a claim that the two markets tied.

But one thing stands out: **within Japan, stocks were still the best game in town by a wide margin**. That 5.3 percent real towered over the near-zero real returns on Japanese cash and government bonds.

The calculation, in detail

The Nikkei 225 is a price index. It tracks share prices but not the dividends companies pay, so on its own it understates what an investor actually earned. To measure total return, we add dividends back and assume they're reinvested. The simulation works like this. Take the Nikkei's year-end level for each year from 1989 through 2024, invest a fixed contribution ($7,500) at each year-end, buying more "units" of the index when it's low and fewer when it's high, the essence of dollar-cost averaging, and grow the unit count each year by that year's dividend yield. The reported figure is the money-weighted return (IRR): the single annual rate that ties the 36 yearly contributions to the final portfolio value.

For the yield we use a path that follows the Nikkei's published history, not a flat guess: from about 0.5% at the 1989 peak to about 1.6–1.8% recently, averaging about 1.1%. The conclusion doesn't hinge on it: with no dividends the investor earned about 4.7% a year; at a flat average, about 5.7%; on the year-by-year path, about 5.9%. The fair summary is "about 6 percent," still dramatically better than the investor who bought a single lump sum at the peak and held (about 1.2% a year).

Two caveats. All figures are in yen; a U.S. buyer would also have faced yen/dollar swings, which we don't model. And the Nikkei is price-weighted, an imperfect proxy for the whole Japanese market. On the broader, cap-weighted TOPIX, the professional benchmark, the same disciplined investor earned about 5 percent a year rather than 6, still several times what Japanese cash or bonds paid. [47] As always, past results illustrate a principle; they don't predict the future.

The worst start on record, and the saver who did fine

Strip away the caveats and one fact is left standing: the investor who kept buying through thirty-four years of a market the world had written off still earned several times what the safe choices paid. That was the worst start abroad. Next come the worst starts at home: New York in 1929, and again in 1999.

New York, 1929: the worst moment in American history

Japan is the cautionary tale abroad. But the hardest test for an American investor is closer to home, and older: **1929**.

Imagine the worst-timed investor who ever lived. He puts $500 into the American stock market at the start of 1929 (about $9,800 in today's money, a bit more than a modern Roth contribution), months before the crash that begins the Great Depression, at prices that, after a brief rally in the spring of 1930, wouldn't be seen again until 1952. By the end of 1932, his $500 is worth about **$176**. A quarter of the country is out of work. Banks fail. The newspapers say capitalism itself is finished.

He does nothing. He reinvests his dividends and waits.

Thirty years later, in 1958, he has **about $5,000**, ten times what he put in, a compound return of **7.97 percent a year**. That's not a typo, and it's not luck. It's the worst calendar-year starting point in the history of American markets, and it produced the **8 percent floor** this entire book is built on. When these pages say the floor is the worst case, this is the case they mean.

How can that be? Because the frightening chart everyone remembers, the one where the market doesn't reclaim 1929 until the 1950s, is a *price* chart. It leaves out the dividends. On price alone those thirty years returned under 3 percent a year (about 2.8 percent). With dividends reinvested, the same index over the same years returned about 8 percent. The difference between a lost generation and a comfortable retirement was one habit: reinvesting the income.

And the companies did keep paying. Dividends per share were cut from about $0.98 in 1929 to $0.45 in 1934, a **54 percent** reduction, but they never came close to stopping, and by 1949 they were higher than they had been in 1929. Meanwhile prices had fallen further and faster, which means the yield on every new dollar soared: from 4.5 percent in 1929 to **9.7 percent in 1931**.

In fact, across these thirty years the dividend yield on stocks beat the 10-year Treasury yield **at the start of every one of these thirty years**, averaging 5.4 percent against 2.7 percent. Stocks paid nearly twice the income of the safe asset, *and* delivered the recovery on top.

THE SAME THIRTY YEARS, 1929–1958	BOUGHT ONCE AND HELD	$500 INVESTED EVERY YEAR
Stocks (S&P 500), dividends reinvested	**7.97%/yr** ($500 → $4,991)	**12.5%/yr** ($15,000 → $150,151)
10-year Treasury bonds	2.64%/yr ($500 → $1,092)	2.15%/yr ($15,000 → $21,217)
Cash (3-month Treasury bills)	1.14%/yr ($500 → $703)	1.19%/yr ($15,000 → $18,118)
Stocks, price only (no dividends)	*2.8%/yr*	—

Nominal, dividends and interest reinvested. $500 a year in that era is roughly $9,800 a year in today's dollars, a bit more than a modern Roth contribution. Annual return series from Aswath Damodaran (NYU Stern); prices, dividends and yields from Robert Shiller. One historical path, not a forecast.

Which brings us to the investor this book is actually written for: not the one who invests once and walks away, but the one who keeps showing up.

Take a saver who starts that same year, 1929, and puts in **$500 at the beginning of every year**, about $9,800 in today's money, straight through the crash, the Depression, a world war and the recovery. Over thirty years he contributes **$15,000**. By 1958 he has **about $150,000**, ten times what he put in, a money-weighted return of roughly **12.5 percent a year**, *better* than the market's long-run average.

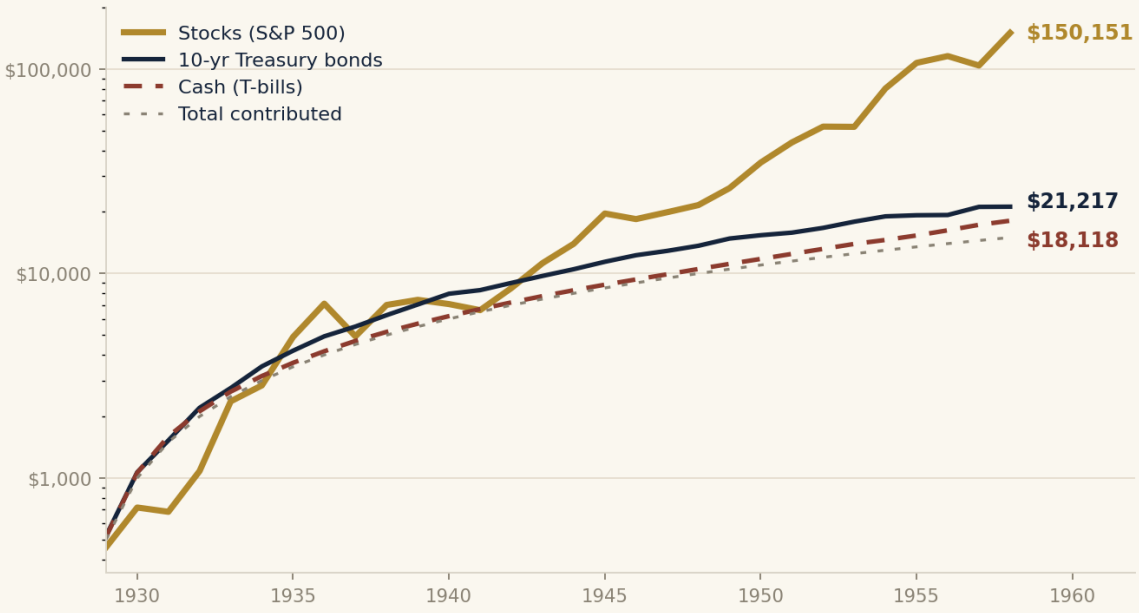
He wasn't clever. He was consistent. A crash, to someone still buying, is a sale. The dollars he invested in 1932 bought shares at a 60 percent discount and a near-10 percent yield, and then rode the entire recovery.

And if he had played it safe? The same $15,000, contributed on the same schedule into 10-year Treasury bonds, would have grown to about **$21,000**. Into cash, about **$18,000**, barely more than he put in. Stocks delivered roughly **seven times** the bond outcome and **eight times** the cash outcome. The safe choice, made at the scariest possible moment and held for thirty years, is the one that would actually have cost him his retirement.

The lesson of 1929 is the same as Japan's: the danger was never the crash. The danger was selling into it, fleeing to safety, or never starting at all.

$500 invested every year from 1929, on the eve of the crash

about $9,600 a year in today's dollars — roughly a modern Roth contribution



Nominal, dividends and interest reinvested. Source: Damodaran (NYU Stern) annual return series.

> The same $15,000, contributed the same way, into three different places. Playing it safe was the expensive decision.

New York, 1999: the most expensive market on record

Two bad beginnings down, and they were bad in different ways. Japan was the market that *stayed* down: thirty-four years before it saw its old high again. 1929 was the market that fell hardest and fastest, the crash that gave the word its

meaning. But there's a third kind of terrible starting point, and it's the one most relevant to anyone investing today, because it's not about a collapse at all. It's about a *price*: buying in when stocks have never been more expensive.

Turn the clock to the end of 1999: it was the most expensive American stocks had ever been by the Shiller CAPE ratio (the standard long-range gauge of value, whose record reaches back to 1871), a mark that still stands. And the decade that followed was the worst in modern American history. From 2000 through 2009 the S&P 500, with dividends reinvested, actually *lost* money, the only negative decade since the 1930s, remembered now as the "lost decade." If there were ever a moment poised to punish an American investor, this was it. Note what makes this test different from 1929: our 1929 investor bought before the fall. This one bought at the top of the most richly valued market in American history and then watched a decade go nowhere. That's precisely the objection thoughtful people raise today, with valuations again near records.

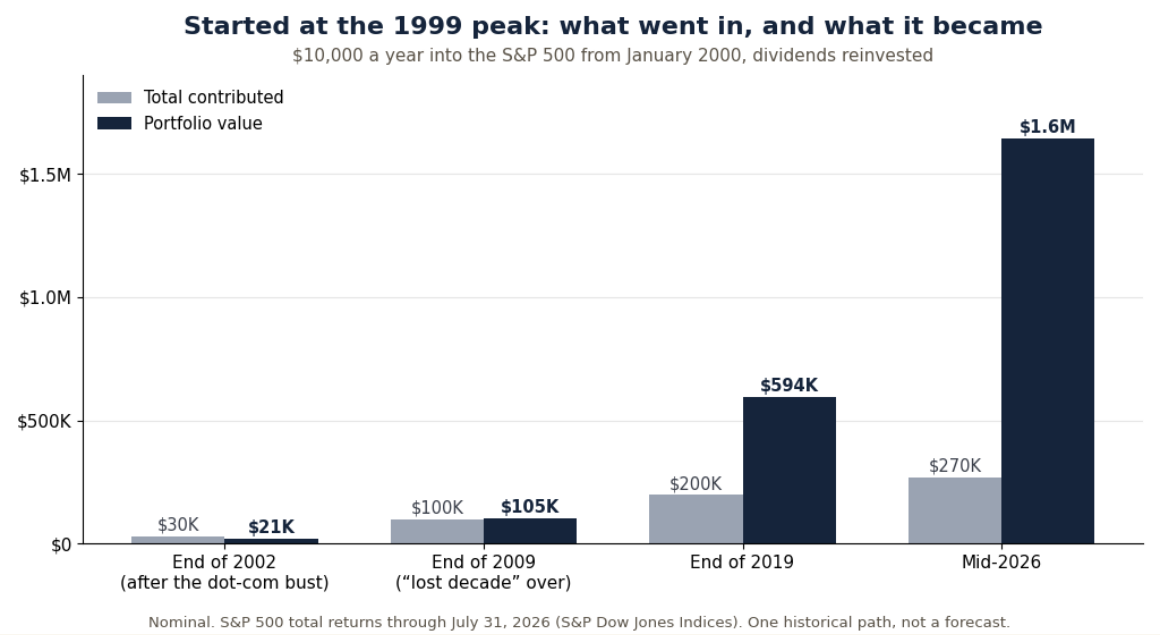
Someone who dropped a single lump sum in at that peak and simply held would still have been underwater ten years later, at the end of 2009, and behind inflation until 2013. And yet, measured all the way to the middle of 2026, twenty-seven years later, even that unlucky lump-sum buyer earned about 8.3 percent a year. Buying at the most expensive moment in the century and a half we have record of, and doing nothing else, still landed almost exactly on the 8 percent floor this book is built upon.

But, as in Japan and in 1929, this book isn't written for the person who invests once and walks away. It's written for the person who keeps showing up. So run the real test. Take a saver who started at that same peak and put in a fixed sum, say $10,000, at the beginning of every year: straight through the dot-com collapse, straight through 2008, straight through the Covid crash, all the way to today. Over 27 years they contributed $270,000, and by mid-2026 they held about $1.64 million, a money-weighted return of about 11.4 percent a year, or 8.6 percent after inflation. Starting at the most expensive moment in American history, the disciplined saver didn't just reach the floor; they beat it handily.

BY	TOTAL CONTRIBUTED	PORTFOLIO VALUE
End of 2002 (after the dot-com bust)	$30,000	$20,893

BY	TOTAL CONTRIBUTED	PORTFOLIO VALUE
End of 2009 (the “lost decade” over)	$100,000	$105,278
End of 2019	$200,000	$594,002
Mid-2026	$270,000	$1,644,257

The same $10,000-a-year saver, having started at the U.S. peak (December 1999). S&P 500 annual total returns with dividends reinvested, January 2000 through July 31, 2026; inflation via CPI-U at about 2.6 percent a year. Source: S&P Dow Jones Indices (S&P 500 annual total returns; 2026 through July 31); U.S. Bureau of Labor Statistics for CPI-U; author’s calculations. One historical path, not a forecast.



> The same table as a picture: underwater after the bust, even after the lost decade, and then the compounding arrives. Rounded; exact figures in the table above.

Why does the outcome flip so completely? For exactly the reason Japan taught us: the contributions made *into* the crash are the engine. Notice the saver was down about 30 percent at the 2002 bottom ($20,900 on $30,000 invested), yet by the end of the lost decade was already ahead, because the dollars invested in 2002 and in 2008–09 bought shares at a discount that then rode the entire recovery. An expensive market followed by a cheap one is the nightmare for someone who already holds a large pile. For someone still building the pile, it is the dream.

One last, honest stress test, since valuations are again near records as this is written. Suppose the market doesn't merely stay expensive but reverts hard: the CAPE falling from today's roughly 40 to 27, its average since 1990, an era of lower interest rates, changed accounting rules and lighter, higher-margin companies that has kept valuations higher than in the century before. That's about a one-third cut to the multiple. Apply that full punishment to the ending values above, and the lump-sum investor's return drops to about 6½ percent, while the disciplined saver's *still clears 9 percent*. Even priced for that reckoning, **the person who kept contributing from the worst starting point on record still lands above the floor this book set out to test**. Only a fall all the way back to the long-run average of about 17 would push the saver below it, to a little over 6 percent, and the lump-sum buyer to a little under 5. We went looking for the worst American moment to begin, and the saver who simply kept going came out fine.

Across three starting points and two countries, the deeper point holds: the cautionary tale, looked at closely, isn't that stocks failed. It's that patient, diversified ownership earned a solid real return even where stocks were supposed to have failed completely.

✦

☆ THE EVIDENCE · ESSAY TWO

Can America Keep Winning?

> *Why the U.S. has outrun the world for a century, and the honest case for and against it lasting.*

All of this raises the real question hiding under the book: why has the U.S. done so much better than everyone else, and is that something permanent or something borrowed? Thoughtful people disagree, so here are both cases.

The case that it continues

America's edge isn't luck; it's structural. Four advantages stand out:

- **The deepest, most liquid capital markets in the world.**
- **Property rights and the rule of law** strong enough that people are willing to fund risky ideas.
- **The dollar,** the world's reserve currency.
- **An innovation engine no rival has reproduced:** top universities feeding a venture-capital system.

A large part of that engine is immigration. The figures here come with a caveat worth stating plainly: how you count a "founder" changes the number a great deal, and advocacy groups on both sides cite the version that suits them. But the range is still striking. The National Foundation for American Policy finds that immigrants founded or co-founded a majority of America's billion-dollar startups; the American Immigration Council finds that immigrants or their children founded close to half of the Fortune 500. And the founder statistics are only the visible peak of a much deeper pattern: today better than one in four Americans is either an immigrant or the child of one.[25] Even the most conservative reading (counting only companies with a founder who was personally an immigrant) leaves the contribution large. If these four advantages hold, American outperformance isn't an accident waiting to reverse.

The case that it reverts

The 20th century was the story of the United States rising to become the world's dominant power, and that's a one-time event, not a repeatable annual return. Markets and economies tend to revert toward the mean over long enough horizons. On this view, today's American premium is the high-water mark of an ascent that has already happened, and the next century narrows the gap.

Bang or whimper?

History offers a useful frame here. Empires sunset; the only question is whether they go out with a bang or a whimper. The markets that ruptured (revolutionary Russia, China in 1949) took their investors to zero with them. But the empires that declined slowly and peacefully tell a gentler story: Britain lost its global

dominance over the 20th century, and the Netherlands lost its long before, yet both stock markets survived and still delivered positive long-run real returns. They simply stopped being number one.

For an investor, “will America stay dominant?” is the wrong question. At some point America will likely lose its dominance, and **the right question is: will that end with a bang or a whimper?** A whimper you can survive by owning the rest of the world too. A bang you can’t, but a true bang, like the 1917s and 1949s of history, has so far been the fate of revolutions and total wars, not gradual decline.

The swing factors to watch

What could push the U.S. from the gentle path toward the harsh one? These are the swing factors worth watching, named without politics:

- **Immigration restriction.** If the founder pipeline that built so much of American enterprise narrows sharply, one of the country’s most distinctive advantages erodes.
- **Loss of central-bank independence.** The 1970s are the cautionary tale: when monetary discipline wavered, inflation ran loose for a decade. A Federal Reserve that loses its independence could repeat it.
- **The fiscal trajectory.** Persistent deficits and a rising debt-service burden raise the long-run temptation to inflate the debt away, which is a quiet tax on every long-term saver.
- **Institutional and rule-of-law stability.** The deepest source of America’s market premium is trust that contracts and property will be honored. That trust is an asset, and assets can be spent down.

None of these is a prediction. They’re the dials that, if turned far enough, would move the U.S. from the Britain or Netherlands story toward something worse. One of them, the debt, is shouted about most and understood least, and it gets an essay of its own, next.

What about concentration risk?

Today's index is less diversified than it looks. A young person who buys "the S&P 500" today is buying something unusually top-heavy, a handful of giant technology companies make up an outsized share of the whole. The textbook picture of a broad, evenly spread index isn't quite what's on the shelf right now.

But concentration isn't new, and the index's track record here is oddly reassuring. **The market has been dangerously top-heavy many times and has worked through it every time, though never without pain.** In the early 1970s it was the "Nifty Fifty," a clutch of must-own growth stocks that then collapsed in the 1973–74 bear market. At the start of the 1980s the index was dominated by energy, riding a commodity supercycle that later broke. In the late 1990s, "irrational exuberance" pushed technology to roughly a third of the entire market just before the dot-com crash. By the mid-2000s, financial stocks had swelled into the largest piece of the index, right before over-leverage and the housing and mortgage bust took them down in the 2008 crisis. Each episode was a real concentration, each unwinding was painful, and each time the index quietly reconstituted itself around the next generation of leaders and went on to new highs. The lesson cuts both ways: today's technology concentration is a real near-term risk, but the index's habit of renewing itself is itself one of the deepest sources of its long-run resilience. You're not buying a fixed list of companies; you're buying a rule that keeps swapping in whoever is winning.

Not a promise, a bet the record has always paid

So can America keep winning? No one can promise it. But the plan in this book never asked it to win by as much as it has. It asks only for the floor, a bet the record has paid in every 30-year stretch since 1928.

THE EVIDENCE · ESSAY THREE

What About America's Ballooning Debt?

> *The most common reason people doubt that the next century will look like the last one, and what a hundred years of the record actually says about it.*

Of all the reasons people give for doubting that the next century will look anything like the last one, the federal debt is the most common. The United States owes

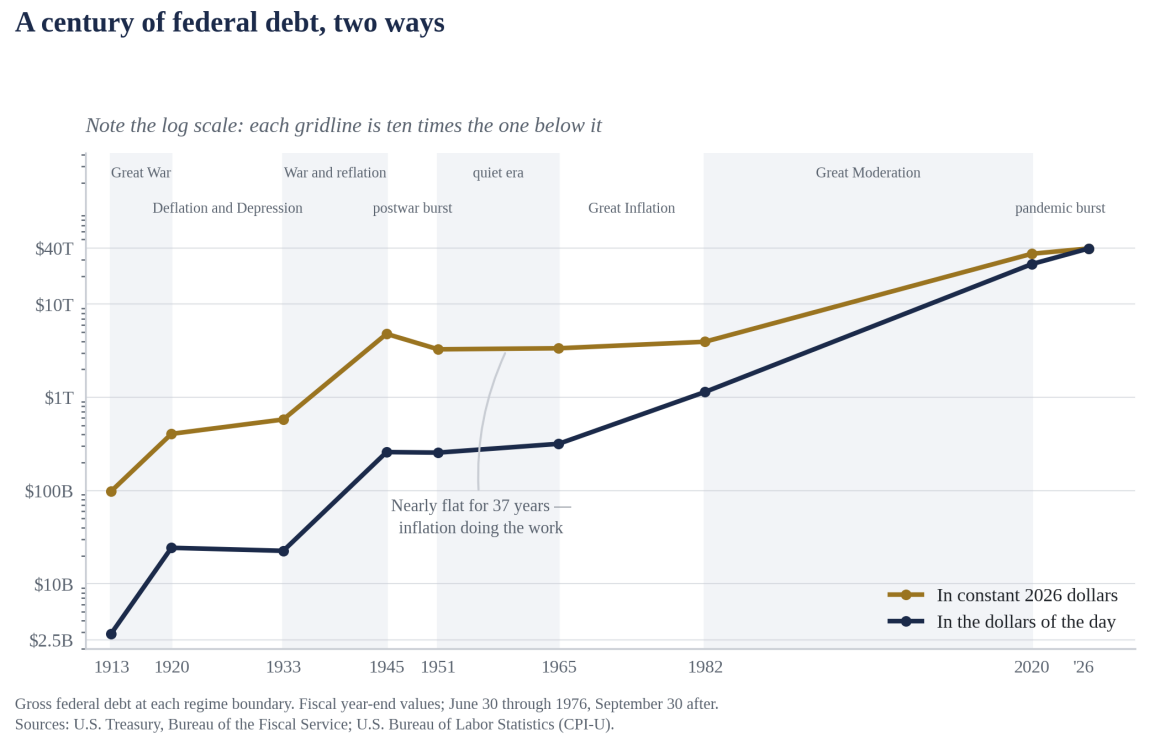
more than $40 trillion[27], more than it produces in a year, and the number has only gone in one direction for a generation. If that ends badly, the reasoning goes, it ends badly for everything downstream of it, including a Roth IRA that assumes American assets keep compounding.

It helps to shrink a number that large down to your own kitchen table. Spread across the country's roughly 134 million households, $40 trillion comes to about $300,000 apiece, about three and a half times what a typical household earns in a year. Count only what's owed to outside lenders, rather than the nearly $8 trillion the government owes itself, and it's still about $240,000 a household, nearly three years of that income. And it climbs by roughly $2 trillion a year — some $15,000 more per household, every year, that no household ever signed for.

The answer isn't that the debt is smaller than it looks, or that it will eventually be paid off. It won't be paid off. It has been only once, in January 1835, under Andrew Jackson; within three years, after the Panic of 1837, the government was borrowing again. In the 113 years since the Federal Reserve was created, the United States has paid down a large share of its debt with surpluses only once: in the 1920s, when eleven straight surpluses cut the World War I debt by about a third. The Depression undid much of it, and it has not happened since. What has happened instead, repeatedly, is that the debt was inflated away. The government kept borrowing in dollars, and the dollars kept getting smaller.

Two demonstrations. Start with the six years after the Second World War. In 1945 the federal debt stood at $259 billion, an enormous sum against the economy of the time, and the sort of number that produced exactly the anxiety the debt produces today. Over the next six years the government paid down essentially none of it. The debt in nominal dollars fell about one percent. But consumer prices rose 44 percent[28], and in real terms the debt shrank by nearly a third. The budget did run surpluses in four of those years, but they only offset the last of the war spending; the debt in dollars barely moved. Inflation did the work.

Now take 1965 to 1982, the stretch economists call the Great Inflation. The debt grew from $317 billion to $1.14 trillion, up 260 percent, a figure alarming enough to make headlines for seventeen straight years. Adjusted for inflation, it grew 18 percent across the entire period. Prices tripled, and the tripling absorbed almost the whole increase.



> A century of federal debt, two ways: in the dollars of the day and in constant 2026 dollars. Between 1945 and 1982 the inflation-adjusted line barely moves.

Gross federal debt at each regime boundary. Sources: U.S. Treasury, Bureau of the Fiscal Service; U.S. Bureau of Labor Statistics (CPI-U).

The exception that proves it. If inflation lightens a debt, deflation should do the opposite. It does, and the record contains one clean demonstration. Between 1920 and 1933, consumer prices fell 35 percent. Over those same years the federal government did exactly what the debt's critics ask for, running surpluses that cut the debt by a third through 1930; even after the Depression's borrowing, it ended 1933 about seven percent below where it began. The real burden of that debt still rose 43 percent. Every dollar the Treasury owed had become a bigger dollar, and paying down principal couldn't keep pace. It's the only stretch in the modern record in which the government tried to pay its debt down and finished worse off than it started.

Inflation regime	Years	Prices	Debt, in the dollars of the day	Debt, after inflation	$1 of cash became
The Great War · 1913–1920	7	+102%	+733%	+313%	$0.49
Deflation & Depression · 1920–1933	13	−35%	−7%	+43%	$1.54
War and reflation · 1933–1945	12	+39%	+1,048%	+729%	$0.72
The postwar burst · 1945–1951	6	+44%	−1%	−32%	$0.69
The quiet era · 1951–1965	14	+21%	+24%	+3%	$0.83
The Great Inflation · 1965–1982	17	+206%	+260%	+18%	$0.33
The Great Moderation · 1982–2020	38	+168%	+2,259%	+780%	$0.37
The pandemic burst · 2020–2026	6.6	+29%	+47%	+14%	$0.77
Whole period · 1913–2026	**113**	**33.7×**	**13,579×**	**403×**	**$0.03**

Individual eras in percent; the whole-period row in multiples (×), the 113-year figures being too large for percentages. “Prices” is CPI-U. “Dollars of the day” means nominal (unadjusted); the last column is what a dollar held in cash at the start of each era could buy at its end.

> Gross federal debt and consumer prices by inflation regime, 1913–2026. The final column is what a dollar held in cash at the start of each regime could buy at the end of it.

Sources: U.S. Treasury, Bureau of the Fiscal Service; U.S. Bureau of Labor Statistics; author’s calculations.

What this changes about the objection. The risk the debt poses to an American investor was never really default. A government that borrows in a currency it issues doesn’t have to default. It has a cheaper option, and since the Second World War the record shows it taking that option whenever the burden became uncomfortable. (The nearest the U.S. came to default was 1933, when Congress cancelled the gold clauses in its bonds and devalued the dollar against gold, the same choice by a blunter route.) So the question isn’t whether the government pays. It’s what the dollars are worth when it does. That’s a different threat than the one people usually have in mind: not that American assets stop existing, or that the companies in your index fund stop earning, but that the yardstick shrinks. Which points the opposite way from the conclusion most people draw. If the debt is going to be resolved through the value of the currency rather than through default, then holding the currency is the exposed position and owning the assets is the protected one. The debt is an argument for being invested, not for sitting it out.

How would today’s debt get managed the same way? The post-war escape is the template, and it’s worth understanding because it’s sobering for a saver. In 1946 federal debt held by the public reached about 106 percent of GDP; by 1974 it had fallen to 23 percent, and the country didn’t default or collapse — it grew and

inflated and disciplined its way down. But growth was the smallest part of that escape. Economists who have taken it apart — Reinhart and Sbrancia, and more recently Acalin and Ball — find the U.S. didn't simply "grow out of" its debt: by Acalin and Ball's count, budget surpluses did about a third of the work and held-down interest rates plus surprise inflation about half. Growth helped, but inflation ran around six percent a year while the Federal Reserve capped bond yields at 2.5 percent into 1951, so bondholders were repaid in dollars worth far less than the ones they had lent. The polite name is financial repression; its effect is blunt. No one needs hyperinflation: a few years of inflation running a little hot, paired with interest rates held a little below it, **slowly transfers wealth from savers to borrowers**, the government chief among them. It requires no vote to cut a program or raise a visible tax, which is exactly why it's the path of least resistance.

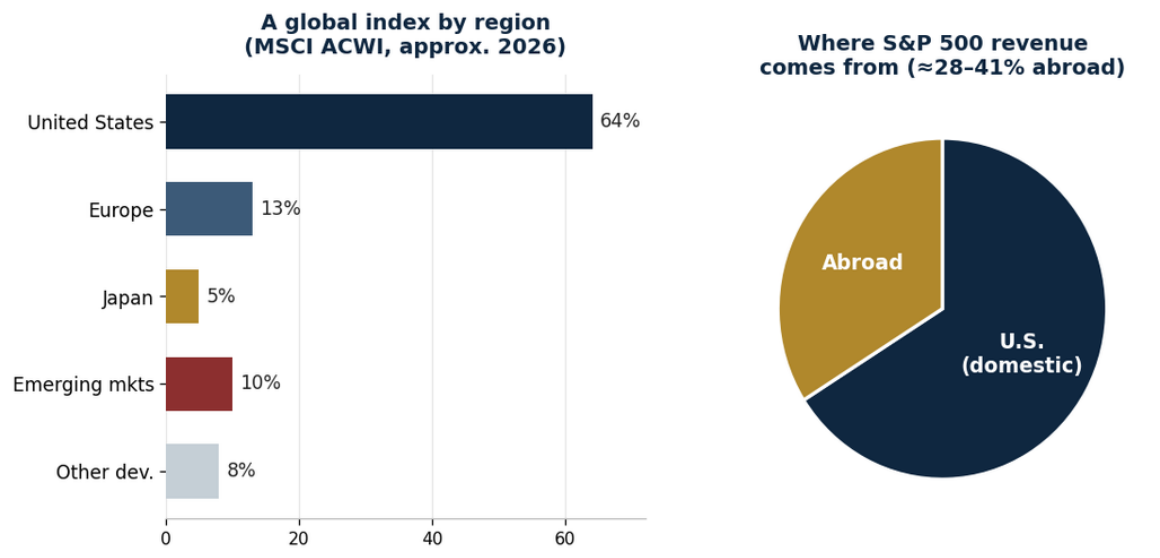
Today is harder than 1946 — the deficits are structural now, not a one-time war bill, and growth is slower — so this is a slow-burning risk, not an imminent cliff. But slow-burning isn't harmless. If managed the way history suggests, it expresses itself as somewhat higher inflation and somewhat lower real returns. That's precisely the argument for planning on the conservative end of the ladder, and for paying attention to the after-inflation figures rather than the headline ones. It's also, quietly, an argument for owning some of the rest of the world, whose governments and currencies don't share the same arithmetic, a case we return to shortly.

Should You Own More of the World?

> *This essay weighs one decision: whether to own more of the world beyond the United States.*

Here's the case in full: the arithmetic, the evidence on both sides, and the reasons thoughtful people land in different places.

Start with a fact that surprises most people. If you buy a single global index fund, **you're not buying some exotic foreign portfolio. You're mostly buying America anyway**. The United States makes up roughly two-thirds of the entire global stock market by value. The rest of the planet (all of Europe, Japan, the emerging giants) splits the remaining third.



> Left: regional weights of a global stock index (MSCI ACWI), 2026. Right: the geographic split of S&P 500 revenue.

Left: approximate regional weights of a global index (MSCI ACWI), 2026. Right: geographic split of S&P 500 revenue; foreign-sales estimates range from about 28% (Goldman Sachs) to about 41% (FactSet/Apollo) depending on method. Source: MSCI ACWI Index factsheet, June 30, 2026 (U.S. weight 63.6%); regional groupings approximate.

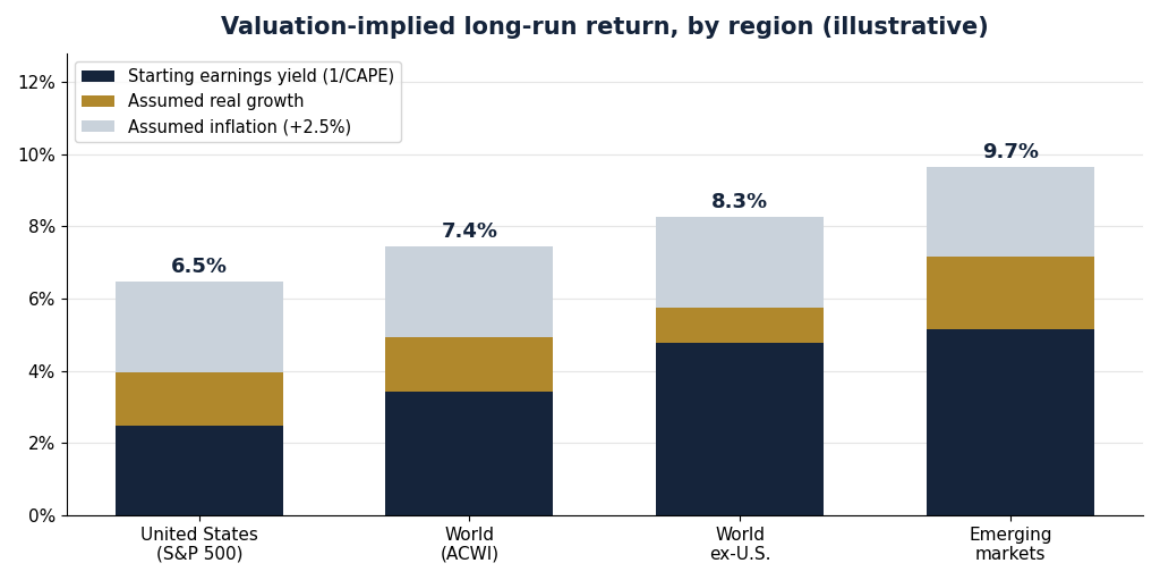
Now the fact that cuts the other way, and the one that matters most for your view. Even if you buy only the S&P 500, no foreign stocks at all, **you're already a global investor through the back door**, because America's biggest companies sell to the whole world. Somewhere between a quarter and two-fifths of S&P 500 revenue is earned abroad (the range reflects real measurement disagreements).

When Apple sells phones in China, when a chipmaker ships to Taiwan, when a drug company sells in Europe, that growth flows into your “domestic” index. This is the strongest argument for a U.S.-centric portfolio: you capture much of the world’s growth while owning its strongest-performing major market, in your own currency, at the lowest cost, and you skip the weaker shareholder protections and thinner liquidity of many foreign markets.

So why would anyone diversify abroad at all? Two reasons, one historical and one mathematical.

The historical one is the central lesson of the *Global Investment Returns Yearbook*, Elroy Dimson, Paul Marsh and Mike Staunton’s record of 35 markets, 23 of them back to 1900: over the last 50 years, investors in the vast majority of countries, the U.S. being the main exception, earned more for the risk they took by spreading their bets worldwide than by betting only on home. Yet most people keep most of their money at home anyway, a habit so common that economists call it the “home-bias puzzle.”

The mathematical one is valuation. Today the U.S. is expensive and most of the rest of the world isn’t, and starting valuation is the single best long-range predictor of returns we have. Run the standard building blocks: today’s earnings yield, plus a reasonable growth assumption, plus inflation, and the forward estimates look like this:



> Illustrative expected returns by region, including 2.5% inflation, from valuation and growth assumptions, mid-2026.

Illustrative valuation-based estimates: each bar is (1 ÷ CAPE) + an assumed real growth rate + 2.5% inflation. CAPE ratios as of mid-2026: U.S. 40.5, world 29.1, world ex-U.S. 21.0, emerging markets 19.4. Source: Siblis Research (regional CAPEs) and Robert Shiller's S&P 500 CAPE series; growth and inflation assumptions are the author's.[46] These are estimates, not forecasts.

Taken at face value, that chart is an argument for global diversification: a dollar invested in cheaper foreign markets carries a higher expected return than a dollar in the richly-priced S&P 500, whose own valuation today implies a forward return well below its long-run average. That's the quantitative case, and it's why thoughtful people own the world.

But hold that chart with real skepticism, and here the case for our S&P 500 preference gets its due. These same valuation models have predicted U.S. underperformance for the better part of fifteen years and been wrong nearly the whole time, by an enormous margin.

In the ten years through 2024, the S&P 500 compounded at roughly 13 percent a year while emerging markets managed about 4 percent. The reason isn't magic: American earnings actually grew. U.S. corporate profits have grown roughly 2.7 times since 2011 while earnings in much of the world stagnated. "Cheap" foreign markets were cheap for a reason, and the reason (slower growth, weaker corporate governance, less dynamism) kept being true. A valuation model assumes the gap closes, but for most of the last fifteen years it instead widened. 2025 broke the pattern, with stocks outside the U.S. up about 33 percent against 18 for the S&P 500, and one year isn't a trend in either direction. Betting on mean reversion is betting that this finally changes.

This isn't a fringe position. **It's essentially the case that the father of index investing and the most famous stock-picker of the modern era have both made for decades.** And each put a number on it. Jack Bogle's rule of thumb was to cap international holdings at roughly a fifth of one's stocks, on the view that the S&P's multinationals already supply Americans with plenty of foreign exposure. Warren Buffett leaned even more toward home: the instructions he left for his own wife's inheritance are 90 percent in a low-cost S&P 500 index fund and 10 percent in short-term government bonds, in the belief that it will beat what most professional investors achieve.[26]

Where does that leave the actual decision? It's a judgment call, and reasonable people land on a U.S.-centric portfolio, for sound reasons. The S&P 500 already

delivers substantial global revenue exposure, America's structural advantages are real and have repeatedly defied the doubters. The full structural case is *Can America Keep Winning?*, and simplicity and low cost have value of their own. The opposite choice, a total-world fund, is the more cautious one. It costs the same pennies in fees, asks nothing more of you than the same automatic habit, and quietly insures against every U.S.-specific risk in this essay. **So there's no wrong answer, only a tradeoff to make with open eyes**: a U.S. tilt bets that the most remarkable run in financial history keeps going; a global fund bets that no single country, however exceptional, stays on top forever. You now have the full case for both sides. The choice, made knowingly, is yours.

A note on funds. Chapter 10 keeps a single U.S. fund as this book's default and mentions two all-in-one global funds for readers who want more of the world. If, having weighed the case above, you want to go further, there are two clean ways to do it:

TICKER	FUND	ANNUAL FEE
VT	Vanguard Total World Stock ETF	0.06%
VXUS	Vanguard Total International Stock ETF	0.05%
IXUS	iShares Core MSCI Total International ETF	0.07%

VT is the all-in-one route: one fund that owns the U.S. and every other market together, in global proportions. It can *replace* your U.S. fund entirely and stand as your whole stock holding. VXUS and IXUS are the other route: they hold everything *outside* the U.S., meant to sit *on top of* an S&P 500 or U.S. total-market fund. You keep your U.S. fund, which already carries some international exposure through its multinationals, and add one of these total-international funds for even more of the rest of the world. What percentage you put abroad is your call; there's no right number, and this book isn't giving one. Keep the fee near zero and automate it the same way. These are options, not recommendations.

One thing to know before you do. This book's numbers, including its 8 percent floor, come from the U.S. record. The indexes these funds follow have short histories, so the longest consistent record is MSCI's index of developed markets,

which starts in 1970. Over that span, developed markets outside the U.S. returned about 9 percent a year against 11 for the S&P 500, with a worst thirty years of under 5 percent, and that's before the foreign taxes withheld on dividends, which a Roth can't recover. More of the world means less dependence on any one country, and very likely a somewhat lower floor.

Pick one and hold on

This is the one real allocation decision left to you, and either answer is defensible: the whole U.S. market, which already earns much of its money abroad, or the whole world, which bets on no single country. Pick one, write it in your plan, and don't change it because one side had a good year. The decision that matters is owning broadly and holding on, and both roads do that.

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THE EVIDENCE · ESSAY FIVE

The Biggest Risk Is Probably You

> *Even a generous market can be squandered; the biggest threat to your return is you, and it's the one you control.*

Set aside whether America keeps winning, and whether the next thirty years match the last hundred. A different risk lives entirely on your side of the ledger, and unlike the grand historical questions, it is within your control.

The biggest threat to an attractive return in your portfolio is you. Not the economy. Your own nerve. The market does its damage to investors mostly by frightening them out at the bottom. The numbers here are stark. Consider a $10,000 investment over a recent 20-year stretch:

WHAT THE INVESTOR DID	ENDING VALUE	WHAT IT MEANS
Stayed fully invested	≈ $80,600	Captured the full return

WHAT THE INVESTOR DID	ENDING VALUE	WHAT IT MEANS
Missed the 10 best days	≈ $35,900	Roughly half, gone
Missed the 30 best days	near cash	A savings account would have done as well
Missed the 40 best days	a loss	Worse than doing nothing

Illustrative, based on J.P. Morgan's Guide to Retirement analysis of S&P 500 daily returns over the 20 years ended December 31, 2025. Figures rounded.

Now the trap that makes this so dangerous: the best days and the worst days are practically neighbors. About six of the ten best days fell within roughly two weeks of one of the ten worst days. And the large majority of the market's best single days happen during bear markets or in the first couple of months of a recovery, exactly when a frightened investor has just sold. **You only collect the best days by being willing to sit through the worst ones wrapped around them.** There's no clean way to dodge the bad days and keep the good; they arrive together.

This is why a decline matters more for what it does to *you* than for what it does to the market. A fall isn't the plan breaking; it's the plan doing exactly what a plan built on stocks does. It helps, then, to know the shape of these declines in advance: how often they come, how far they fall, and how quickly they pass. A thing you were expecting is far easier to hold through than a thing that feels like the end of the world.

What a normal decline looks like

	Correction (a fall of 10% or more)	Bear market (a fall of 20% or more)
How often	About every 2 years	About every 6 years
How deep, on average	About −14%	About −35%
Range of the fall	−10% to −19%	−20% to −57%
Time to the bottom	1 to 3 months	About 13 months (as fast as 1, as slow as 30)
Back to the prior high	About 4 months	2 to 3 years, on average
How it usually ends	3 of 4 never become a bear	Always a new high

U.S. stock market (S&P 500), modern era. Figures are approximate, on a closing basis; sources and definitions vary.
Twice in the last century — the 1970s and the 2000s — a bear market's full round trip took closer to a decade.

> What a normal U.S. stock market decline looks like: how often corrections and bear markets come, how deep they fall, and how long they last.

Sources: Capital Group, "Correction or bear? 6 charts that explain market declines" (S&P 500 since 1949); Yardeni Research, S&P 500 Bull & Bear Markets & Corrections tables; Schwab Center for Financial Research. Figures are approximate; sources and definitions vary.

In every one of them, what the plan asks of you is simple, and it depends only on where you are. If you're still building, **keep buying**: a decline just puts the same shares "on sale." If you're near or in retirement, **don't sell**: spend from the cushion of cash and short-term bonds you built for exactly this, the cash bucket described in Chapter 12, and leave the shares alone. The one move to avoid, at any age, is panicking out at the bottom.

None of this is comfortable while it's happening. It's not meant to be. But it's normal, it is temporary, and every time so far, it has eventually been followed by a new high. *This too shall pass.* Take a deep breath, go for a walk, look away from the screen. If you have to do something, review your investment plan, and follow it to the letter. **And when the screen is red, come back to this page of *Start Now*.**

Which is why the oldest line in investing is also the truest: "it is not about timing the market, it is about time in the market." The single most valuable habit this book can give you is **the discipline to keep buying, and never to sell, when the headlines are at their most frightening.**

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What the research found

The research on what investors do to themselves is unusually consistent. Morningstar measures it every year. Over the decade to 2024, the mutual funds and ETFs Americans owned returned 8.2 percent a year, but the people who owned them earned only 7.0 percent. The gap has one cause: timing. Investors put money in after prices had risen and pulled it out after prices had fallen, and that cost them 1.2 points a year, every year, for ten years. That may not sound like much, but it's nearly 15 percent of everything their funds earned, given away

to bad timing.[42] Barber and Odean found the same thing from the other direction. Studying 66,000 households at a discount broker in the 1990s, they found that the most active traders earned 11.4 percent a year in a market that returned 17.9 percent; the more people traded, the worse they did. Their paper is titled “Trading Is Hazardous to Your Wealth.”[43]

So why do people move their money at exactly the wrong moments? Not stupidity. Two pieces of ordinary human wiring, working together. The first is loss aversion. Kahneman and Tversky showed that a loss hurts about twice as much as an equal gain pleases; a 20 percent fall feels far worse than a 20 percent rise feels good.[44] Pain that strong demands relief, and selling is the one act that makes it stop. The second is how often we look. Benartzi and Thaler showed that stocks are down on nearly half of all days and in about one year in four, so the more often you check your account, the more losses you see, and every one of them fires the first mechanism. Investors, they found, behave as if a forty-year investment had to show a profit every twelve months.[45] Put the two together and the gap in the data explains itself: frequent looking produces frequent pain, pain produces selling, and selling at the bottom turns a temporary loss into a permanent one. The market does its damage not through what it does to your money, which recovers if you leave it alone, but through what it does to your nerves.

What to do about it

The defenses are mechanical, and none of them requires nerve in the moment. **Automate the buying, both halves of it:** the transfer into the account each payday, and the purchase of the fund inside the account, so that neither depends on how you feel that month. **Have a plan, in writing.** Point nine of the list that closes Book One, “Keep your plan on paper,” asks for exactly this, and it’s easier than it sounds: a page that says what you own, why you own it, and what you’ll do when the market falls and you’re under pressure. Build it yourself, from a template on the internet, with an AI assistant, or with a planner if you want one. Review it once a year, and after any large move in the market, up or down, with your bias set firmly toward staying the course. If your asset mix, the split between stocks and everything else, has drifted far from what the plan says, restore it by directing new contributions to whatever has fallen behind, rather than by selling what has grown; inside a Roth, where selling costs nothing in tax, you have more room to act. **Decide now, on a calm day, that you won’t sell on a frightening**

one, and write that sentence down too. **Never make a trading decision while the market is open.** If it still looks right the next morning, before the opening bell, then act. **Designate an investing buddy:** a family member or a friend with investing experience who knows your plan and will remind you of it when your judgment comes under stress. And keep four words within reach for the hardest moments, because they've been true every time so far.

> **This Too Shall Pass.**

That's the whole of the biggest risk. It's not the economy, not the valuation, not the debt. It's the hand on the sell button, and it is yours.

THE EVIDENCE · ESSAY SIX

Why Not Just Pick the Winners?

> *The case for owning the whole market, and against trying to beat it.*

This book tells you to buy one fund that owns the whole American market, and then it moves on, as if that settled the matter. But it doesn't settle it for everyone. Somewhere a reader is thinking: I'm smart, I pay attention, surely I can do better than average, or at least find someone who can. I thought so too, for a long time. I spent twenty years on Wall Street, most of them in research, working alongside and leading some of the best-informed, most intelligent, and hardest-working analysts in the world. And after leaving Wall Street, I practiced active management on my own, and at times outperformed the market, but not all the time. And the effort it took was enormous. This essay is what that time, and the record, taught me about the question. The short version: the people who try to beat the market mostly don't, the few who do rarely keep doing it, and you can't tell in advance which few they'll be. Owning the market isn't settling for average, as many think. It's choosing the result that beats most of the professionals, at almost no cost, with no decisions to get wrong.

Why it got so hard

Fifty years ago, a careful amateur with a library card and a calculator could know something about a company that the market didn't. That world is gone. Today every company of any size is followed by analysts, hedge funds, quantitative models, and machines that read the filing before a human has opened it. Tens of thousands of professionals, with more money, more computing power, and more information than any individual, compete to find mispriced stocks, and in doing so they remove the mispricing. The price you see is the sum of everything they know. Betting against it is not betting against the crowd; it's betting against the most informed people and systems on earth, who are on the other side of your trade because they think you're wrong.

That's why the odds are what they are. S&P Dow Jones Indices has kept score for more than two decades in a report called SPIVA, which compares actively managed funds against the index they're paid to beat. In 2025, 79 percent of large-cap U.S. stock funds underperformed the S&P 500. Over fifteen years there is no category of fund, domestic or international, stocks or bonds, in which a majority of active managers beat their benchmark. Over twenty years, about 93 percent of large-cap funds fell short, and 95 percent of all U.S. stock funds.[49] These are the professionals, with every advantage, and nine in ten of them lose to a fund that costs almost nothing and makes no decisions at all.

But I'll pick the good managers

The natural reply is that averages hide the winners, and the trick is to find the managers who do beat the market. The record answers that too. S&P also tracks persistence. Take the funds that finished in the top quarter of their category in 2021, and ask how many stayed in the top quarter every year for the next four. If skill were real and durable, a good share of them should. In every U.S. stock-fund category but one, the answer at the end of 2025 was none at all. The exception was small-company funds, where it was 2 percent: 3 funds out of 124.[50] Past performance isn't merely "no guarantee" of future results, as the fine print says. It's close to no information at all.

What looks like skill is probably style. Every fund tilts somewhere: large companies or small, growth or value, technology or energy, this sector or that. When a tilt is in favor, the fund shines, and for a few years its manager is on the cover of the magazines. When the tilt turns, it trails, and the money that chased it

leaves at the bottom. The same is true of the index funds that slice the market into pieces: a small-cap fund, a technology fund, a dividend fund. Each of them is a bet that one piece will beat the whole, and each will have its decade in the sun and its decade in the cold. The whole market has no style to go out of fashion. That's the point of owning it.

The arithmetic nobody can argue with

There's a simpler way to see all this, laid out by the Nobel laureate William Sharpe in a short paper in 1991 that every investor should read once.[51] Before costs, the average dollar invested actively must earn exactly what the average dollar invested in the index earns, because together they're the market. There's no other place for the returns to come from. After costs, the active dollar must earn less, by the amount of the costs. It's not a theory about markets being efficient; it's arithmetic. Active management as a whole is a losing game by construction, and the only question is who among the players loses the most.

The costs are larger than they look. An actively managed fund has to pay the analysts, the managers, the traders, the marketing; the typical fee is still more than half a percent a year, against a few hundredths of a percent for a broad index fund. Then comes trading: an active fund turns over much of its portfolio every year, and each trade has a spread and an impact. Then taxes: all that trading realizes gains, and in a taxable account the investor pays tax on them every year, while the index investor's gains compound untouched until the day they're sold. Half a percent a year doesn't sound like much. Over forty years it takes about a sixth of a lump sum, and about an eighth of a lifetime of yearly contributions; a full 1 percent takes nearly a third of the lump sum and nearly a quarter of the contributions. Inside a Roth the tax part disappears, which is one more reason this book pairs the two; the fees and the odds remain.

The haystack, not the needle

The deepest reason to own everything is one I didn't understand until Hendrik Bessembinder published it in 2018, and in 2026 he extended it to a full century. He looked at every stock listed at any point in the United States from 1926 through 2025, 29,754 of them, most long since merged, bankrupt, or delisted, and asked how the market's wealth was created. The answer: the market as a whole added $91 trillion to shareholders' wealth beyond what Treasury bills would have paid, and 46 companies produced half of it. More than half of all stocks lost

money for their long-term holders, nearly six in ten did worse than Treasury bills, and the median stock's lifetime return was minus 6.9 percent. The market's long-run return isn't a broad, democratic average that most stocks share in; it's a handful of extraordinary winners carrying everyone else, and the handful is getting smaller: through 2016 it took 89 companies to make half the wealth, and nine more years cut that to 46.[52]

That has a consequence for the stock-picker. If you hold twenty stocks instead of the whole market, the question isn't whether you're smart; it's whether your twenty happen to include the one or two of the next generation's giants, and the odds say they probably don't. Miss them and you lag the market for decades no matter how sound your reasoning was. The only portfolio certain to hold the next NVIDIA, the next Apple, is the one that holds everything. You don't have to find the needle. You just have to own the haystack it's hiding in.

What this means for you

It means that "average" is the wrong word for what the index fund delivers. Over twenty years, the plain index fund has finished ahead of about nine in ten professionally managed funds; if it were a fund manager, it would be in the top decile, period after period, without a single hire. And it does so without a single decision that can go wrong: nothing to pick, nothing to sell, no manager to fire, no style to wait out. It also means the one serious mistake available to an index investor is to turn it back into a bet, by buying the pieces instead of the whole, or by trading in and out of it when the headlines turn. You'll hear a softer version of the pitch, index funds at the core with a concentrated fund alongside for an edge; the record says the edge usually runs the other way, and the core would have done better alone. The whole market, held for decades, isn't the beginner's version of investing that you graduate from when you know more. It's where I ended up, after years on Wall Street and years more trying to beat the market on my own.

THE EVIDENCE · ESSAY SEVEN

Show Me the Numbers

> *Where every figure in this book comes from, and why the worst case, not the average, carries the argument.*

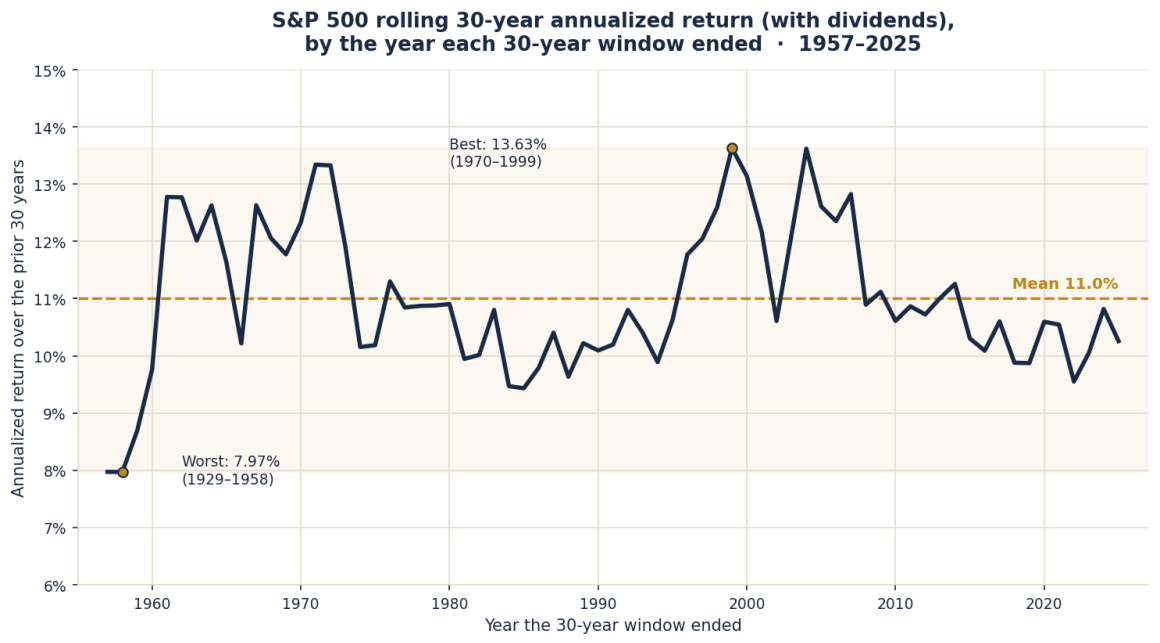
Part one · Where the 10% Comes From

The numbers in this book are anchored on the 8% floor, the worst 30-year stretch on record, and shown against a long-run average of 10% a year. That 10% isn't a guess or a forecast: it's the S&P 500's compound return over the full period since 1928, the return a single investor who simply held throughout would have earned. It sits a notch below the 11.0% average of the individual rolling 30-year windows, and this book uses the lower figure on purpose, to keep even the "average" case conservative. Because so much depends on it, this essay shows exactly where both numbers come from, how much history has varied, and why.

The source is the long-running dataset maintained by Professor Aswath Damodaran of New York University's Stern School of Business, which records the total annual return of the S&P 500, price gains plus reinvested dividends, for every year from 1928 through 2025. From it we can compute the annualized (compound) return an investor would have earned over each rolling 30-year window: 1928–1957, then 1929–1958, and so on through 1996–2025, sixty-nine overlapping windows in all.

The striking result is how stable the figure is. Across all sixty-nine windows, the annualized 30-year return has always fallen between about 8% and 13.6%, and about 60 percent fall between 9.5 and 11.5 percent. The mean of all windows is 11.0% and the median is 10.8%. Compound the whole 1928–2025 span as one continuous run, though, and the figure is about 10%, lower than the average of the windows, because overlapping windows count the strong middle decades many times over. That full-period 10% is the average this book's case studies use, while every conclusion still rests on the 8% floor. (The tables round the floor to 8.0 percent; the worst window itself was 7.97 percent, which would lower the age-70 balance by less than 1 percent, to about $2.14 million.) No 30-year investor in the historical record earned less than roughly 8% a year, or more than about 13.6%. One footnote to the floor: measured monthly rather than by

calendar year, the worst window dips to about 7.6%. The book uses the annual series it is built on, and the margin is small.



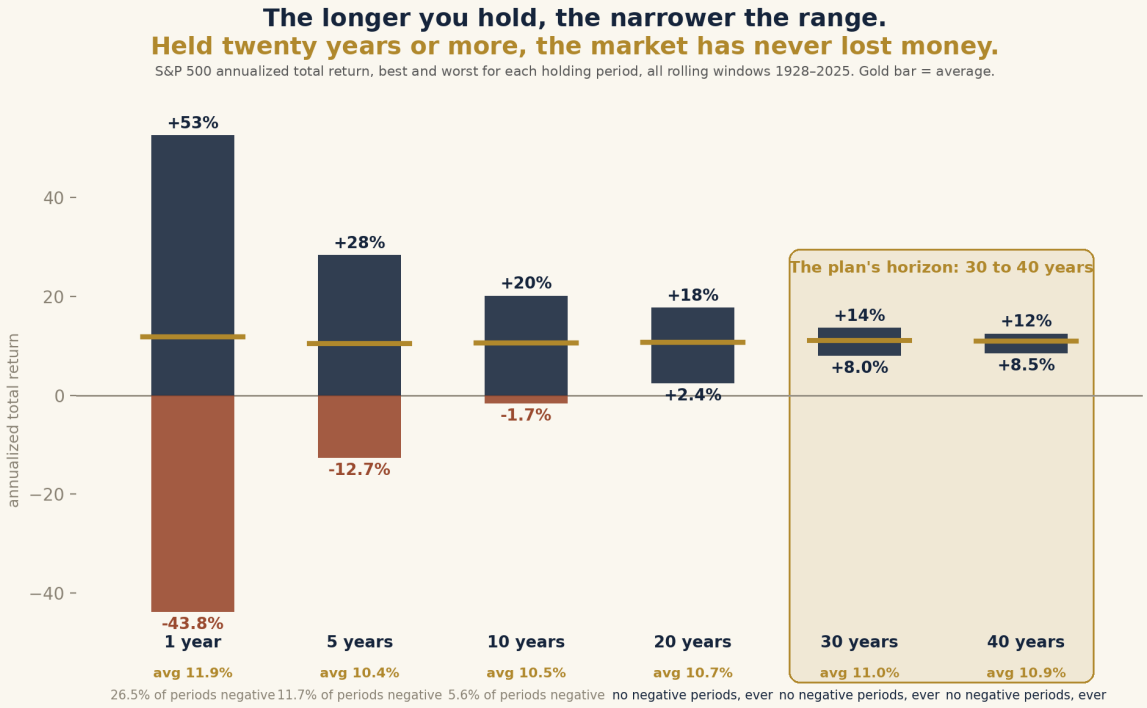
> S&P 500 rolling 30-year annualized returns, dividends reinvested, 1957–2025 — every window falls inside an 8% to 13.6% band.

Source: Aswath Damodaran (NYU Stern), S&P 500 total returns 1928–2025; author's calculations (geometric annualized returns).

One more stress test, because this book's own case studies quietly demand it: Maya starts at 30 and retires at 70, a forty-year horizon, not thirty. Run every rolling 40-year window, all fifty-nine of them, and the floor rises. The worst 40-year stretch since 1928 compounded at about 8.5% a year, above the 30-year floor of roughly 8%, while the best came in near 12.5% and the average near 10.9%. Stretch the holding period and the band tightens again: the ceiling comes down, the floor comes up (in dollars of the day; after inflation, the worst 40-year stretch, 1969–2008, returned about 4.2 percent real, a shade below the worst 30-year stretch), and there has still never been a negative period. Building a forty-year plan on the thirty-year floor is, if anything, one notch more conservative than it claims to be.

One more test, closer to real life. The 8 percent floor measures a single deposit left alone for thirty years. But this book's plan is a deposit every year, $7,500 from age 30 and $8,600 from 50, for forty years, buying through every crash along the

way. So run that exact plan through history, in every forty-year stretch since 1928, all fifty-nine of them. The worst outcome was about $3.2 million, for the saver who started in 1935. This book plans on $2.15 million. **For a steady saver, the floor isn't the worst case; it's a cushion beneath it.**



> The same 98 years, with 40-year windows added: across all fifty-nine 40-year stretches since 1928, the worst compounded at +8.5% a year, above the 30-year floor of +8.0%, and the best at +12.5%. The longer the horizon, the tighter the band. Past performance does not guarantee future results.

S&P 500 rolling 30-year annualized return (with dividends), by the year each window ended, 1957–2025. The figure has stayed within an ~8%–13.6% band, averaging 11.0%. Source: Damodaran (NYU Stern); author's calculations.

The low end of that range belongs to the earliest windows, those that ended in the late 1950s and still carried the full weight of the 1929 crash and the Great Depression. The worst on record, 1929–1958, returned 7.97% a year. That single window is where this book's 8 percent floor comes from, and it's worth seeing up close: *What If You Start at the Worst Possible Moment?* follows the investor who bought in 1929, months before the crash, and the one who kept buying through the Depression. Even that worst case still roughly doubled an investment every nine years.

The high end belongs to windows ending around 1999, which captured the entire bull market from the 1970s through the dot-com peak; the best, 1970–1999, returned 13.63% a year. Since 2000 the figure has drifted back toward its long-run average. A 30-year investor finishing in 2024 earned 10.82% a year; one finishing in 2025 earned 10.26%, both modestly below the 11.0% mean, and both squarely within the normal range.

The practical lesson is the one this book is built on. The exact return any future investor earns will differ from 10%. It could be the 8% used here as the floor that we build upon, or it could be better, much better. And over horizons of thirty years and more, **the range of outcomes has been narrow and consistently rewarding**. That history is what gives the projections in this book their weight.

The full series. Annualized S&P 500 total return for each rolling 30-year window, by start and end year:

WINDOW	30-YR RETURN	WINDOW	30-YR RETURN
1928–1957	7.97%	1963–1992	10.80%
1929–1958	7.97%	1964–1993	10.40%
1930–1959	8.70%	1965–1994	9.89%
1931–1960	9.76%	1966–1995	10.62%
1932–1961	12.78%	1967–1996	11.77%
1933–1962	12.77%	1968–1997	12.04%
1934–1963	12.01%	1969–1998	12.59%
1935–1964	12.63%	1970–1999	13.63%
1936–1965	11.63%	1971–2000	13.14%
1937–1966	10.22%	1972–2001	12.17%
1938–1967	12.63%	1973–2002	10.61%
1939–1968	12.05%	1974–2003	12.11%
1940–1969	11.77%	1975–2004	13.62%

WINDOW	30-YR RETURN	WINDOW	30-YR RETURN
1941–1970	12.33%	1976–2005	12.61%
1942–1971	13.34%	1977–2006	12.35%
1943–1972	13.33%	1978–2007	12.83%
1944–1973	11.91%	1979–2008	10.89%
1945–1974	10.15%	1980–2009	11.12%
1946–1975	10.19%	1981–2010	10.61%
1947–1976	11.30%	1982–2011	10.87%
1948–1977	10.84%	1983–2012	10.72%
1949–1978	10.87%	1984–2013	11.01%
1950–1979	10.88%	1985–2014	11.26%
1951–1980	10.91%	1986–2015	10.30%
1952–1981	9.95%	1987–2016	10.09%
1953–1982	10.02%	1988–2017	10.60%
1954–1983	10.80%	1989–2018	9.88%
1955–1984	9.47%	1990–2019	9.87%
1956–1985	9.43%	1991–2020	10.60%
1957–1986	9.79%	1992–2021	10.55%
1958–1987	10.40%	1993–2022	9.55%
1959–1988	9.64%	1994–2023	10.05%
1960–1989	10.22%	1995–2024	10.82%
1961–1990	10.09%	1996–2025	10.26%
1962–1991	10.20%		

Source: Damodaran (NYU Stern), S&P 500 total returns 1928–2025; author's calculations (geometric annualized returns).

Is the average flattering itself?

The 8% floor is the worst the U.S. record has produced; the fair question is whether the average standing beside it is too good to trust.

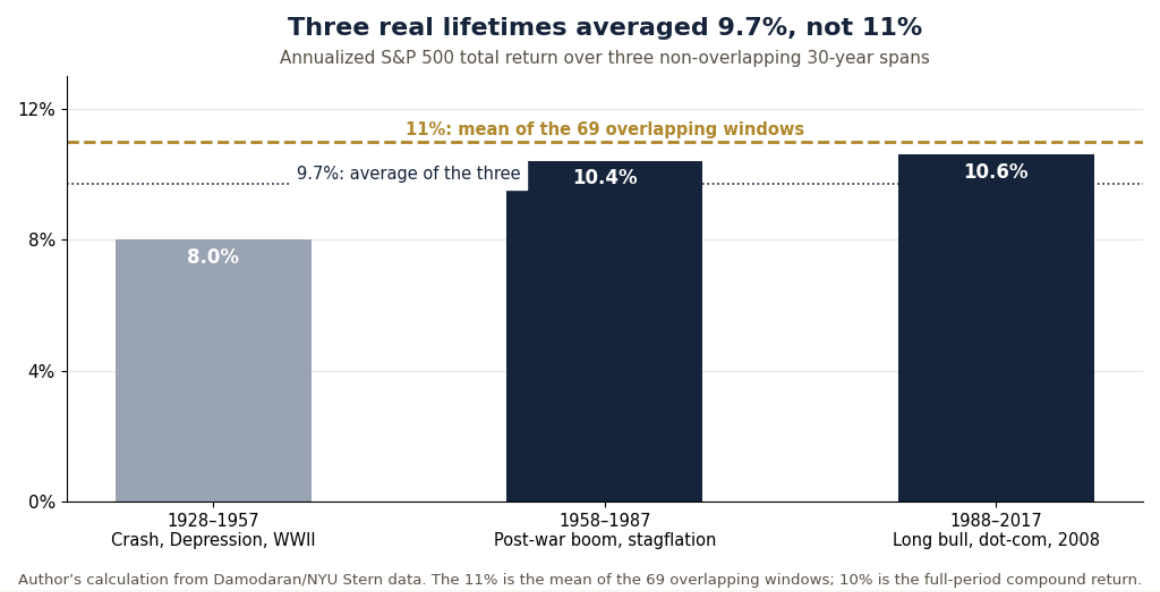
Start with the floor. Every projection in this book rests on the 8% floor, so the honest worry isn't the floor but the average shown beside it. Across the 69 rolling 30-year windows since 1928, those windows averaged about 11% (see the table above). But that 11% isn't 69 independent verdicts of history. The windows overlap heavily: the booming 1950s, 80s, and 90s each get counted inside dozens of them, so a handful of great stretches do most of the lifting. Strip the overlap away and ask how many truly separate 30-year lifetimes the data actually holds, and the answer is only about three.

Here are those three, computed from the same Damodaran/NYU Stern data the rest of this essay uses:

A REAL 30-YEAR LIFETIME	ANNUALIZED RETURN	WHAT IT FELT LIKE
1928–1957	≈ 8.0%	Crash of 1929, Depression, World War II
1958–1987	≈ 10.4%	Post-war boom, then 1970s stagflation
1988–2017	≈ 10.6%	The long bull, dot-com bust, 2008 crisis
Average of the three	≈ 9.7%	

Source: author's calculation from Damodaran/NYU Stern S&P 500 total-return data, 1928–2025 (updated Jan 2026). Returns include reinvested dividends.

Where you slice the calendar matters: starting the three generations in any year from 1928 to 1936 gives an average between about 9.2 and 11.2 percent. The 1928 slice used here sits near the low end.



> The same table as a picture: three real lifetimes averaged 9.7 percent, a point below the overlapping-window mean.

Three independent generations averaged about 9.7 percent, a full point below the 11 percent mean of the overlapping windows, which sits higher only because the strongest middle decades get counted again and again. A third measure falls between them: **compound the entire 1928–2025 stretch as one continuous run, and it returns about 10 percent.** None of the three is wrong; they answer different questions. But together they point to a clear choice. **This book's case studies use 10 percent**, the full-period compound return, close to what a single real lifetime delivered, rather than the flattering 11 percent window-mean, and it anchors every conclusion on the 8 percent floor beneath even that. The 11 percent mean and the 13.6 percent best case appear only as the optimistic end of the range.

How much does the rung you choose matter? A great deal. In the book's own model, moving from the 11 percent window-mean down to 10 percent lops about a quarter off the ending balance; 9.7 percent cuts it by roughly a third; the 8 percent floor is more cautious still. Small differences in the annual rate compound into very large differences in the result, which is exactly why the plan is anchored on the floor and only *illustrated* at 10 percent. The full five-scenario ladder, each rung's ending balance and 4% first-year income, is laid out in Part two, below.

The luck of the country

There's one more reason to distrust the average: we picked the winner. This book studies the United States, and **the United States happens to be one of the best-performing major stock markets of the last 125 years, and by far the largest**. The *Global Investment Returns Yearbook*, by Elroy Dimson, Paul Marsh and Mike Staunton, tracks 35 markets, 23 of them all the way back to 1900. Worldwide, stocks have returned about 5.2 percent a year after inflation; the U.S., about 6.6 percent, among the best of any market. Building a plan on America's past alone is a little like picking a horse after the race is run: you already know it won.

Then there's survivorship bias: the markets that lost don't appear on the chart at all. Investors in Russia's market lost everything in 1917, and in China's in 1949. Those markets don't show up in anyone's rolling-window graphs, because they stopped existing. Even the Yearbook's authors, who think the distortion is modest, agree that long-run stock returns are overstated by counting only the markets that survived. American history isn't fake. It's one good draw from a wider set of possibilities, and the wider set was harsher.

Built on the floor, not the average

So the average flatters itself twice: once because the overlapping windows count the best decades again and again, and once because America was one of the luckiest markets of the century. The floor does neither. It's the worst 30 years the U.S. record has produced, and even it builds a secure retirement. It's not the worst that could ever happen; three lifetimes is a small sample, and no record can promise that. But it's why every projection in this book rests on 8 percent, with 10 percent beside it as the likelier outcome, not the promise. If the future beats 8 percent, as 67 of the 69 windows on record did, the surprise runs in your favor. If it isn't, the plan was built for that.

Part two · The Full Range of Outcomes

Part one showed where the return figures come from; this part lays out what they produce, the entire range of outcomes across five return scenarios, two retirement ages, and two contribution paths, in both nominal and inflation-adjusted (today's-dollar) terms; the account-type comparison near the end extends the horizon to age 80. The two exhibits that follow are the complete picture; the prose around them pulls out what matters.

Why we anchor on the worst case

It’s tempting to lead with the market’s long-run average and let the reader dream on it. But an average is the product of a long, fortunate run, and leading with it invites a fair objection: what if the future is worse?

So **this book anchors its case on the 8% floor**, the worst 30-year return on record, the stretch that began on the eve of the Great Depression. The argument isn’t "you will earn 10%." It is stronger and quieter: **even at the worst outcome on record, this plan still funds a retirement**, and everything above the floor is upside you earned by starting early and staying the course.

In the exhibits, the 8% floor is marked in gold, read it first, and the 10% average (the long-run compound return, the central case) is marked in steel blue; the 9.7%, 11%, and 13.6% columns are shown muted, as reference points. Notice that even that 8% floor funds a retirement, and that the climb from the floor to the average and beyond is all upside.

Starting from an expensive market

You’re starting from an expensive valuation. The most reliable long-range gauge of where stocks stand, the Shiller CAPE ratio, sits near 40 as of mid-2026. That is the highest level since the dot-com bubble, and only that 1999–2000 peak (about 44) has been higher in more than 140 years. Historically, the higher the starting valuation, the lower the returns over the following decade or two. The 20th-century average CAPE of about 16 corresponded to roughly 6.6 percent annual returns over the next 20 years. The only completed episode of starts above 38, in 1999–2000, was followed by negative real returns over the next ten years.

Be fair to the other side. CAPE is a poor timing tool, it has been “high” for years while the market kept rising, and critics argue that accounting changes and the higher profit margins of today’s technology giants justify a permanently higher number. But even the optimistic reading doesn’t make today cheap. The practical takeaway is **humility, not panic**. The next 30 years arguably begin with a valuation headwind that the historical average never had to fight. That’s one more reason to lean on 8 percent rather than 10. Taken literally, today’s valuation implies about 6.5 percent a year if the multiple simply holds: an earnings yield of about 2.5 percent (1 ÷ 40), plus about 1.5 percent real growth, plus 2.5 percent inflation. It implies a good deal less over the next ten years if the multiple falls

back toward its long-run average: the two previous starts from comparably rich valuations, 1929 and 2000, delivered nothing or worse in real terms over the following decade (about +0.3 percent a year after 1929, about −3.4 percent a year after 2000). Stretch the horizon and the starting price matters less, because a one-time fall in the multiple is spread across more years; from those same two starts, the long-run returns came out near 8 percent: 7.97 percent for the thirty years from 1929, and 8.0 percent for the twenty-six years from 2000 through 2025, which is exactly where the floor comes from. And those are the numbers for someone who bought once at the top and never added a dollar; the saver who kept contributing through the cheap years that followed earned 12.5 percent from 1929 and about 11 percent from 2000, as *What If You Start at the Worst Possible Moment?* shows. The floor is a historical fact, not a forecast, and today's valuation is the reason to build on it rather than on the average. But keep the frame straight: this is a caution about the return on money invested all at once. For someone still contributing every year, an expensive market that later cheapens is the *favorable* sequence, not the feared one. The same essay runs exactly that test on a saver who began at the most expensive month in U.S. history and still beat this book's floor.

The key conclusions

Flat contributions; saver starts at age 30; "real" figures are in today's dollars at 2% inflation; income is a tax-free 4% first-year withdrawal.

- **Even in the worst case, you retire secure.** At the 8% floor, a saver reaches $2.15 million by age 70, about $975,000 in today's dollars. The 4% rule turns that into nearly $40,000 a year in today's dollars, a tax-free income for life, rising with inflation, and that sits on top of Social Security. Not riches, but a secure retirement built entirely from ordinary contributions.
- **Working five more years moves the needle hard.** Contributing through age 74 instead of stopping at 70 lifts the 8% floor to $3.22 million ($1.32 million real), about $53,000 a year in today's tax-free income. Most of that gain is the five extra years of compounding, not the five extra contributions.
- **The long-run average runs about 1.7 times the floor.** At 10%, the average this book uses, the age-70 balance is about $3.7 million, or about $149,000 a year of nominal income; in today's dollars that is $1.7 million, roughly $67,000 a year of real income.

- **The upside is large.** In the best 30-year stretch on record (13.6%), the same plan reaches $10.3 million ($4.68 million real), about $187,000 a year in today's purchasing power.
- **Rising contributions help, modestly.** Letting contributions grow 2.5% a year (a proxy for the IRS raising limits over time) lifts the 8% floor from $2.15 million to $2.91 million ($975,000 to $1.32 million in today’s dollars). Meaningful, but smaller than intuition expects, because the earliest and smallest dollars are the ones that compound the longest.
- **Inflation takes roughly half the headline, but the remainder is still substantial.** Over 40 years at 2% inflation, the today's-dollar value is about 45% of the nominal figure. The point of the right-hand columns is to keep the picture straight: the real, spendable, tax-free income is large at every return.
- **The biggest single factor here is the one you don't control.** Across scenarios the age-70 balance spans nearly five-fold, from $2.15 million to $10.3 million ($975,000 to $4.68 million in today’s dollars), driven almost entirely by the return rate. Since you can’t choose your returns, the sound thing is to build the case on the bottom of that range. This book does.

The exhibits: the whole plan, at every return

What follows is the evidence the chapters rest on: the case studies of Chapter 3 run at every return the record has produced, from the 8 percent floor to the 13.6 percent ceiling, at ages 70 and 75, in both the dollars of the day and today’s dollars. Every dollar figure in this book comes from these grids. They’re dense, so here’s how they were built and how to read them.

How the numbers were built

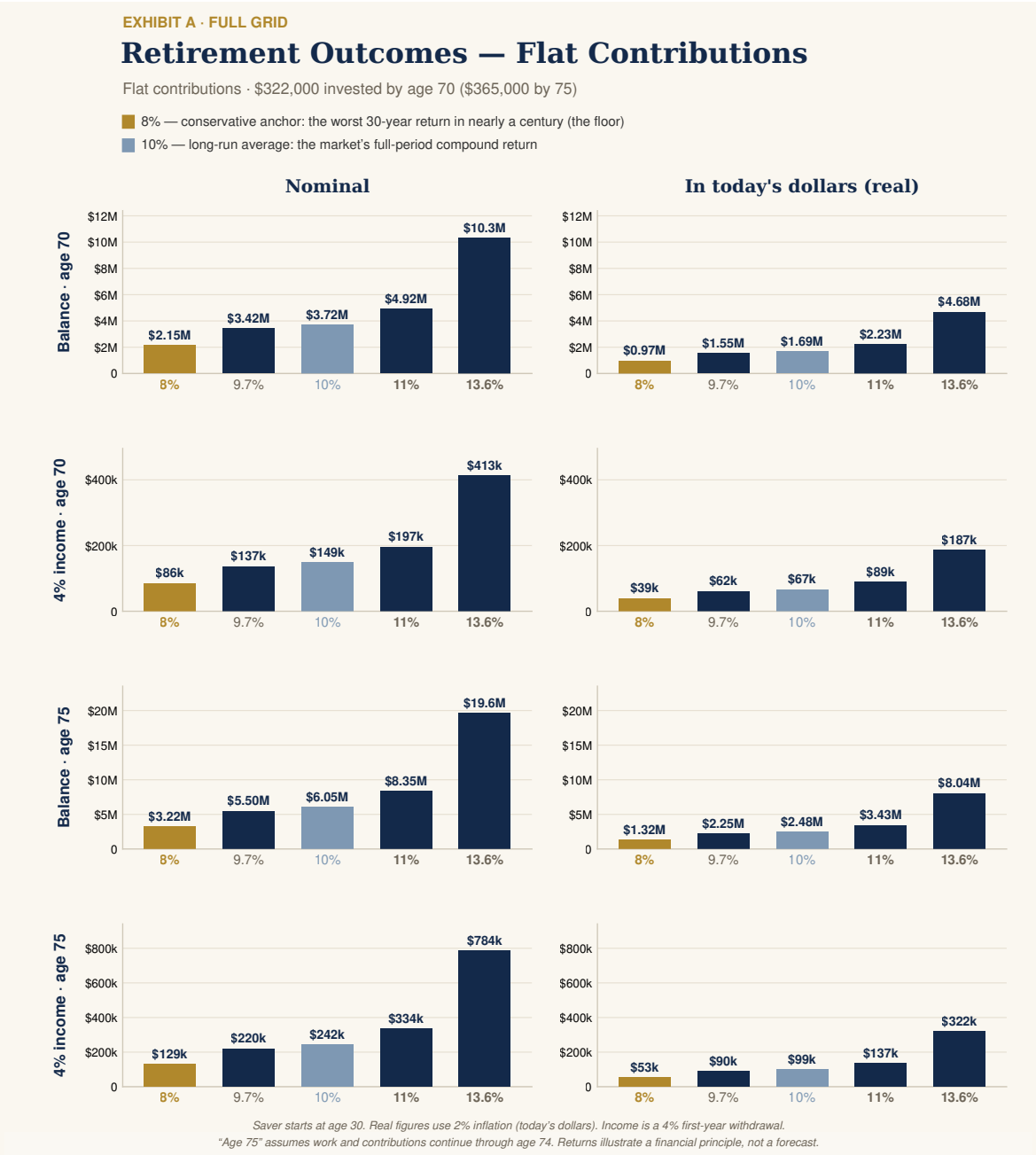
A saver begins at age 30; contributions are made at the start of each year. Flat case: $7,500/year (ages 30–49) and $8,600/year (50+), the 2026 limits including the standard 50+ catch-up. Growing case: the same amounts rising 2.5%/year. Returns are nominal and include reinvested dividends; the five scenarios are the worst 30-year window (8.0%), the average of three non-overlapping lifetimes (9.7%), the full-period 1928–2025 compound return (10.0%), the mean of all rolling 30-year windows (11.0%), and the best 30-year window (13.6%). Real figures discount to the saver's age-30 dollars at 2% annual inflation. Income is a

first-year 4% withdrawal; because withdrawals from a Roth are tax-free, it is money in hand. Traditional balances are taxed at 24% on withdrawal (the tax saving on the way in is assumed spent). Taxable balances assume a 1.5% dividend yield taxed each year at 15% and reinvested, with 15% on the remaining gain when sold. In the tables, the age-75 and age-80 rows assume contributions stop at 70 and the balance is left to grow, with no withdrawals before then. Working and contributing through 74 instead (an IRA contribution requires earned income) adds a little more: at the 8% floor, $3.22 million at 75 rather than $3.16 million. These are illustrations of a financial principle, not forecasts.

How to read the exhibits

Each exhibit is a grid. The left column is nominal dollars; the right column is the same figure in today's dollars (real). Reading top to bottom: the balance at age 70, the 4% income at 70, the balance at age 75, and the 4% income at 75. (We pair 70 with 75, rather than a later age, on purpose. Five more years is the smallest step that still shifts the result substantially, and “working to 75” is realistic for many people in desk jobs, and not a given for anyone. Stopping there also keeps the case conservative; a later finish age would only flatter the numbers.) Within every row the two columns share a scale, so the right-hand (real) bars sit visibly lower: that gap is inflation, made visible. Five return scenarios appear in each panel, with two highlighted: the conservative 8% floor in gold, and the 10% average, the long-run compound return, in steel blue. The 9.7%, 11%, and 13.6% cases are shown muted, as reference points.

- Exhibit A: Flat contributions. The base path: the maximum allowed each year, held flat at today's limits ($7,500 at 30–49, $8,600 at 50+). $322,000 invested by 70.



> Age-70 Roth outcomes under flat maximum contributions: five return scenarios, in nominal dollars and in today's dollars. The 8% floor is gold; the 10% average, steel blue.

For the flat-contribution case, here are the two extremes (the 8% floor and the 13.6% ceiling) in full, across ages 70 to 80:

The floor (8%), flat contributions

AGE	ROTH BALANCE	TRADITIONAL BALANCE	TAXABLE BALANCE
70	$2,152,723	$1,636,069	$1,812,961

AGE	ROTH BALANCE	TRADITIONAL BALANCE	TAXABLE BALANCE
75	$3,163,056	$2,403,923	$2,617,866
80	$4,647,568	$3,532,151	$3,788,267

After-tax lump-sum value, in nominal dollars. Start age 30, flat contributions, 8% return.

The ceiling (13.6%), flat contributions

AGE	ROTH BALANCE	TRADITIONAL BALANCE	TAXABLE BALANCE
70	$10,326,837	$7,848,396	$8,409,835
75	$19,537,050	$14,848,158	$15,715,233
80	$36,961,590	$28,090,808	$29,399,778

After-tax lump-sum value, in nominal dollars. Start age 30, flat contributions, 13.6% return.

> *Left completely untouched, even the 8% floor balance would pass roughly $10 million by 90 and about $22 million by 100 (nominal), not a plan, just a glimpse of how relentless compounding becomes.*

Three lessons from the exhibits

Three lessons run through both exhibits.

1. The floor isn’t a hardship case. About a million dollars in today's money, producing tens of thousands a year in tax-free income for life, from contributions an ordinary earner can make: that’s what this plan produces at the 8% floor, applied to every one of its forty years. Over forty-year stretches the record's worst was better still, about 8.5 percent. Everything in the book past this point is a description of how much better it usually goes.

2. Time is the lever you actually control. You can’t dial up your return, but you can choose to start earlier and to stop later. The jump from the age-70 panels to the age-75 panels, often 50% or more, comes from just five additional years, and

most of it is compounding, not new money. The same logic, run backward, is the entire reason this book is called Start Now.

3. The right-hand columns are the ones to plan with. Nominal millions are exhilarating and slightly unreal; the today's-dollar figures are what the money will actually feel like. They're smaller, and they're still, at every return on the page, more than enough.

What the numbers are worth after inflation

One clarification governs every number in this book. The 8 percent is a nominal return — the growth of the balance in dollars, before any adjustment for what those dollars buy.

At the Federal Reserve's 2 percent inflation target, an 8 percent nominal return is closer to 6 percent in purchasing power, and that's the rate this book uses for every today's-dollar figure. Why 2 percent? It's the rate the Federal Reserve has publicly committed to aim for since 2012, which makes it a common, neutral starting point for planning. History has run hotter: U.S. inflation has averaged about 3 percent a year since 1928, and about 2.5 percent over the last thirty years. At 3 percent, the floor's $2.15 million would be worth about $660,000 in today's money if your contributions never grew. But they don't have to stay flat. The IRA limit rises with inflation, and if your contributions rise with it, you land near $950,000 in today's money even at 3 percent. Both figures are honest. They answer different questions. The nominal number tells you what the statement will say; the real number tells you what the money will do.

One caution belongs here. The worst nominal window, 1929 to 1958, was a low-inflation one; part of why it sits at the bottom is that prices fell for years inside it. Measured in purchasing power, the worst 30-year stretch since 1928 is a different one, 1965 to 1994, when high inflation cut a 10 percent nominal return to a little over 4 percent real.[39] So the today's-dollar floor isn't quite as firm as the nominal one, and an honest reader should know it. Two things soften it. Contribution limits are indexed to inflation, so in a high-inflation stretch the dollars going in rise too, which recovers part of the gap. And the plan's defense against inflation is the same as its defense against everything else: owning businesses, whose prices and profits rise with the price level, rather than holding cash, which doesn't.

The gap between nominal and real isn't a rounding error and it's not episodic. It's the normal condition. Even across the calmest thirty-eight years in the modern

record (1982 to 2020, when inflation averaged 2.6 percent and central bankers were credited with having solved the problem), a dollar held in cash lost 63 percent of its purchasing power. Thirty-eight years isn't a historical curiosity. If you're twenty-five, it is your career.

The practical consequence is a habit rather than a calculation. When a projection in this book shows a balance at seventy, read it as a nominal balance; when you want to know what that balance buys, deflate it. The plan's own headline is the case in point: on the 8 percent floor, the age-seventy balance is about $2.15 million, but in today's purchasing power that is roughly $975,000, the number that tells you what it would actually buy. Both numbers appear in the case studies for exactly this reason.

What if contribution limits keep rising? They will, and it helps, but probably less than you would think

The projections above freeze today's contribution limit; if it keeps rising, as it always has, every number only grows.

The base case throughout this book holds the contribution limit flat at today's 2026 amounts. That's deliberately conservative, because in practice the IRS does raise the limit over time. This last section re-runs the base case (start age 30, the 10% average return) with contributions growing at an estimated 2.5% per year, so you can see the upper edge of what rising limits might add.

Two cautions before reading the numbers. First, the increase is an estimate, not a forecast. No one can know future limits. Second, and more subtly, real limits don't rise smoothly; they jump in occasional $500 steps every few years. Modeling a steady 2.5% annual rise therefore *front-loads* contributions, crediting the account with money a year or two before the law would actually have allowed it. Because those early dollars then compound for the full horizon, this scenario *mildly overstates* what the true stair-step path would produce. Treat it as an optimistic bound, not a central estimate.

For context, here is how the standard (under-50) limit has actually moved. Note how rarely it rises: it was frozen at $2,000 for two decades, and since 2002 it has increased only eight times in twenty-four years: three scheduled $1,000 steps set by the 2001 tax law (2002, 2005, 2008), then inflation-indexed $500 steps from 2009 on, roughly once every three years, almost never in consecutive years.[23]

YEARS	STANDARD IRA CONTRIBUTION LIMIT (UNDER 50)
1975–1981	$1,500
1982–2001	$2,000 (frozen 20 years)
2002–2004	$3,000
2005–2007	$4,000
2008–2012	$5,000
2013–2018	$5,500
2019–2022	$6,000
2023	$6,500
2024–2025	$7,000
2026	$7,500

History of the standard IRA contribution limit. Long-run growth ≈ 3.2%/year since 1975; ≈ 2.4%/year over the modern indexed era (2013–2026). The 2.5% used here sits in that recent range.

With contributions growing 2.5% per year, applied to both the $7,500 and the $8,600 amounts, compounding from age 30, so the age-50 contribution is about $14,100 rather than $8,600. Total lifetime contributions rise from $322,000 (flat) to about $552,000. The after-tax lump-sum values:

AGE	ROTH IRA	TRADITIONAL IRA	TAXABLE ACCOUNT
70	$4,817,693	$3,661,446	$4,025,343
75	$7,758,942	$5,896,796	$6,374,083
80	$12,495,854	$9,496,849	$10,118,223

After-tax lump-sum value, in nominal dollars. Start age 30, contributions growing 2.5%/year, the 10% average return. (A mildly optimistic proxy, not the base case.)

And the corresponding first-year 4% income:

START AGE	ROTH IRA	TRADITIONAL IRA	TAXABLE ACCOUNT
70	$192,708	$146,458	$161,014
75	$310,358	$235,872	$254,963
80	$499,834	$379,874	$404,729

First-year income from a 4% withdrawal, after tax, in nominal dollars. Start age 30, contributions growing 2.5%/year, the 10% average return.

In today's dollars (2% inflation):

AGE	ROTH IRA	TRADITIONAL IRA	TAXABLE ACCOUNT
70	$2,181,887	$1,658,234	$1,823,039
75	$3,182,693	$2,418,847	$2,614,628
80	$4,642,558	$3,528,344	$3,759,202

After-tax lump-sum value in today's purchasing power. Start age 30, contributions growing 2.5%/year, the 10% average return, 2% inflation.

The takeaway. Rising limits help, but less than intuition suggests: growing contributions adds a meaningful but not transformative amount, because **the earliest contributions, the smallest ones, are also the ones that compound the longest** and therefore dominate the result. Compounding and time, not the size of each year's contribution, remain the main story. And because this smoothed proxy slightly flatters the outcome, the real-world figure would land somewhere between the flat base case and the numbers above.

The floor and ceiling under rising contributions

The same ladder, recomputed with contributions growing 2.5% per year instead of held flat. As before, these are after-tax lump sums in nominal dollars for the age-30 saver.

The floor (8%), contributions growing 2.5%/year

AGE	ROTH BALANCE	TRADITIONAL BALANCE	TAXABLE BALANCE
70	$2,910,966	$2,212,334	$2,479,000
75	$4,277,164	$3,250,645	$3,573,272
80	$6,284,557	$4,776,263	$5,164,438

After-tax lump-sum value, in nominal dollars. Start age 30, contributions growing 2.5%/year, 8% return.

The ceiling (13.6%), contributions growing 2.5%/year

AGE	ROTH BALANCE	TRADITIONAL BALANCE	TAXABLE BALANCE
70	$12,596,490	$9,573,333	$10,311,595
75	$23,830,943	$18,111,516	$19,250,427
80	$45,085,083	$34,264,663	$35,994,737

After-tax lump-sum value, in nominal dollars. Start age 30, contributions growing 2.5%/year, 13.6% return.

Every row says the same thing

That’s every outcome in the book, laid out in full: the floor and the ceiling, flat and rising contributions, nominal and real, out to 80. Read down any table and the worst case still builds real wealth, and every better case only adds to it. Read across any row and, for a saver like Maya, the answer never changes: the Roth comes out ahead.

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PART THREE

The Start Now Toolkit

For the day your life outgrows the simple plan: a raise that crosses the income line, a business of your own, a question about the exact numbers. Built to be looked up, not read through.

THE START NOW TOOLKIT

What's in the Toolkit

That's the last of the essays. You have now seen the evidence under every claim in this book: what happened to the saver who started at the worst moments on record, why America has won and whether it can keep winning, what the debt really threatens, how much of the world to own, what investors do to themselves, and where every number comes from.

What remains is a toolkit, and the name is deliberate. None of it is required reading, and none of it changes the plan. It's here for the day your life gets more complicated than the plan assumes, and it's built to be looked up, not read through.

Beyond the Roth IRA is for the moment a raise carries you past the Roth's income limit, or you start a business, or your employer offers a Roth 401(k) and you wonder how the two fit together. It walks through every route to a tax-free retirement in plain English, and comes with a companion tool you can run yourself, with any AI assistant, to see which doors are open to you.

The Retirement Account Hiding in Your Health Plan is the one account that can skip federal tax at every step, and the one almost nobody uses well: who qualifies, the three tax breaks and a fourth most people miss, and the strategy that turns it into a second Roth.

Your Situation, Worked Through takes readers whose lives don't match the chapters' steady paycheck, starting with a couple raising young kids on two incomes, a gig worker whose pay arrives unevenly, a nurse with a 403(b) already in place, a high earner paid partly in company stock, a reader who already holds crypto, a 46-year-old starting late, and a teenager with a first summer paycheck, and works each one through from start to finish.

Key Terms is the glossary: every financial term in the book, more than fifty of them, each in plain English, for whenever a word trips you up.

Further Reading is the short shelf of books that shaped this one, with a note on what each is for; it's worth an evening.

Notes & Sources shows the arithmetic and the origin of every figure in the book, so you can check any of it yourself.

You don't need any of it to act. The plan hasn't changed since the first page: open the account, fund it, and leave it alone.

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THE START NOW TOOLKIT

Beyond the Roth IRA: When One Door Closes, Another Opens

> *There are more routes to a tax-free retirement than the Roth IRA alone, and it pays to know them before you settle for whatever your job hands you.*

The real mistake most people make is bigger than any income limit: not that a door is closed, but that they never check which doors are open. An afternoon of reading (an AI assistant is a fine place to get oriented) and one conversation with a tax professional, walked in with the right questions, can be worth more than years of contributions. And it's never too late: whether you're 25 or 55, the right structure still has decades to work.

Earlier in this book I made the case for the Roth IRA as close to a perfect retirement account: you pay tax on the money once, today, and then it grows and comes out the other end completely tax-free. For most people starting out, it is the first account to fund and the last one to touch, the account you spend down last in retirement, so it keeps compounding tax-free the longest.

But there's a wrinkle that surprises a lot of successful savers, and it's worth meeting head-on. The Roth IRA has an income ceiling. Earn above a certain amount and the IRS simply won't let you contribute to one directly. In 2026 the amount you can put in starts to phase out at **$153,000** of modified adjusted gross income for a single filer and **$242,000** for a married couple filing jointly, and at **$168,000** and **$252,000** it closes completely. Cross that line, and the front door to the Roth IRA is shut.

If that's you, or it's where you're headed, the natural worry is that you've been penalized for doing well, and that the tax-free retirement you were promised is now off-limits.

It isn't. And that's the whole point of this section.

Only one door closes

Nothing about the strategy changes. **The income limit closes exactly one door, the direct Roth IRA, and leaves every other route to tax-free growth wide open. You'll still get there.** You'll simply walk through a different door and put the same dollars into a differently labeled, tax-managed wrapper. The destination is identical.

We'll walk through every door in plain English; a map at the end of this section then puts them all in one place.

Your other options, in plain English

It all starts with the one thing every retirement account requires: earned income. Money you make from working, a paycheck or self-employment income, not gains from investments you already own. No earned income, no IRA or 401(k) contribution, with one exception: a working spouse's pay can fund an IRA for a

spouse who doesn't work. (The HSA is different: it needs a qualifying health plan, not a paycheck.) Everything flows from there.

The first and most important question is simply whether your income is below the Roth IRA limit. If it is, you're done in one step: contribute directly to a Roth IRA, up to **$7,500** in 2026 (or **$8,600** if you're 50 or older), and you can skip the rest of the chart. This is the front door, and it's the simplest path there is.

If you're over the limit, you hit what I have drawn as the **income wall. This is the only real obstacle in the entire picture, and everything that follows is about getting around it.** There are always two ways around, and which one is yours depends on a single question: do you have a workplace 401(k)?

Employees: use your Roth 401(k)

Use the Roth side of your own plan, the **Roth 401(k)**. Here's the part that catches people by surprise: the Roth 401(k) has **no income limit at all**. The ceiling that shut you out of the Roth IRA doesn't exist here. You can route up to **$24,500** of your own pay (2026) straight into the Roth side of your plan, no matter how much you earn. At 50 you can add $8,000 more, $11,250 from 60 to 63, and from 2026, if you earned more than $150,000 in wages from that employer the year before, the catch-up has to go in as Roth anyway. The only catch is that your employer's plan has to offer a Roth option. Most do today, but it's worth a quick check with your benefits department.

Self-employed: open a solo 401(k)

You build the equivalent yourself with a **solo 401(k)**, and its Roth side has no income limit either. Because you're both the employer and the employee, you contribute twice: an employee deferral up to **$24,500**, plus an employer profit-sharing share of up to 25% of your pay (about 20% of your net self-employment earnings, after the deduction for half your self-employment tax, if you work for yourself as a sole proprietor), for a combined ceiling of **$72,000** in 2026, plus any age-50 catch-up. Two cautions: the $24,500 is yours across every plan you belong to, so if you already defer at a day job, it is shared; and reaching the full $72,000 as a sole proprietor takes roughly $250,000 of profit. A SEP-IRA is the simpler cousin: up to 25% of pay (about 20% for a sole proprietor) or $72,000, whichever is less, but it's blunter, and it carries a catch we'll get to in a moment.

One more account: the HSA

If your health plan is a high-deductible one, you're eligible for a **health savings account**, and it's the only account in the tax code that is untaxed at every step: deductible going in, untaxed while it grows, and tax-free coming out for medical costs, which everyone eventually has. Most planners fund it right after the employer match and before the Roth, and invest it in the same kind of index fund rather than leaving it in cash. It's not for everyone, because the high-deductible plan itself isn't for everyone. But if you already have that plan, the HSA is a second Roth with a tax deduction on top, and it belongs in your order. The next piece in the Toolkit, *The Retirement Account Hiding in Your Health Plan*, goes through it in detail.

The backdoor Roth: open to anyone

There's one more route, and it's open at any income to anyone with earned income, or a working spouse: the **backdoor Roth IRA**. You contribute $7,500 ($8,600 if you're 50 or older) to an ordinary (non-deductible) traditional IRA, report it on IRS Form 8606, then convert that money to a Roth. There's no income limit on the conversion, which is why this works for the highest earners.

One trap to know about, the pro-rata rule. The backdoor works cleanly only if you hold no other pre-tax IRA money (traditional, SEP or SIMPLE) on December 31 of the year you convert. The IRS treats all your IRAs as one pot, so if part of the pot is pre-tax, that share of your conversion is taxed. And because a SEP-IRA is usually pre-tax IRA money, choosing a SEP can quietly tax your backdoor conversion. File Form 8606 every year you do this; it is the record that the money was already taxed. For a self-employed saver who wants both, the solo 401(k) is the cleaner pick, its balance doesn't count against the conversion.

Two kinds of "after-tax," and why it matters

This is the one place where a little precision pays off, because the same phrase gets used for two different things. Inside a 401(k), "after-tax money" can mean either of two buckets:

- **Roth contributions**: taxed now, and then both your principal and all of its growth come out tax-free. This is the one most people mean, and it lives inside the $24,500 employee limit.

- **After-tax (non-Roth) contributions**: also taxed-now money, but a separate, third bucket that sits *above* the $24,500 limit. Here the principal comes out tax-free but the growth is taxable, unless you convert it to Roth, and convert promptly, because any growth before the conversion is taxed when you convert. The room is whatever is left of the $72,000 total after your own deferrals and your employer's contributions. That conversion is the engine of the so-called **mega backdoor Roth**, an advanced move for savers who have already maxed everything else and whose plan permits it.

Both are "after-tax." Only the first is automatically tax-free on the way out. Keeping them straight is what separates a confident saver from a confused one.

Crossing the income line is no penalty

If you take one thing from this section, take this: crossing the income line isn't a penalty, and it's not a dead end. It simply moves you from the front door to one of several side doors that lead to the very same room. The method doesn't change: pay the tax once, let it grow untouched, draw it out tax-free in retirement. Only the wrapper around it does.

> **Don't worry about outgrowing the Roth IRA. There will always be a way to fund a good retirement using the same methods we've talked about throughout this book, just held in a different wrapper: a Roth 401(k), a solo 401(k), or the backdoor, none of which have an income ceiling.**

Here are the four situations, and the move each one calls for, at a glance:

YOUR SITUATION	THE MOVE	2026 LIMIT
Income **below** the Roth IRA limit	Contribute straight to a Roth IRA (the front door)	$7,500 (+$1,100 if 50+)
Over the limit, with a workplace 401(k)	Use your Roth 401(k) — no income limit	$24,500 (+$8,000 if 50+)
Over the limit, self-employed	Open a solo 401(k), Roth side — no income limit	$24,500 Roth; up to $72,000 total
	The backdoor Roth	$7,500

YOUR SITUATION	THE MOVE	2026 LIMIT
Any income, another way in		

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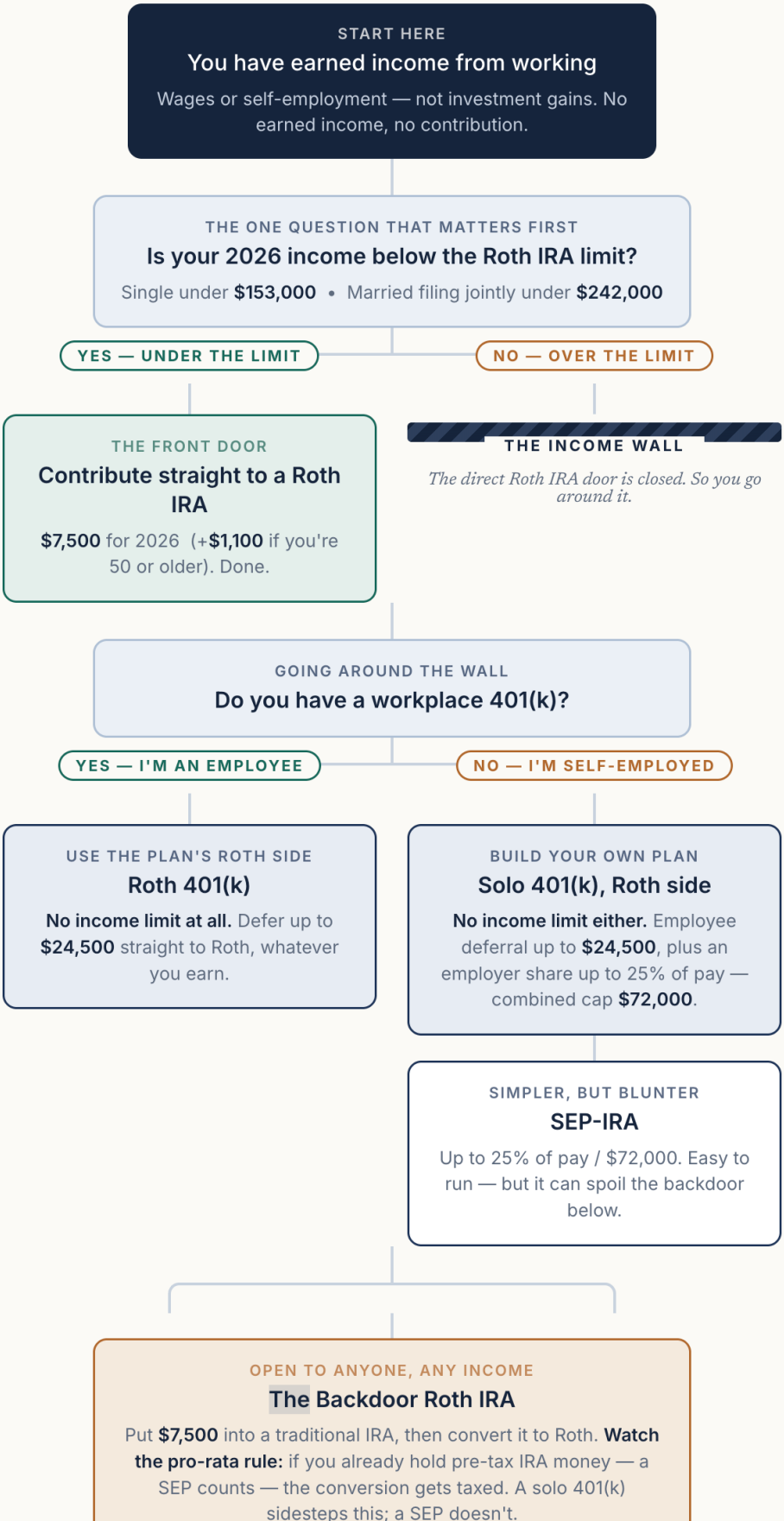
Prefer to walk the decision rather than look it up? The map below lays out that same choice as a short series of questions: start at the top, follow the yes-or-no path, and it takes you to the one door your income and your job leave open. It’s the map you walk to find which Roth path is yours.

START NOW

Which Roth path is yours?

Every route below leads to tax-free growth. *The only question is which door your income and your job leave open — and what to do when the front door is closed.*



All figures are 2026 IRS limits (Source: IRS Notice 2025-67). This chapter is educational and isn't tax advice; a reader's own situation governs. Limits are adjusted annually. Confirm the current year's numbers before acting.

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Already have a traditional IRA and wondering whether to convert it to a Roth? Converting means moving money from a traditional IRA into a Roth: you pay income tax on what you move, in the year you move it, and from then on it grows tax-free, with no required withdrawals later. The best time is often the low-income years between stopping work and claiming Social Security. With little other income, the converted money can be taxed at 10 or 12 percent instead of the 22 or 24 percent you paid while working. Convert a slice each year, just enough to fill those low brackets, rather than all at once, which would push it into the high ones. Before you start, ask your CPA about four traps:

- **The five-year clock.** If you're under 59½, each conversion must sit in the Roth for five years before you can take that money out without a 10 percent penalty, and each conversion starts its own clock.
- **The rule of 55.** If you left your job in or after the year you turned 55, you can take money from that employer's 401(k) without a penalty. Roll it into an IRA first, a common step before converting, and you lose that until 59½.
- **Health-insurance subsidies.** Before Medicare at 65, marketplace insurance subsidies are based on your income, and conversion income counts; a big conversion can shrink or erase them.
- **Medicare's income surcharge.** From 65, Medicare premiums rise for higher incomes, measured two years earlier, so conversions from about age 63 can raise what you pay.

The free conversion calculators from Fidelity, Schwab, and Vanguard will show the trade-off with your own numbers.

For a worked example of these doors in use, see the high-earner case in Your Situation, Worked Through, later in the Toolkit.

A COMPANION TOOL

If you'd like help applying this to your own situation, a free companion tool walks you through these exact questions, one at a time, and hands you a written summary to take to a tax professional. It's available online, free, alongside *Start Now*. You'll find it at startnowbook.substack.com/p/the-full-companion-review. Treat it as a starting point for your own research, not as advice.

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THE START NOW TOOLKIT

The Retirement Account Hiding in Your Health Plan

Everything you probably didn't know about health savings accounts

> *The most powerful and most flexible tax-advantaged account in the code. It comes with one catch.*

There's one account in the American tax code that is untaxed at every step: the money goes in untaxed, it grows untaxed, and it comes out untaxed. Not the Roth, which is taxed going in. Not the traditional 401(k), which is taxed coming out. The health savings account, the HSA, is the only one that gets all three. I gave it one paragraph in the Toolkit. Gerarde Moret, my accountant and one of the early readers of this book, told me that wasn't enough: it's one of the most valuable accounts in the tax code, hiding in plain sight, and very few of the people who could use it understand it. He's right. Here's the whole of it.

The catch first

You can only open and fund an HSA if your health insurance is a high-deductible health plan, an HDHP. In 2026 that means a plan with a deductible of at least $1,700 for an individual or $3,400 for a family, and an out-of-pocket maximum no higher than $8,500 or $17,000. Many employer plans qualify, and from 2026 every bronze and catastrophic plan on the ACA marketplace counts, even if its

deductible doesn’t meet the test. If yours does, the plan will say so, and your HR department or insurer can confirm it. If it doesn’t, nothing in this post applies to you, and a high-deductible plan isn’t the right plan for everyone: if you have a chronic condition or a family that sees doctors often, a lower-deductible plan can cost you less over a year. One thing in the HDHP’s favor that people forget: its monthly premium is usually lower than a low-deductible plan’s, so part of the saving arrives before the HSA does anything at all. Decide the insurance first, on its merits. Then, if you land on an HDHP, open the HSA the same week.

Three more conditions: you can’t be enrolled in any part of Medicare, you can’t be claimed as a dependent on someone else’s tax return, and you can’t be covered by another plan that isn’t an HDHP, including a general-purpose flexible spending account, yours or your spouse’s. Dental and vision coverage is fine, and from 2026 so is a qualifying direct-primary-care membership.

The three tax breaks, and a fourth most people miss

Contributions are deductible from your federal income tax whether or not you itemize. The limit for 2026 is $4,400 for individual coverage and $8,750 for family coverage, plus $1,000 more if you’re 55 or older, and anything your employer puts in counts toward the same limit.

The money grows untaxed, like a Roth. And this is where most people leave the value on the table: they use the HSA as a checking account and never use it as an investment account. Many providers let you invest the balance, and the right investment is the same one as everywhere else in this book, a low-cost index fund that owns the whole market. Leave it in cash and it’s a tax-free way to earn nothing.

One thing many people don’t realize: if your high-deductible plan comes through your employer, the employer will often pair it with an HSA at a bank of its choosing, and some of those accounts offer limited investment options or none. That’s fine. You can generally move the money, by a trustee-to-trustee transfer, to another HSA custodian that offers a broad selection of low-cost funds. Keep contributing through payroll to the employer’s account, since that’s where the payroll-tax break comes from, and once or twice a year transfer the balance across to the investing account the same way. There’s no limit on how often you can do it, and no tax.

Withdrawals are tax-free for qualified medical expenses, which cover more than you'd think: the deductible itself, copays, doctors, dentists, glasses, prescriptions, therapy, and, later in life, Medicare premiums and part of the cost of long-term-care insurance. One thing it can't pay for is the premium on the high-deductible plan itself; the only premiums allowed are COBRA, long-term-care insurance (up to an age-based limit), health coverage while you're collecting unemployment, and, once you're 65, Medicare and other health coverage, but not a Medigap policy.

The fourth break: if your contributions go through your employer's payroll, they also skip the 7.65 percent Social Security and Medicare payroll tax. No retirement account does that; a 401(k) contribution still pays it. On a family contribution of $8,750, that is about $670 a year the Roth can't match, if your pay is under the Social Security wage base ($184,500 in 2026). Above it, you save only the Medicare part, roughly $130 to $200. And if you're self-employed and contribute on your own, there is no payroll-tax break.

The move that turns it into a second Roth

Here's the strategy the tax code allows and almost nobody uses. Pay your medical bills out of pocket, from your checking account, the way you do now. Keep the receipts; a folder on your phone is enough. Leave the HSA alone to compound for twenty or thirty years. There's no deadline for reimbursing yourself: any qualified expense incurred after the account was opened (the date of the care, not the date you paid) can be reimbursed from it, tax-free, at any time, decades later, as long as you didn't also deduct it or have it covered by insurance. So at 60 you hold an account that has compounded untaxed for thirty years, plus a folder of receipts that lets you pull out tens of thousands of dollars tax-free for any reason you like, because the reimbursement, not the spending, is what the rule looks at.

And after 65, the HSA drops its last restriction: you can withdraw for anything at all, taxed as ordinary income, exactly like a traditional IRA, with no penalty. So the worst case for a healthy saver is a traditional IRA with an extra payroll-tax break; the best case is a Roth with a deduction on top. Before 65, a withdrawal for anything other than medical costs is taxed and charged a 20 percent penalty, so treat it as retirement money until then.

Where it fits in the order

In the Toolkit I gave the order of operations, and the HSA sits high in it: first, any employer 401(k) match, because that's free money; second, the HSA to its limit, if you have the plan; third, the Roth IRA. A reader who fills the HSA and the Roth IRA is putting about $12,000 a year (single coverage) to $16,000 (family) into accounts the tax man never sees again, as long as the HSA goes to medical costs, with the match on top. That's the whole of what this book is about, done three times over.

The state catch

Most states follow the federal rules. Two don't: California and New Jersey tax HSA contributions and the account's earnings as ordinary income. If you live in one of them, the federal breaks still apply in full; you lose only the state piece, and the account is still worth having. Everywhere else, the triple tax-free promise holds at the state level too.

Three things to get right

If you'll sign up for Medicare after 65, or start Social Security after 65, which enrolls you in Part A automatically, stop contributing six months before. Part A is backdated up to six months (never before the month you turned 65), and contributions for those months become excess contributions, taxed at 6 percent a year until you take them out.

Name a beneficiary. A spouse inherits an HSA as an HSA; anyone else inherits it as taxable income in one year, so for a non-spouse heir it is better to spend the HSA down in your lifetime and leave them the Roth.

And invest it. Of all the mistakes people make with HSAs, leaving the balance in cash is the common one and the expensive one.

That's the HSA: the one account with every tax break at once, a catch at the front door, and a thirty-year compounding runway for anyone who walks through it. If your plan qualifies, start now.

My thanks to Gerarde Moret, CPA, who pointed out that the HSA deserved more than a paragraph and checked this one. Any errors that remain are mine.

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THE START NOW TOOLKIT

Your Situation, Worked Through

The chapters walk through the plan for a typical saver: starting out, with one income and a Roth at the center. These pages are for readers whose situation adds a twist, like a family budget with two incomes and young kids, paychecks that never look the same twice, a plan already in place at work, a high income, pay that comes partly in company stock, crypto already in the mix, a late start in your mid-forties, or a first paycheck as a teenager. Each one is worked through from start to finish.

Case · Ben and Leah, 34: two paychecks, two kids, one budget

This page is for couples raising young children on two incomes who want to know who saves first, and in what order.

Ben and Leah are both 34. Ben earns $95,000 at a company whose 401(k) matches dollar for dollar up to 4 percent. Leah earns $55,000 at a small firm with no plan at all. They have a mortgage, a four-year-old named Ruby, a baby named Owen born in 2025, and a daycare bill bigger than the mortgage. Leah asked the fair question: every example in this book is one person. How do two of us do this, with kids, on one budget?

Start with the budget. It’s one household and one pot of money. Only Ben has the match, but that doesn’t make it Ben’s job to save. The question is never whose paycheck. It’s where the household’s next dollar does the most. Here’s their order.

First, the cushion: one month of expenses in its own account, then built toward three. The mortgage gets its regular payment.

Second, the match. Ben puts in 4 percent, $3,800, and his employer adds $3,800, an instant 100 percent return. Any card balance goes next, because nothing else in this book earns 22 percent. (If their family health plan is a high-deductible one, the HSA comes right after; the Toolkit piece on it explains why.)

Third, protection. This is where a family's plan differs most from a single person's. Someone with no one depending on them can mostly skip life insurance; parents of small children can't. So both Ben and Leah buy term life insurance, not just Ben. If either of them passed, the family would lose a paycheck and the care that parent gives, which they'd have to pay someone to replace. They buy term, not whole or universal life. Both also check for disability insurance at work: it's often cheap or free through an employer, and if Leah's small firm doesn't offer it, a policy of her own is worth pricing. Finally, they name beneficiaries on every account and write a will that names a guardian for the kids.

Fourth, two Roth IRAs, $7,500 each in 2026. Leah has no plan at work, so she opens her own Roth and funds it from the shared money; an IRA needs earned income, not an employer. If one of them steps back from work for a few years, the spousal IRA rule lets a couple filing jointly fund both Roths from one paycheck, as long as that paycheck covers both. Leah's retirement doesn't stop when her paycheck does.

Why Roth? Filing jointly, after the $32,200 standard deduction and Ben's pre-tax 401(k), their taxable income is about $114,000. The 12 percent bracket ends at $100,800, so their top dollars are taxed at 22 percent. The rule in the 401(k) note after Chapter 2 says 12 or 22 percent points to Roth. If Ben's plan offers a Roth 401(k), it's a sound choice for him too.

Fifth, the daycare. In 2026 the dependent-care FSA limit rose to $7,500 per household. If Ben's employer offers one, they can pay $7,500 of daycare with dollars that skip income and payroll tax, saving them about $2,200 a year. The other option is the child and dependent care credit: at their income, 35 percent of up to $6,000 of daycare for two children, or $2,100. They can't use both on the same dollars: each FSA dollar cuts the credit's $6,000 limit, so a full $7,500 FSA leaves no credit at all. At their tax rate the FSA saves slightly more, and more again if their state taxes income. But the two are close, so each fall, when Ben signs up for next year's benefits, it's worth running both numbers before choosing.

Last, the kids. The instinct is to put the children first. With money, the order runs the other way: Ben and Leah's own retirement comes first, because Ruby and Owen can borrow for college and nobody can borrow for retirement. A 529 comes after that. Owen, born in 2025, can get a 530A account with a free $1,000 from

the federal government; they claim it. Ruby can have a 530A too, without the $1,000. Adding more to either is optional, and comes after the 529. If the grandparents ask how to help, Chapter 7's "If you're the one giving" box is written for them.

With a daycare bill, maxing both Roths may not be possible at first, so the second row shows a lighter start: $5,000 each.

BOTH ROTHS, EACH YEAR, FROM 34 TO 69	THEY PUT IN	AT 70, 10% AVERAGE, NOMINAL	AT 70, 10% AVERAGE, TODAY'S DOLLARS	AT 70, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME AT THE FLOOR, TODAY'S DOLLARS
$15,000 ($7,500 each)	$540,000	$4.94 million	$2.42 million	$1.49 million	$59,000
$10,000 ($5,000 each)	$360,000	$3.29 million	$1.61 million	$991,000	$40,000

Nominal is the balance in the dollars of that future year, what the statement will show. Today's dollars remove 2% inflation a year, so they show what the money will actually buy. First-year income is a 4% withdrawal. Contributions at the start of each year, held at the amounts shown (from 50, each could add the $1,100 catch-up); all Roth, so none of it is taxed coming out. Ben's 401(k) and Social Security aren't included.

Two maxed Roths at the floor pay about $59,000 a year in today's money. Add Ben's 401(k), Roth or traditional, and two Social Security checks, and even at the 8% floor, they're on track for a full retirement. Nothing about the future is guaranteed, but this plan doesn't need the market to be kind.

Their biggest lever comes later. The year daycare ends, the money it cost can go straight into Ben's 401(k).

Action steps.

1. Consider opening a separate savings account for the cushion, with one month of expenses as its first goal.

2. Consider confirming Ben’s match formula and setting his contribution to at least 4 percent, Roth if the plan offers it.

3. Consider pricing term life on both of you, checking for disability coverage at work, and naming beneficiaries and a guardian.

4. Consider opening two Roth IRAs, one in each name, with $625 a month going into each automatically.

5. Consider comparing the dependent-care FSA and the child care credit before open enrollment, and claiming Owen’s 530A seed.

This is an illustration, not personal investment, tax, or legal advice. Your situation is your own; for decisions like these, talk with a tax professional or a fee-only advisor.

Case · Theo, 24: the gig worker

This page is for readers whose pay arrives unevenly, from gigs, contracts or seasonal work, and who wonder how a plan built on regular paychecks fits them.

Theo is 24. He delivers, drives, and picks up freelance design work in a big, expensive city. In a good year it adds up to about $48,000. It never arrives the same way twice: $900 one Tuesday, $3,200 the next week, then nothing for ten days. No employer, no plan, no withholding. Rent takes half of what’s left after taxes, and there’s a car payment. The book’s example, a little under $300 out of each biweekly paycheck, doesn’t fit him. He doesn’t have a paycheck.

So drop the paycheck. Use a percentage of every deposit. A percentage bends with the money: a big week sends more, a thin week sends less, and the habit never breaks.

Theo splits every deposit three ways, the day it lands.

Taxes, 25 percent. Nobody withholds for Theo, so he withholds for himself. Self-employment tax alone is about 15.3 percent of most of his net earnings, the Social Security and Medicare that an employer would normally split with him, because he's both the worker and the boss. Income tax comes on top, and in a big city often state and city tax too. A quarter of every deposit is a sensible starting point at his income, and a tax preparer can fine-tune it after his first year. That account pays the IRS four times a year in estimated payments: April, June, September, and January.

The cushion, 5 percent. Theo's income swings, so his cushion has to be bigger than a salaried worker's: one month of expenses first, then three, then building toward six. Until that first month is banked, the cushion takes 10 percent and the Roth waits. After that, any deposit bigger than a normal month sends its extra here too.

The Roth, 5 percent. Why not wait until the cushion is full? Because Roth contributions can come back out any time, without tax or penalty. Every dollar in it is a second cushion behind the first, and it compounds while it waits. And each year's contribution window closes for good, so a slow-filling cushion shouldn't cost him the year.

One check first, the one Chapter 10 asks: the car loan's rate. Below the 8 percent floor, it gets the minimum. Above it, it gets paid down before the Roth.

Five percent of $48,000 is $2,400 a year, about $200 a month. When the cushion is full, its slice moves to the Roth too. If his income climbs well past this, a solo 401(k) or SEP-IRA lets him put away far more, and *Beyond the Roth IRA* explains which. At $48,000, the Roth IRA is all he needs.

Make it automatic. Some banks can move a percentage of each incoming deposit on their own; if his can't, the split is a two-minute habit the day the money lands.

EACH MONTH, FROM 24 TO 69	HE PUTS IN	AT 70, 10% AVERAGE, NOMINAL	AT 70, 10% AVERAGE, TODAY'S DOLLARS	AT 70, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME AT THE FLOOR, TODAY'S DOLLARS
$100 (2.5% of a	$55,200	$1.05 million	$420,000	$218,000	$8,700

EACH MONTH, FROM 24 TO 69	HE PUTS IN	AT 70, 10% AVERAGE, NOMINAL	AT 70, 10% AVERAGE, TODAY'S DOLLARS	AT 70, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME AT THE FLOOR, TODAY'S DOLLARS
$48,000 year)					
$200 (5%)	$110,400	$2.09 million	$841,000	$436,000	$17,400
$300 (7.5%)	$165,600	$3.14 million	$1.26 million	$654,000	$26,200

Nominal is the balance in the dollars of that future year, what the statement will show. Today's dollars remove 2% inflation a year, so they show what the money will actually buy. First-year income is a 4% withdrawal. Each year's contribution (12 times the monthly amount) goes in at the start of the year. All Roth, so none of it is taxed coming out.

At $100 a month, even at the 8% floor, Theo has about $218,000 in today's dollars, tax-free. Not a fortune; a start, with a number attached. And the habit is what turns $100 into $300 when the good years come. The math scales down; the habit is the point.

Action steps.

1. Consider opening three accounts: a savings account named Taxes, one named Cushion, and a Roth IRA holding one total-market index fund.
2. Consider setting the split: 25/10/0 until one month of expenses is banked, then 25/5/5, automatic if your bank allows.
3. Consider putting the four estimated-tax dates in your calendar, and looking up your car loan's rate.

This is an illustration, not personal investment, tax, or legal advice. Your situation is your own; for decisions like these, talk with a tax professional or a fee-only advisor.

Case · Dana, 32: the plan you already have

This page is for readers who already have a retirement plan at work, a 403(b), 401(k), or 457(b), and want to know what's in it and how it fits with the rest of this book.

Dana is the nurse from Chapter 10. She's 32, earns $85,000, and has a son in kindergarten. She has done the order: she banked a month of expenses, then put 4 percent into the hospital's 403(b) to get the full match, cleared her card, and now puts the maximum into her Roth IRA while her student loans run down on schedule. What she has never done is look inside the 403(b) itself.

A 403(b) is the nonprofit and public employer's version of a 401(k), and so is the 457(b) that many hospitals and governments offer beside it. The rules in the 401(k) note after Chapter 2 apply to both: take the match, choose Roth or traditional on purpose, and fill the accounts in order. Federal employees and the military have their own version, the Thrift Savings Plan, or TSP; its C Fund tracks the S&P 500 at a very low cost.

So Dana logs in to her plan's website, the one listed on her pay stub or benefits page, often run by a company like Fidelity, TIAA, or Empower, and checks three things.

Her match. Dollar for dollar on the first 4 percent of pay, and she's been getting all of it ever since.

The fund she was put in. When the hospital enrolled her, it chose the investment for her: a target-date fund, named for a year near her retirement, like 2060. A target-date fund is one fund that holds stocks and bonds together and slowly shifts toward bonds as that year gets closer, so the ride gets gentler as retirement nears. That's a reasonable choice, and many people can leave it alone. It's different from what this book recommends, one index fund that is all stocks, which aims for more growth over the long run and asks you to sit through bigger swings. Either is a sound way to invest for decades. If Dana wants her 403(b) to match the rest of this book, she can switch to the plan's S&P 500 or total U.S. market index fund; switching inside the plan doesn't trigger any tax. Either way, she checks the fee: if the fund costs more than about 0.5 percent a year, the plan's index fund, usually under 0.1 percent, is worth a look.

Whether there's a Roth option. When someone is signed up automatically, their contributions go in pre-tax unless they choose otherwise. As a single parent, Dana files as head of household, which puts her top federal rate at 12 percent. By the rule in the 401(k) note, that points to Roth: if her plan offers a Roth 403(b), she chooses it.

What comes next, if she can save more: she takes the match first, keeps funding the Roth IRA, because the dollars she puts in can come back out if she ever needs them in an emergency, and then adds more to the 403(b). If she also has a 457(b), it has its own separate limit. At a public hospital, that 457(b) is a strong next step: the money is held in trust for her, and once she leaves the job it can come out without the 10 percent early-withdrawal penalty. At a nonprofit hospital, a 457(b) is usually open only to managers and top earners, and its money legally stays the hospital's, open to its creditors, until it's paid out, so the 403(b) comes first.

One more thing nobody tells nurses. This book calls working to 75 a lever, but for someone lifting patients through twelve-hour shifts it may not be one. Dana should plan on 67 and lean on the levers she does control. Today 8 percent of her pay goes into the 403(b), her 4 percent plus the hospital's 4, and her Roth IRA adds $7,500 a year, almost 9 percent more, for a total of about 17 percent of her pay.

And if the hospital offers a high-deductible health plan, the HSA goes right after the match. The 2026 limit for family coverage is $8,750.

EACH YEAR, FROM 32 TO 66	SHE PUTS IN	AT 67, 10% AVERAGE, NOMINAL	AT 67, 10% AVERAGE, TODAY'S DOLLARS	AT 67, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME AT THE FLOOR, TODAY'S DOLLARS
403(b) only (her 4% plus the 4% match)	$411,000	$2.70 million	$1.35 million	$879,000	$35,200
Both: the 403(b) plus her	$674,000	$4.94 million	$2.47 million	$1.58 million	$63,100

EACH YEAR, FROM 32 TO 66	SHE PUTS IN	AT 67, 10% AVERAGE, NOMINAL	AT 67, 10% AVERAGE, TODAY'S DOLLARS	AT 67, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME AT THE FLOOR, TODAY'S DOLLARS
maxed Roth IRA					

Nominal is the balance in the dollars of that future year, what the statement will show. Today's dollars remove 2% inflation a year. First-year income is a 4% withdrawal. Her salary grows 3% a year; the Roth IRA is held flat at $7,500. Roth money comes out tax-free; any 403(b) money in the traditional, pre-tax option is taxed when withdrawn.

At the floor, the 403(b) alone replaces about 30 percent of her final salary. With the Roth IRA it's more than half, before Social Security.

If rent or childcare makes the full $7,500 out of reach for now, half is still a strong start: $3,750 a year in the Roth, with the 403(b) and match unchanged, still gives her about $1.2 million in today's dollars at the floor, and the full amount can come once the loans are paid off.

Action steps.

1. Consider logging in to your plan's website and writing down three things: your match formula, the name and fee of the fund you're in, and whether there's a Roth option.
2. Consider whether to stay in the target-date fund or switch to the plan's S&P 500 or total-market index fund, and if the fee is above about 0.5 percent, look hard at the index fund.
3. Consider switching to the Roth option if your top tax rate is 12 or 22 percent, and checking at open enrollment whether your health plan comes with an HSA.

This is an illustration, not personal investment, tax, or legal advice. Your situation is your own; for decisions like these, talk with a tax professional or a fee-only advisor.

Case · Priya, 27: the tech earner

This page is for the reader who earns too much for a Roth IRA and wonders whether this book still applies. It does, more than almost anyone. Priya is 27, a software engineer in San Jose, with a base salary of $220,000. On top of it she gets company stock as part of her pay, and a plan to buy more at a discount. She has more doors open than most readers, and more money to send through them. Here's her order.

First, the match. Her employer adds 50 cents for every dollar she puts in, up to 6 percent of salary. That's $6,600 a year of free money, and nothing below beats it.

Second, the HSA. She already has the high-deductible health plan, so she puts in the 2026 maximum, $4,400, and invests it in a total-market index fund, not cash. California taxes the HSA at the state level, so she loses that piece; the federal breaks still hold.

Third, the 401(k), Roth or traditional, chosen on purpose. The rule in the 401(k) note after Chapter 2: at a top federal rate of 32 percent or more, the traditional, pre-tax option usually wins. That's Priya: 24 percent federal on her salary alone, 32 percent once her stock pay is counted, plus 9.3 percent in California, over 40 cents of every top dollar. So she chooses the traditional 401(k), or a split, and puts in the 2026 maximum of $24,500 of her own pay. The next two steps give her plenty of Roth money anyway.

Fourth, the backdoor Roth. She puts $7,500 into a traditional IRA, takes no deduction, and converts it to a Roth. One warning: if she has any old pre-tax money in an IRA, part of the conversion becomes taxable (the pro-rata rule in *Beyond the Roth IRA*), so she moves that money into her 401(k) first, if her plan accepts it.

Fifth, the mega backdoor, if her plan allows it. In 2026 her 401(k) can take up to $72,000 in total. Her own $24,500 and the $6,600 match use $31,100 of that, which leaves $40,900 of room. Many tech plans let her fill it with after-tax contributions and convert them to Roth inside the plan. (Because she's a highly paid employee, the plan's yearly testing can cap or refund part of it; HR can tell her the limit.) She starts with $7,000 and adds more as her pay rises.

Sixth, the company stock. It comes two ways: restricted stock units (RSUs), shares her employer gives her as part of her pay, and an employee stock purchase plan (ESPP), which lets part of each paycheck buy company shares at a discount, usually 15 percent. What she does with them is a real choice, and there's a fair case on each side.

The case for selling: her paycheck, her bonus and her career already ride on one company. If it stumbles, she could lose her job and a chunk of her savings at the same moment. Keeping her RSUs is the same as taking that pay in cash and buying her employer's stock with it, a bet she'd probably never make on purpose.

The case for keeping some: she's young, her savings are still small, and every so often an early employee's shares turn into a fortune. The ESPP discount also gives her a cushion: the stock can fall 15 percent before she's behind.

So she makes it a rule, not a feeling. Her core plan stays in low-cost index funds. Everything she holds outside them, company stock included, together stays under a set limit, about 10 percent of her savings, for example: small enough that if it all went to zero, it wouldn't change where her plan is headed. A broad index fund won't go to zero; a single company can. She sells whatever arrives above that limit and writes the limit down. And whatever she holds, she knows what she's crossed into. The day shares vest or are bought, she's no longer just an employee being paid; she's an investor making a bet, and she owes tax on what the shares were worth that day, even if the price falls later. In Priya's case, her employer's plan sells a few shares automatically to cover the tax, but only at a flat 22 percent federal, well below her bracket, so she sets aside cash for the rest of the bill at the same time, or sells enough extra shares to cover it. Plans differ, so check how yours handles the tax before your first shares arrive. In the dot-com years I watched friends in tech get caught exactly there: taxed on shares worth a great deal, holding on as the price collapsed, and then facing a tax bill on gains that had vanished.

Stock pay starts as part of her compensation and becomes an investment the moment she holds on to it, with taxes on both sides and wrinkles of its own, like a cost basis on the brokerage form that can be wrong. So before she decides what to keep, she reads up on how her company's plan works, asks HR or the benefits team the questions she can't answer, and then sits down with a CPA to get it

straight. **It's the one part of her plan where an hour with a professional pays for itself many times over.**

Last, anything beyond that goes into an ordinary taxable brokerage account, invested in the same low-cost total-market index fund she uses everywhere else.

Add it up and $50,000 a year is going in: $43,400 of her own pay, about 20 percent of her salary, plus the $6,600 match. The money from selling her company stock is extra on top. That's an ambitious target, for the hard saver who wants to retire early, and it still leaves her roughly $9,000 a month after taxes: enough to rent and live well as a single person in San Jose, though not, at this savings rate, to buy a home there too. A steadier saver at her income might put in $30,000 a year, her own share about 11 percent of salary, and keep roughly $10,000 a month.

Say Priya decides to retire early, at 55. At the ambitious rate, even the floor gives her about $100,000 a year in today's dollars, roughly $95,000 after tax, a little below the $9,000 a month she lives on now, before counting the taxable account her stock sales have built. At the steadier rate, 55 works only if the market delivers its average and she's willing to live on less than she does now, about $89,000 a year before tax; at the floor, she'd want to keep working and saving a few more years.

EACH YEAR, FROM 27 TO 54	SHE PUTS IN	HER OWN SHARE OF SALARY	AT 55, 10% AVERAGE, NOMINAL	AT 55, 10% AVERAGE, TODAY'S DOLLARS	AT 55, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME AT THE FLOOR, TODAY'S DOLLARS (3.5%), BEFORE TAX
Steadier saver: $30,000	$840,000	about 11%	$4.4 million	$2.5 million	$1.8 million	$62,000
Ambitious saver: $50,000	$1.4 million	about 20%	$7.4 million	$4.2 million	$3.0 million	$103,000

Nominal is the balance in the dollars of that future year, what the statement will show. Today's dollars remove 2% inflation a year. First-year income here uses a 3.5% withdrawal, because an early retirement may need to last 40 years or more. The traditional 401(k) part of this income is taxed when withdrawn; the Roth part isn't, and neither is the HSA part when it pays medical costs.

Retiring early takes some planning. She starts with a lower first-year withdrawal, about 3.5 percent rather than 4, because the money may need to last 40 years or more. Until 59½, she draws on money she can reach without a penalty: her 401(k) under the "rule of 55" (it applies if she leaves that job in or after the year she turns 55), her taxable account, and the Roth money she put in (once her backdoor and mega backdoor money sits in a Roth IRA; the growth stays put until 59½). And she needs health insurance until Medicare at 65.

If Priya keeps working to 70, like the other cases in this book, the results are remarkable:

EACH YEAR, FROM 27 TO 69	SHE PUTS IN	HER OWN SHARE OF SALARY	AT 70, 10% AVERAGE, NOMINAL	AT 70, 10% AVERAGE, TODAY'S DOLLARS	AT 70, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME AT THE FLOOR, TODAY'S DOLLARS, BEFORE TAX
Steadier saver: $30,000	$1.29 million	about 11%	$19.5 million	$8.3 million	$4.6 million	$182,000
Ambitious saver: $50,000	$2.15 million	about 20%	$32.6 million	$13.9 million	$7.6 million	$304,000

Nominal is the balance in the dollars of that future year, what the statement will show. Today's dollars remove 2% inflation a year, so they show what the money will actually buy. First-year income is a 4% withdrawal. Contributions are made at the start of each year. Not all of it is tax-free: the Roth money (the backdoor and the mega backdoor) comes out tax-free, and so does the HSA when it pays medical costs, but withdrawals from the traditional 401(k), roughly three-fifths of the ambitious saver's yearly total, are taxed as income when she takes them. Take-home and living-cost figures are rounded illustrations, estimated at 2026 federal and California tax rates and typical San Jose rents; they're not a budget.

Action steps.

1. Consider opening your benefits portal to confirm the match, set the HSA to $4,400 and invest it, and ask whether the plan allows after-tax contributions with in-plan Roth conversion.

2. Consider funding a backdoor Roth, after checking every IRA you own for old pre-tax money.

3. Consider setting one limit for everything you hold outside your core index funds, company stock included, say 10 percent of your savings. Write it down, and set any RSUs and ESPP shares above that limit to sell automatically.

This is an illustration, not personal investment, tax, or legal advice. Your situation is your own; for decisions like these, talk with a tax professional or a fee-only advisor.

Case · Devin, 29: the crypto investor

This page is for the reader who already holds crypto and thinks this book waved it away. Devin is 29, works in logistics, and keeps about a third of his savings in bitcoin. A reader like Devin would read this book's essay on the national debt and see his own argument in it: a government that borrows in its own currency inflates, and the person holding cash pays. "That's the bitcoin thesis," he'd say. "You argue it and then won't say the word." Fair. Here's the word, and an answer.

Devin has a point about crypto. Several, in fact. Inflation does erode cash, and this book says so itself. The worry that the dollar will keep losing value is reasonable. And power laws are real: over a century of American stock market wealth, 46 companies made half of it. Devin's bet is that bitcoin is the next outlier. So why does one power law get a haystack and the other get called a lottery ticket?

The difference is what you actually own. A share of stock is a claim on a business: its earnings, its dividends, whatever it builds next. That claim on real profits is why the stock market has a floor. Prices can fall hard, but for most companies the profits keep coming, and many pay part of them out in cash as dividends; at some price, those profits and dividends draw buyers back. It's also why the haystack works. Most stocks disappoint, but companies as a whole earn money and pay

real cash to their owners. When you own every company through an index fund, the winners' profits more than pay for the losers.

A crypto token has no earnings and pays no cash. Its price rests on one thing: what the next buyer will pay.

A good comparison is gold, the oldest hedge against a shrinking currency. Gold hit $850 in January 1980 and didn't see that price again until January 2008. After inflation, it took until 2025. A reasonable worry can still be a hard place to compound wealth for forty years.

Then there are the swings. Bitcoin has fallen about 93 percent (2011), 85 percent (2013–15), 84 percent (2017–18), 77 percent (2021–22), and 52 percent from its October 2025 peak to its February 2026 low. It has come back every time so far. U.S. stock bear markets, by comparison, have fallen about a third on average, with earnings still underneath them. And as *The Biggest Risk Is Probably You* argues, the real danger is the hand on the sell button. An 80 percent fall in an asset with nothing under it but the next buyer is a far harder test of that hand.

If Devin wants to keep holding crypto, for any of the reasons above or simply because he expects a big return, he should hold it in a way that won't hurt the rest of his plan if crypto doesn't turn out the way he thought.

The Roth comes first. Every paycheck, automatically. Crypto never replaces that habit; at most it sits alongside it.

Keep it small. Hold only a slice you could watch fall 80 percent without selling anything else, and without losing sleep. Write the cap into your plan. If a rally pushes you past it, trim back to it.

Know the Roth question. The SEC approved spot bitcoin ETFs on January 10, 2024. They can sit inside a Roth IRA at many brokerages, Fidelity and Vanguard among them; some firms still restrict them. Fees range from about 0.15 to 1.5 percent a year, so check. And think twice: Roth room is capped at $7,500 a year and is the most valuable space you have. A win there is tax-free, but a loss can't be deducted, and every dollar in bitcoin is a dollar not compounding in the haystack.

Devin kept some of his bitcoin, trimmed from a third of his savings down to a slice he can live with, and wrote that cap on one page: 10 percent, a number he won't cross. (Selling bitcoin held outside a retirement account is a taxable sale, so he checked his gains first and spread the trim across two tax years.) He also set up a $290 transfer into a Roth every payday. The bet is still his. The plan no longer depends on it.

Action steps.

1. Consider writing down your crypto share today, in dollars and as a percent of your savings.
2. Consider setting up the automatic Roth contribution before your next crypto purchase.
3. Consider deciding your cap and writing it into your plan.

This is an illustration, not personal investment, tax, or legal advice. Your situation is your own; for decisions like these, talk with a tax professional or a fee-only advisor.

Case · Denise, 46: it's never too late

This page is for readers starting in their mid-forties or later who want to know what's still possible.

Denise is 46 and the operations manager at a regional building-supply company with a dozen locations. She earns $95,000. Her job has offered a 401(k) for eleven years, and she has barely used it; life kept getting there first: a divorce, a stretch of medical bills, then a roof that had to be replaced. Her niece passed along a free copy of *Start Now*. Denise saw that it's aimed at people 20 to 40 and asked the question this page is for: is it too late for me?

No. But her plan looks different from Maya's, who started at 30 with a Roth IRA alone. At 46, Denise's main tool is the 401(k) she already has, and her choices about taxes and Social Security matter more.

The workplace plan is her engine. A Roth IRA tops out at $7,500 a year. Her 401(k) takes $24,500. At 50, a catch-up raises that to $32,500, and from 60 to 63

it is $35,750. Her employer matches 4 percent, and she takes that money first, always.

Roth or traditional, chosen on purpose. Her 401(k) offers both, and the rule in the 401(k) note after Chapter 2 decides it: at a top federal rate of 12 or 22 percent, choose Roth. Denise is at 22 percent, so she chooses the Roth 401(k). If raises push her into the 24 percent bracket, she splits new contributions between the two. Then, if she can, she adds a Roth IRA: $7,500 now, $8,600 from 50.

Here's what twenty-four years can still do:

EACH YEAR, FROM 46 TO 69	SHE PUTS IN	AT 70, 10% AVERAGE, NOMINAL	AT 70, 10% AVERAGE, TODAY'S DOLLARS	AT 70, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME AT THE FLOOR, TODAY'S DOLLARS
Roth IRA max only	$202,000	$799,000	$497,000	$370,000	$14,800
Roth IRA, plus 10% of pay into the 401(k) and the 4% match	$660,000	$2.43 million	$1.51 million	$1.14 million	$45,600
Roth IRA, plus the 401(k) maximum and the match	$1.09 million	$4.18 million	$2.60 million	$1.95 million	$78,000

Nominal is the balance in the dollars of that future year, what the statement will show. Today's dollars remove 2% inflation a year. First-year income is a 4% withdrawal. Salary $95,000, rising 3% a year; limits held at 2026 levels. Roth money comes out tax-free; any traditional 401(k) money is taxed when withdrawn. All before Social Security.

The middle row asks for about 18 percent of her pay; the last row, about a third. Few people can do the last one every year. It's there to show the ceiling, not to set the bar.

Denise looks hard at the middle row and does the math on her retirement. To live about as she does now, she'll want roughly 80 percent of her pay, about $76,000 a year in today's dollars. If she waits until 70 to claim, Social Security will cover about 40 percent, roughly $38,000, if benefits are paid as scheduled; her own estimate is at ssa.gov. That leaves a gap of about $38,000 a year. To buy that much lifetime income at 70, an annuity that rises with inflation, would cost somewhere around $600,000 to $700,000 in today's money. The middle row fills the gap on its own: about $45,000 a year at the 8% floor, though the match's share, about a fifth, is taxed when she takes it.

Eighteen percent of her pay is a lot to start with, so she doesn't. She begins at about 8½ percent of her pay: the match plus two points into the 401(k), and $200 a month into a Roth IRA. She steps up about 3 points a year until, by 49, she's at the full middle row. (The table shows the full amount from the first year to keep it simple; a three-year ramp lands a little lower.) Nothing about the future is guaranteed, but she knows what the record says and what waiting costs. She starts now.

At the floor, the first year of that income comes to about $73,000 in the dollars of the day she retires, about 11 percent a year on everything she put in, and about 14 percent on the part that was her own money rather than the match. That's the yield on cost from Chapter 3, built in twenty-four years.

What waiting would cost. The hardest part of starting at 46 is the voice that says *later*: after the next raise, once the house is settled, at 50, when retirement feels real. Here's what that voice costs, using the same middle-row plan at the floor:

IF DENISE STARTS AT…	AT 70, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME, TODAY'S DOLLARS
46 (now)	$1.14 million	$45,600
50 (four years from now)	$838,000	$33,500
56 (ten years from now)	$482,000	$19,300

IF DENISE STARTS AT…	AT 70, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME, TODAY'S DOLLARS
Never	nothing beyond Social Security	her $38,000 gap stays unfilled

Four years of waiting costs her about a quarter of her retirement income; ten years costs more than half. And never starting leaves the $38,000 gap open for the rest of her life. That's why the best year for Denise to start is this one.

Three more levers.

Social Security. For anyone born in 1960 or later, full retirement age is 67. Claim at 70 instead of 62 and the monthly check is about 77 percent larger, for life, and it rises with inflation. On a $95,000 career that check carries a large share of retirement; the accounts only have to cover the rest.

Working longer. You can't buy back the years you didn't save. You can add years at the other end. Each one brings another contribution, another year of growth, one fewer year to fund, and a bigger check. But those years aren't promised: the table already assumes work to 70, and health and employers both get a vote. So she saves as if the last years may not come, and treats any she gets as a bonus.

Spending less now. This is the lever no one mentions. Each dollar she stops spending works twice: it's a dollar saved, and a dollar of lifestyle she won't have to replace at 70.

Starting at 46 isn't starting late. It is starting.

Action steps.

1. Consider raising your 401(k) contribution to at least the full match, then one or two points more, and turning on automatic increases if the plan offers them.
2. Consider choosing Roth or traditional by the rule in the 401(k) note, and a low-cost broad index fund.
3. Consider looking for 5 to 10 percent of your spending you could cut, and sending it straight to the 401(k) or a Roth IRA.

4. Consider creating your account at ssa.gov to see your benefit at 62, 67, and 70.

5. Once it’s set up, consider leaving it alone. Automatic contributions do the work; checking often only tempts you to change course.

This is an illustration, not personal investment, tax, or legal advice. Your situation is your own; for decisions like these, talk with a tax professional or a fee-only advisor.

Case · Nora, 17: the first paycheck

This page is for teenagers with a first paycheck, and for the parents who want to help them start.

Nora spent the summer working part-time as a lifeguard at the town pool and earned $3,000. She needs most of it for gas, her phone, and a repair fund for an old car. She sets aside $1,000 for her future.

If you’re Nora’s age, this page is for you. You can’t open a Roth IRA on your own until you’re an adult, so a parent opens a custodial Roth IRA, an account the parent manages for you until it becomes fully yours at 18 or 21, depending on your state. Fidelity, Schwab, and Vanguard all offer them. The rule is the one from Chapter 7: you can put in up to what you earned that year. Nora could put in all $3,000, and with full-time summer hours she’d have earned more and could put in more. She chooses $1,000 and keeps the rest for what she needs now, and that’s fine; any amount counts.

The $1,000 goes into one low-cost index fund that owns the whole U.S. market. And here’s the part that makes it easier: the $1,000 is never locked up. If she needs it for something unexpected, like a car repair, she can take that $1,000 back out, with no tax and no penalty; until the account is hers, a parent signs off. Only the growth has to stay put. But I hope she leaves it, and here’s why.

ONE SUMMER'S DEPOSIT AT 17	SHE PUTS IN	AT 70, 10% AVERAGE, NOMINAL	AT 70, 10% AVERAGE, TODAY'S DOLLARS	AT 70, 8% FLOOR, TODAY'S DOLLARS	FIRST-YEAR INCOME AT THE FLOOR, TODAY'S DOLLARS
Her own $1,000	$1,000	$156,000	$55,000	$21,000	$830
With her parents matching it dollar for dollar	$2,000	$312,000	$109,000	$41,000	$1,650
All $3,000 she earned	$3,000	$469,000	$164,000	$62,000	$2,480

Nominal is the balance in the dollars of that future year, what the statement will show. Today's dollars remove 2% inflation a year. First-year income is a 4% withdrawal. Each deposit is made once, at 17, and left untouched to age 70. All Roth, so none of it is taxed coming out.

Read the top line again. Nora's $1,000 from one summer of whistles and sunscreen becomes about $156,000 by 70 at the long-run average. In today's dollars that's about $55,000, and even at the 8% floor, about $21,000. In Chapter 1, $1,000 put in at 30 became about $45,000 at 70 at the average; put in at 17, the same $1,000 becomes about $156,000. Thirteen years of head start more than triples it.

The income column looks small until you compare it with what she put in. At the floor, that one $1,000 pays her about $830 a year in today's dollars, 83 percent of her original deposit, every year, for the rest of her life, and rising with inflation. That's the yield on cost from Chapter 3, and it comes from a single summer.

Nothing you save in your thirties will ever work this hard. The dollars from this summer are some of the most valuable you'll ever earn, and you earned them in a lifeguard chair.

Action steps.

1. Consider sitting down with a parent to open a custodial Roth IRA together, and putting in part of what you earned: $1,000 if you can, less if you can't.

2. Keep your W-2 or pay stubs in a folder. They're your record, for taxes, that the money was earned.

This is an illustration, not personal investment, tax, or legal advice. Your situation is your own; for decisions like these, talk with a tax professional or a fee-only advisor.

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THE START NOW TOOLKIT · KEY TERMS

Key Terms

> Every financial term this book uses, in plain English: more than fifty of them, drawn from investing, finance, tax, and accounting. You don't need to memorize them or read them straight through. Come here whenever a word trips you up; even if all of this is brand new to you, with these at hand you'll be able to follow every step of the reasoning. The terms are listed alphabetically.

1099 — The tax form an independent contractor receives. A 1099 worker is self-employed for tax and retirement purposes and uses accounts like the solo 401(k) rather than an employer plan.

401(k) — An employer-sponsored defined-contribution retirement account. The employee contributes from their paycheck (often with an employer match), chooses investments, and bears the investment risk. Similar in spirit to an IRA but offered through a workplace.

403(b) — A retirement account much like a 401(k), but offered by nonprofits, public schools, and government employers. Contributions come from your paycheck and grow tax-advantaged.

529 plan — A tax-advantaged account for education. After-tax money grows and is withdrawn tax-free when spent on qualified education such as tuition; spent on anything else, the earnings are taxed and penalized. Leftover funds can now be rolled into the beneficiary's Roth IRA, within limits.

530A account — A federal account for children created by the 2025 tax law. Since fall 2026 the Treasury opens one automatically for eligible children; for a U.S.-citizen child born 2025–2028 it adds $1,000 once a parent claims it. Family may add up to $5,000 a year, invested in a low-cost U.S. stock index fund. From the year the child turns 18, it follows Traditional IRA rules.

Annual gift tax exclusion — The amount you can give any one person in a year without using your lifetime gift and estate tax exemption or filing a gift tax return, $19,000 per recipient in 2026 ($38,000 for a married couple who split the gift).

Annuity — A contract, usually with an insurance company, in which you hand over a lump sum in exchange for a guaranteed stream of income, often for life.

Asset allocation — How a portfolio is divided among kinds of investments: stocks, bonds, cash, and anything else. The single biggest driver of how a portfolio behaves, more than any individual pick inside it.

Backdoor Roth — A legal technique that lets high earners who exceed the Roth income limits still fund a Roth: they make a non-deductible contribution to a Traditional IRA and then convert it to a Roth.

CAPE (cyclically adjusted P/E) — The cyclically adjusted price-to-earnings ratio, popularized by Robert Shiller: stock prices measured against average inflation-adjusted earnings over the prior ten years. A high CAPE has historically signaled lower returns over the following decade.

Capital gain — The profit when you sell an investment for more than you paid. A long-term capital gain (asset held over a year) is taxed at lower rates than ordinary income at the federal level.

Catch-up contribution — An extra amount that savers aged 50 and older may contribute above the standard annual limit.

Compounding — Earning returns on your past returns, not just on your original contribution. Over decades the effect becomes exponential rather than linear, the central idea of this book.

CPI-U — The Consumer Price Index for All Urban Consumers, the U.S. Bureau of Labor Statistics' main gauge of inflation: the change over time in the price of a fixed basket of goods and services.

Custodial Roth IRA — A Roth IRA opened and managed by a parent or guardian for a minor who has earned income; control transfers to the child at the age of majority.

Defined-benefit (DB) pension — A traditional pension that pays a guaranteed income for life in retirement, with the employer bearing the investment risk. Now rare in the U.S. private sector.

Defined-contribution (DC) plan — A retirement account (such as a 401(k) or IRA) funded by contributions, where the final balance depends on investment performance and the individual bears the risk. There's no guaranteed payout.

Deflation — A sustained fall in the general price level, the opposite of inflation. Rare in the modern era; it makes cash worth more over time but raises the real burden of debt.

Diversification — Owning many investments instead of a few, so no single failure can sink you. An index fund is diversification taken to its logical end: own everything, and the winners you could never have picked in advance are always in the net.

Dividend — A cash payment a company makes to shareholders out of profits. In a taxable account, dividends are taxed in the year received; inside an IRA they're not.

Dollar-cost averaging — Investing a fixed amount at regular intervals regardless of price, so you automatically buy more shares when the market is low and fewer when it's high, a natural byproduct of steady, scheduled saving rather than a strategy you have to time.

Earned income (compensation), Money from work, wages, salary, or self-employment income, as opposed to gifts, allowances, or investment income. Only earned income qualifies a person to contribute to a Roth IRA.

Employee stock purchase plan (ESPP), A plan that lets you buy your employer's stock through payroll, usually at a discount of up to 15 percent.

Exchange-traded fund (ETF) — An index fund that trades like a stock, with rock-bottom fees and no minimum investment. The most convenient way to own a broad-market index fund.

Financial capital — The money you've saved and invested: the balances in your accounts, working and compounding on your behalf. The second of the two assets a financial life converts between; see *Human capital*.

Glide path — The planned, gradual drawdown of a portfolio through retirement, paced so the money outlasts the person. More broadly, any schedule that shifts a portfolio's risk as a life stage approaches.

Human capital — The value today of all the paychecks you have not yet earned: your skills, training, and remaining working years. Early in a career it is most people's single most valuable asset, and it's spent, converted into financial capital, one paycheck at a time.

Index fund — A fund that holds every stock in a market index (such as the S&P 500), in proportion, rather than trying to pick winners. It captures the whole market's return at very low cost.

Inflation — The gradual rise in prices over time, which erodes the purchasing power of money. This book uses 2% per year to express future dollars in today's purchasing power.

IRA (Individual Retirement Account) — A tax-advantaged account an individual opens to save for retirement, independent of an employer. Comes in Traditional and Roth varieties.

Life-cycle finance — The branch of economics that views a financial life as one long arc: borrow to build earning power when young, convert earnings into

savings through the working years, then draw the savings down in retirement. The frame behind the chart in “Two Hills: The Shape of a Financial Life.”

Lifestyle creep — The tendency for spending to rise automatically with income, so raises disappear into a larger lifestyle instead of larger savings. The main threat to a portfolio big enough to compound on its own.

Modified adjusted gross income (MAGI) — Your adjusted gross income with certain deductions added back. The IRS uses it to decide who can contribute directly to a Roth IRA, and to set other income thresholds.

Net investment income tax (NIIT) — An extra 3.8% federal tax on investment income (such as capital gains and dividends) for higher earners, generally above about $200,000 of income for a single filer.

Nominal vs. real return — A nominal return is the raw percentage gain; a real return subtracts inflation to show the gain in true purchasing power. Over the past century, with inflation near 3%, the market’s 10% nominal return was about 7% real. This book’s today’s-dollar figures assume 2% inflation going forward, the Federal Reserve’s target; if inflation runs hotter, those figures would be somewhat lower.

Non-deductible IRA contribution — Money put into a Traditional IRA that you’ve already paid tax on, with no deduction going in. It’s what you get when your income is too high to deduct a Traditional IRA contribution and you or your spouse has a retirement plan at work. On its own it’s a weak deal, because the growth is still taxed when it comes out; its main use is as the first step of a backdoor Roth.

Ordinary income, Income taxed at the regular rate schedule, wages, interest, and Traditional IRA withdrawals. These rates are higher than long-term capital-gains rates.

Present value (“today’s dollars”) — What a future sum is worth in today’s purchasing power, found by discounting it back at an assumed inflation rate. It answers “what would that future amount feel like if I had it now?”

Pro-rata rule — A tax rule that treats all of your Traditional, SEP, and SIMPLE IRA balances as one pool when you convert money to a Roth. It means a

backdoor Roth is only fully tax-free if you hold no other pre-tax IRA money, since each converted dollar is taxed in proportion to the pre-tax share of the total.

Purchasing power — What a given amount of money can actually buy. Inflation erodes it, which is why a “real” (after-inflation) figure often matters more than a “nominal” one.

Qualified dividend — A dividend that meets IRS holding-period rules and is therefore taxed at the lower long-term capital-gains rate rather than as ordinary income.

Replacement rate — The share of your pre-retirement income that a source (such as Social Security or a pension) provides in retirement. Planners often target a total of 70–85%.

Required minimum distribution (RMD) — The amount the IRS forces you to withdraw each year from a Traditional IRA starting at age 73 (rising to 75 for those born in 1960 or later), whether you need it or not. Roth IRAs have no RMDs during the owner’s lifetime.

Restricted stock unit (RSU), Company shares your employer gives you as part of your pay. They become yours on set dates (“vesting”) and are taxed as income the day they do.

Return — What your money earns in a year, stated as a percentage of what you put in. Put in $100, finish the year with $108, and the return was 8%. It includes both price growth and any dividends the investment paid.

Roth 401(k) — The Roth version of a 401(k), offered through many employers. You contribute after-tax dollars, and qualified withdrawals, including all growth, are entirely tax-free, at the much higher 401(k) limit.

Roth IRA — An IRA funded with after-tax dollars; it grows tax-free and qualified withdrawals in retirement, including all growth, are entirely tax-free.

Rule of 72 — A shortcut: divide 72 by the annual return to estimate how many years it takes money to double. At 10%, roughly every 7.2 years.

SEP-IRA — A Simplified Employee Pension IRA: a straightforward retirement account for the self-employed and small businesses. The owner contributes a percentage of income, with far higher limits than a standard IRA.

Shallow risk vs. deep risk — Shallow risk is a price decline that can reverse: violent in the short run, but only a paper loss unless you sell. Deep risk is a permanent loss of capital with no path back: fraud, ruinous fees, a single bet gone to zero, or selling at the bottom. The plan in this book accepts shallow risk and is built to avoid deep risk.

Solo 401(k) — A 401(k) for a self-employed person with no employees. It lets you contribute as both employee and employer, reaching much higher limits than an IRA, the go-to account for independent workers who want to save aggressively.

Spousal IRA — A rule that lets a working spouse fund an IRA for a non-working or low-earning spouse, so a married couple filing jointly can contribute to two IRAs on a single income.

Tax-deferred (Growth that is not taxed year to year, but will be taxed later on withdrawal) the Traditional IRA model. (A Roth, by contrast, is tax-free, not merely tax-deferred.)

Taxable account — An ordinary, non-retirement brokerage account. You invest after-tax money; dividends are taxed each year and gains are taxed when you sell. No contribution limits or withdrawal rules, but no tax shelter either.

The 4% rule — A rule of thumb that withdrawing about 4% of a portfolio in the first year of retirement (then adjusting for inflation) historically lasted a 30-year retirement. See Section 1.5.

Traditional IRA — An IRA funded with pre-tax dollars (usually a deduction today); it grows untaxed, but every withdrawal in retirement is taxed as ordinary income.

W-2 employee — A traditional employee on a company's payroll, with taxes withheld and reported on a W-2 form. W-2 employees can join their employer's 401(k).

Withdrawal rate — The percentage of a retirement portfolio taken out as income in a given year. A lower rate is safer; a higher rate risks depleting the portfolio.

Yield on cost — The annual income an investment produces measured against what you originally paid for it, rather than its current value. A 4% withdrawal from a large balance can be a very high yield on the small sum first contributed.

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THE START NOW TOOLKIT · FURTHER READING

Further Reading & References

> *A few books shaped how I think about all this. Some of what's here, they said first, and said well; this list is my thanks.* ***If this book made you curious to learn more about investing, here are the few I'd put on any starter shelf.***

Where it starts

The Richest Man in Babylon — George S. Clason. This is where it began in our house. I gave it to our eldest, Zachary, when he was still in elementary school, and then to each of our other children in turn. We paired it with a piggy bank and a simple rule: his allowance, and later the money he earned from working, got split three ways, into spending, saving, and gifting, with the saving bucket always filled first. Clason teaches that same lesson through timeless parables: pay yourself first, save at least a tenth of what you earn, and put it to work. Everything in this book grew from that seed.

The core case

A Random Walk Down Wall Street — Burton Malkiel. This was the first book I read as I left college and set out for Wall Street. If you read only one book to understand why the approach in these pages works, make it this one; Malkiel shows, patiently, why almost no one beats a low-cost index over time, and why you don't need to.

The Little Book of Common Sense Investing — John Bogle. The man who invented the index fund, in the plainest language: own everything, hold forever, and don't let costs eat your returns.

The Psychology of Money — Morgan Housel. His point is that doing well with money is mostly about behavior, not brains: patience, humility, and not panicking

when it's frightening. The perfect companion to the math, since behavior is where most people slip.

The Simple Path to Wealth — JL Collins. Collins wrote this as a series of letters to his teenage daughter, and it's the closest thing in print to the spirit of this book, written for exactly the young American I'm hoping to reach. Its message is radical simplicity: in the building years, put nearly everything into one low-cost total-stock-market index fund, tune out the noise, and never sell in a panic. Along the way he names something worth chasing, enough savings that you can walk away from any job or bad situation that is not right for you. That's not about being rich; it's about being free, which is the whole point.

Going deeper

The Four Pillars of Investing — William Bernstein. When you want to truly understand rather than just follow, this is the book, the theory, history, psychology, and business of investing, all four.

Deep Risk — William Bernstein. The short book behind a distinction this one borrows: shallow risk, the temporary decline you must sit through, versus deep risk, the permanent loss you must never take. A slim map of what can actually destroy capital, inflation, deflation, confiscation, devastation, and what protects against each.

investor.gov — The SEC's investor-education site. Its free compound interest and savings-goal calculators let you run this book's arithmetic on your own numbers, with no ads and nothing for sale.

Rational Reminder — A free weekly podcast from three Canadian portfolio managers, Benjamin Felix, Cameron Passmore and Dan Bortolotti. It's the deep end of the pool: long, careful conversations about what the research actually says on index investing, risk, behavior and planning, often with the academics who did the research. Some episodes get technical, and some tax details are Canadian, but it has sharpened my own thinking as much as anything I listen to. Worth knowing: the hosts manage money for clients, so weigh it the way you'd any advisor's view.

Stocks for the Long Run — Jeremy Siegel. The deep data under the whole premise: across long horizons, a broad basket of stocks has simply beaten bonds, cash, and gold.

Winning the Loser's Game — Charlie Ellis. Ellis borrowed an idea from the tennis scientist Simon Ramo. Professional tennis is a "winner's game," decided by brilliant shots; amateur tennis is a "loser's game," decided by who makes fewer mistakes. Investing, Ellis argued, has become a loser's game, where you win by avoiding unforced errors rather than trying to be clever. That single insight is most of why quiet, low-cost indexing beats the pros. For the last decade of my Wall Street career, Charlie was a consultant and advisor to us, a warm, generous man I could always turn to for his wisdom and perspective.

The Intelligent Investor — Benjamin Graham. This was the first book I read when I arrived on Wall Street, the classic Buffett calls the best investing book ever written. It's old-fashioned in places, but its lessons on temperament (Mr. Market, the margin of safety) never expire.

Money and the life around it

Your Money or Your Life — Vicki Robin & Joe Dominguez. This one is less about markets than about the why beneath all of it. Its central reframe is that money is "life energy", the hours of your finite life you trade away to earn it, so you learn to weigh every purchase by how many hours of life it truly costs and whether it gives your life real value. You track every dollar until the income from your savings finally rises above your expenses: the "crossover point," the moment you're free. It's a founding text of the financial-independence movement, and a close cousin to the self-reliance running through this book.

Are You a Stock or a Bond? — Moshe Milevsky. I read it nearly twenty years ago, and it changed how I saw a career: as an asset, the biggest one most of us will ever own. It was the cherry on top that finally put me over the hump to index investing. The two hills in Chapter 11 come straight from its way of thinking.

I Will Teach You to Be Rich — Ramit Sethi. My wife Hanna turned me onto Sethi through his Netflix series, and I liked his no-nonsense style enough to send you to the book, which is the fuller, step-by-step version. It's built for people in their twenties and thirties: automate your money so saving and investing happen without willpower, run a "conscious spending plan" that spends freely on the few

things you love and cuts the rest, and start investing before you feel like an expert. His mantra is to focus on the big wins (your salary, your automation, your fees) rather than agonizing over the price of a coffee, and that a “rich life” is whatever you decide it is.

On the 4% rule

A Richer Retirement — William Bengen. Bengen is the man who gave us the “4% rule” I lean on for retirement income, back in 1994. In this new book he revisits it with better data and argues you can safely spend even more — closer to 5% to 5.5% for most retirees — which only makes the cautious 4% in these pages feel safer still.

How Much Can I Spend in Retirement? and the ***Retirement Planning Guidebook*** — Wade Pfau. If Bengen started the conversation about safe withdrawal rates, Pfau has spent a career deepening it. A professor of retirement income with a doctorate from Princeton, he stress-tests the 4% rule from every angle, showing where it can be too generous, and where, with today’s higher bond yields, a careful retiree can safely spend even more. The first book is the definitive study of how much you can pull from a portfolio; the Guidebook, now in its third edition, is the broader map of every retirement decision: Social Security timing, taxes, Medicare, and the rest. Denser than most on this list, but this is where you go for the rigor behind the rule these pages lean on.

For the community

The Bogleheads’ Guide to Investing — Taylor Larimore, Mel Lindauer & Michael LeBoeuf. If you want to find your people, start here. Written by leaders of the Bogleheads, the community of ordinary, disciplined index investors devoted to Jack Bogle’s ideas. It’s their collected wisdom in one plain-spoken manual: live below your means, start early, index at rock-bottom cost, and above all, stay the course. It’s the natural door into exactly the kind of community I hope grows around these ideas.

On whose shoulders this stands

The numbers in this book stand on the work of researchers who wrote for scholars, not general readers. You don’t need to read a word of them to succeed, but you deserve to know whose shoulders this stands on.

Eugene Fama. A University of Chicago economist and Nobel laureate, Fama is the father of the “efficient market hypothesis,” the work showing that prices already reflect what’s known, so consistently outguessing the market is extraordinarily hard. He and Kenneth French later built the models that shape modern portfolio theory. His work is the bedrock under this whole book: if you can’t reliably beat the market, the winning move is to own all of it, cheaply.

Paul Samuelson. The first American to win the Nobel in Economics and the man who turned economics into a rigorous mathematical science. In finance he proved that properly anticipated prices move randomly, the formal basis for the “random walk”, and he was index investing’s most powerful early champion, pushing for a low-cost index fund years before one existed and later calling Bogle’s invention as important as the wheel and the alphabet.

Hendrik Bessembinder. A finance professor whose research delivered a startling, book-defining finding: over the long run most individual stocks actually lose to Treasury bills, and essentially all of the market’s net wealth has come from a tiny sliver of huge winners. The unavoidable lesson, the one this book is built on, is that since you can’t know in advance which few stocks will win, you must own the whole haystack.

Aswath Damodaran. An NYU Stern professor known as the “Dean of Valuation,” beloved for teaching and for freely publishing enormous datasets (historical returns, risk premiums, and more) used by students and professionals worldwide. His generosity with that data underpins the numbers and charts in these pages.

Lawrence Fisher & James Lorie. The University of Chicago researchers who, in the 1960s, founded the Center for Research in Security Prices (CRSP) and produced the first rigorous, comprehensive measurement of long-run U.S. stock returns, turning “stocks return about so much over time” from folklore into measured fact.

Roger Ibbotson & Rex Sinquefield. They extended that measurement into the standard long-run return series the whole industry still cites, and then put the ideas to work, Sinquefield co-founding Dimensional Fund Advisors and Ibbotson founding the firm (later part of Morningstar) that supplies those historical numbers to advisors everywhere.

Notes & Sources

> *Numbered references correspond to the superscript markers in the text. Figures are rounded; where rates or ranges are described as "illustrative" or "representative," they are reasonable standard assumptions rather than any individual's actual numbers.*

1. S&P 500 annual and rolling-period returns, 1928–2025, are calculations from Standard & Poor's 500 total-return data (dividends reinvested). Method: annual returns measured year-end to year-end; each multi-year figure is the compound (geometric) annualized return over a window, the product of the yearly (1 + return) factors, raised to the power 1/n, minus 1, with windows rolled forward one year at a time. Across the 69 overlapping 30-year windows, the annualized return ranged from about 8.0% (worst, the window beginning 1929) to 13.6% (best, beginning 1970), with a mean of 11.0% and a median of 10.8%; no 20- or 30-year window was negative. The 10% used throughout is the market's full-period compound return, a deliberately conservative step below the 11.0% rolling-window mean. Two notes on that figure. Rolling 30-year windows quarterly instead of annually, on monthly data reconstructed from Robert Shiller's S&P 500 total-return series, widens the extremes over the same span to about 7.6% at worst and 14.3% at best, while leaving the mean near 11.0% and the median near 10.8%. And compounding the full 1928–2025 span as one single run yields about 9.9%, which rounds to the 10% this book uses. The 11.0% rolling-window mean, shown alongside, reflects the typical 30-year investor's experience. *Show Me the Numbers* charts and tabulates the full rolling-window series.

2. William P. Bengen, "Determining Withdrawal Rates Using Historical Data," Journal of Financial Planning (1994); and Cooley, Hubbard & Walz, "Retirement Savings: Choosing a Withdrawal Rate That Is Sustainable" (the "Trinity Study"), AAII Journal (1998). A 4% initial withdrawal succeeded in roughly 95% of historical 30-year periods on a balanced portfolio.

3. Updated guidance: in his 2025 book (A Richer Retirement) Bengen argues most retirees can safely take about 5%–5.5%, with a historical average nearer 7%; his updated worst-case ("never-failed") rate is about 4.7%. More cautiously, Morningstar's 2026 research puts the base case at roughly 3.9% for new retirees, and Vanguard suggests a 3.5–4% range.

4. Required minimum distributions from Traditional IRAs generally begin at age 73 under current law (SECURE 2.0 Act of 2022), rising to age 75 for those born in 1960 or later. Internal Revenue Service, "Retirement Topics — Required Minimum Distributions."

5. 2026 IRA contribution limits: $7,500 under age 50, with an additional $1,100 catch-up ($8,600) at age 50 and older. Internal Revenue Service.

6. Illustrative federal tax rates: 24% represents a middle ordinary-income bracket; 15% is the most common long-term capital-gains and qualified-dividend rate (Internal Revenue Service rate schedules), with no state tax. For simplicity the same 24% is applied at contribution and at withdrawal. In practice the withdrawal rate is often lower: brackets are indexed to inflation, and the floor case's income of about $39,000 in today's dollars would fall in the 12% bracket under current schedules. Section 3.3 addresses this directly. Chapter 5 re-runs the base case for a middle-income California investor.

7. Today's-dollar figures in this book discount future amounts at 2% a year, the Federal Reserve's long-run target and close to actual U.S. inflation for the two decades before the pandemic. If inflation runs hotter, the today's-dollars figures would somewhat overstate future purchasing power, though the nominal figures are unaffected. The Federal Reserve formally adopted its 2% inflation target in January 2012; inflation ran at or below 2% for most of the following decade, then surged after the pandemic, peaking near 9% (CPI) in mid-2022, the highest in four decades, before receding. Federal Reserve; U.S. Bureau of Labor Statistics.

8. California taxes long-term capital gains and dividends as ordinary income, with no preferential rate; the top state rate is 13.3%. The 3.8% federal net investment income tax applies above roughly $200,000 (single). California Franchise Tax Board; Internal Revenue Service. Rates shown (~31% ordinary and ~24% gains for a ~$100K single filer; ~50.3% and ~37.1% at the top bracket) are representative blends.

9. Net pension replacement rates for a full-career average earner average about 63% across the OECD but only about 50% in the United States, and exceed 90% in the Netherlands and Portugal. OECD, Pensions at a Glance 2025.

10. OECD Revenue Statistics 2024–2025: total tax revenue as a share of GDP was about 25% in the United States in 2024 (ranking 31st of 38 OECD countries), versus an OECD average near 34%, roughly 44% in France and Denmark, and above 40% in Finland, Austria, Belgium, Sweden, Norway, and Italy. The U.S. relies more on income and property taxes and levies no national value-added tax. Lower aggregate taxation is the counterpart to a smaller public role in funding retirement, healthcare, and related needs.

11. Defined-benefit pension coverage of private-sector workers fell from about 38% (1980) to about 20% (2008); defined-contribution participants now outnumber defined-benefit participants several times over. U.S. Bureau of Labor Statistics; Social Security Administration; Congressional Research Service.

12. Social Security replacement rates by career-earnings level are from U.S. Social Security Administration actuarial estimates for a worker reaching full retirement age (67). The program's progressive formula replaces a larger share for lower earners.

13. The 70–85% replacement-of-income guideline is a common financial-planning consensus (e.g., Aon/Georgia State and TIAA analyses). The gap between that target and what Social Security provides is the "retirement income gap."

14. The Social Security Old-Age and Survivors Insurance (retirement) trust fund is projected to be depleted in the fourth quarter of 2032, after which continuing tax revenue would cover about 78% of scheduled benefits absent legislative changes; the legally separate combined funds run to about 2034. These are annual projections that shift with each report. Social Security Board of Trustees, 2026 Annual Report.

15. U.S. public pensions rank in the bottom third of developed countries by the share of earnings they replace. Center on Budget and Policy Priorities.

16. Roth IRA contributions require earned income (compensation) and are limited to the lesser of the annual contribution limit or the recipient's compensation for the year. Internal Revenue Service, "Retirement Topics — IRA Contribution Limits."

17. 2026 annual gift tax exclusion: $19,000 per recipient ($38,000 for married couples who elect to split gifts). Gifts within the exclusion use none of the lifetime gift and estate tax exemption and require no gift tax return. Internal Revenue Service.

18. 530A accounts were established by the 2025 tax law (the One Big Beautiful Bill Act) and opened in 2026; the U.S. Treasury seeds a $1,000 pilot contribution for children born 2025–2028 once a parent elects it on IRS Form 4547, and since about October 1, 2026 opens accounts automatically for eligible children (Treasury temporary regulations, September 30, 2026). Contribution limits (about $5,000/year), the requirement to hold low-cost broad U.S. stock index funds (fees capped near 0.1%), and the switch to Traditional IRA rules from the year the child turns 18 (IRS Notice 2025-68) are per Internal Revenue Service and Treasury guidance as of 2026 and subject to change.

19. Every equity figure in this book is the S&P 500, U.S. large-capitalization stocks. A globally diversified portfolio (adding international, smaller-company, and other holdings) would have looked somewhat different, and historically somewhat lower-returning, though more diversified. U.S. equities were among the strongest-performing major markets of the past century. The reasons are debated, but commonly cited structural strengths include deep and liquid capital markets, strong property rights and the rule of law, a large integrated domestic market, and a continuous pipeline of newly formed and publicly listed companies. Most international comparison markets are themselves market-based economies, so the historical gap reflects these structural and historical factors more than the presence or absence of any single economic system. Past performance does not guarantee future results.

20. Vanguard, “Dollar-cost averaging just means taking risk later” (2012), examining U.S., U.K., and Australian markets: investing a lump sum immediately outperformed gradual 12-month dollar-cost averaging roughly two-thirds of the time (about 68% of rolling 10-year U.S. periods), by an average of roughly two percentage points over the horizon, because markets rose more often than they fell. Vanguard frames dollar-cost averaging as a risk- and regret-management choice rather than a return-maximizing one.

21. Expense ratios and relative fund sizes as of early 2026, from the fund providers (Vanguard, BlackRock/iShares, State Street/SPDR, Schwab). Within

each group the funds track the same index and have delivered nearly identical long-run returns; differences are limited to fees and brokerage ecosystem. ETFs' tax advantage over traditional index mutual funds comes from their in-kind creation and redemption mechanism, which limits taxable capital-gains distributions, a benefit that applies only in taxable accounts, not within a Roth or other tax-advantaged account.

22. 2026 Roth IRA income phase-out ranges, by modified adjusted gross income: $153,000–$168,000 for single filers and heads of household, and $242,000–$252,000 for married couples filing jointly. Within the range the maximum contribution is reduced; above it, direct Roth contributions are not permitted. Source: IRS Notice 2025-67. The annual limit is announced each autumn for the following year and is fixed before that year begins.

23. History of the IRA contribution limit: Internal Revenue Service; Employee Benefit Research Institute. The limit was frozen at $2,000 from 1982 to 2001, rose in scheduled $1,000 steps in 2002, 2005 and 2008, and has been indexed to inflation in $500 increments since 2009.

24. Japanese risk-free rates over the "lost decades": 10-year Japanese government bond yields fell from about 7% in 1990 to near zero (−0.11% in 2019), per the St. Louis Fed (FRED) and Japan's Ministry of Finance; postal ordinary-savings rates fell from about 3.5% in 1990 to near zero from 1995 and 0.001% by 2016, per the Bank of Japan and Japan's Statistics Bureau. Figures are illustrative of the period, not precise annualized averages.

25. About 15 percent of the U.S. population, roughly 50 million people, is foreign-born, counting naturalized citizens and noncitizen residents together; a little over half of them are naturalized citizens. A further about 13 percent are U.S.-born with at least one immigrant parent. The two groups together come to better than one in four Americans. Sources: Pew Research Center (2024–2025); U.S. Census Bureau, Current Population Survey.

26. Bogle's argument appears in The Little Book of Common Sense Investing and numerous interviews; the roughly 20 percent cap on international holdings is his rule of thumb. Buffett's 90/10 instruction is from his 2013 Berkshire Hathaway shareholder letter.

27. Federal debt figures: U.S. Department of the Treasury, Bureau of the Fiscal Service, *Historical Debt Outstanding* and *Debt to the Penny*. Median household income: $87,460 in 2025 (U.S. Census Bureau, Income in the United States: 2025).

28. Consumer prices and inflation: U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers (CPI-U), all items, not seasonally adjusted.

29. Workplace retirement plan access and participation: U.S. Bureau of Labor Statistics, *Employee Benefits in the United States* (released September 2025, covering March 2025). Among private-industry workers, 72 percent had access to employer-sponsored retirement benefits and 53 percent participated. Access to defined-contribution plans was 70 percent; access to defined-benefit plans was 14 percent. Automatic enrollment: the SECURE 2.0 Act of 2022 requires most 401(k) and 403(b) plans *established on or after December 29, 2022* to enroll eligible employees automatically beginning with the 2025 plan year; plans established earlier are exempt.

30. The single-gift figures for a 22-year-old use the same method as the gift table above it: one $7,500 contribution held to age 75 (53 years), at the 8 percent floor and the 10 percent long-run average, with today's-dollar values discounted at 2 percent annual inflation.

31. Withdrawal-rate success rates: Philip L. Cooley, Carl M. Hubbard and Daniel T. Walz, "Retirement Savings: Choosing a Withdrawal Rate That Is Sustainable," *AAII Journal* (February 1998), Table 3. Across the 41 overlapping 30-year periods from 1926 to 1995, a portfolio of 50 percent stocks and 50 percent bonds drawn at an initial 4 percent, with the withdrawal raised each year by the Consumer Price Index, lasted the full thirty years in 95 percent of periods, or 39 of 41. **A note on the paper's other well-known table.** Its terminal-value table (Table 4) reports median ending balances of roughly five times the starting portfolio, but that table follows the paper's Table 1 method, in which the withdrawal is held level rather than raised with inflation, and no period fails. Those ending balances therefore do not describe a retiree following the rule as written, and are not quoted in this book. The authors published no ending balances for the inflation-adjusted run.

32. Retirement spending patterns: David M. Blanchett, “Exploring the Retirement Consumption Puzzle,” *Journal of Financial Planning* (May 2014). Real household spending in retirement declines by roughly 1 percent a year on average; a household beginning at $100,000 a year reaches a real trough near age 84 at about $74,000, then rises again as health costs grow. Blanchett named the pattern the “retirement spending smile.”

33. The life-cycle frame: Franco Modigliani received the 1985 Nobel Memorial Prize in Economic Sciences for his pioneering analyses of saving, centered on the life-cycle hypothesis. The extension of portfolio choice to human capital draws on Zvi Bodie, Robert C. Merton, and Paul A. Samuelson, “Labor Supply Flexibility and Portfolio Choice in a Life Cycle Model,” *Journal of Economic Dynamics and Control* (1992).

34. The 24% used in the Chapter 2 comparison is a representative federal income-tax bracket. The long-term capital-gains rate applied to the taxable account is the lower 15% federal rate. State income tax varies from place to place and is handled separately in Chapter 5.

35. IRS Publication 590-B, *Distributions from Individual Retirement Arrangements (IRAs)*, “Ordering Rules for Distributions” and “Are Distributions Taxable?” Roth IRA withdrawals are treated as coming first from regular contributions (never taxed or penalized, at any age), then from conversions, then from earnings. Earnings withdrawn before age 59½ and before the five-year period beginning with the first contribution year are generally taxable and subject to the 10% additional tax, with listed exceptions.

36. Wade D. Pfau, “An International Perspective on Safe Withdrawal Rates: The Demise of the 4 Percent Rule?” *Journal of Financial Planning* 23, no. 12 (December 2010). Using Dimson–Marsh–Staunton data for seventeen developed markets over 1900–2008, a 4 percent inflation-adjusted withdrawal from a 50/50 portfolio would have failed at least once in most of the countries studied; the United States was among the most favorable.

37. Jonathan T. Guyton and William J. Klinger, “Decision Rules and Maximum Initial Withdrawal Rates,” *Journal of Financial Planning* 19, no. 3 (March 2006). The “guardrails” approach: cut spending about 10 percent when the current

withdrawal rate rises roughly 20 percent above its initial level, and raise it about 10 percent when the rate falls roughly 20 percent below.

38. Social Security Administration, “Delayed Retirement Credits” and “Early or Late Retirement?” (ssa.gov). For workers born in 1960 or later, full retirement age is 67. Claiming at 62 reduces the monthly benefit by 30 percent; each year of delay past full retirement age adds 8 percent (two-thirds of 1 percent per month) up to age 70, giving 124 percent of the full benefit. 124 ÷ 70 ≈ 1.77, hence “roughly three-quarters larger.” Survivor benefits are based on the deceased spouse’s benefit including delayed credits.

39. Real-return comparison of the two windows. S&P 500 total return (dividends reinvested), 1965–1994: 9.89% a year nominal; CPI-U, December 1964 to December 1994: 5.37% a year; real return about 4.3%. For 1929–1958: 7.97% nominal, CPI-U 1.76% a year, real about 6.1%. Source data: Damodaran/NYU Stern annual returns; BLS CPI-U.

40. Within that largest slice, IRAs are overwhelmingly Traditional, not Roth. By ICI’s research about 84% of all IRA assets sit in Traditional IRAs, only about 10% in Roth, and the rest in employer SEP and SIMPLE IRAs, so of the $18.2 trillion in IRAs roughly $15 trillion is Traditional and under $2 trillion is Roth. The gap is mostly history. The Traditional IRA came first, in 1974, created to give workers without an employer pension a tax-deductible way to save; it has had a half-century head start and is swollen with rollovers from old 401(k)s. The Roth arrived only in 1997, named for its champion, Senator William Roth, and reversed the bargain: you pay the tax going in, and everything after, including a lifetime of growth, comes out tax-free. Sources: Investment Company Institute, Quarterly Retirement Market Data, First Quarter 2026 (the $47.6 trillion landscape and category totals); Traditional/Roth/SEP-SIMPLE shares from ICI research, 2023. Totals may not sum exactly due to rounding; the Traditional/Roth split is ICI’s estimate, not an audited figure.

41. The model behind the three households. Each earner starts at $100,000 a year in today’s dollars, the same earner as Chapter 5. A saver begins at 30 and contributes the maximum each year in today’s dollars (indexed to the inflation-adjusted limit); 8 percent nominal return, the book’s floor, shown in today’s dollars; 2 percent inflation; income grows 4 percent a year, steady career raises a little above inflation; retire and claim Social Security at 70 (its maximum, about

124 percent of the full-retirement benefit), computed from capped earnings under the 2026 bend-point formula; California exempts Social Security from state tax; 4 percent first-year withdrawal. Replacement is measured against what the household was actually spending the year before retiring (take-home pay minus what it was saving), a stricter yardstick than pre-tax income. All figures are today's dollars and illustrate a financial principle, not a forecast; not tax advice.

42. Morningstar, "Mind the Gap 2025," U.S. edition: over the ten years ended December 31, 2024, the average dollar invested in U.S. mutual funds and ETFs earned 7.0 percent a year against the funds' own 8.2 percent, a gap of about 1.2 percentage points a year. A 2026 study in the Financial Analysts Journal (Fulkerson, Jordan, Riley and Yan) argues Morningstar's method overstates the size of the gap; the direction is not in dispute.

43. Brad M. Barber and Terrance Odean, "Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors," Journal of Finance 55, no. 2 (2000): 66,465 households, 1991–1996; the fifth of households that traded most earned 11.4 percent a year against a market return of 17.9 percent.

44. Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision under Risk," Econometrica 47 (1979); Tversky and Kahneman (1992) estimated the loss-aversion coefficient at about 2.25, meaning a loss is weighted roughly twice as heavily as a gain of the same size.

45. Shlomo Benartzi and Richard H. Thaler, "Myopic Loss Aversion and the Equity Premium Puzzle," Quarterly Journal of Economics 110, no. 1 (1995): 73–92. Investors' observed behavior is consistent with an evaluation period of roughly one year.

46. Regional CAPE ratios as of June 30, 2026, from Siblis Research, Global Equity Valuations: world 29.1, world ex-U.S. 21.0, emerging markets 19.4. U.S. (S&P 500) Shiller CAPE about 40.5 in July 2026, from Robert Shiller's cyclically adjusted P/E series. The real growth assumptions (1.5% for the U.S. and the world, 1.0% for the world ex-U.S., 2.0% for emerging markets) and the 2.5% inflation assumption are the author's. Each bar is the sum: earnings yield (1 ÷ CAPE) + real growth + inflation.

47. TOPIX comparison: author’s calculation on the same basis as the Nikkei case (a $7,500 contribution at each year-end, 1989–2024, dividends reinvested, money-weighted return), using TOPIX year-end levels and historical dividend yields. Result about 5.1% a year nominal (3.8% price-only), versus 5.9% on the Nikkei 225. TOPIX is capitalization-weighted and did not regain its 1989 peak until July 2024; its higher dividend yield offsets part of the gap.

48. The 80 percent target: Fidelity puts the total need at 55–80 percent of pre-retirement income, with savings covering about 40 percent of it for someone retiring at 70 and Social Security the rest; Schwab cites 75–80 percent; Vanguard 65–80 percent. Salary growth of 4 percent a year matches the long-run growth of Social Security’s National Average Wage Index, about 4.5 percent a year since 1951 and 3.8 percent over 1983–2023. Sources: Fidelity Viewpoints, Retirement guidelines; Charles Schwab, Do You Have Enough for Retirement?; Vanguard, Evaluate expenses and income needs; Congressional Research Service, Social Security: The Average Wage Index (IF11931); SSA, National Average Wage Index.

49. S&P Dow Jones Indices, SPIVA U.S. Scorecard, year-end 2025.

50. S&P Dow Jones Indices, U.S. Persistence Scorecard, year-end 2025, Report 2: of the domestic equity funds in the top quartile of their category in calendar year 2021, the share that remained in the top quartile in each of the four following years through December 2025 was 0% for all domestic, large-cap, mid-cap and multi-cap funds, and 2.4% for small-cap funds (3 of 124).

51. William F. Sharpe, “The Arithmetic of Active Management,” Financial Analysts Journal, vol. 47, no. 1 (January/February 1991), pp. 7–9. Fee figures in the paragraph that follows are representative industry averages; check the expense ratio of any fund before buying.

52. Hendrik Bessembinder, “Do Stocks Outperform Treasury Bills?”, Journal of Financial Economics, 2018; and “One Hundred Years in the U.S. Stock Markets,” SSRN working paper, March 2026 (29,754 stocks listed at any point 1926–2025; $91 trillion of net wealth creation; 46 firms account for half; median lifetime buy-and-hold return −6.9%).

Chapter 8: Sources

Chapter 8 draws on many datasets and studies rather than a handful of quotable figures, so, unlike the numbered notes above, its sources are gathered here in one place, grouped by topic.

- U.S. return windows: author's calculations from the Damodaran/NYU Stern S&P 500 total-return dataset (1928–2025, updated January 2026), the same source used in *Show Me the Numbers*.
- Global and survivorship evidence: Dimson, Marsh & Staunton, UBS/LBS Global Investment Returns Yearbook 2025, and Triumph of the Optimists (2002).
- Japan: Nikkei 225 history (peak 29 Dec 1989; surpassed 22 Feb 2024); contemporaneous market reporting; dollar-cost-averaging analysis of Japanese investor outcomes.
- Valuation: Shiller CAPE data (Robert Shiller / multpl / GuruFocus), mid-2026 readings; long-horizon asset-manager return projections.
- Behavioral gap: J.P. Morgan Guide to Retirement; Hartford Funds / Morningstar "best days" studies.
- Immigrant founders: National Foundation for American Policy (2026) and American Immigration Council (2025).
- Japan dollar-cost-averaging: author's simulation using Nikkei 225 year-end values, dividends reinvested along a yield path that follows the index's published history (~0.5% in 1989 rising to ~1.6–1.8%, averaging ~1.1%). See "The calculation, in detail" in *What If You Start at the Worst Possible Moment?*.
- Federal debt: OMB/Treasury and CBO historical series; post-WWII analysis from Reinhart & Sbrancia (2015) and Acalin & Ball, "Did the United States Really Grow Out of Its World War II Debt?", American Economic Journal: Macroeconomics (July 2026; IMF Working Paper, 2024) on financial repression and inflation.

- Global composition and valuation: MSCI ACWI weights; S&P 500 foreign-revenue estimates from Goldman Sachs and FactSet/Apollo; regional CAPE ratios from Siblis Research and Robert Shiller data.

- Global and international returns since 1970 (Chapter 10 and *Should You Own More of the World?*): MSCI World and MSCI World ex USA gross total returns in U.S. dollars, 1970–2025 (MSCI index levels and factsheets for 2001–2025; earlier years from published annual-return compilations, checked against MSCI's end-2000 index levels; years before the indexes' March 1986 launch are MSCI back-tests, though the worst 30-year windows fall after it). Gross returns are before foreign dividend withholding tax, which cost World ex USA about half a point a year in 2001–2025 (MSCI net vs. gross), compared with the S&P 500 (Damodaran); author's calculations of rolling 30- and 40-year windows. Developed world: about 10.0% a year, worst 30 years about 7% (1989–2018). Outside the U.S.: about 9.4% a year, worst 30 years 4.7% (1989–2018). S&P 500 over the same span: 11.0%, worst 30 years 9.6%.

- Bear markets ("The Pile in Between"): Hartford Funds, "10 Things You Should Know About Bear Markets": 27 S&P 500 bear markets since 1928, 15 since 1945 (a bear market is a decline of 20 percent or more).

- *The Limits to Growth*: Donella H. Meadows, Dennis L. Meadows, Jørgen Randers and William W. Behrens III (1972), a report to the Club of Rome.

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Important Disclaimer

This book is for educational purposes only. The return figures and tax examples are based on historical data and simplified assumptions, so they are meant to explain the math, not forecast what any investment will do next. Past performance is not a promise of future results, and future outcomes may be better or worse than the examples shown here because of market conditions, valuations, inflation, taxes, fees, and the timing of contributions and withdrawals. This is not investment, tax, or legal advice, and the numbers here should not be treated as a recommendation for any specific person.

Contribution limits, income eligibility for Roth contributions, required minimum distribution rules, and tax law are all subject to change. Before acting on anything in this book, consult a qualified financial advisor and tax professional about your own situation. The author disclaims any liability for loss or damage alleged to arise from reliance on the information in this book. Reading this book, or corresponding with the author about it, does not create an advisory or client relationship. The author invests in the same kinds of low-cost index funds described here, and receives no compensation from any fund, brokerage, or company mentioned in this book. The author is not a registered investment adviser or a tax professional. This disclaimer applies equally to the Substack serialization, the audiobook, and any companion tool. The dollar figures throughout are hypothetical illustrations and do not reflect any actual account. The people in this book's case studies, Maya, Priya, Devin and the rest, are composites created to illustrate the math. They are not real people, and their choices are examples, not recommendations.

A note on how this book was made. I wrote this book with the help of AI tools, primarily Claude, by Anthropic, with some research via Perplexity. The writing began with me: the argument, the numbers, the stories, and every judgment in it are mine. Much of the first draft was in my own words. Along the way the tools were a research partner and a sounding board. Where they offered passages, I challenged and improved them. The presentation, the charts, tables, and design, was a collaboration, under my direction. All figures were independently reviewed. Where it reads well, the credit is shared. Where it is wrong, the fault is mine.

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AFTERWORD

A Gift and an Invitation to Pay It Forward

This book is a gift. It's free to read and free to pass along. You owe nothing for it.

If it changed how you think about your future, and you'd like to give something back, here is all I ask: pay it forward. Share this book with someone who needs it: a friend, a sibling, a kid just starting out. And if you can, make a donation, in any

amount, to a cause you believe in. **Your money goes straight to the charity you choose.**

If you'd like a suggestion, my family supports the **Zach Moses Music, Love & Light Fund** at the **Sweet Relief Musicians Fund**, a registered nonprofit that provides nourishing food to career musicians and music-industry workers facing illness or other financial hardship. You can give directly at **sweetrelief.org/zachmoses**; your gift goes to Sweet Relief, not to me. It's named for our beloved and luminous son, Zachary Moses Ostroff. **Wherever you give, I'd be grateful if you dropped me a note.**

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Thank you for reading.

Start now.

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I'm indebted, too, to the writers whose work educated me about how markets, and the individual investors who make them up, really behave. Burton Malkiel's A Random Walk Down Wall Street was the first book on investing I ever read, and it set me on this path. The ideas of Jack Bogle, Jeremy Siegel, William Bengen, William Bernstein, Charles Ellis, Benjamin Graham, Morgan Housel, Eugene Fama, Paul Samuelson, and Hendrik Bessembinder run through these pages, along with the many texts I studied earning my CFA charter.

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This book was written with the help of AI. I've come to think of Perplexity and, especially, Claude as exceptional research assistants — I leaned on both for research, and on Claude in particular for helping organize, draft, and refine the

material around my own writing and ideas. The judgment, the voice, and every decision, along with the responsibility for any errors, remain entirely my own.

And, finally, to our children, Zachary, Isabel, Samuel, and Luc: this conversation began with them, more than twenty-five years ago. Isabel and Samuel were among the most important early readers of this book, and their notes on how to reach people their own age shaped it more than they know. And Zachary, with whom it all began: our conversation about money started when he was seven and never stopped, through the music, the deeply joyful surf sessions, the science, and the ventures, as he grew into a marvelous young man who believed in hope and possibility and wanted every win to be a win for everyone. Much of what's in these pages was shaped in those conversations, which continue today. He's my divine inspiration for sharing it widely and freely now.

About the Author

Greg M. Ostroff, CFA, has invested for more than fifty years and spent nearly twenty of them on Wall Street, at Goldman Sachs Investment Research across the Americas and Asia. Along the way he mentored hundreds of professionals, and spent decades translating how markets and money work for people just beginning to figure it out.

He lives in Northern California with his wife, Hanna, and a very appropriately named dog, Joy.

ONE MORE THING

You've reached the end, and I'd love to hear about it. Did you open the account? Have you funded it, and if not, what got in the way? Has anything changed in how you think about money, or how you feel about your financial future: more confident, or still worried? Do you still have questions

or concerns? Where do you have doubts? What would you like to explore in more depth? And do you have ideas, from your own journey, that could help others on the same road? Write as much or as little as you like, first name or none. I read every note. Leave a comment on any post at startnowbook.substack.com, or write directly to hello@startnowbook.com.

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