From Paycheck to Prosperity – Habits to Retire Comfortably

by Steven Schwartz

Introduction

When you're starting your career or even just a new job your focus is on the present, as it should be. But as you settle in you'll start to think about where you're going – in your job, in your life, and even when your work days are over. What do you need to do now to prepare?

When you're ready to take a serious look at your financial future you'll ask a common question: what should I do to be financially secure in my later years when the paychecks stop coming? It's a devilishly simple question but the answer is difficult for many people to live up to, especially since choices today have consequences so far in the future.

Let's start with a bigger question: What makes one person prosperous and another poor? Certainly luck plays a role but we can't control luck. Per Bylund, Professor of Entrepreneurship at Oklahoma State University, puts it this way,

> **Quote**
>
> What causes poverty? Nothing. It's the original state, the default and starting point. The real question is, "What causes prosperity?"
> – Per Bylund

That's the question to investigate.

While you can't change your past, including your luck to date, you do have control over the choices that shape your future. In fact, you make important choices every day whether you recognize it or not. The decisions and actions that affect your earning potential and your savings may be intentional or they could be just a side-effect of not deciding at all.

The path to a secure and prosperous future requires being intentional. You'll need to be in control of four important choices:

1. **Earn** what you can
2. **Save first** for your future
3. **Invest** your what you save
4. Let it grow by **compounding**

The formula is simple but judging by the lack of millionaires around us it is an extremely difficult set of rules to live by. For many it is even hard to understand! (What does "compounding" really mean?). Let's play out these four rules to see where they lead and what can make them challenging.

Earn What You Can

Earning may be the simplest of the four choices as nearly everyone can and does find a job. It is also, however, dependent on the cards you were dealt in life. As a child, did you have the privilege to learn rather than work? You'll need that to pursue high-value employment as an adult. Do you have time beyond your immediate commitments to family and community to earn more than what's

required to just “get by”? You can’t save unless you have a surplus. Are you personally paid for your work, or do your wages go through someone else’s hands first, with them deciding how much (if anything) you receive? You don’t own what you can’t control.

Sadly, most people on Earth must say “no” to at least one of these questions. If you were born into or have found a path to saying "yes” for the above then you have completed the first and most challenging stretch of the journey: the ability to earn more than enough to squeak by. Let’s start there.

Save First for Your Future

One of life’s ironies is that while the *past* can be clear, it’s impossible to change. And while the *future* is unclear, it’s the only thing you *can* change. Thankfully, the future holds everything you find dear: your family, your children, and your future self. When you save for the future you increase the safety, security, and wealth of *all* those who figure in that future life – no matter what path it takes. Saving is simply giving up a portion of the present for the sake of the future.

Saving is also in insurance policy. It reduces the risk of lowering your living standard if something unpredictable happens – and something unpredictable *always* happens. Everyone needs an insurance policy for that moment. If we’re not born with good luck at least we can prepare for *bad* luck by saving…“just in case”.

One school of thought says that your savings is what’s left over after you've spent your earnings. That’s a dangerous way to play it. It’s better to think of your earnings, or rather your *spending money*, as what’s left over *after* you earn and save. This puts saving first, your future first, and those that matter to you in the future first.

Putting savings ahead of spending is called “*deferred gratification*.” While “gratification” isn’t the only use of money, it can be a real motivator. Your future self will be thankful for:

1. Having a financial cushion to leave a so-so job for a better one
2. Being able to buy a home
3. Having money to pursue further education
4. Supporting the many expenses that having a family, or caring for extended family members, will place on you

But the future is not all serious business. There are other types of deferred gratification you could pursue. For example:

5. Stopping work at a younger age to pursue something you love that doesn’t necessarily pay the bills.
6. Chasing valued life experiences. That is, working on your “bucket list”.
7. Paying it forward – providing others the resources to help *them* be more constructive with *their* lives. Remember, much of what we achieve is due to where we started – which is *plain luck*. It can feel good to turn your luck (leavened with hard work!) into someone else’s luck, so they can benefit and perhaps repeat the favor.

So how much should you save? How much can you afford to save? A great place to start is to put aside a simple percentage of what you earn. History suggests that **ten percent** of your wages is a great start. (That is, 10% of your *gross* pay, *before* subtracting taxes and withholdings taken by intermediaries). Using a percentage ensures that you save more in absolute terms as your earnings grow, and less (again in absolute terms) if your earnings shrink.

By targeting a fixed percentage it becomes easy – even simple! – to sustain. When the paychecks come in, no matter when, and no matter for how much, you simply take 10% off the top and put it aside. Whatever you have left is yours to spend. Your duty to your future self and loved ones has been addressed so you no longer need to worry.

One common concern is that “what’s left over” won’t be enough. Consider that no matter how little this may be, someone else, somewhere else, is living on less. And of those living on less, many are living happily. How is this possible? In a word it’s relativism.

If you look back in history, the standard of living that the poor enjoy today may even *exceed* that of royalty a few hundred years ago. (This is especially true when it comes to healthcare and the comforts of heating, air conditioning, and indoor plumbing.) But why would miracles back then not move the needle today?

Why is it so hard to pursue a lifestyle with reduced consumption? Because humans are wired for relative status comparisons. Colloquially this is known as “keeping up with the Joneses.” Those who don’t earn as much as those around them are forced to go against their nature and lead a lifestyle below that of their peers. This hurts!

It's not a trivial problem. Most people find it difficult or even impossible to live a self-reduced lifestyle in the face of others who have everything or even just have more. If saving is a challenge for you then there are a few ways to improve your situation.

1. **Improve your earning potential**. This isn't simply about working harder or longer, but about increasing your potential. The standard approach is to seek training or education toward a more highly-compensated position. You can also move to where your earnings will stretch further, either due to higher regional pay, lower regional cost of living, or both.
2. **Find new friends, peers, and neighbors**. In short, pick new "Joneses" to keep up with. We are hard-wired to compare ourselves to others and to compete, so enter an environment where you measure up.
3. **Take savings out of your own hands**. If you can't trust your impulses then hide the cookie jar. In practice this means having your savings automatically deducted, perhaps by an employer or a savings institution. Another aid is to make breaking the cookie jar difficult, or even impossible, by entrusting third parties to stand between you and your money. The government finds this works so well that they "pre-deduct" *their* income from *your* paycheck. The courts also enjoy this method when they take on debt collection by garnishing wages or putting a lien on the income of a business. Whether used as carrot or stick, having a saving system outside of your control works.

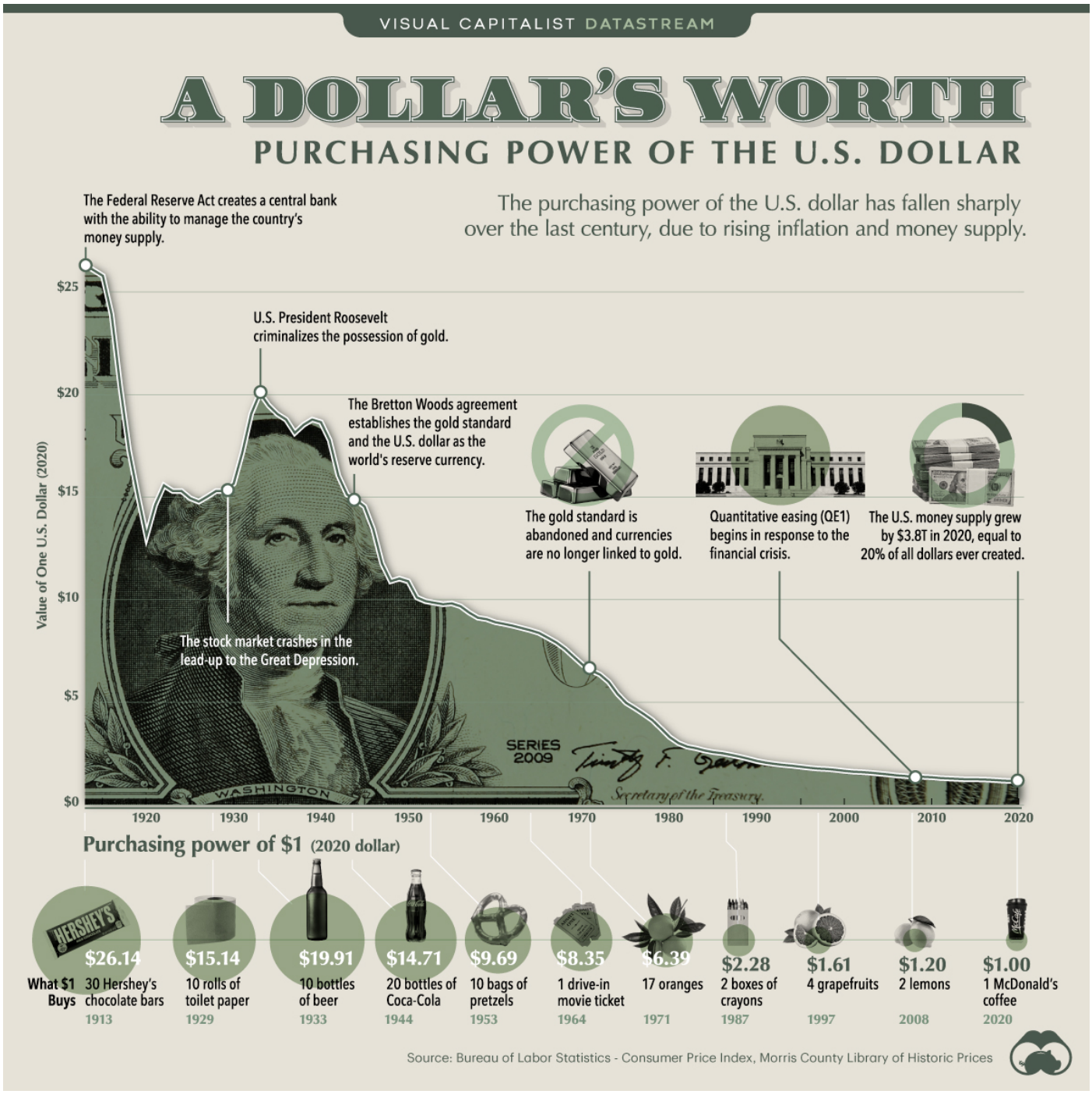
Investing Your Savings

If you save your money in the bank you'll find it doesn't go far. In fact, saving ten percent of your earnings means it will take *ten days* of saved earnings to afford a future day without an income.

But it's worse than that. Savings held in a traditional non-interest-bearing checking or savings account is subject to the forces of inflation and deflation. That means the spending power of your savings goes up and down. But history shows that your spending power goes mostly down – way down.

The United States Federal Reserve, which controls the value of money by controlling how much it issues, does all it can to produce 2% inflation every year.[1] This target is in the explicit charter of the Federal Reserve. If it hits that goal, then over a one-hundred-year period, each dollar of your savings will have the purchasing power of just $0.13. That's an 87% drop in purchasing power!

But over the last century, the Federal Reserve has *missed* its target. The *actual* erosion of purchasing power was even higher: $1.00 became 3.8¢ – a 96% drop!



Source: Visual Capitalist

So much for rewarding savers. Clearly saving alone is not sufficient.

Let's consider what actually happens to your saved money when you leave it in a bank account. If it's lying idle then what are the people at the bank doing with it? And for that matter, why do bankers dress so well? In short, why are they getting rich and not you?

The answer is that bankers seek to create value by putting money in to productive hands. This is called *investing* and it's a powerful tool to turn property, brains, and hard work into greater economic value for all.

Bankers and their close cousins, investors, have one job: increase the value of the assets entrusted to them. Bankers lend money to receive a percentage of what is lent until it is repaid. Investors, however, *spend* money to receive a percentage of *ownership* in a business (represented by "stock"). This is a stake in the value that *others* create with that money.

Investors also purchase existing stock from other investors. In this case, the money goes simply from the new investor to the old. The business, having already received its initial money, simply updates the record of who owns the stock. Think of this as receiving

the ongoing rewards from the money *originally* given to the company to obtain a stake in it. If you are a stock holder, you are "*as good as*" the original investor who helped to fund the business from its start (even though you may have misses some of the ride).

In all cases, over the long run, the percentage bankers and investors expect to receive is higher than the rate of inflation. Their purchasing power increases rather than decreases. Bankers and investors are rewarded for putting resources in the hands of those who are productive.

Giving money in these ways is the essence of Capitalism. It isn't about making people beholden to you or controlling them, it's about empowering others who want to create value and need your capital (your money) to do so. As a capitalist, you are empowering the companies *you* choose, using *your* judgment and *your* values, so that the firms you select can deliver on their vision to create value. If they win, you win.

This is an important point. Many people wonder why businesses grow and how the value of their stock can continue going up. Yes, the stock market goes up and down, but over the long run it goes up. Why?

In business, and in free and competitive markets, the people you invest in are moving Heaven and Earth to create value for others, namely for their customers, and as a consequence for their investors as well. A business sells their product only when a customer wants the product more than they want their own money. A profit happens only when a customers pays more than the cost to provide the product. This is the invisible hand of the market, and we help to animate it when we invest. As investors, we help people turn their vision, hard work, and knowledge of what others want into something worth more than what they started with.

But which company or companies should we invest in? Surely that makes a difference. And it does, but picking companies to invest in (that is, Stock Picking) is a topic for another day. Today it's enough to avoid the decision of which companies to pick by picking *all* companies. This is known as **Index Investing** and there are many stock funds available to purchase the entire stock market. [2]

There is one caveat: investing is about creating "economic" value. This type of value is not the only type that matters in life and is certainly not the most important. Economic value is simply a common, shared, and measurable value – with an entire field of study on how to create it and how it works.

Economic value is also a form of value with legs: it is "money". It can be channeled to fuel projects *outside* the realm of "economic value". Money can be used to direct peoples' time, effort, and resources to all manner of non-economic ends. It can support worthy causes, be given away unconditionally, or used to tilt the playing field in ways that express your values.

Investing is your tool for creating a better future – a future that reflects what *you* want and what *you* value.

The Power of Compounding

As long as we have a stake in something growing by a percentage each year then we have entered the world of **compounding**. This is the last and most important aspect to creating wealth. Whenever something is increasing by a percentage over a fixed period of time then we are compounding, and therefore squarely in the realm of "exponential growth".

What about the 0.5% annual growth on a bank savings account? That may not feel like much but it *is* exponential growth. If that reads like "big growth" then you've got it right. The most intriguing thing about exponential growth is that human intuition is so *absolutely atrocious* at appreciating where it leads in the long run.

There is an old story used to illustrate the power of exponential growth. It is said that long ago, when the game of chess was first invented, its creator presented the game to a wise ruler of the land. The ruler was entranced by the game and so asked the inventor to name any reward for having created such a great diversion. The inventor replied,

> **Quote**
>
> *Your Majesty, I ask you for just one thing. Take your chessboard and place on the first square one grain of wheat. On the first day I will take this grain home to feed my family. On the second day, place on the second square two grains for me to take home. On the third day, cover the third square with four grains for me to take. Each day double the number of grains you give until you have placed wheat on every square of the board. Then my reward will be complete.*

The ruler replied, "*This sounds like a small price to pay for your invention of such a fascinating game. I will see that your request is granted immediately.*"

Now just how much wheat is that anyway? You may already be imagining quite a lot, but we can do the math. A chessboard has 64 squares on it and each square represents one day's reward.

$$\text{The first square, on the first day, holds 1 grain.}$$

$$\text{The second square, 2 grains.}$$

$$\text{The third square, 4 grains.}$$

Got it.

And on the n^{th} day, on the n^{th} square, the inventor has 2^{n-1} grains of wheat to take home to their family.

So, doing the math, we see the final square of the board, on that last day, has a magnificent 9,223,372,036,854,775,808 grains of wheat stacked before us.

All the wheat on the board, taken together, is over 18 quintillion grains! This is clearly insane. It's estimated to be more than 1,000 times the current annual wheat production of planet Earth!

Growth at this rate (100% per day) is unsustainable over any meaningful time frame. However, we see exponential growth in the real world that can be almost as surprising (and as enriching!) over even modestly long periods – such as the period of our life.

Where do we find this type of exponential growth? We find it in the stock market. In the very businesses where we work every day we are creating exponential growth, a few percent every year, through the application of our ingenuity, effort, and resources put toward future goals.

Over the past 200 years our efforts have made companies about 6.5% more valuable at the end of the year than they were at the beginning. This is real growth in value. This number is after all the costs of running the business, and after the eroding effect of inflation is taken into account. Appropriately, this growth goes by the name "real growth."

If you are a worker and an investor, and therefore a part-owner of the companies on the stock market, then in addition to being compensated as an employee you get to see your invested money grow exponentially. Investing money at this compounding rate and letting it grow leads to the closest thing we can find to runaway growth. At this rate, in mathematical terms, after n years you would have saved:

$$\text{Total Saved} = \text{Initial Investment} \times 1.065^n$$

Looked at another way, you would double your money roughly every 11 years. But here we mean more than "money", we mean spending power, after accounting for inflation.

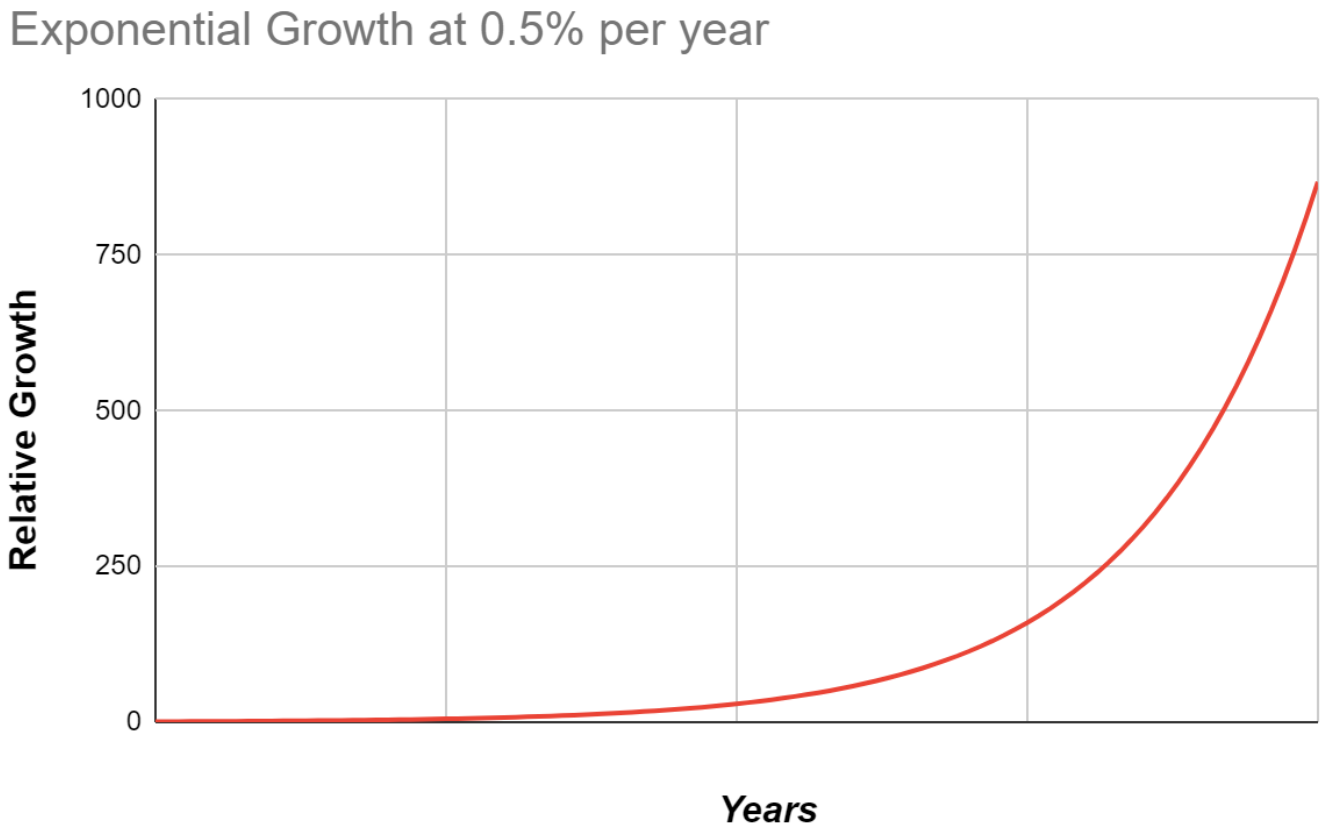
Over a lifetime of savings (say 50 years) you could grow your initial investment 23-fold. Thinking beyond your lifetime, every 100 years you grow your initial investment 543-fold.

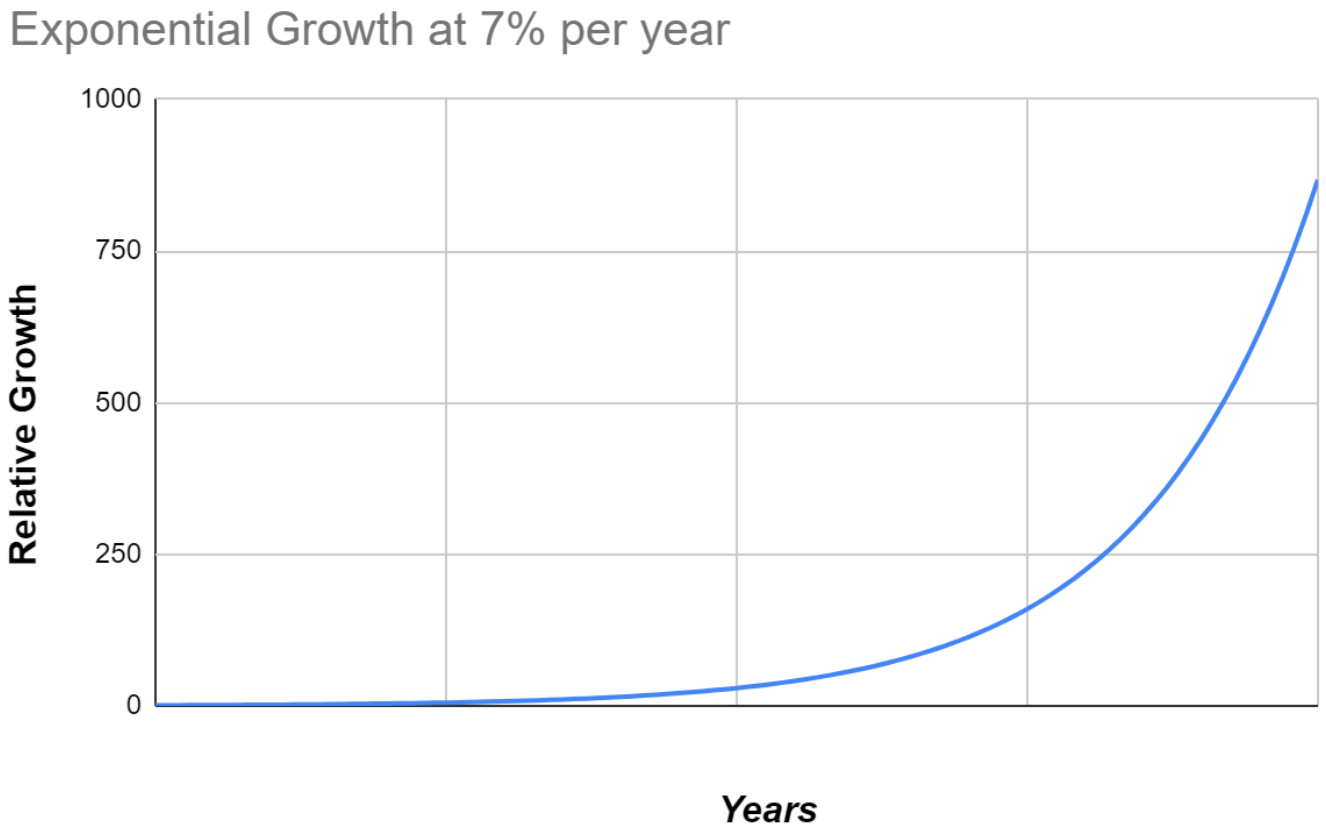
You can see that the greatest absolute returns to investing happen late in the game, just like with the wheat on the chess board.

So, if it's that simple, where are all the billionaires? Most people struggle to think and plan over their own lifetime let alone over time frames that may exceed it. But not all.

Those who look at the world over the long term don't measure results in days or months but in years and decades. Conveniently, these wealth compounders have a magic metric they concern themselves with for measuring long-term progress. It's called the Compound Annual Growth Rate, or CAGR for short. [3]

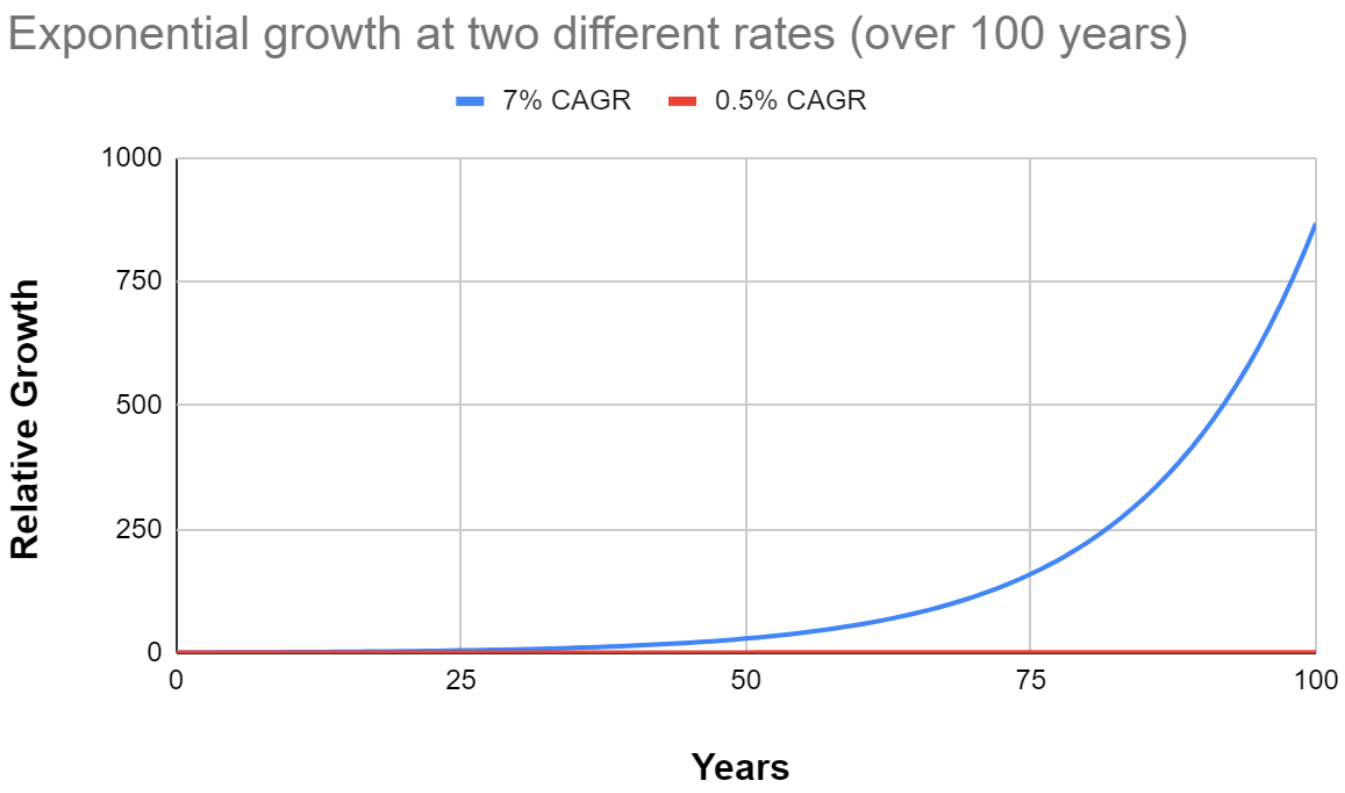
A CAGR of a measly 0.5% and a robust 7% *both* have exponential growth. To illustrate this, the chart below shows what $1 growing by 0.5% each year looks like in red. The chart below in blue shows that same dollar growing at a 7% CAGR. Why do they look identical? What's missing?





They both look “exponential” but with one big difference. The slow growth curve (0.5% CAGR) is shown over *1,300 years*, whereas the 7% growth curve is shown over a much shorter period: 100 years. When you plot both over the same timeframe (below) it’s clear

that not all compounding is created equal. The red 0.5% CAGR line never even gets started.



In 100 years the 0.5% CAGR dollar has grown by a total of 65%, from $1.00 to $1.65. The 7% CAGR dollar, however, has grown by 86,672%, from $1.00 to about $868! When thinking in the timeframe of a human lifespan, it takes at least a 5%-7% CAGR (after inflation) to produce results you can appreciate.

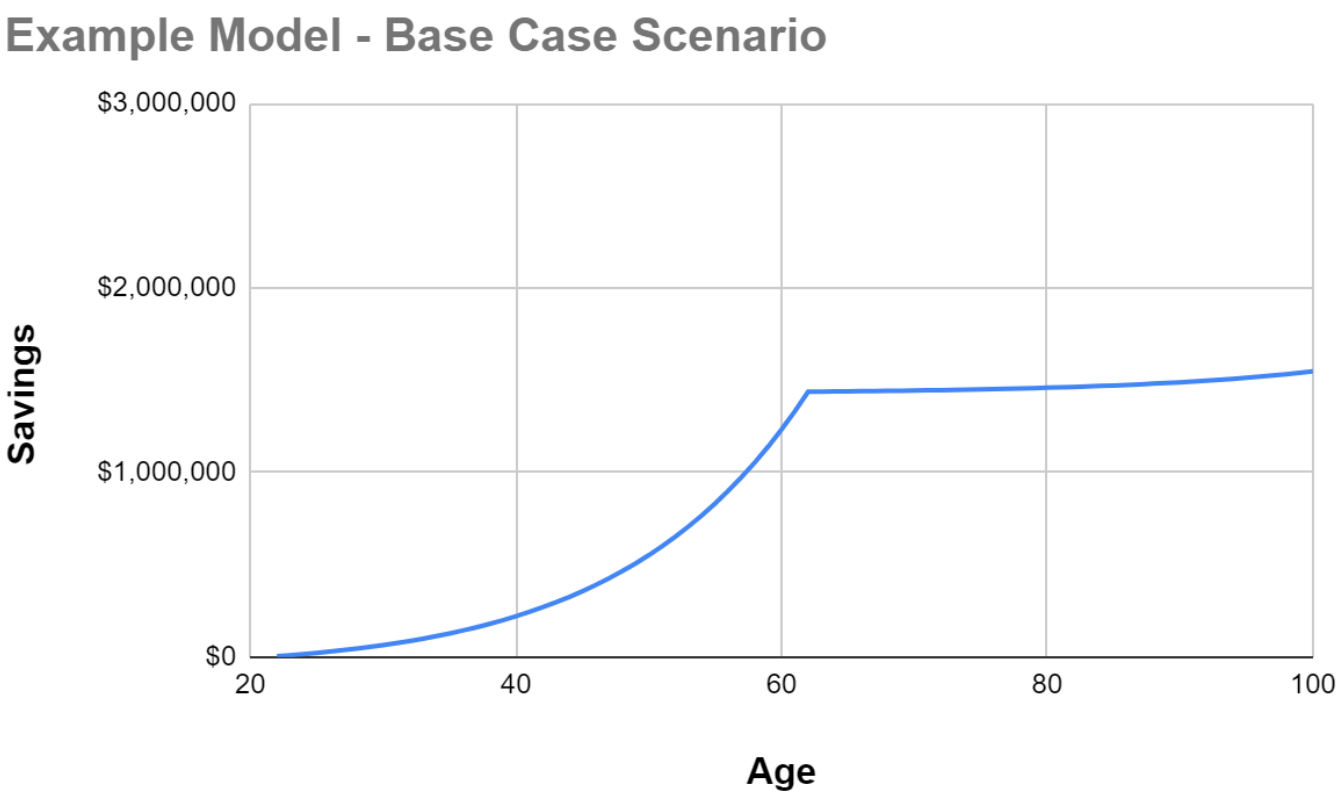
The Implications of Following the Path

Your choices about earning, saving, investing, and compounding come together to create prosperity over a lifetime. Here's a simple model that illustrates the results and lets us explore some cases of "What if?".

In our example model we'll consider a base case scenario of someone's full career and retirement, saving along the following lines:

- A first job at **age 22** with a starting salary of **$50,000 per year**
- **Saving 10% per year** (i.e., putting aside $5,000/year, or about $420/month)
- Holding investments that compound at **7% per year** (on average and after the effects of inflation)
- Retiring after 40 years of work at **age 62**, having reached an **annual salary of $125,000** (that's a 2.3% raise every year, on average)
- Spending **$100,000 per year** in retirement

This is a reasonable and common scenario – and one that you can follow, more or less. The line in blue in the graph below shows how your savings rises over your career.



You may notice that while your wealth grows as you earn and save, when you retire it stays flat. In fact it continues growing just a little bit. In the scenario we modeled, the compounding of your savings is just enough for you to live off of without diminishing it. In this base case you will be leaving a small fortune to the people or causes that matter to you.

But there are certainly choices one can make that will differ from this scenario – and they can have quite an impact on your outcome. Some choices have a small effect, others a big one. You may be wondering what matters most and where you can make good tradeoffs.

What if you save more (or less) each year? What if you pursue a career that earns a lot (or just a little)? What if you are a conservative investor, favoring low-risk, low-return investments? What if you are a patient investor, able to weather the volatility of the stock market to receive higher returns over the long run? And what if you throw in the towel putting your money in cash when the stock market takes a dive, as it inevitably will?

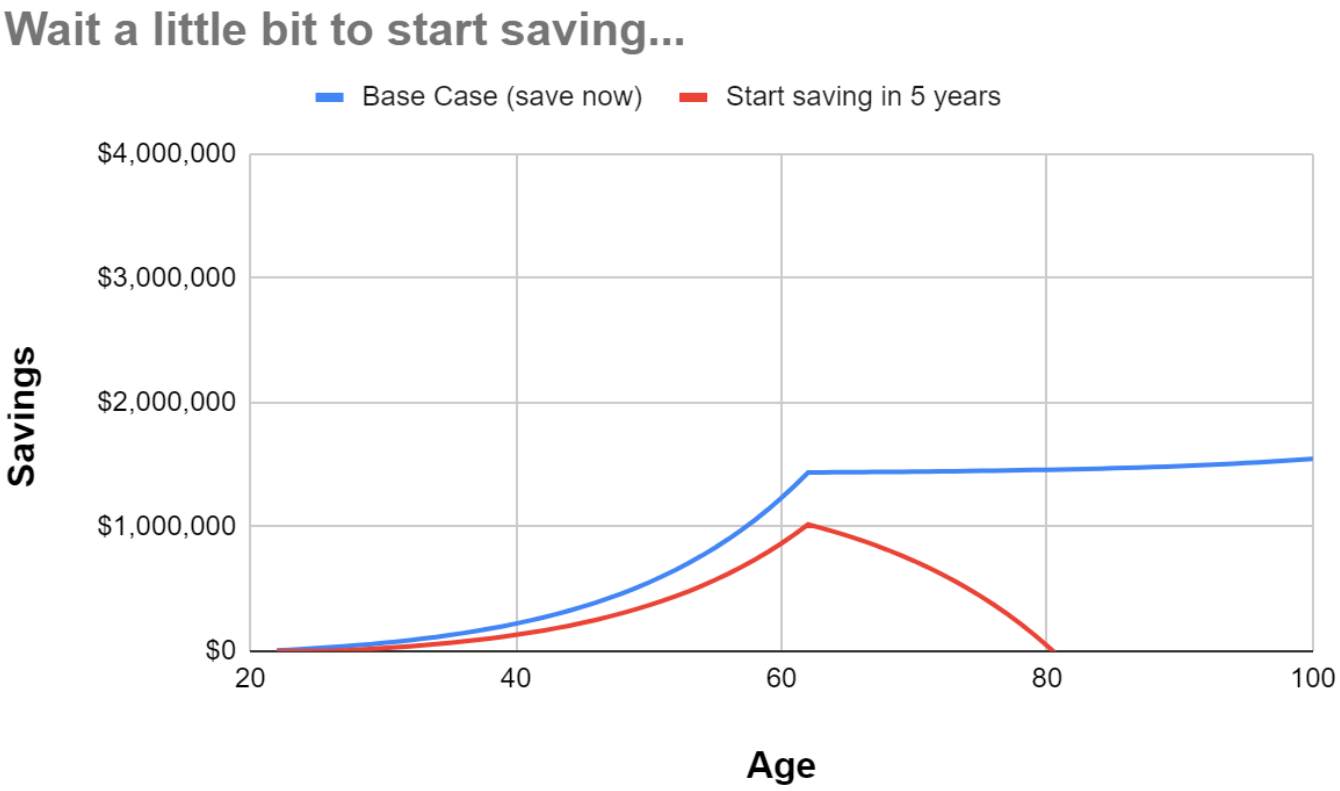
Let's take a look.

Varying your Savings – When and How Much

The best habit is to spend on your future first – by saving. But the future often looks a long way off. Can't you make up for spending more when you're young by saving more when you're older?

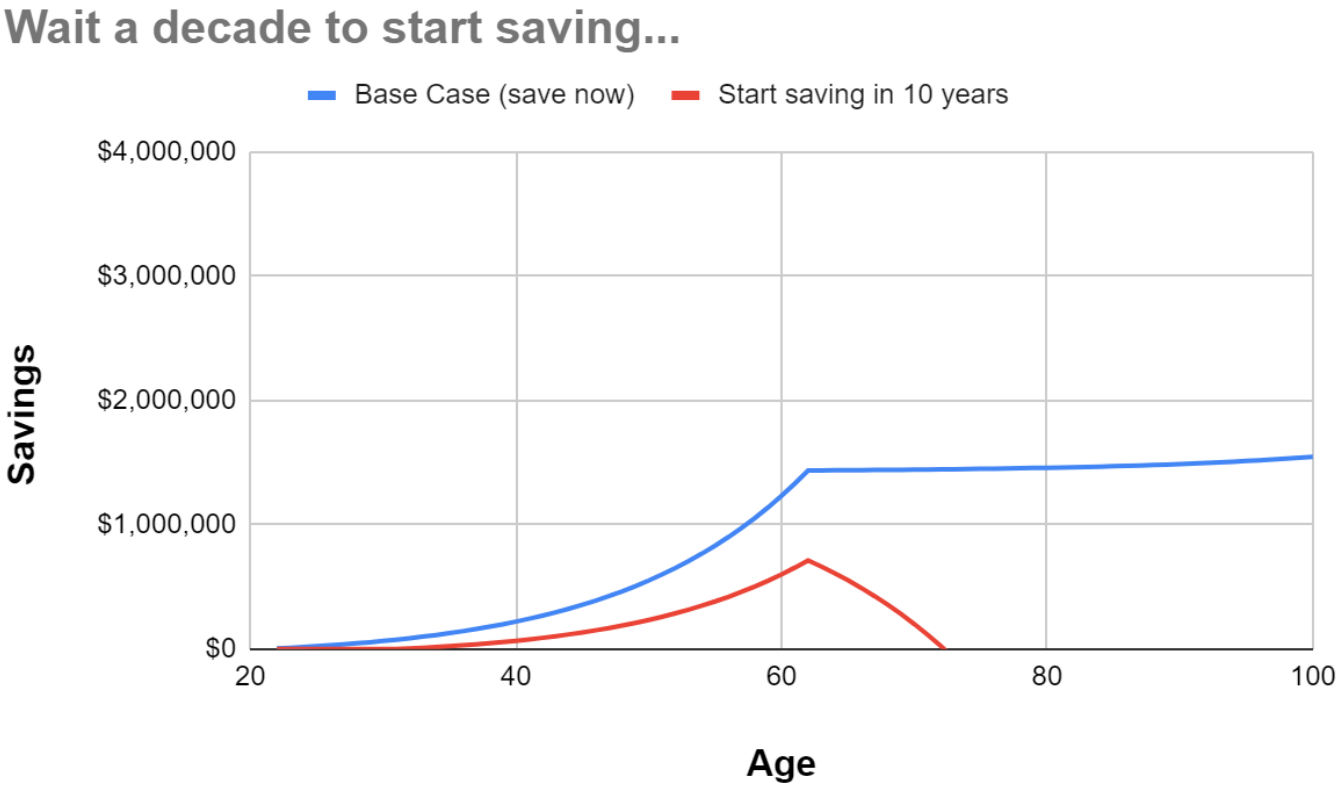
No, Don't Wait

Saving earlier is better. And whenever you're earning you should be saving. In the graph below, the red line shows the effect of waiting just 5 years to start saving.



If you delay, you run out of money by your 80^{th} birthday!

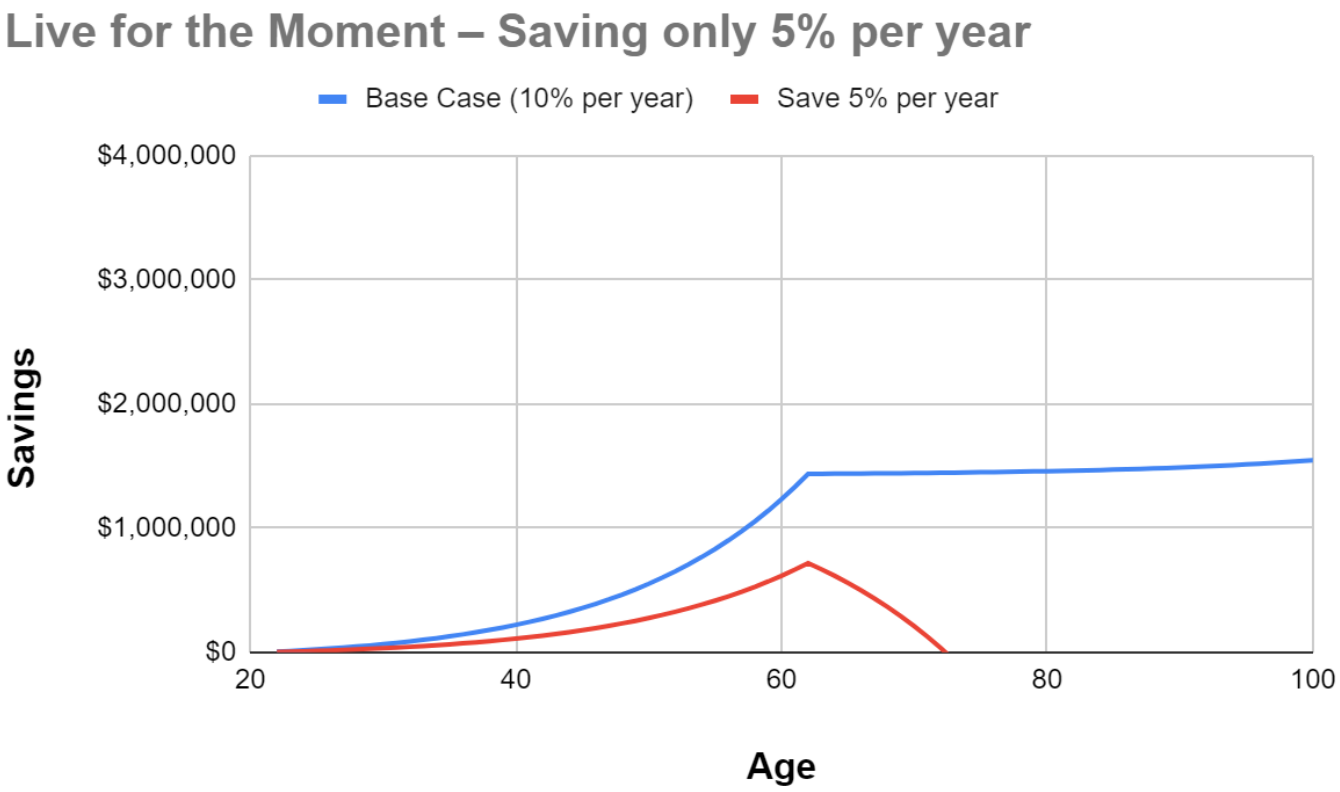
The scenario below shows the effect of waiting even longer before you start. This is what waiting 10 years looks like.

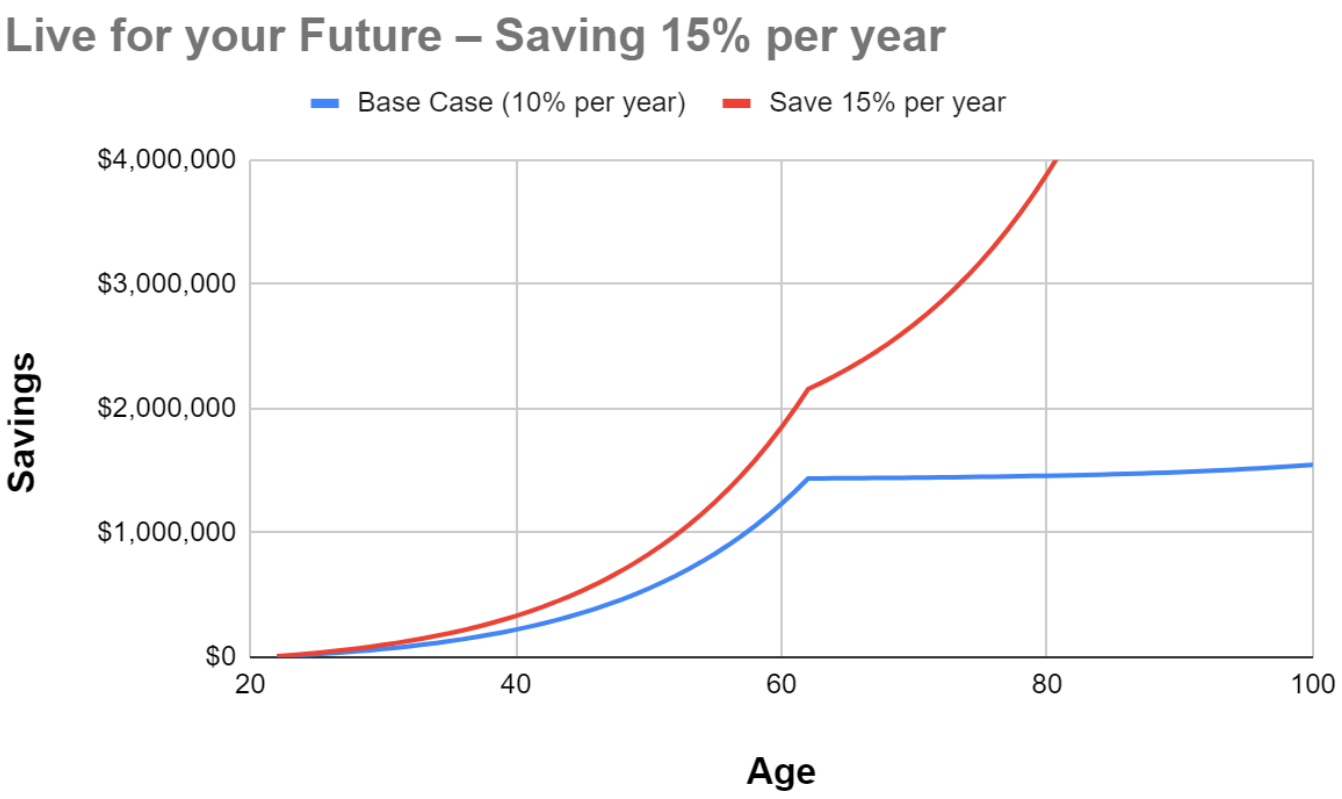


In this case you're broke by 73! This may not be as dire as it sounds with a safety net like Social Security in the US, but in that case you're counting on the largess of your fellows, via the government, to decide on your behalf the lifestyle you can afford.

Don't Scrimp on Saving for the Future

What if you "live a little" and save only 5% of your earnings each year? Or, what if you scrimp and save a lot? The red lines in the two graphs below contrast the difference between the *live for the moment* and the *live for your future* lifestyles, with our base scenario shown again in blue.





Our scenario is quite sensitive to how much you save. Five percent less or five percent more makes a big difference! It's the difference between saving half as much or twice a much. Saving only half as much has the same effect as waiting 10 years to start saving – and again you run out of money in your 70's!

While plus or minus 5% of your pay may look like we're playing with a small number, it could actually amount to 75% or more of your *discretionary spending* (that is, money available after paying for essentials). It's a lot. And you *will feel it* in your lifestyle in either direction, whether you spend that 5% to live well or scrimp to save it.

Knowing this potential upside of saving, some people save far more than 10%. Some seek to have a very high-paying career so they can save *as much as 70%* of their gross pay – with an aim to retire young as reward for their sacrifice.[4] But 10%, calculated as a percentage of your *total pay* before taxes and other withholdings is a great place to start and rate that you can maintain.

In short, saving *sooner* and saving *more* is better.

The Power of Investing for The Long Run

Now for the answer to the question posed earlier: what makes the greatest difference to your future? The answer is clear: ***investing in the stock market*** (to get a higher CAGR, the annual percent return) has the greatest impact. (Remember the chess board?)

In the chart below, the blue line assumes our base case 7% CAGR of the stock market. But if you can get *just one percent higher*, namely 8%, then you are rewarded with the runaway red line below.

The historic long-run real returns (after inflation) for the stock market are about 7%, and recently it's been higher still.

It's easy to see why so many individual investors focus on increasing their return above all else. Some even seem to cast the Eye of Sauron on their investments, consuming every bit of financial information before them. (You know the type.) If you're on that spectrum (hopefully the lighter side), then the American Association of Individual Investors (AAII) is a great place to educate yourself and stay engaged.

History shows that a passive investment in the total stock market puts you in the top 10% of all investors. There are very few cases in life where the less you get involved the better you do, but this may be one of them. Top decile results have never been so easy.

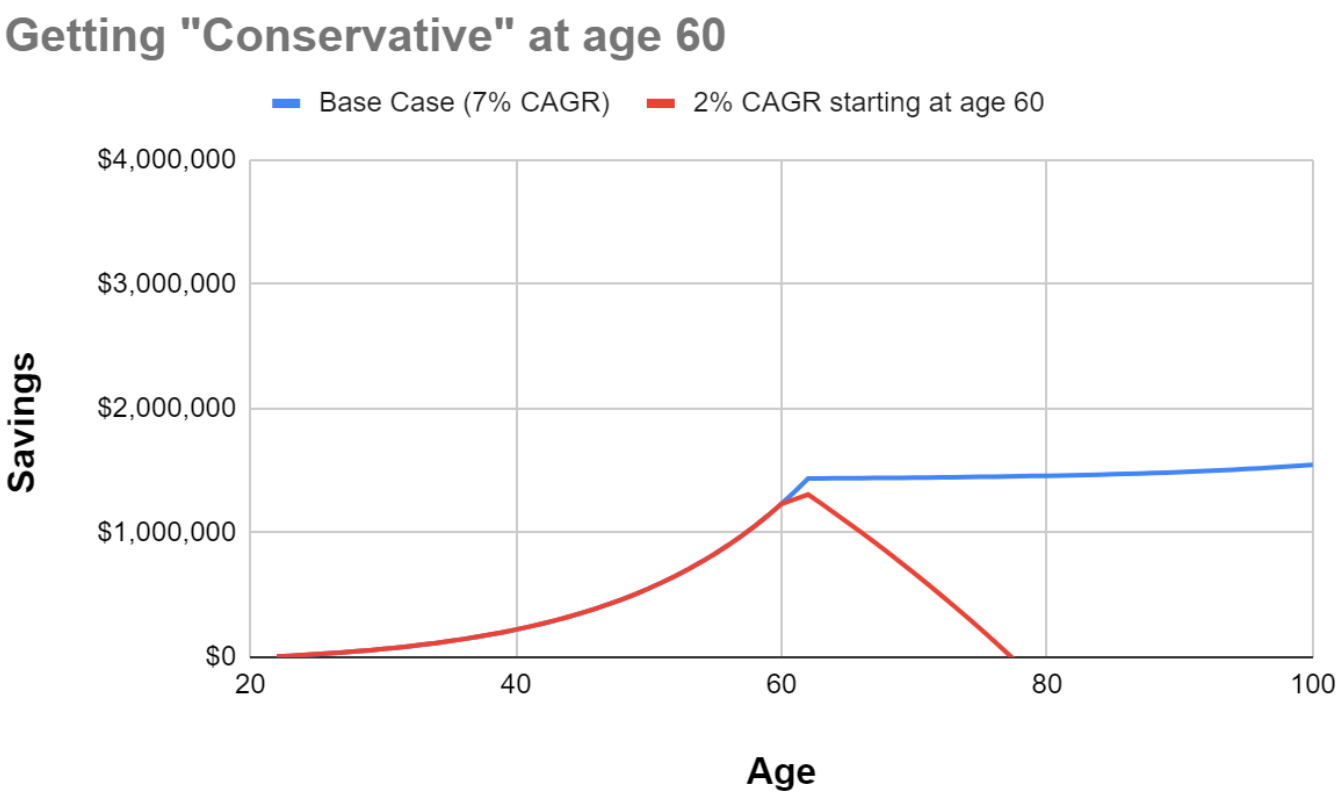
The Cost of Quitting

When your habits of saving are established, and investments are made with each paycheck, it's easy to take your mind off the game. But surely you've noticed how large the numbers to the right on those graphs above get. After only 10 years – one quarter of your working career – you have saved more than an entire year's income. It starts getting hard at that point to take your mind off your accumulating wealth. And as it captures more of your attention you may put it in jeopardy.

With significant wealth tied up in the stock market you may start to pay closer attention to the financial news. Not just periodically, but daily. If you watch the financial news on TV there is even coverage minute by minute, with all the drama of a sporting event.

When the market goes down you see and feel the repercussions. Sadly, it's at this point that many investors place a firmer hand on the tiller – at exactly the wrong time! In such circumstances you might think "why not sell and put the money in cash?" to avoid further loss.

So you do. You're safe in cash. The red line below shows the cost of being conservative, in this case by going to cash when you're 60.



Getting out of the market is a good way to crash the plane. This is the cost of conservatism, of “not being a gambler” in the face of unpredictable ups and downs – and there will be ups and downs, sometimes by 30%-40% in a single year. Cashing out will cost you *millions*.

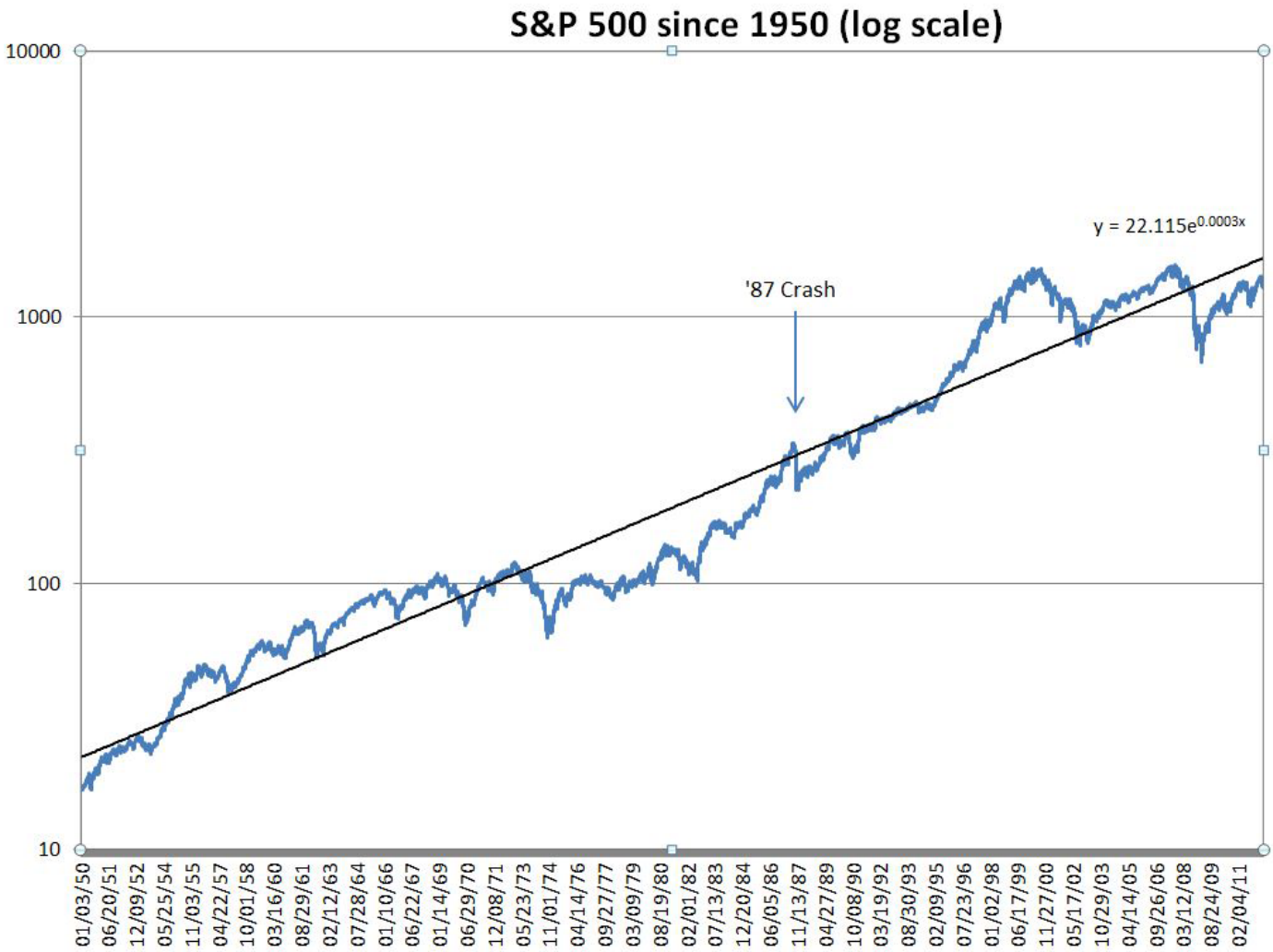
When you forgo the compounding of the stock market, the most powerful tool in the prosperity toolkit, you are likely to do it at exactly the wrong time, say after a noticeable drop. Yet the very event that prompts you to sell, especially if the drop overshoots historical levels, will set the stage for greater future compounding when the market rises from a lower base.

What happens to those who sell stocks and go into cash, short-term bonds, or certificates of deposit (CD’s) to find safety? You can’t blame them really. They just want peace of mind and to sleep better at night. But that leads to another way to lose sleep.

Later, perhaps years later, when the market has been surreptitiously going up again, you think it’s time to get back in. But when exactly? Deciding when to get back in to the stock market is much harder than the decision to get out. Just as you sold *a bit too late*, after the market had clearly gone down, now you’re in a position to buy *a bit too late*, after the market has manifestly gone up. This “whipsaw” effect – out too late, in too late – is common among investors trying to time the market.

So when there’s a market drop, and all the news is about how bad the stock market is doing, how do you keep it in perspective?

Here's a chart of the stock market from 1950 to 2011. In the **1987 Crash**, the Dow Jones Industrial Average dropped 23 percent in a single day! That remains the largest one-day stock market drop in history. Can you spot it in the picture below?



To make short-term losses fade into the background you need a long-term view. This means thinking in increments of 10 to 20 years, or more.

The famous investor, Warren Buffet, once said, "*If you were shopping at your favorite store and suddenly learned that the entire store's prices were 20% lower, would you panic and run away?*" [5] When the market drops 5-10% – or more – think of it as "*stocks are on sale*", and it's time to buy not sell.

Don't worry about your day-to-day or even your year-over-year results. Rest assured that you own a stake in the fruits of what all the people at the companies whose stocks you own create. All their resources, effort, and ingenuity is working to compound your wealth. Never bet against the people in a free society – free for companies to create things that others want, and free for individuals to choose what they value against the myriad of alternative uses for their money.

Conclusion

Most people aren't born into wealth. Surprisingly, even most *wealthy* people weren't born into wealth either. If you have the ability to earn a paycheck then the most reliable path to prosperity is to **spend less than you earn** and **compound your savings** exponentially over time.

Achievable wealth hinges on four things: earning money, saving a portion, living on what's left, and, most of all, participating in the compounding effect of the stock market.

The formula is simple but as we've seen it can be hard to follow – especially over the long run and as your wealth truly grows. If you have the self-discipline to sacrifice a little of the present for the sake of your future, and to stick with a plan in good times and bad, then you can be prosperous, even wealthy.

1. The amount of money in the system is also set by how much banks lend. Lending, surprisingly, leads to the creation of money. While economists agree on the proximal cause of Inflation (rising prices!), there is less agreement on its root cause. Nobel Prize winner, Milton Friedman, famously said that “Inflation is always and everywhere a monetary phenomenon”. That is, the more money in the system the greater the pressure toward inflation. This is a reasonable place to start.↩
2. In the US, there are many excellent funds that invest in essentially all the public companies in the stock market. Two top choices are SPY and VTI.↩
3. Pronounced *KAY-ger* or *KEAH-ger*, with a hard “g”.↩
4. Savings well in excess of 10% to 15% is an approach promoted in the FIRE movement (Financial Independence, Retire Early).↩
5. “Warren Buffett's Investment Strategy”, by Matthew Frankel, The Motley Fool, May 2, 2022.↩