Optionality is for Innumerate Cowards

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MBAs love to talk about "optionality" and how they want more of it. But you don't need an MBA to explain yourself by saying you're "Keeping your options open." Optionality is the Millennial lodestar: we keep our options open.

This is bad behavior, both morally and financially. (Isn't it great when markets reward virtue?)

These mountain climbers probably haven't even heard of put options.

What's wrong with optionality? We'll get there, but first let's talk about why it's so popular. I blame the economy, the post-Cold War zeitgeist, and also Nassim Taleb.

Why Optionality?

One of the attractions of optionality is that we live in a world that's superficially more volatile than we'd expect. As Tyler Cowen has argued, the world is actually getting a lot more boring over time. But I suspect that if you compare the post-Cold War generation to prior generations, you'll see a gap in risk perception. In a world where the risk of nuclear holocaust is nonzero, all other risks are minor: quitting your job to move is risky, but there's always a chance the Russians will nuke your hometown tomorrow, so maybe staying put is just as risky. Having kids at 25 may be a risky move, but what if all you'll have at 26 is radioactive cinders?

Post-Cold War, it felt like The End of History, at least to everyone who became politically aware before 9/11. And since 9/11, we've all felt like we lived in a world that was full of uncertainty we didn't expect. We paid for a Fisher-Price toy, we got Lil' Bobby's First Pipe Bomb Kit.

No wonder people hunker down and avoid committing. The macro risk is gone; nobody is seriously worried about global nuclear conflagration. [1] We're worried about comparatively micro risks, though: financial instability; the grinding risk of having more debt and fewer assets than the previous generations; the fear of relentless social atomization — 1,500 Facebook friends and not a single couch to crash on; the risk that you'll suffer if you follow the establishment's advice on careers, relationships, even diet; the risk that you'll be laughed at (at scale!) if you don't.

Of course Millennials are risk-averse. They felt it, but they didn't know it.

Enter Taleb. At least, from your perspective. But from Taleb's perspective, you started hearing the name Taleb some time in Act IV of *The Merchant of Vol*.

Nassim Taleb was a famous writer before he was ever a famous writer. He was just world-famous to the smaller world of options traders. Back before *Fooled by Randomness* and that Gladwell profile, he was the guy who wrote *Dynamic Hedging: Managing Vanilla and Exotic Options*, a book that was well-regarded among quants.[2] Note that *Hedging* is not about making the directional bet that volatility is too low — it's about selling

expensive volatility while buying the cheap kind, and vice-versa. If you read popular Taleb, you'll rush out and buy put options; probably, whoever sells them to you read his original book, and will do fine whether or not you're right.

But after *Fooled by Randomness*, Taleb became synonymous with the view that risk is intrinsically impossible to model; the more remote the probability, the harder it is to model the magnitude. That puts a theory behind the instinct that we've been underestimating risk this whole time.[3] Of course, Taleb had peerless timing: *Fooled by Randomness* came out a month after 9/11; *The Black Swan* arrived in April 2007; a lot of the folks who had chronically overestimated the prevalence of statistically normal distributions had plenty of downtime in the next two years to read it.

Paying for Insurance

What's wrong with optionality? There are only two problems I see. Just two minor issues, really:

1. It's a bad deal financially.
2. It's utterly cowardly.

Let's take these in turn.

Financially, buying optionality means paying someone else to provide you insurance against risks. Insurance is not an amazing business, historically, but it's not an awful one, and it's been going on for a long time. Insurance companies make enough money to pay their claims, but they also make enough money to pay their claims-adjusters, underwriters, actuaries, middle-managers, CEOs, etc. Plus dividends. Over a long enough time period, the value of the premiums received is always in excess of the value of claims paid.[4] That's why it's the "insurance business," not an "insurance charity".[5]

This is easiest to measure in financial markets, where we can look at the difference between implied volatility[6] and realized volatility. Historically, most of the time, implied volatility is higher than realized volatility. Over a very long time period, you're better-off never buying insurance; in fact, you're theoretically better-off selling it.

Why should this be?

There are a couple reasons: one is that historically, the returns from selling volatility follow a pattern the pros like to call "picking up nickels in front of a steamroller." This was the line used by the principals of Long-Term Capital Management (compound annual returns its first three years: ~35%. Losses in 1998: over 90%). Not only can the strategy backfire painfully, but it tends to backfire at the worst possible time. In financial markets, you typically pay out insurance claims at a time when everything is cheap. This means that, as a standalone strategy, selling options tends to deliver correlated returns (not especially exciting to investors), and as a strategy combined with other strategies, tends to mean you're a forced seller of other assets when they're cheap.

Selling insurance also requires a serious balance sheet. Nobody wants to buy insurance if they'll be worried about collecting it. So the big returns tend to accrue to institutions who can take the pain.

There's a long-standing debate in finance over what proportion of activities can be described as some form of selling optionality and hoping not to be around when the options get exercised. While selling optionality is a socially useful activity, just like insurance, it's pathological if the insurer is undercapitalized and doesn't realize that's what business it's in. One might cynically describe the MBA's dream as not so much "Have lots of optionality" as "Own a call option on the proceeds of the continued sale of put options."

Volatility, as a financial measure, has some intriguing characteristics. For example, both implied vol and realize vol are "sticky," implied vol a little more so than realized vol. In other words, when there's a spike in volatility, investors trade as if it will persist. To put it more concretely: back in early 2009, with the market down by half, the market was pricing options as though another 50% drop was a reasonable possibility. There's a sense in which this is naive: obviously the more extreme a market price deviation, the less probable it is. On the other hand, implied volatility is a sort of meta-measure: it's a measure not just of what the market expects realized volatility to be, but of *how confident the market is in those estimates*. And if the market moves in a way that's implicitly unlikely based on implied volatility, it shows that there was something wrong with our models — of course the price of insurance rises in the face of new and unquantifiable uncertainty.

Cash, Uber, Open Calendars, Loneliness, and Other Forms of Optionality

Optionality shows up in many surprising forms:

- **Cash is a universal call option**: cash is the right to buy any asset for its future market price, *even if that market price is lower than today's*. This is a tautology, but it's a useful reframing: when you hold cash, you're betting that future asset prices will represent more attractive purchase opportunities than today. Interestingly enough, this tautology gives us a neat way to reframe the truism that volatility is highest during market declines: higher asset volatility increases the value of an option, so all else being equal, volatility should raise the value of cash-the-option relative to the value of the volatile asset.

- **Ride sharing rather than car ownership is an optionality trade**: you're not strictly buying or selling optionality here. A car is an option to get from point A to point B for the cost of gas and depreciation, with the caveat that Point A and Point B are where you parked. You pay a lot upfront for that option, but it saves you money if you drive a lot. Ride-sharing economics illustrate the economies of scale present in selling volatility: any one driver who promised 24/7 pickup/dropoff for one subscriber would have a lot of downtime *and* slow arrival time, but a whole network of drivers mutes the impact of spikes and lulls in demand.

- **An open calendar is a call option on opportunities**: In one of the classic Pmarca blog posts, Marc Andreessen advises keeping a completely open schedule. It's a compelling idea, especially given his case study — Arnold Schwarzenegger's casual career pivot from movie star to politician in charge of one of the world's ten largest economies. This schedule works well for people with a combination of traits: no major project absorbing their time, and enough fame/status that they can just demand that everybody else block off time on their calendar for a *maybe* meeting with you. But try it before you've achieved Andreessen/Schwarzenegger fame, and you may find that the result is that you lose out on productive meetings altogether.

- **Loneliness: an optionality-maximizing strategy**: Close friends and family drastically curtail your freedom, in ways large and small. A few years ago, I applied for a job on a lark, got it, and moved to a different coast for six months. Earlier this year, I moved less than a mile, with two kids and a pregnant wife; it was arguably

> harder. At a smaller level: literally as I wrote the last sentence, my one-year-old (Happy birthday, Mallory!) blew a giant spit-bubble on the Escape key. Not a specific problem I had to deal with when I was childless, but still a net win. I suspect that delayed family formation among millennials is a general expression of their desire to maximize optionality.

Many otherwise smart and well-adjusted people have talked themselves into being the Ebenezer Scrooge of optionality, always hoarding the ability to do something later, never actually doing anything when "later" arrives, and giving up a lot in the process.

There's a better way.

The Solution

If optionality is bad, what's the solution? Stop-losses and discipline. A "stop-loss" is technically a form of market order that's only executed after an asset price has reached a certain threshold. For example, you might buy something at $100 with a stop-loss at $95; if the price is above $95, you own it, and if it's below, you sell it at the current market price — ideally $94.99, but sometimes a bit lower than that.

In a continuously liquid market, you can make a series of trades in an underlying asset that mimic the returns from holding an option (to mimic the returns of a call option, you buy some stock, add to your position if it goes up, and sell if it goes down, approximately; in other words, you buy with an implicit stop-loss).

In practice, stop-losses are hard for two reasons:

1. If you actually implement them as an order, you're basically pre-committing to panicking in proportion to everybody else. This is dangerous behavior, and it tends to exacerbate market volatility. [7]

2. If you implement *mental* stop losses, you'll generally find that you don't have the fortitude to execute on them.

It's point 2 that's fixable. Fortitude is a virtue you can develop over time, and developing fortitude allows you to stop bleeding out the difference between implied and realized volatility. It's painful; a mental stop loss is just the discipline to realize that you lost money because you were stupid. Fortunately, you can recast that: having lost money,

you're smarter than you were before. It's a cost, but it's tuition. You can think of the tradeoff between options as paying upfront for the privilege of developing conviction later; stop-losses force you to have conviction now, and to admit your mistakes.

Ultimately, there's a finite net amount of optionality in the world, and it's zero: every time you pay for the option to buy or sell something in the future, you need a counterparty. If there's a bias towards being systematically long something with a total net supply of zero, the buyers will tend to overpay.

Don't be one of those buyers; steel yourself for some future loss-cutting, and accept that you're going to trade pain for gain by taking the other side of the optionality bet.

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[1] If your counterexample includes the word "Trump," please include a screenshot of the one-way plane ticket you purchased to somewhere outside of North Korea's furthest theoretical striking distance. A plane ticket is the difference between seriously worried and performatively worried.

[2] Yes, Taleb's current fanbase is, relatively, *less nerdy* than it used to be.

[3] A quick tip for becoming a "thought leader": find a way to sensibly think what lots of people are feeling.

[4] And even if it's not, policyholders can't collect from an insolvent insurer. So even if the insurance industry faces Black Swan risks that make it a poor business all things considered, this makes buying insurance *an even worse decision*.

[5] Although, I should note that in advanced countries, the vast majority of what the government does, in total spending terms, is poorly-underwritten, wildly-unprofitable

insurance.

[6] Black-Scholes and other options pricing models are beyond the scope of this piece, but in brief: the value of an option is a function of the asset price, the strike price (i.e. the price the option allows you to buy/sell the asset), interest rates, and volatility. Of these, vol is the least knowable.

[7] The existence of stop-loss orders used to underpin some forms of technical analysis, such as betting that if an asset drops below a recent low, it will keep dropping; a recent low is also the point below which there are old stop-loss orders lurking.

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