

ESCAPE VELOCITY

A Physicist's Guide to the Math of Freedom

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The Swiss Lion's Den

I was immediately thrown into the Swiss public school system. For a kid who spoke only Portuguese, this was a disaster. I was the outsider. I was the kid who smelled like his parents' kitchen. I was the one who couldn't understand the jokes, so I became the joke.

The bullying wasn't even creative. It was just the standard, garden-variety cruelty that kids excel at. But here's the thing about being bullied: **It forces you to choose an identity.**

You can either accept the identity of the victim—the poor immigrant kid who is always behind—or you can build something else. You can find a way to become so competent, so dangerous (intellectually or physically), that they can no longer ignore you.

For a long time, I hated the kids in Monthey. I hated the language. I hated the fact that we had left the sun of Portugal for this cold, judgmental slab of rock. I missed my grandmother. I missed the dirt.

The Gift of Discomfort

But looking back, that bullying was probably the best thing that ever happened to me.

Wait, what? Yeah, you heard me.

We live in a world that is obsessed with “safety” and “inclusion.” We want to protect everyone from every possible

slight. We want to smooth out every edge. But here's a counter-intuitive truth: **Comfort is a slow-acting poison for the soul.**

If I had stayed in Portugal, I would have been comfortable. I would have been "one of the guys." I probably would have ended up working a mediocre job, drinking mediocre wine, and complaining about the government like everyone else. I would have been a passenger in my own life.

Being bullied in Switzerland forced me to develop a thick skin. It forced me to realize that if I wanted respect, I wasn't going to get it by asking for it. I wasn't going to get it by being "nice." I was going to have to be so good at something that they couldn't ignore me.

Isolation is a motivator. When you don't have friends to play with, you have a lot of time to think. You have a lot of time to observe. I observed my parents.

Every morning, they got up and went to that kitchen. They didn't complain about "burnout." They didn't talk about "mental health days." They didn't "quiet quit." They just worked. They worked because they had a responsibility to me, to our family, and to the future they were trying to build.

They instilled in me a value system that is almost extinct today: **The Value of the Grind.**

Not the fake "hustle culture" you see on Instagram where people take photos of their laptops next to a swimming pool. I'm talking about the real grind. The kind where your back

I thought the corporate world would be the solution. I was wrong. It was just a different kind of distraction.

Note to the Reader: Success is hollow if you have no one to share it with. If your career requires you to sacrifice your most important relationships, it's not a career—it's a compromise you might regret.

1.5 The Death of the Soul, One PowerPoint at a Time

After a decade of chasing black holes and academic prestige, my wife and I decided it was time to join the “Real World.”

We had spent years solving the “Two-Body Problem” by sheer luck, landing in Brussels and Cambridge together. But the luck was running out. We knew that if we stayed in academia, the next step would likely involve a long-distance relationship across continents or one of us sacrificing their career so the other could have a shot at a tenure-track position.

We didn't want to play that game. We wanted a life together. We wanted a home that didn't come with an expiration date.

So, we made a pact. We would leave the ivory tower and head for the corporate world. We had this naive idea that while academia was theoretical and isolated, the corporate world was

Most people have no idea what they actually spend. They think they do, but they're usually off by 20-30%. They focus on the big things—rent, insurance, car payments—but they ignore the **Friction of Daily Life**. The coffees, the subscriptions, the convenience foods, the “treating yourself” after a bad day at work.

To calculate your FIRE number, you must first find your **Enough Point**.

What is the cost of a life that you actually enjoy? This is a philosophical question as much as a financial one. It requires you to sit down and honestly evaluate what brings you joy versus what you do just to keep up appearances.

For me and my wife, this was a radical audit. We were living in Switzerland, one of the most expensive places on earth. We were making high salaries, but we were spending a huge chunk of that money just to “service” our high-stress careers. We were paying for a nice apartment we barely spent time in, clothes for meetings we hated, and expensive dinners to distract ourselves from the fact that we were exhausted.

We realized that our “standard of living” was actually a weight dragging us down. By lowering the bar of what we “needed,” we were actually raising the ceiling of our freedom.

The Physics of the FIRE Number: The 25x Heuristic

The standard math used by the FIRE community is the **Rule of 25**. It's a simple multiplier that tells you when your portfolio

Chart 2: The Freedom Lever (Savings Rate vs. Time to Retirement)

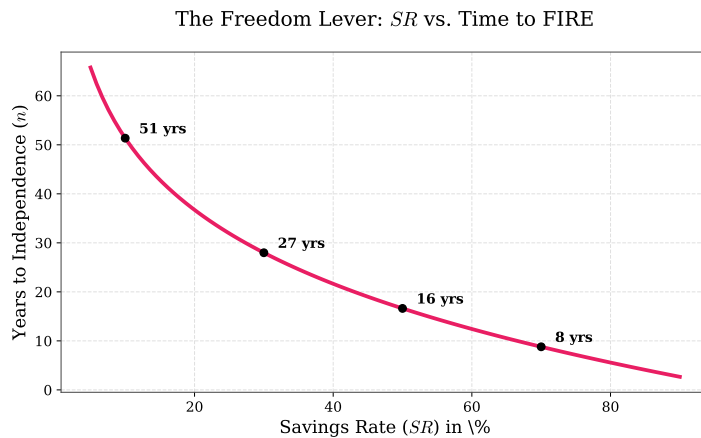


Figure 2.2: The Freedom Lever: Savings Rate vs. Time to FIRE.

If the Hockey Stick tells you *how* wealth grows, the **Freedom Lever** tells you *how fast* you can get out of your job.

Most people think that retirement is a function of age. They think they have to work for 40 years because that's what everyone else does. But as we discussed in the Savings Rate section, retirement is a function of **Percentages**.

Imagine a graph where the horizontal axis is your **Savings Rate** (from 0% to 100%) and the vertical axis is the **Number of Years until Retirement**.

The line isn't a straight diagonal. It's a steep, dramatic curve.

- At a **5% savings rate** (the average for many Western coun-

withdrawal rate.

The Lesson: Don't be the person who crashes their plane because they wanted to carry 1% less fuel. Aim for the “**Goldilocks Zone**” (3.25% - 3.5%).

Having this visual in your mind is critical when the market is volatile. When the S&P 500 drops 30%, you need to be able to look at your 3.25% withdrawal rate and realize that your “Margin of Safety” is large enough to absorb the shock.

Why These Visuals Matter

We live in a world of **Information Overload**. Every day, you are bombarded with news about inflation, interest rates, and political chaos. The media is designed to keep you in a state of constant, low-level anxiety because anxiety is profitable.

In those moments, your brain is going to focus on the immediate, short-term pain. It's going to tell you to “do something.”

But the path to FIRE requires the opposite: it requires you to **Sit Still**.

These visualizations are your **Psychological Anchors**. They remind you that the laws of math and physics are still in effect, even when your emotions are telling you otherwise.

- When the market crashes, look at the **Hockey Stick**. Remember that this dip is just a tiny, meaningless wiggle on the long upward curve.
- When you're tempted to buy a luxury you don't need, look at the **Freedom Lever**. Ask yourself if the item is

Most people in the corporate world view income as a slow, linear progression. You work hard, you get a 3% raise every year, and maybe a 10% jump when you get a promotion. This is the “Employee Script.” It is slow, it is predictable, and it is designed by HR departments to keep you working for as long as possible.

Combining the logic of a scientist with the ruthlessness of a trader, I don’t care about HR scripts. I care about **Market Dynamics**.

Your income is not a measure of your worth as a human being. It is a measure of your **Market Value**. And market value is a variable that can be manipulated, accelerated, and optimized.

In this section, we’re going to look at how to stop being an “Employee” and start being a **Strategic Asset**.

The Physics of Market Value: Rarity and Utility

In physics, the value of a particle is often determined by its rarity and its energy level. The same is true in the labor market.

Your salary is determined by two primary forces: 1. **The Difficulty of the Problems You Solve:** Anyone can follow a manual. Few people can build a convolutional neural network to detect pollen. Even fewer can manage a multi-million dollar trading portfolio. 2. **The Rarity of Your Skills:** If a million people can do what you do, you are a commodity. If only ten people can do what you do, you are a monopoly.

Each of my moves—between various corporate and startup roles—resulted in a significant jump in salary and responsibility. These weren't just “new jobs” ; they were **Level-Ups**. I used each role to acquire a new set of skills, and then I sold those skills to the next highest bidder.

Don't be a mercenary for the sake of being a mercenary. But realize that if you aren't growing and you aren't being paid market value, you are losing money every single day.

The 15-Minute Lever: The Power of Negotiation

This is the most critical part of income acceleration. I call it the **15-Minute Lever**.

Most people accept the first offer a company gives them. They are so relieved to have the job, or so afraid of appearing “difficult,” that they simply say “Yes.”

This is a catastrophic financial mistake.

A single 15-minute conversation during the hiring process can result in a \$10,000, \$20,000, or even \$50,000 increase in your starting salary.

Let's look at the math of the lever: Imagine you negotiate an extra \$20,000 on your starting salary. Over a 20-year career, that \$20,000—if invested at a 7% return—becomes over **\$800,000**.

One 15-minute conversation just bought you three extra years of retirement. That is the highest hourly rate you will ever earn in your life.

How to Pull the Lever: The Script

index funds.

If you decide to enter the real estate market, do it for the right reasons. Do it for the leverage and the diversification. Do it because you understand the local market.

But never forget the “Time Cost.” Your goal is freedom, not becoming a full-time landlord.

In the next section, we’re going to look at the **European Landscape** in more detail. We’ll compare the tools and brokerages that will help you build your engine across the continent.

3.6 The European Landscape: Choosing Your Boat

In the U.S., the FIRE journey is relatively simple. You open a Vanguard account, buy a Total Stock Market index fund, and wait 20 years.

In Europe, it’s a lot more complicated. We have different countries, different currencies, different tax laws, and different sets of brokerages. It’s like trying to navigate a fleet of small boats through a complex archipelago instead of sailing a supertanker across the open ocean.

To reach FIRE in Europe, you need a **Safe, Low-Cost Brokerage** that gives you access to global markets. You need a boat that won’t sink when the weather gets rough.

In this section, we’re going to compare the three most popular options for European investors: **Interactive Brokers, DE-**

someone else), you are failing. To survive the transition, you must realize that **Your time is the highest form of value.** Producing a happy, well-adjusted daughter is more important than producing a Q4 supply chain report. Exploring the hills of Portugal is more important than “aligning stakeholders.”

The Loss of the Social Mirror

One of the most painful parts of the mindset shift is the **Loss of the Social Mirror.**

When you work at a prestigious firm, you are surrounded by people who validate your choices. Your peers admire your career trajectory. Your boss praises your “strategic insight.” You are part of a tribe.

When you leave, that mirror is shattered.

Your former colleagues might say they are happy for you, but underneath, there is often confusion or even resentment. They are still in the race, and your presence—as someone who has chosen a different path—is a threat to their worldview. You lose the automatic social status that comes with a “High-Value” job.

You must learn to build a **Self-Referential Identity.** You must learn to be the source of your own validation. This is a skill that few people in the modern world possess. Most people are “Other-Directed” —they live their lives based on the expectations of others. To thrive in FIRE, you must become “Inner-Directed.”