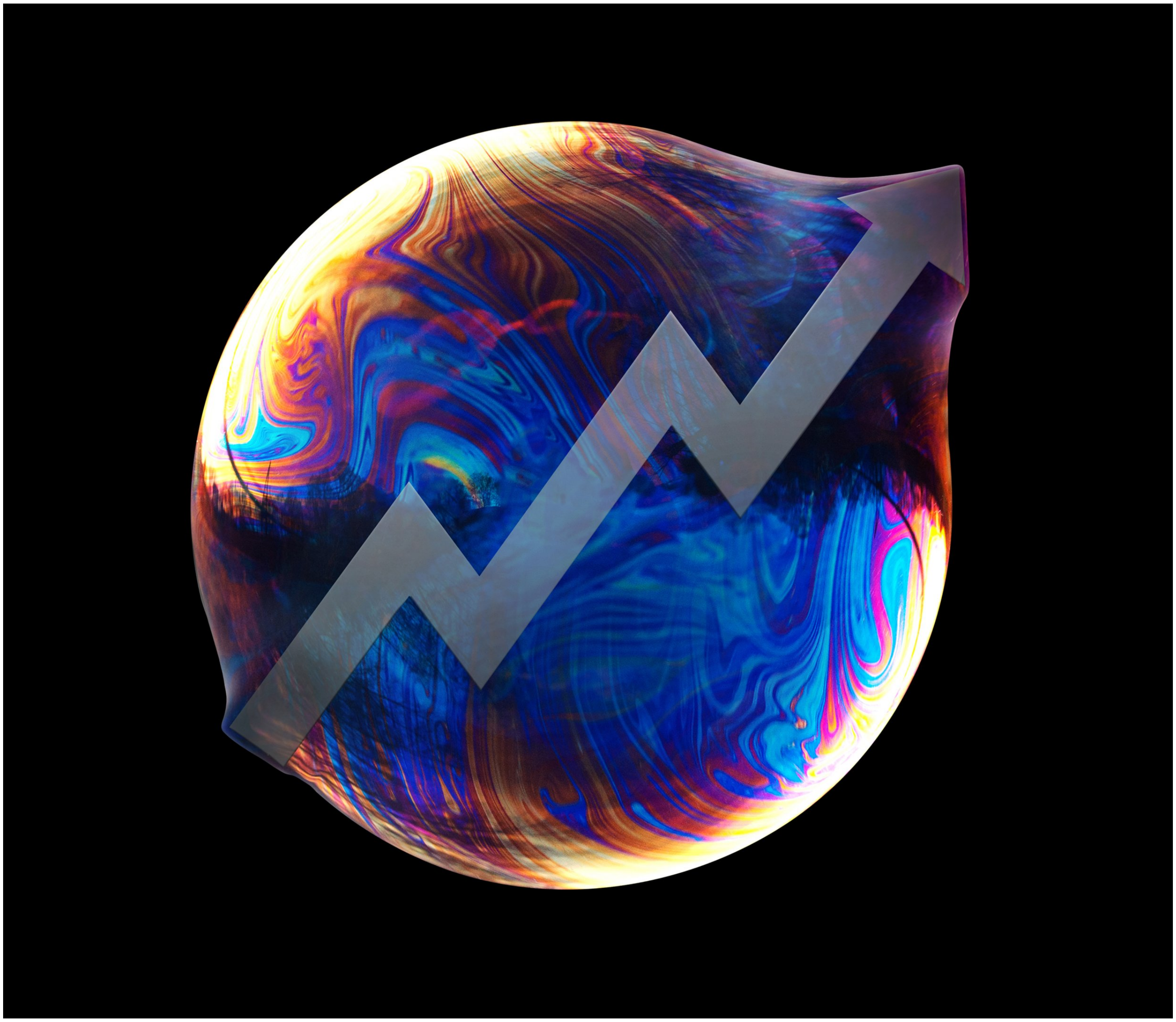
What Goes Up, by Andrew Lipstein

harpers.org/archive/2024/06/what-goes-up-andrew-lipstein-401k-doomsday-index-fund-catastrophe

Andrew Lipstein



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Money—where it comes from, where it goes—was on my mind as I drove from Brooklyn to Philadelphia last fall, a Friday the thirteenth. I spent most of the trip on a Zoom call with my wife and our doula, discussing what combination of night nurses, babysitters, and nannies we'd need come the birth of our twins, our second and third sons. Nary a dollar figure was uttered, seemingly out of respect, just as those attending a funeral avoid naming the actual cause of death.

Still, I wondered what exactly would balance out those items on our ledger. The writing of this article, plus a month's salary from us both? A quarter of my next book advance? All the pizza I'd delivered when I was in high school and college? The fungibility of money can feel by turns sublime, magical, contrived. How can you pay for something and not know what real-world acts or sacrifices you're paying *with*?

As the call ended and the Philadelphia skyline lifted onto the horizon, that unspeakable sum began to seem pathetically small, trinketlike, nicked coins in the face of a vault of cash. I had made the journey to speak with Michael Green, a fund manager notable for both an immensely profitable trade he orchestrated for Peter Thiel worth nearly $250 million, and his (occasionally combative) warnings about the boom in passive investing, which is now estimated to account for more than $15 trillion globally. (Estimates vary widely. Experts put passive investing's share of the U.S. stock market anywhere between 15 and 38 percent.) Green isn't the only one worried: vocal skeptics include Cathie Wood, Michael Burry, Peter Lynch, Elon Musk, David Einhorn, Carl Icahn, and Robert F. Kennedy Jr. But unlike those bigwigs, Green is known for, and only known for, this issue. It is his idée fixe, his raison d'être, or—to get a little less French—his "thing." If a niche finance podcast wants to dive into the topic, Green is the one they call. Try asking a friend who follows the market whether they think index funds are a bubble; money has it they'll bring him up. He has become so synonymous with the subject that a Bloomberg headline referred to him solely as a hater of passive investing.

I was a bit uneasy as I approached the door to his apartment building, a dignified brick structure on a narrow street in a historic district. (Green doesn't have a permanent residence. He and his wife are trying out a few different places, though his choice of Philadelphia is telling, situated right between New York and Washington, the nerve centers of finance and politics, respectively.) There was a smattering of reasons for my angst. Green is vociferous on Twitter, despite the tone set by his handle (@profplum99) and profile picture (Wallace Shawn as Vizzini from *The Princess Bride*). The morning of my visit, Green got into a squabble about inflation, questioning how "in charge of their faculties" his opponent was. (The other user, @Tim75491582, had three followers.) I couldn't help but begin to question my own faculties, especially since my day had started at 4 am, my alarm clock a screaming child. There was also something existentially disturbing about meeting with a passive-investing doomsayer when the bulk of my family's savings is, more or less, invested passively. (Even that phrase, supine as it is, gives me and my wife too much credit. We each make contributions to our individual set-it-and-forget-it portfolios, have bemoaned their performance for years, and have hardly changed a thing.)

But these abstract preoccupations sunk away as one much more visceral emerged. Green came downstairs with his two dogs, asking that we walk to a café before going into the apartment, so that the hounds could get used to me. He then called one of them "insane, though very sweet," and alluded to an incident between it and two deer, in which the dog may or may not have ended the deer's lives. When I joked to Green about my own legs being the size of a buck's—and thus just as easy to break—he looked down at them, as if he could see through my pants, and said they were, in fact, bigger. As the dog brought its snout against my knee, thigh, and crotch, I pretended to be relaxed, a harmless but inquisitive journalist with the kind of sangfroid both man and canine could appreciate. It was only once the dog had deemed me an ally, or at least insufficiently appetizing, and we went on our way, that the manifold and striking ironies appeared before me.

My most recent novel, *The Vegan,* centers on a bout of interspecies empathy between a dog and a hedge-fund manager. Unbeknownst to me until I read a review of the book in the *New York Times,* the protagonist's name, Herschel Caine, "were you to consult a naming dictionary, translates roughly to 'deer killer.' "

Then there's Green's physical appearance. When I initially looked him up, I'd noticed his resemblance to Matthew Macfadyen as Tom Wambsgans in the HBO series *Succession,* jotting down that he had "the not-so-much deer-in-the-headlights look but the look of headlights as they approach the deer."

I was still digesting all of this when, walking out of the café, a coffee in each hand, I found Green talking to a man in a black hoodie that read ban stupid people, not dogs. He seemed to be lecturing Green, and Green was listening avidly. The man, it turned out, was a dog psychologist who goes by Peter Jam; his business card touts doggy education for all. For a few minutes, Green's dog's neuroses were discussed in terms so concrete they made my last therapist's offerings seem platitudinal.

This was the nail in the coffin, the last clue I needed from the universe that I was in the wrong—as someone who doesn't like dogs, who penny-pinches when it comes to our postpartum needs, who passively invests. It was in this state of mind that I listened, for more than four hours straight, as Green spoke with confidence, precision, and patience about the lunacy of index funds, about information flows versus financial flows, about going long cheap stocks and short momentum stocks and the Shiller PE Ratio and "the crazy guys from Cornhole Capital" and long puts and the VIX and SVXY and watching his parents give up their property owing to high taxes and "the king who thinks that he's munificent and yet beats his jester" and, most of all, permeating every thought and aside, the immense bubble growing steadily in the market, invisible to the average investor even as—or perhaps because—it swallows more and more and more and more of our money every day. To call it a cancer on the economy would capture the urgency of Green's warnings, but the analogy falls short once you realize that the tumor has already claimed more than a sixth of its victim—the size of a limb—and is still deemed by mainstream opinion to be the healthiest part of the body.

Green is funny, and self-aware, and intimidating, and I soon found that I had come to believe everything he said. With this belief came a kind of relief. I felt that I'd answered the call of the cosmos. I'd listened; my eyes were opening. And yet, when I left him, fully ensconced in his point of view, the coincidences didn't stop, as if I hadn't even begun to learn my lesson, as if I had poked some beast and it would now be shining its eyes on me everywhere I went. It even followed me into the next day, rearing its head while I was on a run in the rain. I'd glanced up at a brownstone to see, floating by a tree, two stories up, a lone, iridescent soap bubble. I looked around me, expecting to see a child on the sidewalk, or an adult peering out of a window, but there was no one. By the time I lifted my phone and navigated to my camera it was gone.

Financial bubbles, real and imagined, assume all shapes and sizes. They can emerge in any corner of the market, at any time in the broader economic cycle, no matter whether the policy du jour is austerity or expansionary. They might become infamous, like the Dutch tulip mania of 1637—one of the first known speculative bubbles, and now on the lips of corporate motivational speakers the world over—or quickly lost to history, like the uranium bubble of 2007. They can arise from short-term events, like the Poseidon bubble—a consequence of the increased demand for nickel during the Vietnam War—or a confluence of less-tangible factors, like the supposed higher-education bubble.

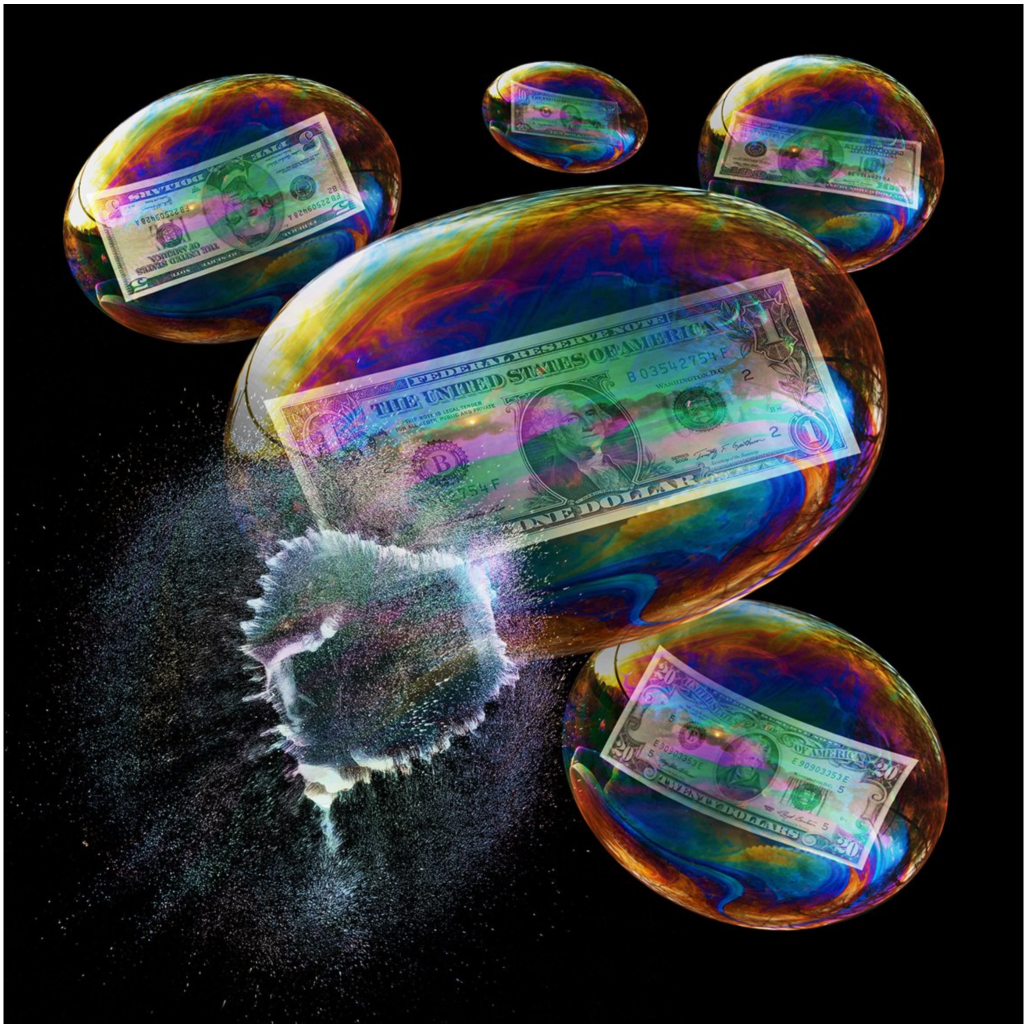
But however diverse bubbles may be, they all follow the same pattern, or so says a theory that is often misattributed solely to Hyman P. Minsky but was actually more of an intellectual baton-passing. Specifically, it states that there are five stages: displacement, boom, euphoria, profit-taking, and panic.

Displacement is all about a tweak in conditions, one that provides fertile ground for a new paradigm. Just as dry–wet cycles and the perfect ratio of chemicals allowed life to profit on earth, displacement is both precondition and stimulus.

Then comes the boom. In recent memory, this might have been most keenly felt during Super Bowl LVI, in 2022, also known as the Crypto Bowl. With $39 million spent on cryptocurrency ads, featuring stars like Matt Damon, LeBron James, and Larry David—how did we ever trust so many first names in a row?—this was when the FOMO was, so to speak, real.

You know something is seriously wrong when a financial vehicle is being described like a hard drug, and euphoria is just that: a sign that the situation is about to go off the rails. In 2007, this would have been your not particularly well-off aunt in Phoenix buying her second condo. In 2000, this would have been your college roommate dropping out to launch a (well-funded) pen-pal start-up. In 1928, this would have been, well, putting your money anywhere but under your mattress.

During the profit-taking stage, you start to see some selling, especially from "smart money"—market movers who are usually quicker to the draw and, owing to their size, impactful. This is when things get ugly—and when we really have to double down on the bubble metaphor. Once a bubble pops, it's only the air that evaporates. The soap—slippery and made mostly of fat—is still somewhere out there, both hidden from sight and a lot more concentrated than it was before. Not that it's always advantageous to try and join in with those on the outside, betting against a (seemingly) swollen bubble; this can be just as dangerous as hopping in. As Keynes said: "The markets can remain irrational longer than you can remain solvent."



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Panic is the negative image of euphoria. Both involve the bulk of the market moving in lockstep, but with each individual investor convinced he can get in (or out) just before his neighbor. Think of panic as musical chairs, except the more frantically everyone tries to sit the quicker the chairs disappear. Today it might seem self-evident that panic begets panic—we've all seen *It's a Wonderful Life*—but it wasn't until the early Eighties that we formally understood why this happens and how to prevent it, thanks to the work of Douglas Diamond, Philip H. Dybvig, and Ben Bernanke. (For their contributions, the trio was awarded the 2022 Nobel Memorial Prize in Economic Sciences.)

None of these five stages alone is proof of a bubble. The 1929 panic ending the Roaring Twenties bull market (a certified bubble if ever there was one) is best captured in photographs showing throngs of men waiting outside banks to withdraw their savings. But the contemporary, funhouse incarnation of this image—lines of (still mostly) men panicking at the doors of Silicon Valley Bank during last year's regional banking crisis, their precursors' suits and fedoras traded in for jeans and down jackets—wasn't the result of a bubble, at least not by any rigorous definition. (Though it is tempting to imagine the board of your local regional bank lost in the euphoric throes of long-term Treasury bonds.)

Less clear, and more disconcerting, is a related question: Can something be a bubble if it lacks, or bypasses, one of Minsky et al.'s stages? And if so, could such an elision make it all the more cataclysmic?

Passive investing has an ostensibly simple definition: it's a buy-and-hold strategy using index (or similar) funds to match the overall performance of the market. Yet Green and his ilk would object starting with "buy-and-hold" and reach a fever pitch by "overall performance of the market." (In conversation, Green's tone belies his vehemence. He refers to passive investing dispassionately, using the truncated term "passive," just as millennial music fans might say "indie.")

Let's start with active investing then, which was just called "investing" before "passive" came along. In public markets, this is the buying (hopefully when low) and selling (ideally when high) of individual investments like stocks, bonds, and derivatives (such as options and futures). You might think a company is undervalued, or bound to break through in South America, or on the cusp of shedding that pesky corporate-malfeasance lawsuit, so you buy. Then, once you surmise it's overvalued, or your prediction came true (or didn't), or you need the money, you sell. Because buying a stock helps increase the price and selling helps decrease it, you're also doing your part to keep the market "efficient." In an efficient market, all prices reflect all available information. It's a quality, like freedom, we refer to in the absolute despite the fact that it can only really exist in shades. (It's also a term that makes Green bridle. When I asked him if he thinks active investing, unlike passive, makes the market more efficient, he sighed heavily and said, "You've got to be very careful with that. It's a very loaded term in economics." He then suggested I use "mean-reversionary behavior" instead. The day after I wrote this paragraph, a week and a half after we met, he published a post on his Substack titled "For your information: 'Market Efficiency' is not the question.")

After trying your hand at the market, you might realize you're not that good at this buying low and selling high, nor do you have the know-how to diversify your portfolio enough to mitigate risk. So you give your money to someone who has told you, or at least implied—but never promised, and certainly not on paper—that over time, they can make more for you than you can make for yourself, even after taking their fees into account. This relationship can assume quite a few forms, though one of the most popular has been the mutual fund, in which the savings of many individual investors are pooled together and controlled by money managers. Though they're commonplace today (by 2022, just over half of U.S. households had shares in at least one mutual fund), they didn't get Joe and Jane Investor's attention until the Sixties

—when funds began advertising to the broader public—and only really started to catch on in the Eighties, thanks to a bull market, name-brand stock pickers like Peter Lynch and Michael F. Price, and the rise of the retirement plan.

Meanwhile, another storm was brewing. Though John “Jack” Bogle would go on to lead the index-fund revolution—an ever-growing thorn in the side of active mutual-fund managers—he once sat on the other side of the aisle. In 1970, he became the chairman of the Wellington Management Company, a storied institution, having launched the world’s first balanced mutual fund in 1929. (“Balanced” refers to the use of both stocks and bonds, the most common ratio being “60/40,” a term that now acts as a byword for the most middle-of-the-road, meat-and-potatoes investment strategies.) Just four years later, after Bogle led a disastrous merger that he himself called “shameful and inexcusable and a reflection of immaturity and confidence beyond what the facts justified” (he also said he was “wrapped up in the excitement of the go-go era”), he was fired.

That same year, the Nobel-winning economist Paul Samuelson published a column titled “Challenge to Judgment” in *The Journal of Portfolio Management.* In rhapsodic prose, he concluded that “the best of money managers cannot be demonstrated to be able to deliver the goods of superior portfolio-selection performance.” In other words, money managers weren’t that great at managing money. (The trend holds true today. Over the past two decades, only 7 percent of actively managed funds beat the S&P 500.) As the *Financial Times* journalist Robin Wigglesworth frames it in *Trillions,* his comprehensive and impressively evenhanded history of the index fund, this “landed like a call for atheism published in the Vatican’s *L’Osservatore Romano.*” Not everyone was upset. Bogle, per Wigglesworth, found Samuelson’s premise “electrifying.” (The love would turn out to be, as it were, mutual. Speaking on the index fund in 2005, Samuelson said, “I rank this Bogle invention along with the invention of the wheel, the alphabet, Gutenberg printing, and wine and cheese.”) In his piece, Samuelson called for a passive fund that would simply mirror the Standard and Poor’s 500, an index tracking five hundred of the largest U.S. stocks. But Samuelson had wanted such a fund only because he thought it would show just how mediocre active managers were in comparison. Bogle, on the other hand, needing a fresh idea to set sail on, saw a business opportunity. So what if a fund’s returns were merely on par with the rest of the market? This was, apparently, what actively managed funds were getting away with while charging hard-working Americans high fees for their middling performance. If this new index-style fund’s fees were low enough—and they could be, given such a hands-off approach—*that* could be Bogle’s edge.

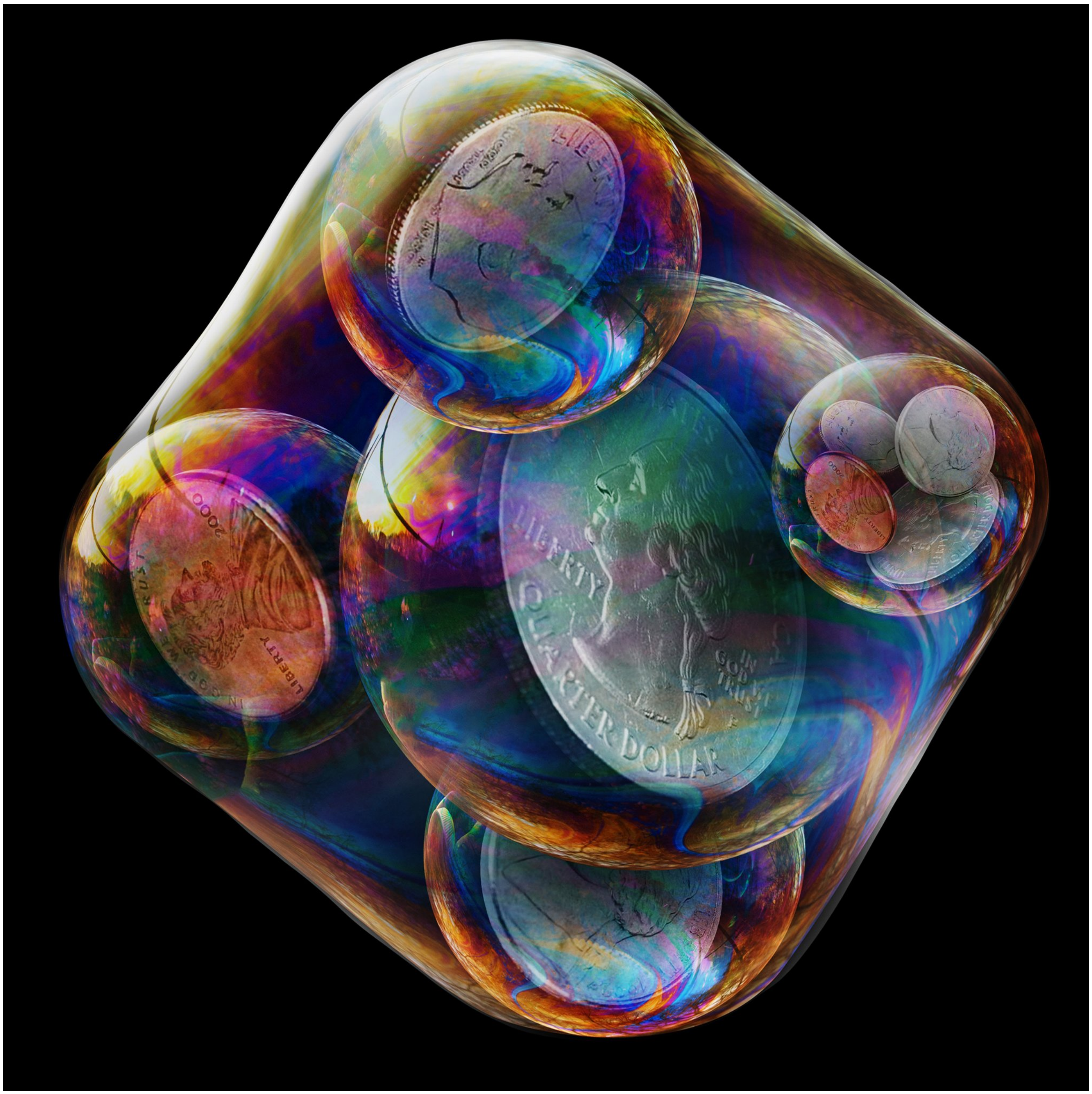
That September, disgraced yet still yoked to Wellington, he started a new firm within his old offices. He’d even hoped to use the Wellington name and, when rebuffed, struggled to find one for himself. Then, shortly before the company was set to launch, he came across a quote by Horatio Nelson, considered to be the greatest officer in British Royal Navy history: “Nothing could withstand the squadron under my command.” It’s easy to imagine Bogle, smitten by these words, his lips tracing their syllables, his eyes widening imperceptibly as he discovered that Nelson wrote this victory speech while aboard—what else?—the HMS *Vanguard.* (It helped that Bogle's second-in-command had heard from some ad execs that *V* was a strong letter.)

Vanguard's First Index Investment Trust (known today as the Vanguard 500 Index Fund) wasn't technically the first market-cap-weighted index fund. (This means that each stock in the fund is weighted proportionally to its total market value. Today, for example, Microsoft on its own commands around 7 percent of the Vanguard 500.) Nor was it particularly popular when it first launched. Bogle himself called it "an artistic, if not commercial, success." This was telling. For a man deeply passionate about the theoretical foundations of finance, he had a flair for the more human side of the business: courting the press, converting employees into evangelists, turning an investment fund into a moral crusade. He also had a healthy ego. When I asked Green to describe Bogle in one word, he tripled his allowance: "an incredible salesman." (Coincidentally, Green had used a factor of three earlier in our conversation, when estimating how bloated the valuation of the S&P 500 is.)

So how did we get from Bogle's first fund, which raised just $11.32 million—with such a paltry sum, Vanguard couldn't even sufficiently buy all the stocks in the index—to the more than $13 trillion passively invested in the U.S. stock market today? To the naked eye, passive's increase in assets under management (AUM) through the years mirrors that of the supposed performance of an index fund: slow and steady, with momentum building as gains compound (and occasionally dampening in times of recession). But a closer look reveals a new paradigm at play over the past fifteen years or so—a much steeper climb, which Green and other passive-investing Cassandras blame on regulation, monetary policy, new investment vehicles, and even public narratives. Or, as Minsky might call it: displacement.

These changes may seem disparate and disconnected, yet they all speak to a continually swelling, improbably bipartisan belief: that Americans are best off parking their savings in long-term, highly diversified, passive investments—and those savings better grow. The first shift goes back nearly fifty years and sets the scene for the rest. The advent of the 401(k) plan, set in motion by the Revenue Act of 1978, gave workers a tax-deferred savings account linked to their employer, and helped funnel money from pension plans (in which employees continue to collect income after they retire) into retirement plans, where savings are accrued *before* retirement and invested in securities, like stocks. (It should be noted that both systems, distinct as they are, tie benefits to employment—something that has long overtaken baseball as America's national pastime.) Over the next few years, this ruling was beefed up—in 1981, the IRS began allowing participants to deduct contributions directly from their salary—and by 1983, almost half of all large companies offered or were at least considering 401(k) plans. This, combined with the rip-roaring bull market of the Eighties, was a major boon for the likes of Vanguard, which introduced its first 401(k) program in 1983. At the start of the decade, Vanguard claimed around $3 billion in AUM; by the end of it, this had ballooned to more than $47 billion.

Vanguard's success only fed itself. The bigger its funds, the more the company could reduce its expense ratio (what investors spend on fees and other costs), which in turn sweetened its pitch to the public. In 1982, Vanguard's average expense ratio was 0.6 percent. By 2000, it was 0.27 percent. Today, if you buy Vanguard 500 Index Fund Admiral Shares, you'll pay just 0.04 percent; a good expense ratio for an actively managed mutual fund is currently ten to twenty times that. (Hours after I finished writing this tale of Vanguard's triumph, I received a text from my mom, addressed to her grandchildren, with photos attached: "These cute deer were in our backyard and were looking for you.")



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But you can now passively diversify with an even lower expense ratio, thanks to the next incarnation of indexing. Exchange-traded funds, or ETFs, are a child of the Nineties, though they didn't really get going until the Aughts. Vanguard began offering them in 2001, when there were roughly one hundred in total. There are now around eleven thousand. Unlike with a mutual fund, you need not sign some byzantine management agreement or scroll through a dull-as-death prospectus. ETFs also offer more transparency, no minimums, intraday trading (you can usually trade mutual-fund shares only once a day), and greater tax efficiency. Listed and traded like stocks, they're as easy to buy as shares of Netflix. The biggest ETF is State Street's SPDR S&P 500, ticker symbol SPY, which at the time of this writing manages more than $500 billion, about as much as the market values of IBM, Boeing, and Disney combined. Twenty-four hours a day, five days a week, you can now put a mere one dollar in SPY (or any of the other handful of ETFs that track the S&P 500), your dollar instantly split into five hundred pieces and invested in each of the companies, proportionate to their size, lucky enough to receive your fraction of a cent. But you can do so much more than simply buy ETFs. You can short ETFs, lend ETFs to others who want to short them, hedge with ETFs, buy ETFs on margin, and trade derivatives like options on ETFs. In this way, they can feel like the Monster to Bogle's Frankenstein, slipping from his grip, gaining a mind of their own, and, well, giving everyday investors just a bit too much discretion.

Bogle hated the more adventurous ETFs and called those who bought them "fruitcakes, nutcases, and [the] lunatic fringe." In 2019, eight months after he died, the Securities and Exchange Commission passed "the ETF Rule," making it even easier to bring ETFs to market. Suddenly, on top of ETFs for standard sectors, commodities, currencies, and foreign assets, there were ETFs for the cannabis industry (ticker symbol: MJ), the crypto industry (CRPT), and meme stocks (the now-defunct MEME). There was even an ETF tracking the yelly CNBC host Jim Cramer's stock picks (LJIM); this ceased trading on September 11 of last year. The past few years have also seen the dizzying rise of what a Morningstar analyst likened to "walking into the casino": leveraged and inverse ETFs, like one built to do the opposite of what Jim Cramer says (SJIM); SJIM, too, has been shuttered. Green himself has the rule to thank for the fund he runs, the Simplify Macro Strategy ETF; it is, of course, actively managed. Its ticker symbol is FIG, which Green references in the name of his Substack: "Yes, I give a fig."

Given their low cost, low barrier to entry, and diversity, it's no wonder that ETFs have siphoned off more and more market share from passive mutual funds. Recently, in fact, U.S. passive ETFs have overtaken their less-jaunty older cousin in AUM. (At the end of 2023, U.S.-listed ETFs hit an AUM of $8.2 trillion; the vast majority of these are passive.) But this town, it turns out, is big enough for both passive vehicles. Despite the ascent of passive ETFs, index-based mutual funds have only continued to amass assets, thanks in large part to their not-so-secret weapon: aging Americans. If you've ever wanted to ask, "Well, aren't *all* Americans aging?" you're not just an asshole; you've hit on exactly why passive mutual funds, unlike cable TV, won't go out with the baby boomers. As soon as you start a 401(k), fresh out of college—or, perhaps more realistically, in your thirties—you're likely already pouring money into passive mutual funds.

Green lays a great deal of blame for this on financial regulation. In 2001, the Economic Growth and Tax Relief Reconciliation Act (one of the "Bush tax cuts") increased contribution limits and enabled older participants to make "catch-up" contributions. In 2006, the Pension Protection Act encouraged companies to automatically enroll their employees in 401(k) plans (studies have found that this doubles enrollment) and laid the groundwork for target-date funds to become a major recipient of those savings. (These "funds of funds" start with higher-risk investments and slowly switch to more conservative choices as you near your target date, which is often decades in the future. The constituent funds can be actively or passively managed, but most are now passive, and only trending more in that direction.) Then came the SECURE Act of 2019, a basket of provisions that incentivized employers to offer 401(k) plans, let retirees wait longer to withdraw funds, and more. Whether or not these laws are responsible, as Green says, 401(k) plans have both exploded in size and become remarkably passive. Between 2005 and 2020, their assets skyrocketed from $2.4 trillion to $7 trillion. Between 2006 and 2020, the portion of those assets allocated to index funds increased from 17 percent to 41 percent, while those in target-date funds grew from 3 percent to an astonishing 28 percent. (This number is also weighed down by the fact that assets accrue over time, and target-date funds, being a newer product, are more prevalent among younger savers. Participants in their twenties now put roughly half of their plans' assets into target-date funds.) Though individual retirement account (IRA) assets aren't as likely to be in target-date or passive mutual funds, IRAs have long managed more money than 401(k) plans, have grown just as robustly, and are now responsible for more than a trillion dollars in index funds.

At the end of last year, it finally happened: total U.S. passive investments—whether in mutual funds or ETFs—controlled more of the market than actively managed funds. By this point, there's no denying that a boom has taken place. But then what about the next of the five stages? If passive investing is in fact a kind of bubble, where's the euphoria? There are certainly enthusiasts (the r/Bogleheads subreddit has more than four hundred thousand members), but it's impossible to square the idea of speculative rapture with a movement designed to be its very opposite. Against a backdrop of recent financial hubris—including meme stocks, crypto, NFTs, SPACs, SPARCs, and alternative private-public investments—index funds are the safe bet, the old standby, a choice so sound your employer makes it for you. The question is whether this is proof that passive investing can't be a bubble—or only a sign we need to rethink what a bubble can be.

"It actually turns out that they're not passive at all," Green says of index funds. "What they are is active managers with the world's simplest quantitative strategy. Did you give me cash? If so, then buy. Did you ask for cash? If so, then sell."

This isn't just a language quibble. Green believes index funds aren't merely measuring the market, they're now a major force of distortion—and their power is only accumulating.

Some of the consequences of passive investing are well known. For example, there's the so-called index-inclusion effect, in which companies (temporarily) rise in price after they're chosen to be included in an index. The math is simple: funds tracking that index will be forced to buy that stock. On November 16, 2020, the day it was announced that Tesla would be included in the S&P 500, its shares rose 13 percent. (Though the effect has seemingly dissipated through the years, some believe this is only because traders preempt such news, evening out its impact.) But Green doesn't appear as interested in how index funds affect individual companies. In fact, he's somewhat passive (sorry) when it comes to arguably the most prominent debate around indexing: common ownership. This is when index-fund managers become major shareholders in competing firms, spawning antitrust concerns. In one of countless examples, as reported in the *Harvard Business Review*, "Vanguard and BlackRock are the largest (non-individual) owners of CVS, Walgreens Boots Alliance, and Rite Aid (with State Street not far behind in two of the three)." Vanguard, BlackRock, and State Street—known as the Big Three—are also the three largest institutional holders of stock in General Motors, Ford, and Tesla; in JPMorgan Chase, Visa, and Citigroup; in Costco, Target, and Walmart. The trend continues across almost every industry you can think of. Together the Big Three now manage around 80 percent of all indexed money and control some 22 percent of the average S&P 500 company.

What Green is worried about is much more fundamental. It's about how the market works—or doesn't. "Buy low, sell high" has become a trope, something your corny uncle might have quipped, flipping you a nickel with a wink. But it's true enough. Investors should theoretically buy when something appears to be cheap and sell when they think it's expensive, and in this way the wisdom of crowds determines the fair market price. Indexing seems to follow the exact opposite logic. When a stock's price increases, it gets an even bigger piece of every new dollar invested in an index it's a part of (assuming that index is market-cap weighted, as most are)—which, of course, only helps to push the price up more. Green asserts that this effect has contributed to a top-heavy, overvalued market—one that even rising interest rates haven't dampened. (Microsoft, Apple, Nvidia, and Amazon currently account for about 21 percent of the SPDR S&P 500 ETF.) But if all this is true—if the system is set up to feed only the full—what should we make of another adage, one just as dependable as "buy low, sell high": "what goes up must come down"?

It's important to note that changes in stock prices don't affect the allocation of money *already* invested in an index—though such holdings, Green believes, are just as significant. Because dormant dollars add to a stock's weight in an index but don't influence future price movements, both active traders and changes in index-fund flows can have an outsize impact, leading to unanticipated volatility. In other words, passive investing makes the market *less elastic.* To illustrate this, imagine a meeting of ten co-workers, in which nine have strong opinions and one is passive by nature. The tides of the conversation may shift, but in a fluid way. Now imagine five are passive. Now, what about eight? The two active participants will take turns seizing the room's attention, the balance of power swaying with violent force. This concept is crucial to how Green pulled off the $250 million triumph for Peter Thiel. He theorized that a market movement of only 4 percent would result in a much larger shock wave of volatility. After finding an inverse ETF measuring the S&P 500's volatility that was "perfectly mechanical, perfectly inelastic," he made a big, bearish bet, using options for leverage. On February 5, 2018—also known as Volmageddon, after the dramatic spike in "vol" that occurred that day—the index dropped 4 percent and the ETF cratered, losing more than 90 percent of its value while filling Thiel's coffers.

But inelasticity isn't the only line you can draw from index funds to market instability. Consider, of all things, correlation. For such an anodyne word, it has the power to make money managers sweat straight through their fleece vests. Correlation, or how closely stock prices move together, tends to rise whenever volatility does, such as during the 2008 financial collapse. (It's worth noting that Michael Burry, one of the first analysts to foresee and profit from the subprime-mortgage crisis—as made famous in *The Big Short*—believes that passive investing is a bubble. He has even compared index funds to collateralized debt obligations, one of the causes of the Great Recession.) The correlation between, er, correlation and indexing is intuitive: What could cause stocks to move in lockstep more than investing in "the market" at large? Though some studies dispute this, an impressive body of evidence supports the link.

Green's ultimate doomsday scenario isn't nearly as complicated as any of these ideas. It is merely that—despite how swiftly passive investing is rising, and how many nest eggs are still left to snatch—indexing will one day reach its peak. Maybe this will be caused by a generational shift. Maybe the market will simply become saturated. Some speculate that the government will try to prevent this from happening, and Green believes they've already relied on monetary policy and regulation to "kick the can down the road"—a metaphor that meets the severity of Green's vision only if this can is full of nitroglycerin. (One example he cites is the SECURE Act of 2019, which Green thinks was passed, in part, to stave off 401(k) outflows.) Regardless, it's inevitable: at some point in the future, net flows will become negative. The passive-investing market will be, more or less, a roller coaster gliding over its crest. What then?

If index funds do in fact have "the world's simplest quantitative strategy," their one input—investors taking out more money than they're putting in—would set in motion the beginnings of a mass selling event. Or, in other words: the profit-taking stage. Green points out that while active managers normally keep a cash buffer of around 5 percent to soften outflows (or to jump at new opportunities), passive funds don't. This could hasten the sell-off, turning profit-taking into panic—a visceral plunge that would only be exacerbated by the inherent inelasticity and correlation of a passive market. Imagine again the room full of ten co-workers, eight of them passive. Sensing that the conversation has gotten out of hand, or just that their patience has been spent, the passive co-workers might become a force of their own, a majority voice declaring that the meeting is over.

Predicting how exactly such a crisis would unfold is, at best, a test of imagination. Of the passive-investing bubble, Michael Burry has tweeted, “All theaters are overcrowded and the only way anyone can get out is by trampling each other. And still the door is only so big.” He’s also said, “The longer it goes on, the worse the crash will be.” How long that is—and just how big passive will get in the meantime—is anyone’s guess.

Without euphoria, without a pervasive sense of greed, without the normal warning signs that keep out cautious investors, it’s possible that passive investing could grow to swallow the majority of the market. (For comparison, index-fund assets are already greater than both the mortgage-backed security market of 2008 and the entirety of the Nasdaq stock exchange at the height of the dot-com bubble.) And why not? It’s the first major financial vehicle to come with that sweetest of promises: we can all be in this together. Passive investing literally redefines “the market,” taking the idea of a zero-sum competitive arena and turning it into a tradable asset—one that anyone anywhere can invest in anytime they want. In this way, in every way, its collapse would be like that of no other bubble we’ve ever seen. Yes, there could be a nearly immediate evaporation of capital, including a great many households’ savings; worldwide panic leading to, and then exacerbated by, bank runs; an incomprehensible cascade of bankruptcies, foreclosures, and liquidations; distrust of the banking system, the dollar, and one another; and even an earthquake in the global political order. But more than any of that—all of which we’ve experienced before—the failure of passive investing would strip away every last pretense that the market is a collective good. Underneath that idealistic veil, in the broad daylight of a new epoch, we’d see the base unit of investing—the trade—for exactly what it is: an exchange that two parties sit on opposite sides of, each hoping that the other got the worse end of the deal.

I took my fears straight to the source: Vanguard. I was given an hour with Rodney Comegys, the global head of Vanguard’s Equity Index Group. Unlike Green, he did not invite me into his (makeshift) home. We did not even meet in person, but on Microsoft Teams, Vanguard’s teleconferencing provider of choice. There were no startling coincidences. There were no beasts to keep me on my toes. It was Halloween, but neither of us mentioned it.

Comegys is an apt representation of Vanguard’s brand. He is affable, patient, and optimistic. He says things like “we really are the place for the little guy,” and “I love index investing.” He was calling in from Vanguard’s headquarters, in the unassuming Main Line suburb of Malvern, Pennsylvania, a far cry from the dog-eat-dog world of Wall Street. Hours after our conversation—in what I like to think of as a test of Vanguard’s wholesomeness but was actually an abhorrently, impossibly idiotic mistake—I accidentally sent a draft of this article to the public-relations contact who arranged the interview. (The working title was “Stop Being So Passive!” with the current subtitle: “Does the rise of index funds spell catastrophe?”)

Vanguard passed the test with flying colors. When I asked the PR rep to delete the email, he immediately confirmed that he had, then wrote me the next day to “affirm once again” that he had done so without opening the document, and even shared a story about his team being on the opposite side of such a gaffe.

Comegys came off just as magnanimous, and in a way that inspired confidence. This made me happy. I am, as I mentioned, a passive investor, and I even have a 401(k) with Vanguard. (In fact, they sent me an automated email during the middle of my interview with Green, which was like getting a text from your wife while being hit on.) It was to a receptive ear that Comegys fed bits such as “We’re not like New York–based Wall Street firms that are spending money flying people around. We’re flying coach. In the old days, you had to put a nickel in the copy machine if you made a personal copy.” (He clarified that this is no longer the case.) But as the conversation went on, I found that I was beginning to channel Green. I wanted clarity, and perhaps even assurance that Green’s ideas could be refuted.

I asked Comegys if Vanguard’s strategy was built on the assumption that the market would only go up in the long term. After some explaining, Comegys said yes. I asked if regulation has paved the road for the success of index funds. He called this “a challenging question” and then gave a fair and direct answer. He noted that regulators have in mind the best interests of investors and then conceded that regulation has likely helped to propel indexing. I asked whether index funds not only measure the market but also sway it, specifically by inflating the valuations of companies. With great care, he underscored that the majority of the market is still made up of active investors, and that they have a greater say in pricing. Citing the rapid rise of passive investing, I asked if he would ever be worried about indexing taking over too much of the market. Again he invoked the active investor. I asked if index funds make the market more or less efficient. He replied that index funds aren’t the ones making the market efficient; this was the job of “those active investors who are fighting it out every day.” Again I asked, in so many words, if he worried about indexing getting too big, given his continual emphasis on the importance of active investing. He gave a long answer basically conveying that he doesn’t see evidence that indexing is currently too big. I asked the question again. He told me that there will always be active investors, that they are going to “exist for a very long time.” This phrasing stayed with me, because it’s similar to how my mom would respond when, as a kid, I’d ask her to promise that she and my dad were going to live forever.

Passive investing seems like the sensible choice for the average American. Active investors are crucial to keeping the market efficient. Index funds are quickly ascending and show no signs of slowing down. I now believe all of these things. What I don’t know is whether they can all continue to be true together. Green would say no. Comegys would waver. In an effort to widen my aperture, I sought out two even more disparate perspectives.

Lasse Heje Pedersen is a prestigious Danish economist. Green says he's "indebted" to Pedersen's work on redefining passive investing. He also named Pedersen when I asked him to list three people who would agree with him most. As soon as I started talking to Pedersen, I realized this wouldn't be the case. He is incredibly measured, pensive, and realistic. When I boiled down the two sides to (a) active investors will always be able to correct distortions caused by index funds and (b) indexing will get so big it will create its own gravity, undermining the effect of active investing, Pedersen replied that the first statement is more valid. He also said that everyone can make money together, and professed great faith in the market generally.

I had a much more casual conversation with Peter Jam (surname Jambazian), the dog psychologist Green ran into outside the café. I'd taken a picture of his business card, and when I called him out of the blue, he acted as though me peppering him with questions was the most natural thing. We discussed dog aggression and fear, the "movable territory" of Chihuahuas, and why dogs do not need meditation ("they are always living in the here and now"). When Jam told me that he doesn't really know anything about the market, this only made me crave his neutral, detached opinion even more. But every time I tried bringing the conversation back to investing, he started talking about guitars—buying them, fixing them, selling them. For more than ten minutes, I struggled to understand what should have been obvious: the guitar market was the most trustworthy market he knew. He sensed my hesitation. "Those are investments for me," he said. "You know, like, it can be so weird for you." He laughed. "But it's kind of like investments for me. I know their worth."

If this seemed to be the soundest investment advice I'd heard in weeks, I also wondered how, exactly, you can possibly know the worth of anything. Was Peter falling into the same trap as passive investors? Wasn't his confidence in the price of guitars based solely on past performance? I considered taking this idea back to Green, and was about to email him when I remembered something striking he'd said early on in our time together: "I constantly try to remind people—it's like, you know, just remember, we're a species who for three thousand years believed that a sun god transited across the sky, dragged by golden horses, right? We will believe almost anything."