FINANCIAL FYSICS

The basic laws of money and investing

by Don McDonald

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THE BASIC LAWS OF MONEY AND INVESTING

2025 UPDATE

DON MCDONALD

To all of you who were never taught the fundamentals of saving, investing and growing wealth in our educational system, this book is for you.

To all of you who have worked hard to amass as much as you could and are now enjoying the fruits of your labor, congratulations.

To anyone who has ever been hurt by the financial services industry and Wall Street, this book is dedicated to you. I am sorry that you had to learn the hard way.

Financial Fysics: Laws and Theories of Financial Fysics

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PREFACE

You will never read an unbiased book about money or investing. That includes this one. Everyone who writes about the subject has a viewpoint, and I am no exception. Nevertheless, I believe what I have written here to be true and accurate. In a book full of rules, laws and theories about money, I will offer my opinions only to justify and explain my thinking. The conclusions I draw and the rules I set forth will be heavily based on these opinions, but I have tried to provide you with enough information so that you can draw your own conclusions.

This book makes no attempt to be comprehensive, but instead offers you fundamental concepts to guide your thoughts about your personal financial life. If you follow these rules, or laws as I call them, I make no guarantees of success, but I can almost guarantee that you will be in better shape than if you followed what much of the financial industry and the media tell you.

I wrote my first book about personal finance, The Naked Truth About Your Money, nearly twenty years ago. I thought perhaps I was done but, if anything, my passion about the subject has only grown in the intervening years. About fifteen years ago I self-published the first edition of this book. It was my attempt to condense forty years of thinking about this subject into a concise (and I hope entertaining) set of rules, or as I call them, laws and theories.

Since the first edition, the investment industry has seen significant changes. Index funds and ETFs have grown dramatically. Fee compression has made investing more accessible. Yet the fundamental human behaviors that derail investors remain stubbornly unchanged.

Whether you choose to manage your own financial affairs, including your investments, or to hand those responsibilities to a qualified, unbiased advisor, this book should help you gain a better understanding of what is really going on in the financial world. That knowledge might be worth more than money.

I began thinking about what to call the basic rules of investing. In 1776, Adam Smith wrote The Wealth of Nations and fathered the modern economic order. That means that, in 249 years, no one has completely figured out what makes the financial world work. So, I will offer some general laws and theories.

I considered calling these the Laws of Financial Physics. However, unlike real physics, financial physics has no irrefutable laws. Outcomes can be altered by outside forces because we are dealing not only with inanimate numbers but also with very animate people whose behaviors are impossible to predict with any degree of certainty. Therefore, some of my laws and most of my theories should be considered in the same realm as many of the so-called laws of physics that are still being debated by scientists. Hence the title: Financial Fysics.

1

RULE 1: THE LAW OF WEALTH ACQUISITION

There are only three ways to make money: people at work, money at work and luck.

When you think about it, there are only three ways you can ever amass wealth. The first is to have people at work, which includes yourself. You go to work and trade your time for money.

Your employer may also be putting people to work, and you are one of those people. That employer is paying you less than you are producing for the company, which is how the owner makes a profit. An owner might employ hundreds or thousands of people and make a profit from each one. This is clearly a more effective way to make money than just working for yourself. However, both the worker and the owner are both utilizing the Law of Wealth Acquisition.

The second way to make money is to put your money to work. If you have money and invest it wisely, the money will grow. You don't even have to work to make it happen. That is the appeal of investing.

Think of it this way: if you invested money in my company and I put people to work, you and I would be making money from our people at work. All I have to do is pay you back less than what the business earned from its people, and we both win.

The third way to make money is by luck. While most financially successful people won't admit it, luck plays some part in almost every fortune. Bill Gates was in the right place at the right time and parlayed what luck gave him into a vast fortune.

Luck can come in many forms: being born to the right parents, meeting the right people, having an opportunity that no one else had and, of course, winning the lottery. Most luck comes with a cost: you actually have to be working or be investing to have most kinds of luck pay off. Even the lottery requires you to buy a ticket, which is, technically, an investment.

Of course, luck can also be bad. Good luck and hard work can disappear with a stretch of bad luck. That is one of the things that makes it hard to figure out why some are successful while others are not.

In the end, lucky or not, you must be either working or investing or both in order to acquire any significant amount of wealth. That is the Law of Wealth Acquisition.

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RULE 2: SUPPLY AND DEMAND DYNAMICS

All prices are set by supply and demand.

The price of everything, from a loaf of bread to a share of Apple stock, is set by just two factors: supply and demand.

In the simplest example, if two people want the same thing and there is only one of it, the price will go up. If there is one potential buyer and two sellers, the price will go down.

While this may seem overly simplistic, this single concept is the basis for all prices. That includes the price of any investment you may ever make. All the analysis, all the predictions, all the speculation comes down to one thing: will there be more or fewer buyers or sellers tomorrow?

It doesn't matter how good the earnings of a company are or how wonderful the future looks for a particular sector of the economy. All that matters is if there are more or fewer people who want to buy or sell that stock tomorrow.

Since no one can know how many buyers and sellers there will be tomorrow, no one can predict what prices will be tomorrow. That doesn't stop many people from trying, but in the end they are just guessing.

BUBBLES AND SUPPLY AND DEMAND

History is full of examples of prices being driven irrationally by supply and demand. Here are just a few:

Tulip Mania (1637): During this period in the Netherlands, tulip bulbs became so valuable that single bulbs sold for more than ten times a skilled worker's annual income. Prices crashed when buyers dried up.

South Sea Bubble (1720): The South Sea Company's stock rose nearly 800% in a few months based on speculation about trade with South America. When reality set in, the crash ruined thousands.

Railroad Bubble (1840s): The promise of rail transportation drove railway stocks to unsustainable heights. Many railways went bankrupt when revenues didn't match expectations.

Roaring Twenties (1929): Stock speculation drove prices to incredible levels before the crash of 1929 and the Great Depression.

Dot-Com Bubble (2000): Companies with no earnings and questionable business models saw their stocks rise astronomically before crashing.

Housing Bubble (2008): The belief that housing prices only go up drove a bubble that, when it burst, caused the worst financial crisis since the Great Depression.

Crypto Boom (2021): Bitcoin surged past $60,000 and countless altcoins and NFTs saw spectacular gains before the subsequent crash wiped out trillions in market value.

Meme Stock Mania (2021): Stocks like GameStop and AMC were driven to extraordinary heights by retail investors coordinating on social media, only to see dramatic declines.

In each case, prices were driven by the same thing: an imbalance in supply and demand. When everyone wanted to buy, prices soared. When everyone wanted to sell, prices crashed. This pattern will repeat itself forever, and no one will ever be able to predict exactly when.

3

RULE 3: THE THEORY OF FINANCIAL FLUCTUATION

All investments fluctuate in value, and there is no reliable way to predict how much or when.

Fluctuation is the fancy Wall Street word for volatility, or what normal people would call risk. Every investment has some degree of risk. Even the safest investments, like Treasury bills, have some risk, even if it is just that inflation might erode the purchasing power of your returns.

Stocks are, of course, more volatile than bonds, and small company stocks are generally more volatile than large company stocks. But knowing that something is volatile doesn't tell you when it will go up or down or by how much.

Some investments are more volatile than others, but there is no reliable way to predict exactly how volatile any investment will be in the future. Past volatility is a guide, but it is not a guarantee.

If you can't stomach any fluctuation, you will have to accept very low returns. If you want higher returns, you will have to accept more fluctuation. It's that simple.

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RULE 4: THE LAW OF EVERYTHING EVENTUALLY RISES

Over the long term, nearly everything goes up in price.

The United States has been incredibly successful economically. In 2024, GDP per capita was approximately $86,000, according to IMF data. This places the U.S. among the wealthiest nations on Earth.

Over the past century, the U.S. stock market has returned roughly 10% annually before inflation, or about 7% after inflation. Real estate, commodities, and other asset classes have also generally risen over time.

This doesn't mean everything goes up every year. There have been many periods of decline, some lasting years. But over decades, the overall trend has been upward.

This is important for investors to understand. Short-term fluctuations, while painful, are temporary. Long-term trends are what build wealth.

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RULE 5: THE WORST CASE SCENARIO THEORY

The worst case scenario is always worse than you think it will be.

No matter how bad you think things can get, they can always get worse. This applies to individual investments, to markets as a whole, and to the economy.

During the financial crisis of 2008-2009, the stock market lost more than 50% of its value. Many people lost their homes. Major financial institutions failed or had to be bailed out.

During the COVID crash of 2020, the market dropped over 30% in just a few weeks. No one predicted that a global pandemic would shut down the world economy.

The point is not to be pessimistic, but to be prepared. Have emergency funds. Don't put all your eggs in one basket. Don't use leverage that could wipe you out in a worst-case scenario.

Hope for the best, but plan for the worst. And remember, the worst could be worse than you imagine.

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RULE 6: THE THREE "N" THEORY

No one can consistently predict the future. No one. Never.

Despite all the experts, analysts, pundits, and forecasters, no one has ever been able to consistently predict what the markets will do.

Eugene Fama of the University of Chicago won the Nobel Prize for his work on efficient markets. His research with Kenneth French has consistently shown that trying to beat the market through stock picking or market timing is, for most people, a losing proposition.

Research from the Swiss Finance Institute and countless academic studies confirm that the vast majority of professional money managers fail to beat simple index funds over the long term. Those who do beat the market in one period are no more likely to beat it in the next period than random chance would suggest.

This doesn't mean markets are perfectly efficient or that no one ever beats the market. But it does mean that you should be highly skeptical of anyone who claims to know what the market will do next.

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RULE 7: NO NEW NEWS THEORY

In an efficient market, all known information is already reflected in prices.

If you hear a piece of news about a company and think it will affect the stock price, you're almost certainly too late. The price has already adjusted.

Markets are remarkably efficient at incorporating information. When earnings are announced, the stock price adjusts within seconds. When news breaks, prices move before most people even hear about it.

This is why it's so hard to beat the market. By the time you know something, everyone else knows it too, and the price already reflects that knowledge.

The only way to consistently beat the market would be to know something others don't, or to process information faster than everyone else. Both are extremely difficult, and the former is often illegal (insider trading).

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RULE 8: THE RISK TO REWARD RATIO

There is a relationship between risk and reward, but it's not always linear.

Generally speaking, investments that offer higher potential returns also carry higher risk. This makes sense: if an investment were both high-return and low-risk, everyone would buy it, driving up the price and lowering the returns.

But the relationship isn't perfect. Sometimes you can take on more risk without getting compensated for it. Sometimes opportunities arise where the risk-reward equation is more favorable.

The key insight is that you should never take risk without understanding it. Ask yourself: What could I lose? What could I gain? Is the potential reward worth the potential risk?

And remember: the risk you take should be appropriate for your situation. A young person saving for retirement can afford to take more risk than someone already retired and living off their savings.

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RULE 9: THE LAW OF INFLATION EROSION

Inflation constantly erodes the purchasing power of money.

A dollar today will not buy as much tomorrow. This is true almost everywhere and almost always. Over time, inflation eats away at the purchasing power of your money.

This means that if your investments don't at least keep up with inflation, you are actually losing ground. The money might show a positive return, but if inflation is higher, you can buy less with it.

Historically, inflation in the U.S. has averaged about 3% per year. Some years it's higher, some lower, but over time it adds up. At 3% inflation, prices double roughly every 24 years.

This is why keeping large amounts of money in savings accounts or under the mattress is a losing strategy. You need your money to grow faster than inflation just to maintain your purchasing power.

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RULE 10: THE THEORY OF TAXATION EVAPORATION

Taxes reduce your investment returns.

Every time you earn investment income, the government takes a cut. Interest, dividends, and capital gains are all subject to taxation.

The impact of taxes on long-term investment returns is significant. A 20% tax on your gains means you only keep 80 cents of every dollar you earn.

This is why tax-advantaged accounts like 401(k)s and IRAs are so valuable. By deferring or avoiding taxes, you keep more of your money working for you.

It's also why tax-efficient investing matters. Strategies like holding investments for more than a year to qualify for long-term capital gains rates, or harvesting tax losses to offset gains, can make a meaningful difference over time.

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RULE 11: THE FEE TO RISK/REWARD RATIO

Investment fees reduce your returns without reducing your risk.

Every fee you pay comes directly out of your returns. If your investment earns 7% and you pay 1% in fees, your actual return is 6%. The math is simple but the impact is profound.

The good news is that fees have been declining. According to Morningstar, the average asset-weighted expense ratio for equity funds has fallen to 0.34% as of 2023, down dramatically from 1.1% a decade earlier. Even actively managed funds now average around 0.60%. The rise of index funds and competition among fund companies has been a huge win for investors.

But fees still matter enormously. Over a 30-year investing career, the difference between a 0.2% fee and a 1% fee can mean hundreds of thousands of dollars.

Here's the key insight: fees reduce your returns but not your risk. A fund that charges 1% doesn't protect you from market downturns any more than a fund that charges 0.1%. You're just paying more for the same ride.

Keep your costs low. It's one of the few things in investing you can actually control.

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RULE 12: THE EMOTIONAL FACTOR

Emotions are the enemy of good investing.

Fear and greed drive investors to make terrible decisions. When markets are soaring, greed drives people to buy at the top. When markets are crashing, fear drives them to sell at the bottom. This is exactly backwards from what you should do.

But knowing this doesn't make it easier. When your portfolio has dropped 30% and headlines are screaming about economic collapse, it takes tremendous discipline to stay the course, let alone buy more.

And when everyone you know is bragging about their stock market gains and a company's stock has tripled in a year, it's hard not to pile in, even if valuations are stretched.

The best investors are those who can control their emotions and stick to their plan. This is easier said than done, but it may be the single most important skill in investing.

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RULE 13: THE THEORY OF DIVERSIFICATION DILUTION

Diversification reduces risk but also limits potential returns.

If you put all your money in one stock and it doubles, you've doubled your money. If you spread your money across 500 stocks and one doubles, you've barely moved the needle.

This is the trade-off of diversification. By spreading your bets, you reduce the chance that any single bad outcome will devastate you. But you also reduce the chance that any single good outcome will make you rich.

For most people, this trade-off is worth it. The goal of investing isn't to get rich quick; it's to build wealth over time. Diversification helps you stay in the game long enough for compounding to work its magic.

But don't over-diversify. There's little benefit to owning 10 different funds if they all hold similar stocks. True diversification means owning assets that don't all move together.

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RULE 14: THE REBALANCING REMINDER

Markets will unbalance your portfolio. Regular rebalancing keeps you on track.

Let's say you decide on a 60% stock, 40% bond portfolio. After a year of strong stock returns, you might be at 70% stocks and 30% bonds. You haven't done anything wrong, but your portfolio has drifted from your plan.

Rebalancing means selling some of what's gone up and buying some of what's gone down to get back to your target allocation. It feels counterintuitive, but it's actually a disciplined way to buy low and sell high.

There's no perfect rebalancing schedule. Some people do it quarterly, some annually, some only when allocations drift beyond certain thresholds. The key is to have a system and stick to it.

Rebalancing also forces you to think about your risk tolerance. If seeing your stock allocation grow to 70% makes you nervous, that tells you something about how much risk you're comfortable with.

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RULE 15: THE SOURCE CONSIDERATION RULE

Consider the source of all financial advice.

Everyone giving you financial advice has a motive. Your job is to understand what that motive is and how it might color the advice.

Stockbrokers make money when you trade. Fund companies make money from the fees you pay. Financial media makes money from advertising and attention. None of this is necessarily bad, but you need to understand it.

Even well-meaning friends and family have biases. If your brother-in-law made a killing in tech stocks, he'll probably tell you to buy tech stocks. If your neighbor lost money in real estate, she'll tell you to avoid it.

The best financial advice usually comes from fee-only fiduciary advisors who are legally required to put your interests first and who don't profit from selling you products. But even then, everyone has blind spots and biases.

In the end, you have to think for yourself. Gather information from multiple sources, understand the biases involved, and make your own decisions.

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RULE 16: THE KISS PRINCIPLE

Keep It Simple, Stupid.

The financial industry loves complexity. Complex products mean higher fees. Complex strategies sound impressive. Complex explanations keep you confused and dependent on experts.

But simple investing works. A portfolio of low-cost index funds covering domestic stocks, international stocks, and bonds can serve most investors perfectly well for their entire lives.

Complexity often hides costs, and it always increases the chance of mistakes. With every moving part you add to your investment strategy, you add another opportunity for something to go wrong.

This doesn't mean you should be simplistic. You should understand what you own and why you own it. But that understanding should lead you toward simplicity, not away from it.

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RULE 17: THE PAST PERFORMANCE WARNING

Past performance is no guarantee of future results.

You see this disclaimer everywhere because it's true. What happened in the past tells you surprisingly little about what will happen in the future.

Fund managers who beat the market last year are no more likely to beat it next year than random chance would suggest. Markets that have boomed may be due for a correction, or they may continue booming. No one knows.

Yet investors consistently chase performance. They pile into last year's best-performing fund and sell last year's worst. This behavior is so common that it has a name: "dumb money."

The best predictor of future returns is not past returns but costs and asset allocation. Low-cost funds tend to outperform high-cost funds. Appropriate asset allocation keeps you invested through ups and downs.

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RULE 18: THE DIY DILEMMA

THE BIGGEST DRAG ON YOUR RETURNS MIGHT BE YOU.

Dalbar, a financial research firm, has been measuring investor behavior for decades. The results are consistent and sobering.

According to Dalbar's 2024 study, the average equity investor earned just 16.54% in 2023, while the S&P 500 returned 25.02%. That 8.48 percentage point gap was the second-largest in a decade. Over time, this gap compounds into a massive wealth shortfall.

The study also found that the average investor holds their investments for just 4.8 years. That's not nearly long enough to ride out market volatility and capture the long-term returns that make stock investing worthwhile.

Why do investors underperform so badly? The usual suspects: buying high and selling low, chasing performance, panicking during downturns, and letting emotions drive decisions.

This is the DIY Dilemma. Managing your own money seems easy and saves on advisor fees. But if you can't control your behavior, you might be better off paying someone to help you stay the course.

The best thing a good advisor does isn't pick investments. It's keeping you from making the big mistakes that derail your financial future.

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LAST WORDS

If you've made it this far, thank you. I've tried to condense decades of thinking about money and investing into a set of principles that will serve you well.

The financial world wants you to think it's complicated. Complexity serves their interests, not yours. The truth is simpler: spend less than you earn, save the difference, invest it in low-cost diversified funds, and don't do anything stupid.

The hard part isn't knowing what to do. It's doing it consistently, year after year, through booms and busts, ignoring the noise and the temptations.

Good luck. And remember, the goal isn't to get rich. It's to live a good life, free from financial worry, with enough to take care of yourself and those you love. Money is a tool to that end, not an end in itself.

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RESOURCES

Here are some resources I recommend for further learning:

BOOKS

The Four Pillars of Investing by William Bernstein

A Random Walk Down Wall Street by Burton Malkiel

The Little Book of Common Sense Investing by John Bogle

The Psychology of Money by Morgan Housel

WEBSITES

Bogleheads.org - A community dedicated to low-cost investing

Portfolio Visualizer (portfoliovisualizer.com) - Tools for analyzing portfolios

PODCAST

Talking Real Money - The podcast I co-host with Tom Cock, offering straight talk about investing