# A Book about Wealth

Advice for Recent College Grads
and Anyone Else Who Might Be Interested

Brian Baugh, PhD

Updated for 2026 tax law

# Contents

**Introduction** **1**

**The "Why" of Wealth** **3**

**The Wealth Accumulation Formula** **7**
.1 Predicting Your Future Wealth . . . 7
.2 Deriving the Most Important Equation of Your Life . . . 8
.3 The Six Levers of Wealth . . . 9

**Brief Tangent on "Current Self" vs "Future Self"** **10**

**Lever #1: Increase Your Starting Wealth** **11**

**Lever #2: Increase Your Lifetime Earnings** **13**

**Lever #3: Decrease Your Lifetime Taxes** **14**
.1 The Four Types of Taxes . . . 14
.2 Step 1: Calculate Your Deduction . . . 14
.3 Step 2: Compute Your Taxable Income . . . 15
.4 Step 3: Computation of Federal Income Tax Liability . . . 16
.5 Computation of State Income Tax Liability . . . 17
.6 Computation of Social Security Taxes . . . 17
.7 Computation of Medicare Taxes . . . 17
.8 Aggregation of the Four Taxes . . . 17
.9 Your Marginal Tax Rate, the Most Important Number in the U.S. Tax Code . . . 19
.10 Your Marginal Tax Rate can Change . . . 20
.11 Your Tax Minimization Toolkit . . . 21
.12 The Basics of Tax Arbitrage . . . 22
.13 An Added Benefit of Traditional 401k usage: Geographic Tax Arbitrage . . . 23
.14 Wrapping up the Tax Arbitrage Section . . . 24
.15 ***Roth*** vs ***Traditional*** 401k (and IRAs) . . . 24
.16 A Note about Future Tax Rates . . . 26
.17 Non-Tax Reasons Why Roth IRAs are Pretty Cool . . . 27
.18 ***Roth*** AND ***Traditional*** 401ks . . . 28
.19 Roth IRA Conversion Ladder . . . 29
.20 Phase out of Trad IRA deductibility & Roth contributions . . . 30
.21 Backdoor Roth IRAs . . . 31
.22 Mega Backdoor Roths . . . 32

.23 A Massive Opportunity for Employees of Public Institutions: 401a, 457, 403b . . . . 33
.24 Under what Circumstances would our Married Household Itemize? . . . . . 34
.25 Tax Benefits from (Home Ownership and) Itemizing? . . . . . 35
.26 Maximize the Tax Savings of Itemizing with Lumpy Charitable Contributions . . . . 36
.27 How do Your Kids Influence Your Taxes? . . . . . 37
.28 Earned Income Tax Credit (EITC) . . . . . 37
.29 How Investments are Taxed in a Taxable Brokerage Account . . . . . 39
.29.1 Dividend Taxes . . . . . 39
.29.2 Short-term vs Long-term Capital Gains . . . . . 39
.29.3 Preferential Taxation of Dividends and LTCG . . . . . 39
.29.4 Zero Taxes in Retirement on $131,100 of Income . . . . . 40
.29.5 Capital Gain Harvesting . . . . . 41
.29.6 Strategy of Deferring Capital Gains . . . . . 41
.29.7 Tax Loss Harvesting . . . . . 42
.30 Health Savings Accounts . . . . . 43
.30.1 The HSA as a Stealth IRA . . . . . 43
.31 529 Plans . . . . . 44
.32 Hierarchy of Savings: How to Minimize Your Lifetime Tax Burden . . . . . 44

**Lever #4: Decrease Your Lifetime Consumption** **46**
.1 The Double Benefit of Frugality . . . . . 46
.2 The Big Three: Housing, Transportation, and Food . . . . . 46
.2.1 Housing . . . . . 47
.2.2 Transportation . . . . . 47
.2.3 Food . . . . . 47
.3 Lifestyle Creep: The Silent Wealth Killer . . . . . 48
.4 Contentment: The Most Underrated Financial Strategy . . . . . 48

**Lever #5: Increase Your Lifetime Interest Earned** **49**
.1 The Power of Compound Interest . . . . . 49
.2 Risk vs Return . . . . . 50
.3 Short-term vs Long-term Risk . . . . . 50
.4 Index Funds: The Only Investment You Need . . . . . 50
.5 The Corrosive Effect of Fees . . . . . 51
.6 Asset Allocation: Keep It Simple . . . . . 51
.7 Dollar-Cost Averaging . . . . . 51
.8 Behavioral Investing: Don't Be Your Own Worst Enemy . . . . . 51
.9 Putting It All Together . . . . . 52

**Lever #6: Decrease Your Lifetime Interest Expense** **53**

**Bonus Section: Create Your Own Financial Statements** **54**
.1 The Balance Sheet . . . . . 54
.2 The Income Statement . . . . . 54
.3 The Statement of Cash Flows . . . . . 55
.4 Putting It All Together . . . . . 55
.5 From Excel to an App . . . . . 55

**Wrapping it up** **57**

# Introduction

I teach finance at a business school at a large public university. I have an undergraduate degree in mechanical engineering, an MBA, and a PhD in finance. You may think that because I went to college for 12 years, the majority of which I spent studying finance, that this would qualify me to teach you something useful on the topic of personal finance. But the depressing reality is that I learned nothing about personal finance in the 12 years of college. This is unfortunate since the mastery of personal finance can change the trajectory of one's financial life.

With the death of pensions and the ascension of self-directed 401k plans, each of us has been thrust into the role of pension fund manager whether we realize it or not. As our own pension fund manager, we must decide how much to save, how to invest, and how to leverage the tax code for our benefit. None of these tasks are particularly easy to do without some training. From my perspective as a former college student and current college professor, it is evident that the educational system is failing to properly prepare our students to fulfil this role of personal pension fund manager. I know this firsthand; I am a product of this failed system.

I spent five years dutifully trudging through one of the longest degrees offered by my undergraduate institution (second only to chemical engineering if I remember correctly), collecting a math minor along the way. In the process, I learned multivariate calculus, thermodynamics, mechanism design, materials science, physics, statistics, and numerical methods. Despite my technical training and relative comfort with math, I accepted my first internship at Boeing completely and utterly financially impotent.

I arrived at my HR orientation with a hundred other bright-eyed and bushy-tailed individuals ready to change the world through our engineering. I quickly realized that I was woefully unprepared for the confusion of HR onboarding in which we were forced to sit through hours of tedious lectures on healthcare and retirement options, among other things. I distinctly remember the HR individual recommending that we lowly interns opt out of our 401ks because we were poor college students. That seemed reasonable enough to me; after all, why should I care about retirement when it was a good 40 years away? I followed her advice and did not participate in the 401k plan during my internship.

A few months later I realized the stupidity of what I had done.[1] It turns out that Boeing matched 75% of employee contributions up to the first 8% of an employee's salary. To put this into plain English, if I earned $10k over the summer and contributed $800 (=8%*$10k) to my 401k, Boeing would have contributed $600 (75%*8%*$10k) to my 401k. Through my idiocy, I threw away $600 in free money which would have immediately provided a 75% return on my initial investment

[1]When I look back at my actions, I picture Jim Carrey in the closing scene of the formative movie of my childhood, Dumb and Dumber, desperately screaming ***DO YOU REALIZE WHAT YOU'VE DONE!?!?!***

of $800 ($800*1.75=$1,400).[2] While this financial loss haunted me for months, it turned out to be one of the best things to have ever happened to me from a financial standpoint. This experience was the catalyst that propelled me into a decade long obsession on the topic of personal finance. I reasoned that lessons learned about personal finance while in my early 20s would produce dividends (literally and figuratively) throughout the course of my life. I figured that the sooner I learned these lessons, the better. I don't know that I've ever been more correct about anything in my life.

I completed my internship and returned to my super-senior year of undergrad convinced that I needed to get my financial act together before my stupidity cost me a fortune. Over that final year of school I devoured every investing and personal finance book I could get my hands on, quickly becoming familiar with important concepts such as passive investing and index funds. Prior to graduation, I had maxed out my wife and my Roth IRAs and filled them with index funds. Eventually my interest in finance turned me towards the MBA, PhD, and current role as finance professor.

I think this book will be helpful, not because of my credentials (which are worthless when it comes to personal finance since I've received no formal training in the topic), but because I've made quite a few mistakes that I think I can help you avoid. In the writing of this short book, I'm trying to condense nearly two decades of financial missteps and knowledge into a few short pages for your reading pleasure. I believe that if you take the underlying message seriously, it will have the power to transform your financial life. This may sound like a get rich quick scheme, but I can assure you it's not. It's a get rich slowly scheme, the only way I know of accumulating wealth.

I wrote the first draft of this book in 2018, a decade into my obsession. It's now 2026, and my wife and I have grown our net worth from $10,000 at graduation to over $3,500,000—all while raising five kids on a professor's salary in the Midwest. I didn't inherit money. I didn't get lucky with crypto. I just did the boring stuff in this book for twenty years. The tax numbers have been updated to 2026 law, and I'm now living proof that this boring, slow, disciplined approach actually works.

[2] Even had I liquidated my 401k upon returning to school, the 10% penalty from accessing my 401k early would have been dwarfed by the 75% match. Here's the math to those interested: 1*(1+75%)*(1-10%)=1.575, which is greater than 1. Even considering the early withdrawal penalty, I pissed away the opportunity to recklessly and instantly grow my money by 57.5%.

# The "Why" of Wealth

Let's begin with the definition of wealth. I use the term wealth interchangeably with the term "net worth," which is calculated as the sum of your assets (cash, investments, home value, etc) minus your liabilities (credit card debt, student loan debt, mortgage debt).

Now that we understand what wealth is, let's talk about why it's useful. If you are reading this in your early 20s, perhaps you envision your future wealth funding a luxurious life filled with first-class travel to exotic overseas destinations. Perhaps you envision your wealth enabling you to purchase a mansion or a Lamborghini. Perhaps you envision your wealth producing a passive income stream to enable an early retirement in your early 30s. If you are in your 50s or 60s, perhaps you envision your wealth giving you the freedom to visit your grandchildren as often as you would like.

Whatever your reason for desiring wealth, I hope that we can all agree that it's a useful tool.[1] It can put a roof over your head, food in your belly, clothes on your body, and even afford you a life of luxury if you so desire.

A life of luxury has never appealed to me. My fondest memories in life are not when I'm indulging in consumerism, but instead when I'm backpacking or kayaking in the great outdoors, playing with my family in our back yard, or playing board games with friends. Each of these activities can be accomplished with somewhere between zero and very little money.

So, buying fancy stuff has never been a big motivator for me to work or to accrue wealth. Instead, I've found that the accumulation of wealth buys me freedom.

I began my engineering career in 2006 making $56k/year in Seattle, WA. My wife and I were childless for the first two years of our marriage. We were frugal and continuing to live like poor college students despite having a decent salary. It made sense to us at the time—we were happy with our level of spending as poor college students, so why did we have to succumb to the societal norm of lifestyle creep upon graduating?[2]

We rented a modest apartment, I biked to work, we seldom ate out, we turned the heat down in the winter, we didn't run the A/C in the summer (which was easy since there was none). Once, during a particularly cold winter spell, we awoke in the morning to a freezing cold house (we could see our breath) and tried to turn on the faucet. Nothing came out of the faucet other than an ominous gurgling sound. Fearing that my frugality had caused tens of thousands of dollars in water damage, I frantically tried to identify the location of the burst pipe. Luckily for us it was an exterior fire sprinkler pipe that had burst. Disaster averted, we continued our frugal path for three years in Seattle.

[1] Though, of course, wealth means nothing if it detracts from your health, relationships, and happiness.

[2] Lifestyle creep is the tendency for people's expenditures to match their income as their income rises, but it happens so subtlety that most people don't realize that it's occurring.

After these three years of living frugally, our net worth climbed from $10k upon graduation to around $100k. At the time I didn’t calculate our savings rate but it must have been about half of my income. My wife substitute taught our first year in Seattle but called it quits when our first child was born.

Looking at how easily we had accrued $100k in wealth, I marveled at the opportunities that this wealth presented. I could stop working entirely and live for four years before hitting zero since our cost of living was approximately $25k/year at the time. I quickly discovered that each year of work purchased me an additional year of freedom.

With $100k of freedom in the bank (technically in IRAs & 401ks), I evaluated my career options. I was surrounded by engineers who had been stuck in the same job for most of their careers. If you happened to start your career at Boeing in the landing gear systems group (like me), it was common for you to spend your entire career in that area having never ventured into other areas of the company. Spending the next 45 years in the cube farm didn’t seem particularly appealing. After all, I was surrounded by people who had done the same and many of them seemed miserable.[3] One of these seemingly unhappy colleagues who sat a few desks over died from a heart attack in his mid-60s over the weekend, a sobering reminder of the fragility and finite nature of life and my desire to live differently from my colleagues.

So with $100k in the bank, I quit (technically asked to be put on an educational leave of absence to give me the guaranteed option to return after my degree) and got an MBA. I reasoned that an MBA would increase my salary and my job satisfaction as I transitioned to a business role in a different company. At the age of 27 and with two young children, I began the program.

My MBA was an enjoyable experience. I loved the escape from the cube farm. I loved being able to spend more time with my family. Aside from the lifestyle benefits, I also learned some useful things during my MBA. It was there that I received my first classroom exposure to accounting, finance, and Excel. After my first year in the program, I took an internship at Delta Air Lines in their procurement department (terrible fit, but it was the best internship I could secure). While I thought that escaping the monotony of engineering would expose me to the wonderful and exciting world of business, in reality I saw that many of the problems I observed at Boeing not only existed, but were amplified at Delta. Relative to the laid back 40 hour culture at Boeing, I saw people regularly working 50–60 hour weeks at Delta. I’m not a master mathematician, but I noticed that the salaries were pretty similar across both companies and that the hours worked were not. If I returned from the MBA to Boeing, I could make $100k and work 40 hours per week in a functional low-stress environment or I could work at Delta and make $100k and work 60 hours per week in a dysfunctional high-stress environment. Some quick math told me that I’d make 50% more per hour at Boeing than Delta.[4]

I returned from my internship with an understanding that people generally don’t like their jobs. I don’t think I was fully prepared for this during my years of schooling. In my 6 years of college at the point, no professor had the courtesy to burst my bubble of optimism and tell me “no matter what job you take, your job will likely suck.” No adult had really done so either to me either.

So let me fill that void for you. Your job will probably suck. It’s not your problem, it’s how jobs work. I know there are people who indeed love their jobs, but I am increasingly of the opinion that these people are in the far minority of the population.[5] Just this morning I had a tooth cleaning

[3]Though a great colleague once assured me in my early days at the company “you can’t get paid more and work less anywhere on the planet.”

[4]Far too often do young college students obsess about the gross salary for a particular job. Students would make much smarter decisions if they considered gross salary in conjunction with work-life-balance (the tactful way of saying fewer hours worked per week), health insurance benefits, retirement benefits, cost of living in area, vacation time, etc.

[5]My wife, a former elementary school teacher, is a rare exception to this rule.

at my dentist's office. For reasons I'm still unclear of, my dentist personally performed the 45 minute cleaning rather than his hygienist, the first time this has happened. During the 45 minute cleaning, he told much of his life story while I responded with a series of approving grunts. Part of this monologue included frustration with his job. He lamented the fact that people don't like dentists. He also lamented the fact that people go to him with problems, which he fixes, which then reverse over time as teeth continue to decay. He likened his job to the thankless job of a stay at home wife who constantly cooks, then cleans, then cooks, then cleans, and so on. Every problem my dentist fixes becomes unfixed as bodies decay to dust. He also expressed financial frustrations with insurance reimbursements among other things.

I've had similar discussions with my friends who are doctors. They voice frustration with bureaucracy, drug seeking patients, dealing with insurance companies, etc.

Again, let me be clear to you. Your job will likely suck. If you don't like your job, you're not broken (as I thought when I began my career). It's how jobs work.

As you go forward in life, given that your job will likely suck, you may want to consider careers that compensate you well for enduring the suckiness while also providing a decent work life balance. If I haven't crushed your hopes and dreams yet, let me also assure you that some jobs suck less than others.

As I returned dejected from my sucky MBA internship, I noticed that my professors seemed to have a pretty cushy gig. They wore sandals to work. They showed to work later than I was used to at Boeing. They smiled a lot. They had meaningful interactions with students. They had flexible summers. At the age of 29 with three kids (child number three was born during the MBA) and around $100k in the bank, I thought "what the hell... why not try this?" After all, after being removed from the work force for one and a half years, our net worth hadn't declined at all. We still had a large financial cushion.

So I applied to 15 PhD programs and returned to Boeing, the third time I returned to that company after vowing to never return. En route from the MBA to Seattle, I received my first acceptance letter to a PhD program. I stayed at Boeing for 8 months then drove my family of five 2,500 miles across the country in a 1994 Pontiac Grand Prix with no air conditioning with $130k in the bank. The first day of our drive, our car began to overheat while crossing some mountain passes in Oregon, so we turned the heat on full blast even though it was well over a hundred degrees outside.

I endured 5 years of PhD hell (I would only recommend a PhD to a masochist), during which children 4 and 5 were born. I graduated the PhD with a net worth of $225k. Frugality, a raging stock market, a modest stipend, and handouts from the government (the government is sympathetic to families of 7 living on $25k/year) helped us to nearly double our net worth over this time.

At the age of 34, I finished the PhD with 5 kids in tow and got a great gig as a professor. I love my current job, but despite its awesomeness there are aspects I don't like (grading, publish or perish, etc). No job is perfect, but I'm a lot closer to perfection now than I was a decade ago.

Fast forward another decade. At 44, our net worth has grown from $225k at the end of my PhD to over $3,500,000—on a professor's salary in the Midwest, with five kids. Same boring principles you'll read about in this book. Time and compound interest did the heavy lifting. That wealth means that if I ever wanted to leave a tenured position to build something new, I could. I may never do it. But the point is that I have the *choice*.

So why did I waste the last 5 minutes of your life recounting my life history? I think it helps to illustrate a few important life lessons, the most important of which is that wealth creates options. There is no way I would have had the audacity to quit a well-paying engineering job with three kids had I not had some sort of financial cushion. In stark contrast to me were my colleagues who were living paycheck to paycheck despite making a hearty engineering salary. Do you think they had the

freedom to do anything with their life other than continue to rotting away in the cube farm for the next five decades, anxiously awaiting their next payday? Voluntarily prying myself from Boeing’s supple teet was an extremely difficult decision and one that I never would have made without the $100k and the ability to live frugally (plus a very supporting wife!).

So, circling back to the opening question of this chapter, the point of wealth (to me) is to create freedom. There are infinite things you can do with wealth. In stark contrast is a life devoid of wealth, in which your life choices become severely constrained.

If you desire wealth to live a life of luxury, I’m not going to stop you. But you’ll see in the next chapter that high levels of consumption will provide a massive headwind in the accumulation of wealth.

So now that we’ve talked about the “why” of wealth, let’s chug ahead and discuss how to accrue it. After all, that’s probably why you picked up this book.

# The Wealth Accumulation Formula

I have to warn you that this book contains a bit of math. Before you scream profanities and toss the book in the trash, let me assure you that it's not hard math. We're going to do some basic arithmetic. And I believe that it's basic arithmetic that can change your life.

I'll also warn you that we are going to go through dozens of case studies in this book to help illustrate these points. I've believe that this is the only way you can learn these concepts.

## Predicting Your Future Wealth

In this first case study, we will predict a household's wealth (i.e. its net worth) one year from today.

***Case Study: One-Year Wealth Prediction***

Let's assume the following:

- The household has $100k in assets which will produce a guaranteed return of 5% per year
- The household has $0 in liabilities
- The household has a current net worth of $100k ($100k assets − $0 liabilities)
- The household earns $50k/year
- The household pays $10k/year in taxes
- The household has $30k/year in living expenses

What will the household's net worth be in one year?

The household's wealth in one year will be $100k (starting wealth) + 50k (income) − 10k (taxes) − 30k (annual spending) + $100k*0.05 (interest earned on assets) = $115k (ending wealth).

I think people vastly underappreciate how easy it is to estimate their future wealth. Staring at the above example, let's decompose it:

Next year's wealth = Current wealth + next year's income − next year's taxes − next year's living expenses + next year's interest earned − next year's interest paid.

We can write this symbolically as:

$$W_{t+1} = W_t + I_{t+1} - T_{t+1} - C_{t+1} + IntEar_{t+1} - IntExp_{t+1}$$

where:

- $W$ = wealth
- $I$ = income
- $T$ = taxes
- $C$ = consumption (i.e. living expenses)

- $IntEar$ = interest earned
- $IntExp$ = interest expense

## Deriving the Most Important Equation of Your Life

The above relationship is true when savings is defined as:[1]

$$Savings_{t+1} = I_{t+1} - T_{t+1} - C_{t+1} + IntEar_{t+1} - IntExp_{t+1}$$

Prepare to have your mind blown as we derive the most important equation of your life. Let's go back to our example. How much wealth will the household have in two years?

Let's assume all of the parameters from before carry over.

The household's wealth in two years will be \$115k (starting wealth after 1 year) + 50k (income) − 10k (taxes) − 30k (living expenses) + \$115k*0.05 (interest earned on assets) = \$130,750 (ending wealth).

We can write this symbolically as:

$$W_{t+2} = \boldsymbol{W_{t+1}} + I_{t+2} - T_{t+2} - C_{t+2} + IntEar_{t+2} - IntExp_{t+2}$$

Now here is where the magic happens. The above equation requires that we know $W_{t+1}$, the household's wealth in one year. Luckily for us, we just derived it a few steps above. Let's substitute from above:

$$\begin{aligned} W_{t+2} = &[W_t + I_{t+1} - T_{t+1} - C_{t+1} + IntEar_{t+1} - IntExp_{t+1}] \\ &+ I_{t+2} - T_{t+2} - C_{t+2} + IntEar_{t+2} - IntExp_{t+2} \end{aligned}$$

Now, let's rearrange by grouping like terms:

$$\begin{aligned} W_{t+2} = W_t &+ [I_{t+1} + I_{t+2}] - [T_{t+1} + T_{t+2}] - [C_{t+1} + C_{t+2}] \\ &+ [IntEar_{t+1} + IntEar_{t+2}] - [IntExp_{t+1} + IntExp_{t+2}] \end{aligned}$$

If we get really fancy and do this a bunch of times (let's define a bunch as this generic variable $N$), we get:

$$\begin{aligned} W_{t+N} = W_t &+ [I_{t+1} + I_{t+2} + \ldots + I_{t+N}] - [T_{t+1} + T_{t+2} + \ldots + T_{t+N}] \\ &- [C_{t+1} + C_{t+2} + \ldots + C_{t+N}] + [IntEar_{t+1} + IntEar_{t+2} + \ldots + IntEar_{t+N}] \\ &- [IntExp_{t+1} + IntExp_{t+2} + \ldots + IntExp_{t+N}] \end{aligned}$$

We can rewrite the above in mathematical notation using the Greek symbol capital sigma to make ourselves look smarter:

$$W_{t+N} = W_t \; + \; \sum_{i=1}^{N} I_{t+i} \; - \; \sum_{i=1}^{N} T_{t+i} \; - \; \sum_{i=1}^{N} C_{t+i} \; + \; \sum_{i=1}^{N} IntEar_{t+i} \; - \; \sum_{i=1}^{N} IntExp_{t+i}$$

This, my friends, is the most important equation in the book the most important equation of your financial lives. It tells us that 50 years from now, we can perfectly arrive at our future wealth as our current wealth + the sum of our income over the next 50 years − the sum of our taxes over the next 50 years − the sum of our consumption over the next 50 years + the sum of our interest earned over the next 50 years − the sum of our interest expense over the next 50 years.

[1] One of my biggest pet peeves is when people think that there is something magical about savings which they only accomplish through diligent budgeting. This is absolute nonsense. Look at the savings equation. Savings is not something you do. It's simply what's left over after you earn money, pay taxes, pay for living expenses, earn interest, and pay interest.

## The Six Levers of Wealth

I believe this derivation to be informative because it illustrates the only way I know to accrue wealth. The six levers that will determine your future wealth (or lack thereof) are:

- Your starting wealth ($W_t$)
- The sum of your income over the next $N$ years ($\sum_{i=1}^{N} I_{t+i}$)
- The sum of your taxes over the next $N$ years ($\sum_{i=1}^{N} T_{t+i}$)
- The sum of your consumption over the next $N$ years ($\sum_{i=1}^{N} C_{t+i}$)
- The sum of your interest earned over the next $N$ years ($\sum_{i=1}^{N} IntEar_{t+i}$)
- The sum of your net interest expense over the next $N$ years ($\sum_{i=1}^{N} IntExp_{t+i}$)

The rest of this book will be organized by each of the six levers. I'll warn you beforehand that some of these chapters will be more actionable than others.

# Brief Tangent on "Current Self" vs "Future Self"

Psychologists and economists often refer to the psychological battle between the impulsive and impatient "current self" and the forward thinking "future self." Indeed, only a daily basis there is an ongoing battle in my head between the two versions of myself. Think of the "current self" as the bad angel on your shoulder who only cares about the very moment, while the "future self" is the good angel who desires for your future well-being. When bedtime approaches and I'm reading a good book or watching a good show, the "current self" urges me to push ahead until 1am while the "future self" urges me to go to bed to be well-rested the following day. The "future self" implores me to eat Kale to improve my long-term health, while the "current self" implores me to binge on ice cream to give me immediate gratification.

The "current self" is impulsive, short-sighted, and desires to maximize pleasure right now. The "future self" pleads with you to temper the "current self" so you can make progress towards longer term goals.

I view this framework of viewing the world to be incredibly powerful and accurate in my own life. The entirety of the little success that I've accomplished in life thus far has been brought about by the successful tempering of the "current self" and the listening to my "future self." Doing so has left me wiser, richer, and healthier than I would have otherwise been.

Mastering of one's health or finances requires tempering of the "current self" for the wellbeing of the "future self." You would do well to develop systems that defeat the "current self" in favor of the "future self." The system of only bringing healthy foods into your home is an example of how to temper the "current self." If you get the munchies when there is no junk food in your home, it becomes much harder for the "current self" to indulge. To do so, you would have to leave his home and drive to a burger joint. Admittedly, this may not be a sufficiently high obstacle to overcome, but at least it's a hurdle that we've put in place. Likewise, developing financial systems can drastically improve your probability of financial success. For some who are tempted to overspend using credit cards (I am not one of these people), a good system would be to cut them up. For someone who is tempted to overspend their paychecks (I am not one of these people), a good system would be to increase your 401k contributions or implement a regimented budgeting system so that you have less cash to squander when you receive your paycheck.

If you develop a sufficient number of these systems in your life, you will be a much happier, healthier, and richer individual.

# Lever #1: Increase Your Starting Wealth

$$W_{t+N} = \boldsymbol{W_t} \; + \; \sum_{i=1}^{N} I_{t+i} \; - \; \sum_{i=1}^{N} T_{t+i} \; - \; \sum_{i=1}^{N} C_{t+i} \; + \; \sum_{i=1}^{N} IntEar_{t+i} \; - \; \sum_{i=1}^{N} IntExp_{t+i}$$

Do you want to be wealthier in the future? The first lever is to start with more wealth today.

How do I propose that you go about being wealthier today? It turns out we can manipulate our guiding equation to derive that as well:

$$W_t = W_0 \; + \; \sum_{i=1}^{t} I_i \; - \; \sum_{i=1}^{N} T_i \; - \; \sum_{i=1}^{N} C_i \; + \; \sum_{i=1}^{N} IntEar_i \; - \; \sum_{i=1}^{N} IntExp_i$$

If we assume we start life off with zero wealth, then this simplifies to:

$$W_t = \sum_{i=1}^{t} I_i \; - \; \sum_{i=1}^{N} T_i \; - \; \sum_{i=1}^{N} C_i \; + \; \sum_{i=1}^{N} IntEar_i \; - \; \sum_{i=1}^{N} IntExp_i$$

If you have a large amount of wealth today, then you have used the above equation to your benefit. You must have either had high earnings, paid low taxes, consumed very little, earned a lot of interest, or paid little interest. In reality, you likely have done a combination of several of the above. We know with certainty that this is the case.

If you have a low amount of wealth today, then you have used the above equation to your detriment. You must have either had low earnings, paid high taxes, consumed a lot, earned little interest, or paid a lot in interest. In reality, you likely have done a combination of several of the above. We know with certainty that this is the case.

Before you label me as a horrible, unsympathetic person, let me assure you that I understand many of us are born into much more difficult situations than others. Perhaps you have contracted a chronic disease which has prevented you from working while simultaneously blowing up your healthcare expenditures. Perhaps you have been providing massive financial support to a relative in need. In either of these cases, I fully acknowledge that these situations aren't your fault in the sense that you could have avoided them. You were just unlucky. But the underlying mathematical truth is that your wealth today is a function of your prior actions, whether these actions are involuntary (contracted a horrible disease) or voluntary (blew money in youth).

I'm not trying to be pessimistic here. But I want ***you*** to take ownership of ***your*** financial life. I can assure you that ***nobody else is going to do it for you***, especially now that pensions are essentially dead and your employer isn't going to babysit you into an increased savings rate as was the case with pension funds.

The lesson I want to beat into your head is that your financial situation ***today*** is entirely determined by ***your past actions***. Likewise, your ***future*** financial situation is ***entirely determined***

***by your*** past and ***future actions***. We can't change the past, so ***the only way to improve your future financial situation is through your future actions***.

That's the point of this book. To help you make more prudent financial decisions ***starting today***.

# Lever #2: Increase Your Lifetime Earnings

$$W_{t+N} = W_t \; + \; \sum_{\boldsymbol{i=1}}^{\boldsymbol{N}} \boldsymbol{I_{t+i}} \; - \; \sum_{i=1}^{N} T_{t+i} \; - \; \sum_{i=1}^{N} C_{t+i} \; + \; \sum_{i=1}^{N} IntEar_{t+i} \; - \; \sum_{i=1}^{N} IntExp_{t+i}$$

Earning a lot of income throughout your life will significantly help you on your path to wealth. Feel free to tweet that if you like. Brilliant insights like this are the reason you picked up this book.

Most of us have intuition about how to increase lifetime earnings: 1.) Learn valuable skills. 2.) Get good job. 3.) Work hard.

I don't have much more to say other than to state the obvious: some careers systematically pay much more than others. It's my observation that there is a correlation between the rigor and unpleasantness of training and the corresponding wage outcome.

Engineering, medicine, actuarial science, and computer science are challenging fields. They require years of difficult math and science. Relatively few students willingly subject themselves to years of abuse in school to master these subjects. Unsurprisingly, graduates in these fields tend to be more highly compensated than graduates in other subjects. Why? Because of supply and demand. Graduates in these fields are in short supply yet the demand for these skillsets is high.

My children aren't yet at the age where they are actively investigating different careers, but when the time comes I'll have some candid conversations with them about the economic reality of potential career paths. I will still love my children if they decide to study musical theater, but I will be perfectly transparent with them that such a decision will make their lives substantially more difficult from a financial standpoint.

A reader might astutely point out that hourly wages for plumbers, electricians, and welders can be very high. I agree entirely. Going forward many will respond to such monetary incentives and specialize in marketable trades such as these.

Suffice it to say that I'm not an expert at career advice, but I like to observe the world around me. And my observations say that a good way of increasing your likelihood of achieving high lifetime income is to acquire skills that are in high demand and short supply.

Moral of the story: School is cool. More precisely (though it doesn't rhyme as nicely): learning specialized skills that are in high demand and short supply is a smart ticket towards maximizing your lifetime income.

# Lever #3: Decrease Your Lifetime Taxes

$$W_{t+N} = W_t \; + \; \sum_{i=1}^{N} I_{t+i} \; - \; \sum_{\boldsymbol{i=1}}^{\boldsymbol{N}} \boldsymbol{T_{t+i}} \; - \; \sum_{i=1}^{N} C_{t+i} \; + \; \sum_{i=1}^{N} IntEar_{t+i} \; - \; \sum_{i=1}^{N} IntExp_{t+i}$$

One of the primary reasons for me writing this book is to help you to better understand the largest line item in most people's budget: taxes. If you finish this chapter and understand its contents, you will know more about the tax code than 99% of the population. More importantly, you will understand how to exploit the tax code to minimize your lifetime tax burden, which will make you a substantially wealthier individual.

This is the longest chapter in the book by far, but I promise it is worth the effort.

## The Four Types of Taxes

At the federal level, there are four types of taxes that come out of a typical worker's paycheck:

1. **Federal income taxes.** This is the big one. It's calculated using the progressive tax brackets that we'll dive into shortly. For 2026, the top marginal rate is 37%.
2. **State income taxes.** Most states levy their own income tax on top of the federal tax. Nine states (Alaska, Florida, Nevada, New Hampshire, South Dakota, Tennessee, Texas, Washington, and Wyoming) levy no income tax at all.
3. **Social Security taxes.** The Social Security tax rate is 6.2% on the first $184,500 of gross income (2026). Your employer also pays 6.2%, for a combined rate of 12.4%.
4. **Medicare taxes.** The Medicare tax rate is 1.45% on all of your gross income. Your employer also pays 1.45%, for a combined rate of 2.9%. High earners pay an additional 0.9% on income above $200k (single) or $250k (married).

We will walk through the computation of each of these taxes using a worked example. It is not hard math. If you can do basic arithmetic, you can calculate your own taxes by hand.

## Step 1: Calculate Your Deduction

Before we can calculate your federal income tax, we need to determine your deduction. Every taxpayer gets to choose between two options:

1. **The standard deduction.** This is a fixed amount set by the government. For 2026, it is $16,100 for single filers and $32,200 for married filing jointly.[1]

[1]The 2017 tax reform (TCJA) roughly doubled the standard deduction. The 2025 "One Big Beautiful Bill Act" (OBBBA) made these provisions permanent and indexed for inflation. Unlike prior editions of this book, we no longer need to worry about these provisions sunsetting.

2. **The itemized deduction.** This is the sum of specific deductible expenses, including state and local taxes (SALT), mortgage interest, and charitable contributions. You choose whichever is larger.

Let's set up the example that we will carry throughout this chapter. Assume the following:

***Case Study: Baseline Tax Parameters***

- $8,000/year in property taxes
- $5,500/year in state income taxes
- $9,000/year in mortgage interest
- $1,000/year in charitable contributions

One important wrinkle: the SALT cap. Federal law caps the deduction for state and local taxes (property taxes + state income taxes) at $40,400 for 2026.[2]

In our example, total SALT is $8,000 + $5,500 = $13,500. Since $13,500 is well below the $40,400 cap, the full amount is deductible. Our itemized deductions are:

Table .1: *

| | | **Single** | **Married** |
|---|---|---|---|
| | **Standard Deduction** | *$16,100* | *$32,200* |
| *Federal Tax Deductions* | Property Taxes | $8,000 | $8,000 |
| | State Income Taxes | $5,500 | $5,500 |
| | Mortgage Interest | $9,000 | $9,000 |
| | Charitable Contributions | $1,000 | $1,000 |
| | **Itemized Deduction** | *$23,500* | *$23,500* |
| | **Max(Standard, Itemized)** | **$23,500** *(itemize)* | **$32,200** *(standard)* |

The single household itemizes because $23,500 exceeds the $16,100 standard deduction. The married household takes the standard deduction because $32,200 exceeds the $23,500 in itemized deductions. Note that in neither case does the SALT cap bind—the $40,400 cap is well above our $13,500 in state and local taxes.

The generous $32,200 married standard deduction is the primary reason that most married households do not itemize. We'll discuss the circumstances under which our married household *would* itemize later in this chapter.

## Step 2: Compute Your Taxable Income

Health insurance premiums which are paid through payroll deduction are untaxed at the federal and state level. As a result, we subtract these premiums when calculating tax liability. The same is true for the employee portion of Traditional 401k contributions. The last adjustment we need to make to our gross income is to subtract the standard or itemized deduction, whichever is larger.

Continuing our example from before, we will make the following additional assumptions:

[2]The original TCJA capped SALT at $10,000, which was a major pain point for homeowners in high-tax states. The OBBBA raised this cap to $40,000 in 2025, indexed for inflation ($40,400 for 2026). While this is a massive improvement, the cap still binds for high-income households in states like California and New York.

***Case Study: Additional Parameters***

- $160,000 household income
- $12,000/year health insurance premiums paid through payroll deduction
- $5,000/year in employ*ee* Traditional 401k contributions
  – $2,500/year in employ*er* Traditional 401k contributions
- No kids (for now)
- Deductions carried over from Step 1

Table .2: *

*Calculating Taxable Income*

| **Single** | **Married** | |
|---|---|---|
| $160,000 | $160,000 | Gross Income |
| −$12,000 | −$12,000 | − Health Ins. Prem. |
| −$5,000 | −$5,000 | − Trad 401k contribution |
| −$23,500 | −$32,200 | − Deduction |
| $119,500 | $110,800 | = Taxable Income |

## Step 3: Computation of Federal Income Tax Liability

With taxable income calculated, we proceed to calculate the tax liability as dictated by the federal tax brackets. The tax table tells us the tax rate on the given range of income. For example, when we refer to the married column, we see that the first $24,800 of taxable income is taxed at 10%, the next $76,000 (=$100,800−$24,800) of taxable income is taxed at 12%, and so on. The calculation of the federal tax liability for each household follows in a relatively straight forward manner.

Table .3: *

*Federal Tax Brackets (Truncated, 2026)*

| **Single** | **Married** | **Rate** |
|---|---|---|
| $0 – $12,400 | $0 – $24,800 | 10% |
| $12,400 – $50,400 | $24,800 – $100,800 | 12% |
| $50,400 – $105,700 | $100,800 – $211,400 | 22% |
| $105,700 – $201,775 | $211,400 – $403,550 | 24% |

Table .4: *

*Calculating Federal Tax Liability*

| **Single** | **Married** | |
|---|---|---|
| 10%×($12,400−$0)<br>+ 12%×($50,400−$12,400)<br>+ 22%×($105,700−$50,400)<br>+ 24%×($119,500−$105,700) | 10%×($24,800−$0)<br>+ 12%×($100,800−$24,800)<br>+ 22%×($110,800−$100,800) | |
| **$21,278** | **$13,800** | Federal Tax Liability |

## Computation of State Income Tax Liability

Given that there are 50 different states, it is beyond the scope of this book to arrive at the specific computation of the tax liability for each state.

For our purposes, we'll continue this example assuming a $5,500 state tax liability and a flat 5% marginal rate even though the reality may be slightly more complicated.

## Computation of Social Security Taxes

Recall that the Social Security tax rate is 6.2% on the first $184,500 of gross income. Since our household's gross income of $160,000 is below the $184,500 wage base, Social Security taxes are easily computed as:

Table .5: *

| | **Single** | **Married** |
|---|---|---|
| *Social Security Taxes* | 6.2%×$160,000 = $9,920 | 6.2%×$160,000 = $9,920 |

## Computation of Medicare Taxes

Recall that the Medicare tax rate is 1.45% of gross income on the first $200,000 of income if single (or $250,000 if married) and 2.35% on income above that. It's easily computed as:

Table .6: *

| | **Single** | **Married** |
|---|---|---|
| *Medicare Taxes* | 1.45%×$160,000 = $2,320 | 1.45%×$160,000 = $2,320 |

## Aggregation of the Four Taxes

Continuing this example, we can aggregate each of these four taxes into an aggregate tax burden for the household:

Table .7: *

| **Single** | **Married** | |
|---|---|---|
| $21,278 | $13,800 | Federal |
| $5,500 | $5,500 | State |
| $9,920 | $9,920 | Social Security |
| $2,320 | $2,320 | Medicare |
| **$39,018** | **$31,540** | Total Tax Burden |
| **24.4%** | **19.7%** | Total Tax Burden / Gross Income |

*Total Tax Burden*

These taxes are not trivial in magnitude. They constitute 24.4% (=$39,018/$160,000) of the single household's income and 19.7% (=$31,540/$160,000) of the married household's income.

One of the primary reasons for me writing this book is to help you to better understand the largest line item in most people's budget: taxes.

Before proceeding further, let me point out a pet peeve of mine. For federal taxes, we calculated that the married household will owe $13,800. In reality, the couple won't write a check for $13,800 in April of the following year, but instead the couple will have some federal taxes withheld every single paycheck. Let's assume that the couple had withheld $1,200 in federal taxes each month, for a total of $14,400 (=$1,200×12) for the year. When the couple files their taxes the following April, they would receive a refund of $600 (=$14,400−$13,800). Most people I know rejoice at receiving money from the government at tax time. This is because most people I know are financial idiots. The financially competent person would be disappointed at the receipt of $600 because it means that the person gave Uncle Sam an interest free loan for up to 16 months.[3]

This isn't rocket science. I've just demonstrated that you can calculate your federal tax liability in a few minutes. I'd encourage you to plug in your own parameters and figure out your own federal tax liability. After doing so, I'd recommend that you look at your paystubs and adjust your withholdings so that you end up with a federal tax refund of around zero. But don't go overboard here. If you strategically (or accidentally) underwithhold and make a large tax payment the following April you run this risk of incurring underwithholding penalties (google "IRS Underpayment of Estimated Tax" to learn more about the conditions in which this penalty would occur). Though these penalties are relatively modest (you incur a modest interest charge), you'll want to avoid them by shooting for a refund of zero. Again, this should take you a few minutes to do by hand.

Let's go back through this example and see what we have observed so far:

- The employ*er* 401k match does not affect the household's taxes today.
- Health insurance premiums and Traditional 401k contributions helped to reduce taxable income, regardless of whether the household took the standard deduction or itemized.
- Despite paying $8,000/year in property taxes, $5,500/year in state income taxes, $9,000/year in mortgage interest, and $1,000/year in charitable contributions, the married household received zero additional tax benefit from any of these items because the standard deduction exceeded the itemized deduction. We'll discuss why further below (refer to section entitled *"Tax Benefits from (Home Ownership and) Itemizing"*).
- The U.S. tax code is progressive, meaning the more money you make, the higher rate at which each dollar is taxed. For the married household in our example, the first $24,800 of *taxable* income (i.e. after deductions, etc) was taxed at 10%, the next $76,000 ($100,800−$24,800) of *taxable* income is taxed at 12%, and the last $10,000 ($110,800−$100,800) is taxed at 22%.
  - Note that the first $24,800 of *taxable* income for every married household will be taxed at 10%, whether their total taxable income is $20,000 or $20,000,000. This is how a progressive tax code works. Each additional chunk of money earned is taxed at an increasing rate.
  - Higher income households will indeed have a higher average tax rate, defined as total taxes / total income. This is because a higher proportion of their income is taxed at higher rates even though these households have a portion of their income taxed at 10%, 12%, and so on.
- Payroll taxes are computed using gross income rather than taxable income.

[3] Federal taxes overwithheld in a January paycheck that is not refunded until April of the following year constitutes a 16 month interest free loan to the government.

## Your Marginal Tax Rate, the Most Important Number in the U.S. Tax Code

To illustrate how the household's marginal tax rate is determined, let's expand on the previous example by focusing solely on the married household. Let's give the married household a $100 raise, increasing their income from $160,000 to $160,100. Let's see how this simple change propagates through our calculation of tax liability:

Table .8: *
*Calculating Taxable Income*

| **Married (baseline)** | **Married (with $100 raise)** | |
|---:|---:|---|
| $160,000 | $160,100 | Gross Income |
| −$12,000 | −$12,000 | − Health Ins. Prem. |
| −$5,000 | −$5,000 | − Trad 401k contribution |
| −$32,200 | −$32,200 | − Deduction |
| $110,800 | $110,900 | = Taxable Income |

Table .9: *
*Calculating Federal Tax Liability*

| **Married (baseline)** | **Married (with $100 raise)** | |
|---:|---:|---|
| 10%×($24,800−$0) | 10%×($24,800−$0) | |
| + 12%×($100,800−$24,800) | + 12%×($100,800−$24,800) | |
| + 22%×($110,800−$100,800) | + 22%×($110,900−$100,800) | |
| **$13,800** | **$13,822** | Federal tax liability |

Unsurprisingly, the $100 raise increased our taxable income by $100. When it came time to calculate the household's tax liability, we see that this extra $100 is taxed at 22%, since that is the highest tax bracket in which the household finds itself. The difference in tax liabilities is $22 (=$13,822−$13,800), which could have alternatively been calculated as the marginal rate of 22% × $100 = $22.

If you recall in our previous example, the married household had a marginal state tax rate of 5%, thus the combined marginal rate of the household is 27% (=22% federal + 5% state). When also considering federal and state income taxes, the $100 raise will increase taxes by 27% × $100 = $27.

To further illustrate why this marginal rate matters, let's revert to the baseline situation for the household but instead increase our Traditional 401k contributions by $100, from $5,000 to $5,100. Here's how that scenario looks:

Unsurprisingly, the $100 higher Traditional 401k contribution served to reduce the household's taxable income by $100, from $110,800 to $110,700. When we run this new taxable income through our tax table, we see that it reduces our federal tax liability from $13,800 to $13,778, a difference of $22. Note that we could have easily computed this difference in taxes directly using the marginal rate of 22% multiplied by our $100 increase in 401k contributions.

Again, when we also consider the 5% state marginal rate, the $100 extra Traditional 401k contribution would have reduced the household's total tax burden by $27.

Table .10: *
*Calculating Taxable Income*

| Married (baseline) | Married (with $100 401k contribution) | |
|---|---|---|
| $160,000 | $160,000 | Gross Income |
| −$12,000 | −$12,000 | − Health Ins. Prem. |
| −$5,000 | −$5,100 | − Trad 401k contribution |
| −$32,200 | −$32,200 | − Deduction |
| $110,800 | $110,700 | = Taxable Income |

Table .11: *
*Calculating Federal Tax Liability*

| Married (baseline) | Married (with $100 401k contribution) | |
|---|---|---|
| 10%×($24,800−$0) | 10%×($24,800−$0) | |
| + 12%×($100,800−$24,800) | + 12%×($100,800−$24,800) | |
| + 22%×($110,800−$100,800) | + 22%×($110,700−$100,800) | |
| **$13,800** | **$13,778** | Federal tax liability |

## Your Marginal Tax Rate can Change

While it is usually sufficient to calculate the change in tax liability as the marginal tax rate multiplied by either the change in income or Traditional 401k withholdings, this shortcut does not always work. The reason why it won't work is if the change in income or Traditional 401k withholdings puts a household into a new marginal bracket. To illustrate, consider the following example of a married household with the following parameters:

- $146,000 gross income
- $12,000 health insurance premiums
- $0 Traditional 401k contributions (in our baseline scenario)
- $32,200 standard deduction

Under this baseline scenario, the household has a federal tax liability of $11,820 and a marginal rate of 22%. If we increase the Traditional 401k contributions from $0 to $1,000, we arrive at a new federal tax liability of $11,600, a difference of $220, as expected (=22%×$1,000).

However, if we further increase the Traditional 401k contributions from $1,000 to $2,000, the tax liability changes to $11,480, a difference of only $120 (=$11,600−$11,480). Why didn't the tax liability change by $220 as it did before? Because the 401k contribution pushed the household from the 22% bracket into the 12% bracket.

Table .12: *
*Calculating Taxable Income*

| Married (baseline) | Married ($1k 401k) | Married ($2k 401k) | |
|---|---|---|---|
| $146,000 | $146,000 | $146,000 | Gross Income |
| −$12,000 | −$12,000 | −$12,000 | − Health Ins. Prem. |
| $0 | −$1,000 | −$2,000 | − Trad 401k contribution |
| −$32,200 | −$32,200 | −$32,200 | − Deduction |
| $101,800 | $100,800 | $99,800 | = Taxable Income |

Table .13: *
*Calculating Federal Tax Liability*

| **Married (baseline)** | **Married ($1k 401k)** | **Married ($2k 401k)** | |
|---|---|---|---|
| 10%×($24,800−$0) + 12%×($100,800−$24,800) + 22%×($101,800−$100,800) | 10%×($24,800−$0) + 12%×($100,800−$24,800) | 10%×($24,800−$0) + 12%×($99,800−$24,800) | |
| **$11,820** | **$11,600** | **$11,480** | Federal tax liability |

## Your Tax Minimization Toolkit

If I haven't lost you thus far, you now know more about the U.S. code than 99% of the population. Congratulations. I hope that you are beginning to understand how this knowledge of the tax code may make you a wealthier individual.

Let's proceed by discussing the different types of accounts which might hold our investments. Think of each type of account as nothing more than a bucket in which we fill our investments. The U.S. government treats each bucket differently in terms of how the underlying investments are taxed. Properly understanding and strategizing around the differences between these accounts will drastically minimize your lifetime tax burden.

- Tax deferred vehicles
  - Traditional 401k, Traditional 401a, Traditional 403b, Traditional 457, Traditional IRA
- Tax exempt vehicles
  - Roth 401k, Roth 401a, Roth 403b, Roth 457, Roth IRA, 529 (college savings)
- Health Savings Accounts (HSA)
- Taxable Brokerage Account

Within each class of savings vehicle, they are treated pretty much the same. Here is how they are treated:

| **Account Type** | **Contributions** | **Dividends & Cap Gains** | **Withdrawals** |
|---|---|---|---|
| Tax-deferred (Traditional) | Untaxed | Untaxed | Taxed* |
| Tax-exempt (Roth) | Taxed | Untaxed | Untaxed |
| Health Savings Accounts | Untaxed** | Untaxed | Untaxed |
| Taxable brokerage accounts | Taxed | Taxed*** | Taxed*** |

Table .14: *
* Taxed as ordinary income
** Unlike tax-deferred accounts, HSA accounts are also exempt from payroll taxes
*** In a taxable brokerage account, dividends and capital gains are taxed at preferential rates

It doesn't take a genius to look through these types of accounts and realize that some are better than others. The best type of investing account is the Health Savings Account, as it is "triple tax advantaged." What do I mean by this? 1.) Contributions are untaxed, 2.) dividends and capital gains are untaxed, and 3.) withdrawals are untaxed. In your quest to minimize your lifetime tax burden, you would do well to utilize Health Savings Accounts when that option is available. The HSA is even more advantageous when you consider the fact that contributions to the HSA, if done through payroll deduction with your employer, are not subject to payroll taxes of Social Security and Medicare.

By looking at the table, we also see that taxable brokerage accounts are inferior to the other savings vehicles. They are taxed at every step along the way. Despite this, we will discuss in subsequent sections the actionable steps you can follow within your taxable brokerage account to lower your tax burden.

Given the benefits of some accounts over others, I would recommend you to prioritize these accounts in the following order:

1. HSA
2. Trad or Roth (we'll discuss how to decide between the two types of accounts in next section)
3. Taxable brokerage

The section "Hierarchy of Savings" below expands on this idea.

## The Basics of Tax Arbitrage

Recall that the whole point of this chapter is discussing strategies of minimizing our lifetime burden:

$$W_{t+N} = W_t \; + \; \sum_{i=1}^{N} I_{t+i} \; - \; \sum_{i=1}^{N} T_{t+i} \; - \; \sum_{i=1}^{N} C_{t+i} \; + \; \sum_{i=1}^{N} IntEar_{t+i} \; - \; \sum_{i=1}^{N} IntExp_{t+i}$$

Thus far, we have covered pretty well the benefits *today* of dumping money into a Traditional 401k (or Traditional IRA). We've gone through the math and seen that your Traditional 401k contributions lower your federal and state taxes *today* by the size of the contribution multiplied by your marginal tax rate. But Traditional 401ks aren't exactly a free lunch.

Why not? Because the money will ***eventually be taxed***. Let's figure out how they will be taxed and whether there is a tax savings from doing so.

Traditional 401k withdrawals are taxed as "ordinary income," which means that it is taxed in the same manner as we've discussed previously. The one difference is that in retirement the 401k distribution won't be subject to Social Security or Medicare taxes, since these taxes were already taken out when the income was earned.

To illustrate how the 401k will be taxed in retirement, we have to make some assumptions about the future tax code. The simplest assumption to make is that the tax code will stay the same (we'll relax this assumption later). Let's carry over our baseline scenario of a married household earning $160,000. Let's say that in retirement they will withdraw $50,000/year from their 401ks. Here's how the taxes would vary across the two scenarios:

Table .15: *

*Calculating Taxable Income*

| **Married (baseline)** | **Married (retired)** | |
|---|---|---|
| $160,000 | $50,000 | Gross Income |
| −$12,000 | $0 | − Health Ins. Prem. |
| −$5,000 | $0 | − Trad 401k contribution |
| −$32,200 | −$32,200 | − Deduction |
| $110,800 | $17,800 | = Taxable Income |

The left column is unchanged from before. The couple owes $13,800 in federal taxes and has a marginal rate of 22%. For every dollar of income put into a Traditional 401k, this saves the couple $0.22 in federal taxes *today*. We proceed by subtracting the $32,200 standard deduction from the couple's $50,000/year income in retirement to arrive at $17,800 in taxable income. The entire

Table .16: *
*Calculating Federal Tax Liability*

| Married (baseline) | Married (retired) | |
|---|---|---|
| 10%×($24,800−$0)<br>+ 12%×($100,800−$24,800)<br>+ 22%×($110,800−$100,800) | 10%×($17,800−$0) | |
| **$13,800** | **$1,780** | Federal tax liability |
| 22% | 10% | Marginal tax rate |
| Irrelevant | 3.56% | Average tax rate |

$17,800 is taxed at 10%. The average tax rate of 3.56% can be computed as $1,780 / $50,000, or alternatively as 0%×($32,200/$50,000) + 10%×($17,800/$50,000).

***This is financial alchemy at its finest. We just discovered how to mint money by shifting WHEN the household is taxed on its income. This may be the single most important concept in this book and a huge source of wealth accumulation.***

Rather than having its income be taxed at the 22% federal marginal rate during its working years, the married household shifted the timing of these taxes towards retirement, and in the process ends up with a tax burden of 3.56%. It accomplished this very low tax burden through a combination of lower tax brackets & full utilization of standard deduction (i.e. the 0% region) in retirement.

If you are lost in the math, reread this section until it is implanted onto your soul. It's the most important concept in this book.

## An Added Benefit of Traditional 401k usage: Geographic Tax Arbitrage

To further demonstrate the case for how Traditional 401ks can minimize your lifetime tax burden, consider the case of a retiree who relocates from a state with high income taxes to one with no income taxes[4] (or simply a lower rate).

By deferring taxation while located in the 5% tax state until when the income is withdrawn in retirement at the 0% tax state, we further reduce our lifetime tax burden and increase our lifetime wealth accumulation.

I'm planning to do precisely this in retirement. I work in a state with a relatively high marginal rate of 7%. In retirement, I plan to move to a state with a lower tax burden (perhaps 0%). By shoving money into tax-deferred accounts during my working years, moving to a state with no income tax, then withdrawing money in retirement, I am legally avoiding the 7% taxes indefinitely on all sheltered income.

Again, this is financial alchemy. By simply understanding how taxes work and how you might exploit the tax code to your advantage, you are easily minimizing your lifetime tax burden, and thus increasing our lifetime wealth.

[4]Alaska, Florida, Nevada, New Hampshire, South Dakota, Tennessee, Texas, Washington, and Wyoming levy no state income tax.

## Wrapping up the Tax Arbitrage Section

To summarize the power of the Traditional 401k in reducing your lifetime tax burden, there are several key things you must understand:

- The Traditional 401k enables you to put pre-tax money into investments, saving yourself the size of the contribution × your combined marginal tax rate (federal MTR + state MTR) in the process.
- If you withdraw this money in retirement when you are not working, the first $32,200 would be taxed at 0%, the next $24,800 would be taxed at 10% federally, the next $76,000 (=$100,800−$24,800) would be taxed at 12% federally, and so on.
- When you are saving yourself 22% in federal taxes today and paying a weighted average of 0%, 10%, 12%, (and so on) in taxes in the future, this is tax arbitrage. You are significantly decreasing your lifetime tax liability while doing so.
- A Traditional 401k allows you to exploit geographic tax arbitrage in which you move from a high tax state while working to a lower tax state in retirement.
- An added benefit of the Traditional 401k is that you don't pay taxes on dividends or capital gains over your investing lifetime, which will serve to amplify your returns relative to investments held in taxable brokerage accounts.

## ***Roth*** vs ***Traditional*** 401k (and IRAs)

Thus far, we've primarily discussed utilizing ***Traditional*** 401k accounts to lower your tax burden. ***Traditional*** Individual Retirement Accounts (IRAs) can be used similarly (with the caveat that you are not above the income limits. For more information, see the section entitled "Phase out of Trad IRA deductibility & Roth contributions").

However, an increasing number of employers are also offering ***Roth*** 401k plans. ***Roth*** IRAs have also been available for some time now.

Armed with a good understanding of the tax code, we're now in the position to deeply understand the tradeoffs behind ***Traditional*** and ***Roth*** 401ks (or IRAs).

To review what we covered in the previous section:
***Traditional*** 401ks and IRAs are untaxed now, yet **taxed upon withdrawal**.
***Roth*** 401ks and IRAs are **taxed now**, and untaxed upon withdrawal.

To discuss our Roth vs Traditional discussion (i.e. our tax-exempt vs tax-deferred), we will build upon the example from the previous section, but let's force Traditional 401k contributions to $0 for now:

Table .17: *

| | **Married (baseline)** | **Married (retired)** | |
|---|---|---|---|
| *Calculating Taxable Income* | $160,000 | $50,000 | Gross Income |
| | −$12,000 | $0 | − Health Ins. Prem. |
| | $0 | $0 | − Trad 401k contribution |
| | −$32,200 | −$32,200 | − Deduction |
| | $115,800 | $17,800 | = Taxable Income |

Let's say that this household is considering between investing $1,000 *of income* into a ***Traditional*** 401k vs investing that same $1,000 *of income* into a ***Roth*** 401k. Let's make the following assumptions:

- Ignore payroll taxes for now

Table .18: *
*Calculating Federal Tax Liability*

| **Married (baseline)** | **Married (retired)** | |
|---|---|---|
| 10%×($24,800−$0)<br>+ 12%×($100,800−$24,800)<br>+ 22%×($115,800−$100,800) | 10%×($17,800−$0) | |
| **$14,900** | **$1,780** | Federal tax liability |
| 22% | 10% | Marginal tax rate |
| Irrelevant | 3.56% | Average tax rate |

- $50,000/year withdrawal in retirement
- 5% state income tax now and in retirement
  - The $32,200 standard deduction would reduce the average state tax paid to 1.78% (=0%×($32,200/$50,000) + 5%×($17,800/$50,000)).
- In retirement, all withdrawals will come exclusively from a Traditional 401k or exclusively from a Roth 401k
- Retirement is 40 years away
- Investments grow by 6%/year

Given the above parameters, the *marginal* tax rate today is 27% (=22% federal + 5% state) while the *average* rate in retirement is 5.34% (=3.56% federal + 1.78% state).

In retirement, the after-tax value of *$1,000 of income* diverted to a ***Traditional*** 401k would be: ($1,000×(1+6%)$^{40}$)×(1−5.34%) = $9,737

In retirement, the after-tax value of *$1,000 of income* diverted to a ***Roth*** 401k would be: ($1,000×(1−27%))×(1+6%)$^{40}$ = $7,509

In this example, the after-tax value of the ***Traditional*** 401k is 30% (=($9,737 − $7,509) / $7,509) larger than that of the ***Roth***.

To reiterate, by ***optimally deciding between a Traditional and Roth account, we grew our money by 30%***. This is financial alchemy. If you understand it, you will be a substantially wealthier individual.

We can generalize the last example into symbolic form. To summarize:

- The after-tax value $1 income contributed to a ***Traditional*** 401k in N years is: ($1×(1+R)$^{N}$)×(1−$\tau_{\text{average,retirement}}$
- The after-tax value $1 income contributed to a ***Roth*** 401k in N years is: ($1×(1−$\tau_{\text{marginal,today}}$))×(1+R)$^{N}$.
- A ***Traditional*** 401k will produce a higher after tax value than a ***Roth*** 401k when:
  - Future after-tax value of $1 income contributed to a ***Traditional*** 401k today > Future after-tax value of $1 income contributed to a ***Roth*** 401k today
  - ($1×(1+R)$^{N}$)×(1−$\tau_{\text{average,retirement}}$) > ($1×(1−$\tau_{\text{marginal,today}}$))×(1+R)$^{N}$
  - Divide both sides by (1+R)$^{N}$ and simplify
  - (1−$\tau_{\text{average,retirement}}$) > (1−$\tau_{\text{marginal,today}}$)
  - $\tau_{\text{marginal,today}} > \tau_{\text{average,retirement}}$
- A ***Roth*** 401k will produce a higher after tax value than a ***Traditional*** 401k when:
  - $\tau_{\text{marginal,today}} < \tau_{\text{average,retirement}}$

Prior to writing this section of the book, I had always understood (and taught) that the proper comparison to make for ***Roth*** vs ***Traditional*** 401ks was the *marginal* tax today vs the *marginal* tax rate in retirement. After writing this section of the book in excruciating detail, it is apparent that I was wrong. The appropriate comparison to make is the *marginal* tax rate today vs the *average* tax rate in retirement. Why is this the case? In retirement, these distributions are not all taxed at the

*marginal* rate. If the current tax code persists, the first $32,200 would be taxed at 0%, the next $24,800 would be taxed at 10% (=10% federal + 0% state, roughly), and so on. This more precise formulation of the ***Roth* vs *Traditional*** decision is the correct way of thinking about this problem, and carefully doing so will make you a substantially richer person as you minimize your lifetime tax burden in the process.

To make it painfully obvious why the *average* rate is the appropriate rate to use, consider the extreme example of a married household that makes only $32,200/year in ***Traditional*** 401k withdrawals in retirement. Due to the standard deduction, the *average* tax rate on this income would be zero. However, if they withdraw their 32,201$^{st}$ dollar from a 401k, this would be taxed at the rate of 10%, so their *marginal* federal rate is 10%. In this example, the *average* tax rate of 0% is the economically relevant number here and the *marginal* rate of 10% is irrelevant.

If you think this is a crazy, non-sensical example of $32,200/year in 401k withdrawals, it's not. One of my favorite bloggers is Jeremy at Go Curry Cracker. He does precisely this strategy with his ***Traditional*** 401k distributions (which he technically converts to a ***Roth*** IRA, but the underlying economics are the same as if he were to withdraw them). In retirement, he supplements any shortfalls in income with dividends and capital gains from his taxable brokerage account. In retirement, his average tax rate is zero. During his working years, his marginal rate was substantially higher than zero. By exploiting this tax arbitrage, he has grown his wealth significantly.

## A Note about Future Tax Rates

We can calculate with absolute certainty what our marginal tax rate is today. Doing so will give us half of the required information to make the optimal ***Traditional*** vs ***Roth*** decision (i.e. today's *marginal* rate). The other required information we need is our *average* tax rate in retirement which is a function of the tax brackets, the size of the standard deduction, etc.

You might rationally argue that we have no idea what future tax rates might be, so it is pointless to get very scientific about this exercise. After all, we're running a large federal deficit that will presumably have to be closed at some point through higher tax rates. But I still think we can learn from a thoughtful analysis on what might happen to tax rates in the future.

Let's take the extreme example that tax rates in the future double from where they are today, with all other tax parameters (i.e. standard deduction, width of tax brackets, etc) staying the same. In other words, what used to be the 10% tax bracket is now the 20% tax bracket, and what used to be the 12% tax bracket is now the 24% tax bracket, and so on.

I think most of us can agree that tax rates aren't likely to go this high, but despite this let's see how that changes our calculations.

Here's how $50,000 of income is taxed under the current baseline vs the alternative world in which tax rates double.

Table .19: *
*Calculating Taxable Income*

| **Married (baseline)** | **Married (tax rates double)** | |
|---:|---:|---|
| $50,000 | $50,000 | Gross Income |
| $0 | $0 | − Health Ins. Prem. |
| $0 | $0 | − Trad 401k contribution |
| −$32,200 | −$32,200 | − Deduction |
| $17,800 | $17,800 | = Taxable Income |

Table .20: *

| | **Married (baseline)** | **Married (tax rates double)** |
|---|---|---|
| *Federal Tax Brackets (Truncated)* | 10%: $0 – $24,800 | 20%: $0 – $24,800 |
| | 12%: $24,800 – $100,800 | 24%: $24,800 – $100,800 |
| | 22%: $100,800 – $211,400 | 44%: $100,800 – $211,400 |
| | 24%: $211,400 – $403,550 | 48%: $211,400 – $403,550 |

Table .21: *
*Calculating Federal Tax Liability*

| **Married (baseline)** | **Married (tax rates double)** | |
|---|---|---|
| 10%×($17,800−$0) | 20%×($17,800−$0) | |
| **$1,780** | **$3,560** | Federal tax liability |
| 10% | 20% | Marginal tax rate |
| 3.56% | 7.12% | Average tax rate |

In this extreme example of rates increasing, the average rate went from 3.56% to 7.12%. Recall how the 7.12% is computed. It's a weighted average of the different tax rates. In other words, 0%×($32,200/$50,000) + 20%×($17,800/$50,000). The reason why I personally am not concerned about tax rate increases is because any tax hikes will be severely dampened by the large 0% region caused by the standard deduction.

Frugal individuals should care less about future tax hikes because they are much more likely to have annual withdrawals much closer to the standard deduction than those who are less frugal. If I required $150,000/year to live in retirement, I would be more worried about future tax hikes.

The nice thing about retiring is that, unlike during your working years, you get to choose perfectly how much you are taxed based on how much you withdraw. The ultimate hedge against tax rate increases is a frugal lifestyle.

You might correctly argue that the standard deduction may shrink over time, weakening my argument. But my overall perception of the tax code is that it is very forgiving to those making modest salaries, which is likely the case for most of us in retirement (either by choice or due to the fact that we haven't saved enough, an unlikely outcome for a diligent reader of this book).

## Non-Tax Reasons Why Roth IRAs are Pretty Cool

Despite the fairly compelling argument that ***Roth*** IRAs are an inferior savings vehicle to ***Traditional*** IRAs for tax reasons made in the last section (i.e. during your working years, your *marginal* rate is likely higher than your *average* rate in retirement), it turns out that there are some good reasons for ***Roth*** IRAs to find a place in your portfolio.

I'll start with one of the more obvious reasons. If you make too much money, you cannot contribute to a ***Traditional*** IRA and receive the tax benefit that we've been illustrating thus far in the book. If your income happens to fall in this region, then the optimal thing for you to do is to utilize a backdoor ***Roth*** IRA. If you want to learn more on backdoor ***Roth***s, please see the appropriate section below.

However, the primary (non-tax) reason that ***Roth*** IRAs are great is that you can access the principal (the money you've put in) at *any time for any reason*. There are no taxes or penalties for doing so, since this money has already been taxed at both the federal and state levels. As a result,

I am a firm believer that ***Roth*** IRAs are a great place to have an emergency fund. An investment in a ***Roth*** IRA can be liquidated into cash in your checking account in a matter of days. After years of maxing out your ***Roth*** IRAs, you will have a sizeable multi-purpose investment account that can be used for a variety of purposes:

- Emergencies (principal only without taxes or penalty)
- First time home purchase (principal + up to $10,000 of interest without taxes or penalty)
- Your kids' education (principal only without taxes or penalty)
- Actual retirement (principal + interest without taxes or penalty)

I think that ***Traditional*** 401ks and IRAs are superior to ***Roth***s for most people since it is rare for $\tau_{\text{marginal,today}} < \tau_{\text{average,retirement}}$, as discussed in the previous two sections. As a result, most people will want to stuff ***Traditional*** accounts to the brim each year. However, for the household who has no emergency fund, a ***Roth*** IRA would be a perfect place to build up an emergency fund.

## *Roth* AND *Traditional* 401ks

The previous section framed the discussion of ***Roth*** vs ***Traditional*** 401ks as an "either/or" decision, but I think a great strategy going forward is to use both types of accounts.

The following example helps illustrate how the combination of both ***Roth*** AND ***Traditional*** 401k accounts can be quite strategic.

Assume the following basic scenario:

- Single
- $85,000 income
- $16,100 standard deduction
- $6,000 health insurance premiums
- 5% state income tax

The left column illustrates what the individual's tax situation looks like. As shown, before any 401k contributions, the individual is paying $8,550 in federal taxes with a *marginal* rate of 22%. When you also consider the state income tax rate of 5%, the combined *marginal* tax rate is 27%.

Table .22: *
*Calculating Taxable Income*

| **Single (baseline)** | **Single ($12.5k Trad 401k)** | |
|---:|---:|---|
| $85,000 | $85,000 | Gross Income |
| −$6,000 | −$6,000 | − Health Ins. Prem. |
| $0 | −$12,500 | − Trad 401k contribution |
| −$16,100 | −$16,100 | − Deduction |
| $62,900 | $50,400 | = Taxable Income |

Table .23: *
*Federal Tax Brackets (Truncated)*

| **Single** | **Rate** |
|---:|---:|
| $0 – $12,400 | 10% |
| $12,400 – $50,400 | 12% |
| $50,400 – $105,700 | 22% |
| $105,700 – $201,775 | 24% |

Table .24: *
*Calculating Federal Tax Liability*

| **Single (baseline)** | **Single ($12.5k Trad 401k)** | |
|---|---|---|
| 10%×($12,400−$0) | 10%×($12,400−$0) | |
| 12%×($50,400−$12,400) | 12%×($50,400−$12,400) | |
| 22%×($62,900−$50,400) | | |
| **$8,550** | **$5,800** | Federal tax liability |

If the individual wanted to get out of the 22% bracket, they could simply contribute $12,500 to a Traditional 401k, reducing their taxable income from $62,900 to $50,400 (the very end of the 12% bracket). Since a 401k has an annual contribution limit of $24,500, the individual could fit an additional $12,000 (=$24,500−$12,500) of money into a Roth 401k (and even another $7,500 into a Roth IRA).

This is a powerful strategy: fill up the ***Traditional*** to the bracket edge, then put the rest in ***Roth***. Total tax-advantaged savings: $12,500 (Trad) + $12,000 (Roth 401k) + $7,500 (Roth IRA) = $32,000 per year.

## Roth IRA Conversion Ladder

In the previous sections, we have learned that ***Traditional*** 401k contributions serve to lower taxable income today, independent of whether you are itemizing or taking the standard deduction, and that distributions from ***Traditional*** 401k accounts will eventually be taxed as ordinary income down the road. The ***Traditional*** 401k is intended for retirement savings, though the U.S. government hasn't quite caught wind of the early retirement movement. The age at which the government allows you to access your 401k money is 59½, which to a 20 or 30 year old can seem like a lifetime away. After all, if you master the topics in this book you will become quite wealthy quite fast and may want to retire before 59½.

To prevent people from "raiding the cookie jar" and accessing their 401ks early, the IRS charges a 10% penalty on distributions (i.e. withdrawals) made before the age of 59½. At this point of the book, if you are a younger reader of this book you may be screaming profanities wondering why I wasted your time in previous sections elaborating the elegance of tax arbitrage through the utilization of ***Traditional*** 401ks if you don't have the ability to access this money until you're almost dead.

There are several workarounds available, my favorite of which is the ***Roth*** IRA conversion ladder. Here's how it works.

Upon severing from a given company, you have the ability to leave your ***Traditional*** 401k as is or roll it over to a ***Traditional*** IRA at the brokerage of your choice (i.e. Vanguard, Fidelity, Schwab, etc). Since both the ***Traditional*** 401k and ***Traditional*** IRA are treated similarly from a tax standpoint (pre-tax money goes in, then eventually taxed upon withdrawal), there are no tax consequences for the rollover. Rollovers can also be used to roll 401ks directly over from Employer A to Employer B or via a Rollover ***Traditional*** IRA (i.e. Employer A ⇒ (Rollover) Traditional IRA ⇒ Employer B). I've used rollovers several times in my career as I've bounced around companies and, though they require a little paperwork, are relatively straight forward.

With the rollover discussion behind us, let's assume that you retire at the age of 40 with $1M in your 401k, which you plan to use to fund your early retirement.

For simplicity, let's assume that you roll over the entirety of your 401k to a ***Traditional*** IRA without paying any taxes. With the money in your ***Traditional*** IRA, you are able to perform the conversion from a ***Traditional*** IRA to a ***Roth*** IRA. This is an extremely simple process that requires a few mouse clicks to perform. You will convert a portion of this $1M every year as you utilize the ***Roth*** IRA conversion ladder. Unsurprisingly, the moment we convert investments from a ***Traditional*** IRA to ***Roth*** IRA, we will owe taxes on the converted amount. The taxation of this conversion is taxed as ordinary income and handled in the same manner as we've illustrated at great length before.

Usually, you can touch the principal (i.e. the contributions) of the ***Roth*** IRA at any time for any reason. However, there is a slight nuance we need to discuss here. After converting to a Roth IRA, there is a 5 year incubation period in which you cannot touch the converted principal. After the 5 year incubation period is up, you're good to withdraw the principal portion of this (but not the interest portion) without any additional taxes or penalties. Thus, you've successfully managed to access your 401k funds before the age of 59½.

If you require $50,000/year of income in retirement (and aren't funding this through other sources), the appropriate implementation of this strategy would look like this:

- 2026: Convert $50k from Trad to Roth. Don't touch for 5 years (until 2031). Use $50k from other funding sources to live.
- 2027: Convert $50k from Trad to Roth. Don't touch for 5 years (until 2032). Use $50k from other funding sources to live.
- 2028: Convert $50k from Trad to Roth. Don't touch for 5 years (until 2033). Use $50k from other funding sources to live.
- 2029: Convert $50k from Trad to Roth. Don't touch for 5 years (until 2034). Use $50k from other funding sources to live.
- 2030: Convert $50k from Trad to Roth. Don't touch for 5 years (until 2035). Use $50k from other funding sources to live.
- 2031: Convert $50k from Trad to Roth. Don't touch for 5 years (until 2036). Use $50k converted principal (not interest) ***from 2026*** to live.
- 2032: Convert $50k from Trad to Roth. Don't touch for 5 years (until 2037). Use $50k converted principal (not interest) ***from 2027*** to live.
- And so on...

As you see from the above example, you would need $50k×5=$250k in savings held outside of 401ks for the strategy to work. $250k in Roth Principal would work from prior Roth contributions, as would $250k in taxable brokerage accounts. With that caveat in place, this is probably the simplest way of accessing the 401ks before the age of 59½ without incurring the 10% early withdrawal penalty.

## Phase out of Trad IRA deductibility & Roth contributions

The table below illustrates the income limits for different types of IRAs. If your income is below the following amounts, then there is no problem with you contributing to the corresponding type IRA. The table below is an over-simplification that ignores phase-outs above these limits, which we'll ignore for now. If you want to learn more, feel free to google "***Roth*** IRA income and contribution limits" or "***Traditional*** IRA deduction limits."

For example, if you are married and your household income is below $126,000, you are able to contribute $7,500 per person to a ***Traditional*** IRA and receive the full tax deduction as we've

| | Roth | Traditional (Deductible) | Traditional (Non-Deductible) |
|---|---|---|---|
| Single | $160k | $83k | No limit |
| Married (Joint) | $236k | $126k | No limit |

discussed previously. If you instead prefer to contribute to a ***Roth*** IRA, you can do so up to $236,000 of household income.

What if you are a married household that makes more than $126,000 and you want to contribute to a Deductible ***Traditional*** IRA? Ignoring the slight complication arising from the phase-out-region, you are simply out of luck. If you are a married household that makes over $236,000, the first two columns of the table seem to imply you are out of luck when it comes to IRAs.

This is where the last column, the Non-Deductible ***Traditional*** IRA, comes into play. How do these work? Well, you put after-tax money into them (like a ***Roth*** IRA and unlike a normal Deductible ***Traditional*** IRA) and you have to pay taxes on them when you withdraw (like a ***Traditional*** IRA).

In reality, a Non-Deductible ***Traditional*** IRA is much more similar to a taxable brokerage account than it is to either the Deductible ***Traditional*** IRA or the ***Roth*** IRA. One advantage of the Non-Deductible ***Traditional*** IRA over the taxable brokerage account is that you wouldn't incur capital gains taxes and dividends in a Non-Deductible ***Traditional*** IRA. However, the primary advantage of the Non-Deductible ***Traditional*** IRA is illustrated in the "Backdoor ***Roth*** IRA" section that follows.

## Backdoor Roth IRAs

In the previous section, we discussed income limits for various IRA accounts and briefly discussed the relatively impotent Non-Deductible ***Traditional*** IRA.

It turns out that there is a strategy to transform the impotent Non-Deductible ***Traditional*** IRA into a ***Roth*** IRA. This strategy is called the Backdoor Roth Conversion. Here's how it works in practice for an individual or couple with income in excess of the ***Roth*** contribution limits in the previous table:

- Ensure that there is $0 balance in all ***Traditional*** IRA accounts.
  - If you have non-zero balance, try to roll over existing ***Traditional*** IRA accounts to an employer's 401k before proceeding.
- Make a Non-Deductible ***Traditional*** IRA contribution. Your brokerage won't know that it's non-deductible, as this is determined when you file your taxes the following April. So think of this as a ***Traditional*** IRA contribution that you're simply not going to get a tax break on the following April. As a result, you're essentially putting *after tax* (rather than pre-tax) money into this ***Traditional*** IRA.
- When initially placing your (non-deductible) ***Traditional*** IRA contribution, choose a safe investment like a money market fund.
- Once the transfer is completed and you are holding the money market fund in your (non-deductible) Traditional IRA, convert this balance to a ***Roth*** IRA.
  - You will owe taxes on any gains made from the time you fund your ***Traditional*** IRA until the point that you convert to a ***Roth*** IRA.
    - If you perform this conversion immediately after funding the account, you should have just a few pennies of interest, so there would be no tax implications upon doing so.

    - If you wait to perform this conversion until long after the initial account funding, you will have more interest. This would also be the case if you were to invest initially in a volatile investment such as a stock (or stock mutual fund). You must pay taxes on any gain since the initial contribution, so there is no upside to delaying the conversion. Do it immediately.
- Once converted to a ***Roth*** IRA, you have successfully completed the "backdoor ***Roth*** IRA contribution" are free to invest in whatever you choose.

If you have outstanding ***Traditional*** IRAs, this will complicate the tax reporting. As a result, the backdoor ***Roth*** IRA contribution is optimally performed with zero balance in existing ***Traditional*** IRAs. If you desire to perform a backdoor ***Roth*** contribution but have existing ***Traditional*** IRAs in your portfolio, you have one of two options:

- Convert your existing ***Traditional*** IRAs to ***Roth***s prior to the backdoor ***Roth*** contribution. You will owe taxes on the entire converted amount (assuming that these were deductible ***Traditional*** IRAs. If they were non-deductible ***Traditional*** IRAs, you'll owe taxes only on the gains).
- Alternatively, you can try to roll over your ***Traditional*** IRA into your employer's 401k plan. This is exactly what I recently did to avoid any backdoor ***Roth*** IRA complications.
  - I rolled my Boeing 401k into a Vanguard ***Traditional*** IRA, which I was then able to roll over into my current employer's 403b plan, paving the way for a clean backdoor ***Roth*** IRA contribution.
    - This backdoor ***Roth*** complication is the most compelling reason why people might not want to roll over their 401ks after terminating a company.

Filling out the tax forms for the backdoor ***Roth*** is relatively straight forward and handled through IRS Form 8606. Your software program will do this painlessly for you. The one thing to be aware of is to enter your (non-deductible) ***Traditional*** IRA contributions BEFORE entering information on the conversion. Note that this goes against the standard questionnaire sequence for most software programs, which gather information about income (including ***Roth*** conversions) before IRA contributions. When entering a backdoor ***Roth*** in tax software, first report the (non-deductible) ***Traditional*** IRA contributions, then report the conversion. Doing so will keep you from reporting problems.

So that covers the method in which high income earners can legally contribute to a ***Roth*** IRA (via the "back door").

## Mega Backdoor Roths

As of 2026, an individual may only contribute $24,500 to a ***Traditional*** or ***Roth*** 401k. Any employer match does *not* count towards that limit. Assuming an $24,500 contribution to either the ***Traditional*** or ***Roth*** 401k and a 75% employer match of $18,375, the total contributions (employee + employer) to the 401k would be $42,875.

However, the IRS allows you to make *after-tax* contributions to a ***Traditional*** 401k in excess of the $24,500 employee annual contribution limits. The sum of the following three contributions must be less than $72,000:

- Employee ***Traditional*** or ***Roth*** 401k contribution
- Employer ***Traditional*** or ***Roth*** 401k match
- Employee *after-tax* ***Traditional*** 401k contributions

With the total contribution limit of $72,000, the maximum size of the *after-tax* ***Traditional*** 401k contribution is $29,125 (=$72,000−$24,500−$18,375).

The *after-tax* ***Traditional*** 401k behaves like the Non-Deductible ***Traditional*** IRA discussed in the previous section and has the same advantages and disadvantages. The disadvantage is that,

left alone, the *after-tax* ***Traditional*** 401k behaves a lot like a taxable brokerage account with negligible tax savings. The advantage is that contributions to the *after-tax* ***Traditional*** 401k can be converted to a ***Roth*** IRA much like Non-Deductible ***Traditional*** IRA. The process is very similar to that of the backdoor ***Roth***, with a few small changes:

- Ensure that there is $0 balance in all ***Traditional*** IRA accounts.
  - If you have non-zero balance, try to roll over existing ***Traditional*** IRA accounts to an employer's 401k before proceeding.
- Make an *after-tax* ***Traditional*** 401k contribution.
- Roll the *after-tax* ***Traditional*** 401k contribution over to a Traditional IRA.
- Once the rolled over to a Traditional IRA, convert to a ***Roth*** IRA.
  - You will owe taxes on any gains made from the time you fund your *after-tax* ***Traditional*** 401k until the point that you convert to a ***Roth*** IRA.
  - When you invest in a money market fund and convert shortly after funding the account (i.e. a day or two), the size of the gain should be trivially small, as should the taxes owed on the conversion.
- Once converted to a ***Roth*** IRA, you are free to invest in whatever you choose.

In order to implement the above strategy, the following conditions would be required:

- Required: Your employer allows for *after-tax* ***Traditional*** 401k contributions.
- Nice to have: Your employer allows for "in-service distributions," allowing you to roll the money over to a Traditional IRA before terminating your employment.
  - If your employer does not allow for "in-service distributions," then you can continue forward with the strategy and delay the rolling over and eventual conversion until you terminate your employment.
    - As the distance between the contribution date and the ***Roth*** conversion date grows, so too will your investments likely grow (as well as the taxes owed on the conversion).

## A Massive Opportunity for Employees of Public Institutions: 401a, 457, 403b

There are a whole bunch of employer sponsored retirement accounts out there. The most common is the 401k. However, if you work for a public institution like a university you may also have access to a 401a, 403b, and a 457.

As of 2026, the contribution limits to these accounts is typically $24,500/year per account.

I work for a public university where we have access to a 401a, 403b, and a 457. The contribution limit to our 403b and 457 is $24,500 per account. Our contribution limits to our 401a are capped at a strict percentage of our salary per university policy.

I saved a colleague of mine $18k last year in taxes through a 5 minute conversation. Prior to the tax law change, he (and I) were hitting a particularly painful portion of the AMT (Alternative Marginal Tax), which raised our effective marginal tax rates (federal + state) to almost 50%. Through the maxing out of a previously unutilized 403b and 457, my colleague saved approximately $18k (=50%×(18k+18k)) in taxes.

Life lesson: Be keenly aware of the retirement plans offered by your employer, particularly if employed by a public institution, and try to exploit all of them.

## Under what Circumstances would our Married Household Itemize?

In our previous example, the single household itemized while the married household took the standard deduction. In this section, let's investigate the circumstances in which the married household would itemize.

Since the household in our example has itemized deductions totaling $23,500, this means that the household would need an additional $8,700 in itemized deductions to even reach the standard deduction of $32,200. What are some potential changes to the household's tax situation that would cause this change? Let's say that they get a raise at work that causes their state income taxes to rise from $5,500/year to $10,500/year. Surely this would push them into the itemized camp, right?

Table .25: *

| | Married (baseline) | Married (Modified) | |
|---|---|---|---|
| | *$32,200* | $32,200 | **Standard Deduction** |
| | $8,000 | $8,000 | Property Taxes |
| *Federal Tax Deductions* | *$5,500* | *$10,500* | State Income Taxes |
| | $9,000 | $9,000 | Mortgage Interest |
| | $1,000 | $1,000 | Charitable Contributions |
| | *$23,500* | $28,500 | **Itemized Deduction** |
| | **$32,200** | **$32,200** | **Max(Standard, Itemized)** |

It turns out that the $5,000 increase in state income taxes did move the needle on the itemized deduction (from $23,500 to $28,500), but it still falls short of the $32,200 standard deduction. Unlike the old $10,000 SALT cap under the original TCJA, the $40,400 SALT cap under the OBBBA is no longer the binding constraint. Instead, it's simply that the $32,200 standard deduction is very generous.[5]

So what can move the needle in favor of itemizing? Since SALT ($18,500) + mortgage ($9,000) = $27,500 falls well short of $32,200, we need charitable contributions of at least $4,700 to even begin itemizing. Let's go ahead and revert back to our baseline example and increase our charitable contributions from $1,000 to $10,000.

Table .26: *

| | Married (baseline) | Married (Modified) | |
|---|---|---|---|
| | $32,200 | $32,200 | **Standard Deduction** |
| | $8,000 | $8,000 | Property Taxes |
| *Federal Tax Deductions* | $5,500 | $5,500 | State Income Taxes |
| | $9,000 | $9,000 | Mortgage Interest |
| | *$1,000* | *$10,000* | Charitable Contributions |
| | $23,500 | $32,500 | **Itemized Deduction** |
| | **$32,200** | **$32,500** | **Max(Standard, Itemized)** |

[5] Under the original TCJA with a $10,000 SALT cap, the $5,000 increase in state taxes would have had zero effect on itemized deductions because SALT was already capped. The OBBBA's higher SALT cap ($40,400) means that state and local taxes now flow through to your itemized deduction, but the generous standard deduction remains a formidable hurdle.

Finally we achieved our goal of itemizing. We exceeded the $32,200 standard deduction by $300. We'll talk more about the economic benefits from itemizing in subsequent sections.

## Tax Benefits from (Home Ownership and) Itemizing?

Let's run this new itemized deduction through our baseline scenario to understand the effect of itemizing on our tax liability.

Table .27: *
*Calculating Taxable Income*

| **Married (std deduction)** | **Married (item. deduction)** | |
|---|---|---|
| $160,000 | $160,000 | Gross Income |
| −$12,000 | −$12,000 | − Health Ins. Prem. |
| −$5,000 | −$5,000 | − Trad 401k contribution |
| −$32,200 | −$32,500 | − Deduction |
| $110,800 | $110,500 | = Taxable Income |

Table .28: *
*Calculating Federal Tax Liability*

| **Married (std deduction)** | **Married (item. deduction)** | |
|---|---|---|
| 10%×($24,800−$0) | 10%×($24,800−$0) | |
| + 12%×($100,800−$24,800) | + 12%×($100,800−$24,800) | |
| + 22%×($110,800−$100,800) | + 22%×($110,500−$100,800) | |
| **$13,800** | **$13,734** | Federal tax liability |

How much did the itemization decrease federal taxes? $13,800 − $13,734 = $66. We could have alternatively calculated this as $300 × 22% federal marginal tax rate = $66.

How much did state taxes decrease? $300 × 5% state marginal rate = $15.

What was the total decrease in taxes? $81 (=$66 + $15).

This is kind of depressing, isn't it? To recap our total itemized deductions so far:

- $8,000 in property taxes
- $5,500 in state income taxes
- $9,000 in mortgage interest
- $10,000 in charitable contributions

In sum, we have $32,500 in deductions, and despite all of these massive itemized deductions we have, we're only saving $81 in federal & state taxes relative to the baseline scenario of the standard deduction. Why is this the case? Because it's only the itemized deductions ***IN EXCESS OF THE STANDARD DEDUCTION*** that provide any economic benefit to us. In this last example, it was only the last $300 of charitable contributions that got us over the $32,200 hurdle.

If you want to think properly about the economics of the tax code, recognize that you're only getting benefit from itemizing for those (few) dollars in excess of the standard deduction.

How do we think about this economically? Each of the following is technically correct:

- $8,000 in property taxes + $5,500 in state income taxes + $9,000 in mortgage interest + *the first $9,700 of charitable contributions* got us to the $32,200 standard deduction. It was only the *last $300 of charitable contributions* that received any economic benefit from itemizing.
- $8,000 in property taxes + $5,500 in state income taxes + the first *$8,700 in mortgage interest* + $10,000 of charitable contributions got us to the $32,200 standard deduction. It was only the *last $300 of mortgage interest* that received any economic benefit from itemizing.
- And so on.

Since charitable giving is the most discretionary of the four itemized deductions, I think that the second bullet point above is the most economically accurate description of the underlying economics. With that framework in mind, what tax benefit did we get from owning a home in this past example?

The answer is ***zero***. Even though we pissed away $8,000 in property taxes and $9,000 in mortgage interest, we received zero tax savings from owning a home. This is entirely due to the tax code. If you want to properly understand the economics of renting versus buying, please don't delude yourself into thinking that owning a home is a good deal tax-wise. This certainly was the case before the 2018 tax reform when the standard deduction was substantially lower, but it is certainly not the case going forward.

The economics of home ownership took a massive blow in January of 2018 with the doubling of the standard deduction. I'm not claiming that home ownership doesn't make economic sense going forward, but I am arguing that the relative cost of home ownership has drastically increased as compared to renting, yet nowhere in the news have I read anything mentioning this.

## Maximize the Tax Savings of Itemizing with Lumpy Charitable Contributions

This is probably a good time to talk about the tax strategy of lumpy charitable contributions. Let's stick with the current example:

- $8,000 in property taxes
- $5,500 in state income taxes
- $9,000 in mortgage interest
- $6,000 in charitable contributions (baseline amount)

Recall the depressing reality that with $6,000 of annual charitable contributions, total itemized deductions are $28,500, which falls short of the $32,200 standard deduction. The couple takes the standard deduction and gets zero benefit from their charitable giving.

If the couple desires to donate $6,000/year to charitable contributions, it would be more prudent to donate $12,000 one year and $0 the next. Let's see why.

Table .29: *
*Federal Tax Deductions*

| **$6k contribution** | **$12k contribution** | **$0 contribution** | |
|---:|---:|---:|---|
| $32,200 | $32,200 | $32,200 | **Standard Deduction** |
| $8,000 | $8,000 | $8,000 | Property Taxes |
| $5,500 | $5,500 | $5,500 | State Income Taxes |
| $9,000 | $9,000 | $9,000 | Mortgage Interest |
| *$6,000* | *$12,000* | *$0* | Charitable Contributions |
| $28,500 | $34,500 | $22,500 | **Itemized Deduction** |
| **$32,200** | **$34,500** | **$32,200** | **Max(Standard, Itemized)** |

Table .30: *
*Calculating Federal Tax Liability*

| **$6k contribution** | **$12k contribution** | **$0 contribution** | |
|---|---|---|---|
| 10%×($24,800−$0)<br>+ 12%×($100,800−$24,800)<br>+ 22%×($110,800−$100,800) | 10%×($24,800−$0)<br>+ 12%×($100,800−$24,800)<br>+ 22%×($108,500−$100,800) | 10%×($24,800−$0)<br>+ 12%×($100,800−$24,800)<br>+ 22%×($110,800−$100,800) | |
| **$13,800** | **$13,294** | **$13,800** | Federal tax liability |

Baseline:

- Donate $6,000/year
- Total tax burden across two years = $13,800×2 = $27,600.

Alternative (lumpy contributions):

- Donate $12,000 one year, then $0 next
- Total tax burden across two years = $13,294 + $13,800 = $27,094.

By doing lumpy contributions, we save $506 in federal taxes over two years. Add in the 5% state tax savings and the total comes to roughly $620.

The tax savings would grow even more if we tripled (then had 2 years off), or quadrupled (then had 3 years off) our charitable contributions, and so on.

If you are in a situation where you make regular charitable contributions, it would be prudent to invest the 5 minutes to replicate the above activity for your personal situation to minimize your tax burden. Again, this isn't rocket science, but thinking strategically on this dimension has the power to significantly increase your wealth.

## How do Your Kids Influence Your Taxes?

I have 5 kids. A friend of mine in grad school joked that I only had children to get the tax benefits from them. This isn't true. I chose to have children to be perpetually poor, exhausted, and frustrated.

So after raiding our bank accounts and our fridges, do kids produce any benefit to us from a tax standpoint?

Each child you have that is 16 years or younger entitles you to a $2,200 tax credit.[6] What is a tax credit? It reduces your tax liability dollar for dollar.

But what if your tax credits exceed your tax liability? The child tax credit is refundable, meaning you get cash back. However, the refundable portion is limited to $1,700 per child.

Let's assume that our married household from before gives birth to triplets. Let's see how this affects our tax liability:

This child tax credit is phased out for joint filers making over $400,000 (or $200,000 if single), but I'll spare you the gory details. If you're interested in learning more, google "child tax credit phase out."

## Earned Income Tax Credit (EITC)

The Earned Income Tax Credit (EITC) is one of the most powerful anti-poverty tools in the tax code, and yet most people have never heard of it. The EITC is a refundable tax credit for low-to-moderate

[6]The OBBBA increased the Child Tax Credit from $2,000 to $2,200 per child, indexed for inflation. The refundable portion also increased from $1,400 to $1,700 per child.

Table .31: *

| | Married (baseline) | |
|---|---|---|
| *Calculating Taxable Income* | $160,000 | Gross Income |
| | −$12,000 | − Health Ins. Prem. |
| | −$5,000 | − Trad 401k contribution |
| | −$32,200 | − Deduction |
| | $110,800 | = Taxable Income |

Table .32: *

| | Married (baseline) | |
|---|---|---|
| *Calculating Federal Tax Liability* | 10%×($24,800−$0) | |
| | + 12%×($100,800−$24,800) | |
| | + 22%×($110,800−$100,800) | |
| | **$13,800** | Federal tax liability |
| | **−$6,600** | − Child tax credits (3 × $2,200) |
| | **$7,200** | = Federal tax liability |

income workers. Unlike the child tax credit which reduces your tax bill, the EITC can result in a *negative* effective tax rate—meaning the government pays you.

The size of the credit depends on your income and the number of children you have. Here are the 2026 maximum credits:

| Number of Children | Max Credit | Phase-out Ends (MFJ) |
|---|---|---|
| 0 children | $664 | $26,820 |
| 1 child | $4,427 | $58,863 |
| 2 children | $7,316 | $65,899 |
| 3+ children | $8,231 | $70,244 |

The EITC phases in as your earned income rises (rewarding work), plateaus at its maximum, then gradually phases out as income exceeds a threshold. For a married couple with three or more children, the maximum credit of $8,231 is available for earned income between roughly $18,000 and $31,000, and the credit phases out entirely at $70,244.

When you combine the EITC with the Child Tax Credit, a moderate-income family with children can receive substantial tax benefits. Consider a married couple earning $35,000 with three children under 17. They would receive a CTC of $6,600 (3 × $2,200) and an EITC of approximately $8,231. That's $14,831 in combined tax credits against a very modest federal tax liability, resulting in a substantial cash refund.

If your household income falls within the EITC range, make sure you are claiming it. It's free money that many eligible families leave on the table simply because they don't file a tax return.[7]

[7]The IRS estimates that roughly 20% of eligible taxpayers fail to claim the EITC each year. If you are eligible, please claim it.

## How Investments are Taxed in a Taxable Brokerage Account

Thus far, we've primarily been concerned about the taxation of labor income, as this constitutes the largest and most complex source of taxation for most people.

With investments held in tax advantaged accounts (401k, IRA, 529, 403b, 457, 401a, etc.) there is no additional reason to worry about investment taxes since dividends and capital gains are not taxed within these accounts.

However, if you want to want to invest after maxing out your tax advantaged accounts, you will be forced to turn to taxable brokerage accounts.

In our effort to minimize our lifetime tax burden, it would be prudent to spend a few minutes learning about how investments are taxed and some strategies you might consider exploiting.

To make it simple, investors face investment taxes when:

- They incur a capital gain (i.e. sell a stock for a higher price than they bought it)
- They receive a dividend

### Dividend Taxes

The dividend yield on the S&P 500 index is roughly 1.5% and the dividend yield on a typical total international stock index is around 3%. If you have $100,000 invested in each fund you should receive $1,500 or $3,000 in dividends each year. If you are a long-term investor, like myself, you will likely want to reinvest these dividends. The annoying thing is that you must pay taxes every time you pay dividends. In the example above, if we receive a total of $4,500 in dividends, this might be taxed at 15% federally and 5% at the state level, leaving only $3,600 in after-tax cash to reinvest back in the stocks.

Brokerages will do this dividend reinvestment automatically for you. You can ask the brokerage to withhold taxes for you or you can simply pay the taxes when they are due the following April. This is what I personally do. So going back to the example, my brokerage would use the full $4,500 of dividends to reinvest, but I now have a slightly higher tax bill the following April.

We'll get more into the specifics of dividend taxation in the "Preferential Taxation of Dividends and LTCG" section below. But first, we need to discuss what a capital gain is.

### Short-term vs Long-term Capital Gains

Let's assume that an investor buys $1,000 worth of stock which experiences a return of 50% over 6 months, resulting in a new value of $1,500. If the investor decides to sell at the 6 month mark, they would incur a **short-term** capital gain of $500 (=$1,500 − $1,000). The gain is considered to be short-term because the investment was held for less than a year. The **short-term** capital gain would be taxed as if it were ordinary income (i.e. as we've been discussing in the previous sections).

If instead the investor decided to sell after a full 12 months after purchasing, the investor would incur a **long-term** capital gain and would thus be taxed at preferential rates, which tend to be lower than ordinary income rates. As a result, it is prudent to hold onto capital gains for at least a year before selling.

With that short discussion of capital gains behind us, we're now able to observe the preferential tax treatment of dividends and capital gains.

### Preferential Taxation of Dividends and LTCG

Let's go through an example to see how these rates work. The first column is our baseline example in which the married household makes $131,100 in gross income, pays $12,000 in health insurance

| Dividend and LTCG Tax Rate | Single | Married Filing Jointly |
|---|---|---|
| 0% | $0 – $49,450 | $0 – $98,900 |
| 15% | $49,450 – $545,500 | $98,900 – $613,700 |
| 20% | Over $545,500 | Over $613,700 |

premiums, and takes the standard deduction of $32,200. The second column adds to this baseline scenario $12,000 of long-term capital gains (LTCG) or dividends (or any combination of the two). The third column adds to the baseline scenario $13,000 of LTCG or dividends.

Table .33: *
*Calculating Taxable Income*

| Married (baseline) | Married (12k LTCG) | Married (13k LTCG) | |
|---|---|---|---|
| $131,100 | $131,100 | $131,100 | Labor Income |
| $0 | $12,000 | $13,000 | + LTCG / Div |
| −$12,000 | −$12,000 | −$12,000 | − Health Ins. Prem. |
| $0 | $0 | $0 | − Trad 401k contribution |
| −$32,200 | −$32,200 | −$32,200 | − Deduction |
| $86,900 | $98,900 | $99,900 | = Taxable Income |

Table .34: *
*Calculating Federal Tax Liability*

| Married (baseline) | Married (12k LTCG) | Married (13k LTCG) | |
|---|---|---|---|
| 10%×($24,800−$0) | 10%×($24,800−$0) | 10%×($24,800−$0) | |
| + 12%×($86,900−$24,800) | + 12%×($86,900−$24,800) | + 12%×($86,900−$24,800) | Tax on labor |
| | + 0%×($98,900−$86,900) | + 0%×($98,900−$86,900) | |
| | | + 15%×($99,900−$98,900) | Tax on investments |
| **$9,932** | **$9,932** | **$10,082** | Federal tax liability |

As we can see, the federal tax liability is identical across Columns 1 and 2, despite the $12,000 in LTCG/Div in Column 2. Why? You can see from the tax treatment of LTCG/Div that it is only those investments with push the family over $98,900 in combined income (=labor income + LTCG + Div) that are taxed at the preferred rates of 15% and 20%. Any investment income less than that is taxed at 0%.

It is only in Column 3 where we finally breach the $98,900 threshold, and the additional $1,000 if LTCG/Div are taxed at 15%, resulting in a tax liability in Column 3 that is $150 higher than that in Columns 1 and 2.

### Zero Taxes in Retirement on $131,100 of Income

The previous section illustrates very well how investments are taxed preferentially as opposed to labor income. The following example shows an extreme example of how a retiree could pay $0 in taxes, despite having $131,100 of income.

Assume for a moment that an early retiree married household desires to convert $32,200 from a ***Traditional*** to a ***Roth*** IRA. In our baseline scenario in the left column, we can see that the federal

tax liability is zero. The interesting thing happens in the second column where we add $98,900 of dividends and LTCG. Doing so raises the total income of the household to $131,100. However, given the preferential treatment of LTCG and dividends, this household would pay $0 in taxes as illustrated below.

Table .35: *
*Calculating Taxable Income*

| **Married (baseline)** | **Married (98.9k LTCG / Div)** | |
|---:|---:|---|
| $32,200 | $32,200 | Roth Conversion |
| $0 | $98,900 | + LTCG / Div |
| $0 | $0 | − Health Ins. Prem. |
| $0 | $0 | − Trad 401k contribution |
| −$32,200 | −$32,200 | − Deduction |
| $0 | $98,900 | = Taxable Income |

Table .36: *
*Calculating Federal Tax Liability*

| **Married (baseline)** | **Married (98.9k LTCG / Div)** | |
|---:|---:|---|
| 10%×($0) | 10%×($0) | Tax on Roth Conversion |
| | + 0%×($98,900−$0) | Tax on investments |
| **$0** | **$0** | Federal tax liability |

## Capital Gain Harvesting

The above example illustrates the strategy of "capital gain harvesting" in retirement. In the previous example, the household is able to realize $98,900 of capital gains without paying a penny in taxes. If the couple does not need this money to live, they can immediately repurchase those shares after realizing the capital gain. Doing so will increase the cost basis (i.e. historical purchase price) of the securities, thereby reducing any future tax liability on the capital gain.

## Strategy of Deferring Capital Gains

If you want to minimize your lifetime tax burden, it would be prudent to hold onto capital gains for as long as you can tolerate, perhaps until your death. Why? If you give appreciated assets to your heirs upon death, they will benefit from a "step up of cost basis." This sounds really complicated, but all it means is that from a tax standpoint, it will be as if your children purchased the investments at the time of your death. As a result, if they were to liquidate the shares upon your death, they would pay no taxes on any gains. If you hold investments over your entire lifetime, these capital gains can be substantial.

The above paragraph is why I treat my investments in my taxable brokerage account as my "forever investments." I recommend you do the same. Don't buy something you might fall out of love with. Buy investments in your taxable brokerage account with the intent to hold onto them forever. Because it is expensive to change your investments in a taxable brokerage account. If I fall out of love with an investment held in a tax-advantaged account (i.e. 401k, IRA, etc), I can simply sell it and buy another without facing any tax penalty.

### Tax Loss Harvesting

The flip side to capital *gain* harvesting is tax *loss* harvesting. Tax loss harvesting is much more commonly used than capital gain harvesting, as the former tends to be used exclusively in retirement by savvy early retirees.

Tax loss harvesting works in a pretty straight forward manner. Consider the following example.

In the baseline example, a married household is the same as in many of our previous examples. In the next column, we introduce a $9,000 capital loss to the household. Unfortunately the household cannot deduct the full $9,000 on this taxes, but is instead limited to a $3,000 deduction. The remaining $6,000 of unused deductions will be "carried over" to subsequent years. In our example, this would entitle the household to deduct $3,000/year for three total years from their taxes, saving themselves $3,000 × marginal tax rate each year they do this.

Table .37: *
*Calculating Taxable Income*

| **Married (baseline)** | **Married ($9k capital loss)** | |
|---:|---:|---|
| $160,000 | $160,000 | Gross Income |
| $0 | −$3,000 | − Capital Loss ($3k max) |
| −$12,000 | −$12,000 | − Health Ins. Prem. |
| −$5,000 | −$5,000 | − Trad 401k contribution |
| −$32,200 | −$32,200 | − Deduction |
| $110,800 | $107,800 | = Taxable Income |

Table .38: *
*Calculating Federal Tax Liability*

| **Married (baseline)** | **Married ($9k capital loss)** | |
|---:|---:|---|
| 10%×($24,800−$0) | 10%×($24,800−$0) | |
| + 12%×($100,800−$24,800) | + 12%×($100,800−$24,800) | |
| + 22%×($110,800−$100,800) | + 22%×($107,800−$100,800) | |
| **$13,800** | **$13,140** | Federal tax liability |

The strategy of tax loss harvesting exploits the above mechanics. Specifically, households who wish to tax loss harvest will sell investments that have gone down in order to receive the tax benefit today. But investors who do this might understandably be worried about missing out on the subsequent rise of the investments, negating any tax savings.

To minimize the problem of missing out on the subsequent rise in investments after selling, investors employing the strategy of tax loss harvesting will buy other investments that are "not substantially identical" to the initial security, which would create a "wash sale," and prevent the household from realizing the capital loss on their taxes. To avoid this wash sale problem, be sure to do the following:

- If you are selling Stock A and rebuying Stock A, be sure to wait 30 days after selling to repurchase. Also ensure that Stock A isn't purchased in any account you own (i.e. IRAs, etc). This accidental purchasing of Stock A within the 30-day window can often occur when dividend reinvestments are turned on. I avoid this problem by turning off dividend reinvestment when I intend to tax loss harvest.

- If you don't want to wait out of the market for 30 days, you can simply buy a "not substantially identical security" in lieu of the initial fund. An example of this would be to sell a Vanguard total stock market index fund that had gone down in price, and replace it with the Vanguard S&P 500 index. The former fund holds 3,600+ companies, while the latter holds 500 companies. However, since the largest companies such as Apple, Microsoft, and Google (i.e. Alphabet) dominate both indexes, since both are weighted by market cap, they move almost identically. Thus, the two funds are great "tax loss harvesting partners." If you google this term, you will find other such partners for total international stock market funds, total bond market funds, etc.

## Health Savings Accounts

If there is one section of this chapter that I want you to pay close attention to, it's this one. The Health Savings Account (HSA) is the single best savings vehicle in the United States tax code, and most people have never heard of it.

An HSA is available to anyone enrolled in a High Deductible Health Plan (HDHP). If your employer offers an HDHP option, you almost certainly have access to an HSA. The 2026 contribution limits are $4,400 for individuals and $8,750 for families.

What makes the HSA so special? It is the only account in the tax code that is **triple tax advantaged**:

1. **Contributions are untaxed.** Like a Traditional 401k, your contributions reduce your taxable income.
2. **Growth is untaxed.** Like a Roth IRA, dividends and capital gains within the HSA are never taxed.
3. **Withdrawals are untaxed.** When you withdraw money for qualified medical expenses, you pay zero taxes.

But it gets even better. If your employer offers HSA contributions through payroll deduction, your contributions are also **exempt from FICA taxes** (Social Security and Medicare). This makes the HSA effectively *quadruple* tax advantaged. Consider a household in the 22% federal bracket with a 5% state tax:

***HSA Tax Savings Example***

A family contributing the maximum $8,750 through payroll deduction saves:

- 22% federal income tax: $1,925
- 5% state income tax: $438
- 6.2% Social Security: $543
- 1.45% Medicare: $127

**Total tax savings: $3,033** (a 34.65% immediate return on the contribution)

No other savings vehicle provides an immediate 34.65% return. Not the 401k (no FICA savings). Not the Roth IRA (no immediate tax benefit at all).

### The HSA as a Stealth IRA

Here's where the HSA gets really interesting. Unlike a Flexible Spending Account (FSA), the HSA has **no "use it or lose it" rule**. Your balance rolls over indefinitely. You can invest your HSA funds in stock index funds, just like a 401k.

The optimal strategy: pay your medical expenses out of pocket today, save your receipts, and let your HSA grow for decades. There is no time limit on when you can reimburse yourself for medical expenses. You could pay a $500 medical bill out of pocket today, invest that $500 in your HSA, let it grow to $2,500 over 25 years, then reimburse yourself the original $500 tax-free at any time. The remaining $2,000 of growth stays in the HSA and continues to compound.

After age 65, the HSA becomes even more flexible. Withdrawals for *any purpose* (not just medical) are taxed as ordinary income, just like a Traditional IRA. So in the worst case, your HSA is simply another Traditional IRA. In the best case, it's a tax-free growth machine that you use to cover medical expenses in retirement—which, let's be honest, are likely to be substantial.

## 529 Plans

529 plans are college savings vehicles which are treated much like a ***Roth*** IRA. They are funded with after-tax money but the earnings are never taxed if used on qualified educational expenses.

In addition to the benefit of tax-free growth, many states provide subsidies to households who contribute to a 529 plan, though this subsidy is usually restricted to the state's own 529 plan.

Let's assume that a state has a flat tax of 5% and allows for up to $10,000 of 529 contributions to be deducted from the individual's state income tax. Thus, the $10,000 contribution effectively costs $9,500 after appropriately accounting for the state tax subsidy.

While this is certainly a great benefit, there are a few pitfalls to be aware of when investing in 529 plans. Mainly, the fees in 529 plans are higher than what one would experience when investing directly in a brokerage account, for example. As of today, the expense ratio on a typical U.S. total stock market index fund is 0.03%, though the expense ratio for a typical U.S. stock market index fund held within a 529 plan can range anywhere from 0.08% to 0.49% (google "Bogleheads 529 Cost Comparisons" for a great analysis). California's ScholarShare529 has among the lowest expense ratios of any equity fund in the country at 0.08%.

I personally have a two-pronged approach with respect to 529 savings. I fund my 529 plan within my own state up to the state deduction limit, then take any additional dollars to a low-cost 529 plan. If my state did not subsidize my 529 contributions (or alternatively if my state had no state income taxes), I would take all of my dollars to the lowest cost plan available.

## Hierarchy of Savings: How to Minimize Your Lifetime Tax Burden

Now that we've covered all of the major tax-advantaged savings vehicles, let's put it all together into a prioritized hierarchy. If your goal is to minimize your lifetime tax burden (and it should be), here is the order in which I recommend you deploy your savings:

1. **Employer match (free money).** If your employer matches 401k contributions, this is a guaranteed 50–100% return on your money. Always capture the full match first. This is the closest thing to free money that exists.
2. **HSA to the max ($4,400 individual / $8,750 family).** The only triple (quadruple with payroll deduction) tax-advantaged account in the tax code. Max it out every year if you have access.
3. ***Traditional* 401k/403b to the bracket edge.** Contribute enough to ***Traditional*** accounts to push your taxable income down to the edge of your next lower tax bracket. This captures the tax arbitrage between your current marginal rate and your future average rate in retirement.

4. ***Roth* 401k/IRA for remaining space.** After filling the ***Traditional*** to the bracket edge, put the rest of your 401k space ($24,500 total employee limit) into a ***Roth*** 401k. Also contribute $7,500 to a Roth IRA if your income permits (or use the backdoor Roth if not).
5. **Mega backdoor Roth (if available).** If your employer allows after-tax 401k contributions with in-service distributions, you can contribute up to the $72,000 total 415(c) limit and convert to Roth. This is the holy grail for aggressive savers.
6. **Taxable brokerage.** After exhausting all tax-advantaged space, invest in a low-cost taxable brokerage account. Use the strategies we discussed (hold forever, tax loss harvest, capital gain harvest in retirement) to minimize the tax drag.

***Hierarchy of Savings: Worked Example***

Single filer, $85,000 income, 22% federal marginal rate, employer offers HDHP with HSA and mega backdoor Roth:

1. **Employer match:** 5% = $4,250 (costs you $0)
2. **HSA:** $4,400 (saves 34.65% = $1,525 in taxes)
3. **Traditional 401k:** $12,500 to push TI from $62,900 to $50,400 (bracket edge). Saves 22% × $12,500 = $2,750 in federal taxes.
4. **Roth 401k:** Remaining $12,000 (=$24,500 − $12,500). Tax-free growth forever.
5. **Roth IRA:** $7,500 via backdoor if income exceeds limits. Tax-free growth forever.
6. **Mega backdoor Roth:** Up to $72,000 − $24,500 − $4,250 = $43,250. Tax-free growth forever.
7. **Taxable brokerage:** Anything left over.

Total annual tax-advantaged savings: $4,400 + $24,500 + $7,500 = $36,400 minimum.
With mega backdoor: up to $72,000 + $7,500 + $4,400 = $83,900.

If you can shelter $83,900 per year in tax-advantaged accounts, you are well on your way to building serious wealth while minimizing your lifetime tax burden. Even if you can't afford the mega backdoor, the first four steps (employer match + HSA + Traditional to bracket edge + Roth for the rest) will put you ahead of 99% of the population.

This hierarchy isn't set in stone. Your specific situation may warrant adjustments. But as a general framework, it's a powerful starting point for anyone serious about building wealth.

# Lever #4: Decrease Your Lifetime Consumption

$$W_{t+N} = W_t \; + \; \sum_{i=1}^{N} I_{t+i} \; - \; \sum_{i=1}^{N} T_{t+i} \; - \; \sum_{\boldsymbol{i=1}}^{\boldsymbol{N}} \boldsymbol{C_{t+i}} \; + \; \sum_{i=1}^{N} IntEar_{t+i} \; - \; \sum_{i=1}^{N} IntExp_{t+i}$$

I'm always amazed at how much effort is required to make a dollar. Assuming a marginal tax rate of 22% at the federal level, 5% at the state level, 6.2% with social security, 1.45% with Medicare, this is a combined marginal tax rate of 34.65%.[1] To generate $1 more of cash, this household would have to earn $1.53 (=1/(1−34.65%)). If we want to buy something costing $1 that also charges a 10% sales tax, we'd need to generate $1.68 of income (=1×(1+10%)/(1−34.65%)). It's really depressing when you realize how quickly taxes destroy your income. Understanding how precious after-tax dollars are makes me a more disciplined consumer.

This is the shortest lever in the book, not because it is the least important, but because the advice is simple. Living below your means is the single most controllable lever in the wealth equation.

## The Double Benefit of Frugality

Reducing your spending does two things simultaneously:

1. **It increases your savings rate.** Every dollar you don't spend is a dollar that gets deployed into tax-advantaged accounts and investments (Lever #5).
2. **It reduces the wealth you need to retire.** If you can live happily on $40,000/year, you need far less wealth to fund your retirement than someone who requires $100,000/year. Using a simple 4% withdrawal rule, the frugal household needs roughly $1M while the spendy household needs $2.5M.

This is the double benefit that most people miss. Frugality doesn't just accelerate your savings—it shrinks the target you're saving towards. The person who saves 50% of their income and lives on $40k/year will reach financial independence in roughly 17 years, regardless of income. The person who saves 10% and lives on $90k/year will work for 50+ years.

## The Big Three: Housing, Transportation, and Food

If you want to reduce your spending, focus on the big three. These categories alone typically consume 60–70% of a household's budget.

[1] Made worse if you consider the employer portion of the payroll taxes.

### Housing

Housing is by far the largest expense for most households. The simplest way to reduce this expense is to buy or rent less house than you can "afford." I put "afford" in scare quotes because the mortgage industry will gleefully approve you for a mortgage that consumes 30–40% of your gross income. Just because a bank will lend you $500,000 doesn't mean you should borrow $500,000.

My family of seven lived in a 1,200 square foot home for years. It was small, but it was paid off early, and the psychological freedom of having no mortgage payment was worth more than any extra bedroom could provide.

Some practical tips:

- Buy less house than you think you need. You'll adapt.
- Consider the total cost of homeownership: mortgage, property taxes, insurance, maintenance, HOA. These often add 30–50% on top of the mortgage payment.
- If you're renting, don't be ashamed. Renting is not "throwing money away." As we demonstrated in the tax chapter, the tax benefits of homeownership are essentially zero for most married households due to the generous standard deduction.
- House hacking (renting out rooms, ADUs, or living in a duplex) is one of the most powerful wealth-building strategies available to young people.

### Transportation

Cars are the second largest expense for most households, and also the most commonly overspent category. Here's the uncomfortable truth: a car is a depreciating asset that loses value every single day. Spending $50,000 on a new car when a $15,000 used car would serve the same purpose is a $35,000 decision that costs you far more than $35,000 when you consider the opportunity cost of investing that money.

My approach:

- Buy reliable used cars (3–5 years old) and drive them until they die.
- Avoid car payments. If you can't pay cash, you're buying too much car.
- One car households are underrated. If you can make it work, the savings are enormous: no second car payment, no second insurance policy, no second registration, no second set of maintenance.

I drove a 1994 Pontiac Grand Prix across the country with a family of five. No air conditioning. The car overheated crossing mountain passes in Oregon, forcing us to drive with the heat on full blast in 100+ degree weather. Was it pleasant? No. Did it matter? Not at all. We arrived safely, and the money we didn't spend on a nicer car continued to compound in our investment accounts.

### Food

Food is the third largest expense and also one of the most controllable. The average American household spends over $7,000 per year eating out. The math is straightforward: a meal at a restaurant costs 3–5× what it costs to prepare the same meal at home.

I'm not suggesting you never eat out. I'm suggesting you be intentional about it. Meal planning, cooking at home, and reducing food waste can easily save a family $3,000–$5,000 per year. That's $5,000 per year that can go into your 401k and grow tax-deferred for decades.

## Lifestyle Creep: The Silent Wealth Killer

Lifestyle creep is the tendency for your spending to rise in lockstep with your income. You get a $10,000 raise and somehow your expenses increase by $10,000. This is entirely natural—it happens so subtly that most people don't realize it's occurring.

The antidote to lifestyle creep is to save your raises. When you get a $10,000 raise, immediately increase your 401k contribution by $10,000. You were living fine on your previous salary. Why do you need the extra money in your checking account?

My wife and I continued to live like college students for years after I started earning an engineering salary. It wasn't hard, because we were happy at that level of spending. We never experienced lifestyle creep because we never gave ourselves the opportunity.

## Contentment: The Most Underrated Financial Strategy

I'll end this chapter with what I believe to be the most underrated financial strategy of all: being content with what you have.

My fondest memories in life have nothing to do with consumerism. They involve backpacking in the great outdoors, playing with my family in our backyard, and playing board games with friends. Each of these activities can be accomplished with somewhere between zero and very little money.

If you can train yourself to find satisfaction in experiences rather than possessions, you will have solved the consumption problem. You won't need to fight lifestyle creep because you won't desire more stuff. You won't need to budget aggressively because you naturally don't want to spend excessively.

This is much easier said than done, and I won't pretend to be a psychologist. But I will observe that the wealthiest people I know—in terms of net worth, not income—tend to be the most content with modest lifestyles. The correlation is not a coincidence. Their contentment enabled their wealth, not the other way around.

Moral of the story: the $1.68 of pre-tax income required to purchase $1 of stuff should make you think twice about every purchase. Focus on the big three (housing, transportation, food), save your raises, avoid lifestyle creep, and cultivate contentment. These aren't just financial strategies—they're life strategies.

# Lever #5: Increase Your Lifetime Interest Earned

$$W_{t+N} = W_t \; + \; \sum_{i=1}^{N} I_{t+i} \; - \; \sum_{i=1}^{N} T_{t+i} \; - \; \sum_{i=1}^{N} C_{t+i} \; + \; \sum_{\boldsymbol{i=1}}^{\boldsymbol{N}} \boldsymbol{IntEar_{t+i}} \; - \; \sum_{i=1}^{N} IntExp_{t+i}$$

If you've followed the advice in the first four levers, you have a good job, you're living below your means, and you're shoveling money into tax-advantaged accounts. The natural next question is: what should I invest in?

This is where most people get tripped up. The investing industry has a strong financial incentive to make this seem complicated, because complexity justifies fees. I'm going to make it simple, because it is simple.

## The Power of Compound Interest

Albert Einstein (probably) never said that compound interest is the eighth wonder of the world, but whoever did say it was right. Compounding is the most powerful force in personal finance, and it's the reason that time in the market matters far more than timing the market.

***Case Study: The Power of Compounding***

Consider two investors who each earn $85,000/year:

- **Investor A** starts investing $10,000/year at age 25 and stops at age 35 (10 years of contributions, $100,000 total).
- **Investor B** starts investing $10,000/year at age 35 and continues until age 65 (30 years of contributions, $300,000 total).

Assuming an 8% annual return:

- At age 65, Investor A has: **$1,580,000**
- At age 65, Investor B has: **$1,223,000**

Investor A contributed $200,000 less yet ended up with $357,000 more. That's the power of starting early and letting compounding do the heavy lifting.

The lesson is unmistakable: start investing as early as possible. Every year you delay costs you dearly in future wealth. The money you invest in your 20s will have 40+ years to compound. The money you invest in your 50s will have less than 15 years. Time is the single most important ingredient in the compounding recipe.

## Risk vs Return

There is a fundamental relationship in investing: higher expected returns come with higher risk. This is not a flaw in the system—it's how markets work. If a risky investment didn't offer a higher expected return, nobody would invest in it.

Here are the approximate long-term historical returns for major asset classes:

| Asset Class | Avg. Annual Return | Worst Single Year |
|---|---|---|
| U.S. Stocks | ∼10% | −37% (2008) |
| International Stocks | ∼8% | −43% (2008) |
| Bonds | ∼5% | −13% (2022) |
| Cash / Money Market | ∼3% | 0% |

The pattern is clear. Stocks have the highest long-term returns but also the scariest short-term drops. Cash never loses value in nominal terms but barely keeps up with inflation.

## Short-term vs Long-term Risk

Here's the key insight that most people miss: the risk of stocks *decreases* as your time horizon increases.

Over any single year, stocks might return anywhere from −40% to +50%. That's terrifying. But over a 20-year period, U.S. stocks have never produced a negative total return in the history of the modern stock market. Over 30-year periods, the worst annualized return was still over 8%.

This has a profound implication for your investing strategy: if you are young and have decades before retirement, stocks are actually *less* risky than bonds for your specific situation, because you have time to ride out the downturns. The only people for whom stocks are truly risky are those who need their money in the next 1–5 years.

This is why I am 100% invested in stocks in my retirement accounts. I don't need this money for 20+ years. Short-term volatility is irrelevant to me. What matters is the long-term expected return, and stocks dominate every other asset class over long horizons.

## Index Funds: The Only Investment You Need

An index fund is a mutual fund or ETF that holds every stock in a given market index. Instead of trying to pick individual stocks or paying a fund manager to pick them for you, you simply own the entire market.

Why is this a good idea?

1. **Diversification.** By owning thousands of stocks, you eliminate the risk that any single company's failure devastates your portfolio.
2. **Low costs.** Since nobody is actively picking stocks, the fees are microscopic. A Vanguard Total Stock Market Index Fund charges 0.03% per year. Compare that to the typical actively managed fund at 0.50–1.00%.
3. **Most professionals can't beat the index.** This is the most damning fact of all. Over any 15-year period, roughly 90% of actively managed large-cap funds underperform the S&P 500 index. You are paying higher fees for worse performance. The investing industry doesn't want you to know this.

## The Corrosive Effect of Fees

Most people underestimate how devastating investment fees are over a lifetime. The difference between a 0.03% expense ratio and a 1.00% expense ratio sounds trivial, but it is anything but.

***Case Study: The Cost of Fees***

Two investors each invest $500,000 for 30 years at a gross return of 8%:

- **Low-cost index fund** (0.03% fee): Net return 7.97%. Ending balance: **$4,956,000**
- **Actively managed fund** (1.00% fee): Net return 7.00%. Ending balance: **$3,806,000**

The 0.97% difference in fees costs the investor **$1,150,000** over 30 years. And remember, the actively managed fund is statistically likely to underperform the index fund *before* fees, making the gap even wider.

This is why I invest exclusively in low-cost index funds and encourage everyone I know to do the same. Vanguard, Fidelity, and Schwab all offer total market index funds with expense ratios under 0.05%.

## Asset Allocation: Keep It Simple

Asset allocation is a fancy term for how you divide your investments between stocks and bonds. For most people, I recommend a very simple approach:

- **If you are 20+ years from retirement:** 100% stocks. Split between U.S. total stock market (60–80%) and total international stock market (20–40%). You have time to ride out any downturn.
- **If you are 10–20 years from retirement:** Begin introducing bonds. A split of 80% stocks / 20% bonds is reasonable.
- **If you are in or near retirement:** A 60% stocks / 40% bonds allocation is a reasonable starting point, though your specific situation (pension, Social Security, spending level) should inform this decision.

There are people who will tell you that this is too aggressive, too simple, or too passive. They are probably selling you something. The empirical evidence overwhelmingly supports a simple, low-cost, diversified portfolio held for the long term.

## Dollar-Cost Averaging

Dollar-cost averaging means investing a fixed amount at regular intervals (say, every paycheck) regardless of what the market is doing. When the market is high, your fixed contribution buys fewer shares. When the market is low, it buys more shares.

The beauty of this strategy is that it completely removes the temptation to time the market. You don't need to predict whether the market will go up or down tomorrow. You simply invest on a schedule and let time do the work.

If you're contributing to a 401k through payroll deduction, you're already dollar-cost averaging. Congratulations—you're doing it right without even trying.

## Behavioral Investing: Don't Be Your Own Worst Enemy

The biggest risk to your investment returns is not market crashes. It's *you*.

Study after study has shown that the average investor significantly underperforms the very funds they invest in. How is this possible? Because people buy after the market has gone up (fear of missing out) and sell after the market has gone down (panic). This buy-high, sell-low behavior destroys returns.

Here are the behavioral traps to avoid:

- **Don't panic sell during a crash.** The market dropped 37% in 2008. Investors who stayed the course recovered their losses within 5 years and went on to triple their money over the next decade. Investors who sold locked in their losses permanently.
- **Don't chase performance.** The fund that returned 30% last year will probably not return 30% next year. Past performance does not predict future results. This isn't just a legal disclaimer—it's an empirical fact.
- **Don't check your portfolio constantly.** The more frequently you check, the more likely you are to see a loss (on any given day, stocks are down roughly 46% of the time). The more you see losses, the more tempted you are to act. Check your portfolio quarterly at most.
- **Don't try to time the market.** Nobody—not professional fund managers, not economists, not talking heads on TV—can consistently predict short-term market movements. The data on this is overwhelming.

The optimal investing strategy is boring. Set up automatic contributions to low-cost index funds. Don't touch them. Ignore the daily noise. Go live your life. Come back in 30 years and marvel at what compounding has done.

## Putting It All Together

***The Optimal Investing Strategy***

1. Follow the Hierarchy of Savings from the tax chapter.
2. Within each account, invest in low-cost total market index funds (expense ratio under 0.10%).
3. Allocate roughly 70% U.S. stocks, 30% international stocks for long-term money. Add bonds as you approach retirement.
4. Automate everything. Set up payroll deductions and automatic investments.
5. Never sell during a downturn. Never chase hot investments. Never try to time the market.
6. Rebalance once a year (if at all).

That's it. This is the strategy that has been empirically shown to outperform the vast majority of professional investors over the long term. It requires no special knowledge, no expensive advisors, and no daily attention. The investing industry doesn't want you to know how simple this is, because simplicity doesn't generate fees.

Moral of the story: invest early, invest often, invest in low-cost index funds, and don't touch it. Time and compounding will do the rest.

# Lever #6: Decrease Your Lifetime Interest Expense

$$W_{t+N} = W_t \; + \; \sum_{i=1}^{N} I_{t+i} \; - \; \sum_{i=1}^{N} T_{t+i} \; - \; \sum_{i=1}^{N} C_{t+i} \; + \; \sum_{i=1}^{N} IntEar_{t+i} \; - \; \sum_{\boldsymbol{i=1}}^{\boldsymbol{N}} \boldsymbol{IntExp_{t+i}}$$

This lever isn't rocket science. The less interest you pay, the wealthier person you will be. The one exception to this statement is if you borrow money to purchase an asset (such as a home or a stock) which appreciates at a rate higher than your borrowing rate. Buying stocks with borrowed money (i.e. buying on margin) is a risky proposition that I would discourage doing.

If I had non-mortgage debt (I don't), I would make minimum payments on all debt accounts, and use any excess cash to pay off the highest interest accounts first. Doing so will produce a mathematically superior debt repayment to that of Dave Ramsey's debt snowball approach, in which you pay off the balance of the lowest account first. The advantage of the debt snowball approach is that you experience psychological wins each time a balance is paid off completely. I'm not a master psychologist, but if these psychological wins will help encourage you to pay off debt faster, go with the snowball approach. If you simply want the mathematically fastest way to get out of debt, pay the highest interest debt off first.

What are some other tactics to avoid paying interest? Rather than borrowing to make purchases, you can save up money prior to making purchases. Doing so requires you to delay the purchasing of such items. You can find the hilarious Saturday Night Live skit on the topic by googling "SNL Don't Buy Stuff You Cannot Afford".

# Bonus Section: Create Your Own Financial Statements

With the prolonged discussion of the wealth accrual formula behind us, I think we're able to let the rubber hit the road and see how it actually applies in our day-to-day lives. The best way I can think to illustrate this is through the creation of personal financial statements.

Financial statements are shared by publicly traded firms every quarter for the purpose of disclosing to their investors. Through these financial statements, investors are able to convey the financial health (or lack thereof) to investors.

Just like financial statements help investors know whether they are on the right track, I believe that creating your own personal financial statements will help you immensely in knowing whether you are on the right track. They will provide incredible insights on how to improve your financial life.

During my MBA I briefly participated in a stock valuation club in which we used information from firms' accounting statements to arrive at an estimate for the firm's stock price. While I have little confidence in my ability to correctly value a firm, I learned to fully appreciate and model the interaction of the three types of financial statements that firms produce: the balance sheet, the income statement, and the statement of cash flows. I believe the skills that I developed there could be of great use to us as we trudge through our financial lives.

First, let's discuss the purpose of each of the financial statements and how it pertains to us as individuals.

## The Balance Sheet

This is where we keep track of our assets (checking, savings, investments, home) and our liabilities (credit card, student loans, auto loans, mortgages). If we increased our wealth from one month to the next, this will show up on our balance sheet.

I recommend taking a monthly snapshot of every account balance you have. This is a trivially easy activity that is done automatically by many account aggregation websites such as Empower (formerly Personal Capital). On the last day of each month, simply record the balance of every account. This 5-minute exercise gives you a complete picture of your financial position.

## The Income Statement

This is where we keep track of our income, taxes paid, and living expenses. After we make income, pay taxes, and pay for living expenses, we are left with savings.

If you've been following along with the wealth equation, this should look familiar:

$$\text{Savings} = \text{Income} - \text{Taxes} - \text{Living Expenses}$$

Track your income and expenses each month. Categorize your expenses into meaningful buckets: housing, food, transportation, healthcare, and other. This will reveal exactly where your money is going and help you identify areas for improvement.

## The Statement of Cash Flows

If an individual is spending less than they are earning, this will produce savings each month. If the individual does nothing with these savings, the balance of their checking account will grow indefinitely. The more prudent thing for this individual to do is to distribute the savings to higher yield investments. In contrast, if an individual is spending more than they are earning (as would be the case for a retired individual), these funds must be coming from somewhere.

In the case of both the saver who is spending less than they earn or the spender who is spending more than they earn, the allocation (or extraction) of cash from different accounts will manifest themselves here in the statement of cash flows.

The statement of cash flows answers the question: "I made $X in savings this month. Where did that money go?" For a working household, the answer might be: $1,400 to the 401k, $288 to the HSA, $458 to a Roth IRA, $464 extra towards student loan principal, and so on.

## Putting It All Together

I will caution you that these three statements, although easy to understand conceptually, are somewhat difficult to implement in real life. The correct implementation of these principles in real life will require a precise understanding of each dollar that flows through your banking and investment accounts. However, once the initial time investment is made to implement this system, the ongoing maintenance of the statements requires almost zero work.

I personally tracked my household's financial statements in Excel for nearly 20 years. Every month, I recorded account balances, categorized transactions, and reconciled everything to the penny. Over that time, my cumulative unexplained difference—the gap between what my financial statements predicted and what my account balances showed—was $2.01. On a net worth that grew from $10,000 to over $3,000,000, that's a rounding error.

This level of precision isn't necessary to get value from the exercise. But it illustrates what's possible when you treat your household finances with the same rigor that a publicly traded company treats its financial statements.

## From Excel to an App

After 20 years of maintaining these statements by hand, I got tired of the manual work. So I built an app to do it automatically.

The app connects to your bank and investment accounts, automatically categorizes transactions, computes your income statement, balance sheet, and statement of cash flows, and reconciles everything to the penny—just like I used to do by hand, but without the tedious data entry.

If this sounds useful to you, visit **www.personalcfo.app**. I built it for myself first. Now I'm sharing it with anyone who wants to take their financial life as seriously as I take mine.

The first four levers in this book (earning, taxes, consumption, investing) tell you *what* to do. Financial statements tell you *whether you're actually doing it.* They are the scoreboard. Without a scoreboard, you're playing the game blind.

# Wrapping it up

It is often said that "the definition of insanity is doing the same thing over and over and expecting different results." I'm going to modify this statement. "The definition of insanity is doing the same thing ***as your broke peers*** and expecting different results." We live in a country where incomes are incredibly high relative to the rest of the world, yet almost everyone is broke. Why are we broke? Staring at the wealth generation equation, we know why they are broke is because of Lever #3 through Lever #6:

$$W_{t+N} = W_t \; + \; \sum_{i=1}^{N} I_{t+i} \; - \; \sum_{i=1}^{N} T_{t+i} \; - \; \sum_{i=1}^{N} C_{t+i} \; + \; \sum_{i=1}^{N} IntEar_{t+i} \; - \; \sum_{i=1}^{N} IntExp_{t+i}$$

If you want to forge a different path from your broke peers, you must ***act differently*** from them. This book can hopefully serve as a roadmap to get you in the right direction. What are the largest actions you will do that will set you apart from your broke peers?

- Living below, or preferably far below, your means.
  - Being content while doing so.
  - This will be much more easily accomplished if you don't compare your clothing, homes, cars, or vacations to others.
- Aggressively paying down all high interest debt (credit card, student loan, auto loan).
- Understanding the tax code deeply and maxing out tax-advantaged vehicles.
- Understanding the corrosive effects of investing costs, keeping your investing costs low to maximize the compounding effects of interest.
- Ignoring the day-to-day, week-to-week, and year-to-year fluctuations in stock price performance and be content to dollar-cost-average through the market's ups and downs. Not panicking after market drops. Not pouring in money after high recent returns.

By acting differently from your broke peers, your wealth will drastically deviate from that of your broke peers, and likely substantially so. In a matter of decades, a million or more dollars more than your broke peers. Such is the power of compound interest when combined with frugality and tax minimization. The sooner you can act on these lessons, the better.