The Ponzi Factor

THE SIMPLE TRUTH ABOUT INVESTMENT PROFITS

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QuantStyle Publishing

Delaware

www.ThePonziFactor.com

Published in the United States by
QuantStyle Publishing
Lewes, Delaware 19958 US

Book Design ©2017 QuantStyle Publishing
ISBN 978-1976949951

The Ponzi Factor: The Simple Truth about Investment Profits/ Tan Liu. — Edition 1.3.

Originally published in February 2018. Updated in October 2020.

The Ponzi Factor is a nonfiction book that describes what the Author witnessed and observes in the investment finance industry. The majority of the data are from primary sources.

All truth passes through three stages.

First, it is ridiculed.

Second, it is violently opposed.

Third, it is accepted as self-evident.

— Arthur Schopenhauer

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PREFACE

"The truth does not require many words. It's the lies that demand elaboration."

The Ponzi Factor is the most comprehensive research ever compiled on the negative-sum nature of *capital gains*—the money people make from buying and selling stocks. Unlike other finance books, this book does not assume stocks are ownership instruments. It investigates the ownership *assumption* and asks, "Why are stocks ownership instruments if the owners never receive money from the companies they own?"

History shows that the association between stocks and ownership came through dividends—a profit-sharing agreement between the shareholders and the businesses they owned, which is also why *all* stocks paid dividends before the 1900s. The idea of non-dividend stocks is a new concept that came about over the past century. At some point, the academics and regulators decided it was okay for companies to issue stocks and avoid paying their investors indefinitely. But their acceptance of this new form of ownership—*Ponzi assets*—was through tradition (and possibly corruption), but not with any research or logic.

The sad truth is, people in finance do not study history and don't know the difference between a *value* that comes from the exchange of money (a cerebral idea) and the *money* that is being exchanged (a possessable item). The product of this ignorance is a system and culture that treats Ponzi assets as ownership just because they're printed by a company. It doesn't matter if the company makes money, losses money, pays nothing, or prints as many shares as they want. If a company prints it, it's ownership. This kind of shoddy logic doesn't work in other industries, but it is the norm in finance.

The Ponzi Factor is one of the shortest finance books ever published, but it also debunks the foundational ideas in textbooks. The concepts in this book are based on self-evident logic, observable facts, and history, which is why it can be understood by anyone, from any background, at almost any age. If a kid is mature enough to run a lemonade stand, that kid will understand the information in this book. You will enjoy this book if you are a curious person because it will reconnect you with your intuitive understanding of ownership. But if you are a finance junky who thinks stocks are ownership and you don't care why…Then you're not going to like what you learn.

This October 2020 update will include this preface and a postface to briefly address the government's response to the coronavirus. The manuscript itself will not have any updates and remains unchanged from the version that was released in 2019. The main thing I want to address is that The Ponzi Factor was written under the assumption that the government and regulators were ignorant or neutral, but not *dirty*. However, the government response to the coronavirus showed that the SEC, Federal Reserve, and Treasury are *dirty cops* who will do whatever it takes to keep Ponzi assets from collapsing. We need to acknowledge the system for what it is: unfair and unethical. But we should also think about how to live with it.

Ponzi assets might not be ownership, but the U.S. government is backing them. They're not going anywhere for the foreseeable future, so do what you want with them. By the end of this book, you will understand exactly how stock prices are derived and why finance degrees and the concept of *valuation* are complete bullshit. This can help you make better gambling decisions because you'll know how to filter out the industry's noise. Ultimately, I don't care what people do with their money. I just want them to know the truth about how the stock market works.

INTRODUCTION

THE MOST DANGEROUS IDEAS ARE THOSE THAT ARE TRUE

Read the literature, but don't read too much of it. Read a bit to notice something that everybody is doing wrong. Something that just doesn't feel right. Read enough to develop your intuitions, and then trust your intuitions. Don't be too worried if everybody else says it's nonsense.

But, there is one thing…If you think it is a really good idea, and other people tell you it's COMPLETE NONSENSE. Then you are really onto something.

— Deep Learning AI Pioneer, Geoffrey Hinton

FOR A MOMENT, IGNORE EVERYTHING you know about stocks, the investment system and everything that took place over the past 400 years. Imagine yourself in the early 1600s at a time when no one knew what stocks were yet, but they were about to be introduced as a new investment instrument. You're going to hear two proposals, and I want you to think about how the early investors would have reacted to the introduction of stocks.

Proposal One:

A business owner approaches a group of investors and says, "I'm selling shares of my company. If you invest in my business, you'll receive a note that says you own a piece of the company, and if the business makes money, you'll receive a share of the profits."

Proposal Two:

A business owner says to a group of investors, "I'm selling shares of my company. When you invest, you'll receive a note that says you own a piece of the company. However, you won't receive any money from the business, and the company is not obligated to pay you anything, ever. But, you can make money by selling the note to other people. You might get lucky and get more than you paid."

Now, which proposal do you think early investors would have considered, and which do you think they would have avoided? Which one sounds like a legitimate business investment, and which one sounds like a shady scam?

History shows that when stocks were first introduced to investors, they were designed to perform like investment proposal number one, where companies paid *dividends* and shared profits with investors. But today, the common stocks that are being issued to investors behave like proposal number two, where shareholders receive nothing from the business, and the only realistic way investors can make money is by selling their shares to other investors.

One of the biggest myths about stocks is the idea that profits from stocks come from the earnings and growth of the underlying company. The assumption is, when a company makes money, they share the profits with their investors. But in practice, most public companies never pay dividends, and when

they make money, which can be millions or even billions, they keep everything.

The simple truth is, profits from stocks come from other investors who are buying and selling stocks. When an investor buys a stock for $10 and sells it for $11, that $11 comes from another investor, someone who will then start hunting for yet another investor who will give him or her $12, and so on.

This is actually a negative-sum situation because the underlying company isn't involved in the transaction. The investors are just cannibalizing each other for profits, and there are fees attached to every transaction.

It's one thing if everyone acknowledges this negative-sum gambling scenario and people just want to gamble. But the stock market is sold as a positive-sum investment system, and investors believe the system produces more money than they contribute. This is why most of the money that goes into the stock market comes from pension plans and retirement funds, and why 18-year-old kids are allowed to open online trading accounts.

Finance professionals will rationalize that it's not all about the cash, but also about investing in the hypothesized intrinsic value of the companies and point out how the US stock market has grown to more than $36 trillion in value. Now, this would be a valid argument if we lived in a world where investors buy stocks for the sake of having stocks and never want their money back. But the last time I checked, investors do want their money back. People don't buy stocks because they love stocks and think: *I love my shares of Google. I want to hold their stock forever and never get my money back.*

No. Investors buy stocks because they want to make money—and their only objective is to get more cash out of the system than they put into it.

Investment finance is different from other businesses because everyone involved—from the bankers to the analysts, to the advisors, to the investors and the companies that need investments—all want one thing and one thing only: cash. This is not the case when we look at a normal business like a restaurant. The restaurant that sells food wants cash, but the people who give the restaurant cash are end-users who want food in return, not more cash. This simple and essential fact is why the logic of investing is incredibly illogical.

When it comes to stock transactions, the person selling the stock wants cash, but so does the person who is buying the stock. There are no end-users. Everyone involved wants more money back than they contribute, and no one pays attention to where the money is coming from…It's probably because no one wants to know where the money is really coming from.

The problem is, the money investors take out of the system is coming from other investors who are putting money into the system, and the stock market is just a system that shuffles cash between investors. It is a system where current investors' profits are strictly dependent on the inflow of money from new investors. And, such a system is also known as a "Ponzi scheme."

Most people understand that a Ponzi scheme is a scam, but what most people don't realize is that a Ponzi scheme can also produce a lot of winners. It's not a scam where everyone loses money. A lot of investors who are involved—and unaware of the scam—can make money too. Bernard Madoff ran the biggest Ponzi scheme to date. After his $50 billion scam was exposed in 2008, investigators found that more than half of his accounts realized a profit. The total amount of money lost in his scam was greater of course, but as far as the accounts were concerned, more than half of them actually realized a net profit.

The fraudulent aspect of a Ponzi scheme is not its inability to produce winners. The issue is in the mechanics and where that money comes from, and how investors who make money are taking it from other investors who also want to make money.

One thing that tends to be true about Ponzi schemes (and scams in general) is that there's always something about the scenario that looks too good to be true.

The chart below is for Tesla Motors from 2010–2018. It shows how their stock shot up from $20 a share to over $380 a share during this nine-year period.

Question: How much money do you think Tesla made during this time? No need to think of an exact number. But do you think they made a lot of money…or a little?

Answer: Tesla lost $6.1 billion. Tesla didn't make any profit. They didn't break even. They lost $6.1 billion during this period.

Now, this is interesting because the early investors who bought into the company in 2010 could have made a lot of money while the company they owned actively bled out $6.1 billion.

SEC 10-K: Consolidated Statement of Operations Tesla Motors, Inc.	
Year	Annual Net Loss (in thousands)
2010	(154,328)
2011	(254,411)
2012	(396,213)
2013	(74,014)
2014	(294,040)
2015	(888,663)
2016	(773,046)
2017	(2,240,578)
2018	(1,062,582)

But how can that logically happen?

How is it possible for investors to walk away cash rich in profits with real money in their hands when the company they invested in never made any money?

In a legitimate investment scenario, that can never happen. Investors should only be able to make money when the company they invest in makes money. However, a situation like this can occur if the early investor's profits are dependent on cash from new investors, rather than the performance of the underlying company.

If you asked people in finance how Tesla's early investors could have gotten rich while their company lost billions, they will respond with something vague and infallible like:

"The market trades on future information."

"The price of a stock is a reflection of future earnings."

"The company has value and Tesla's going to make money in the future."

The Philosopher Karl Popper calls these unfalsifiable statements and classifies them as empirically uninformative pseudoscience ideas that cannot be proven right or wrong. And in this case, they also assume there are people who can see into the future. Financial professionals are masters at giving unfalsifiable answers, but what they will never allude to is the clear and provable fact that Tesla's investors' profits came from other investors. And the reason why they don't want to

acknowledge the obvious is because they don't want to think of the stock market as a system that shuffles money between investors, just like a Ponzi scheme.

I didn't sift through hundreds of companies to find an example like Tesla. I just thought of some popular companies that everyone probably knows, checked to see if they had a nice-looking chart, and looked into what they reported to the Securities Exchange Commission (SEC). Tesla was the second company I investigated to find such an example.

IF THE STOCK MARKET IS SIMILAR TO A GIANT PONZI SCHEME, then why are there so many textbooks on stock analysis? Why is it taught in schools, and why do finance academics and professionals treat it as something legitimate?

Do not underestimate the power of fallacies.

The sad truth is, falsehoods and immoral practices can be treated as normal and routine and persist for centuries before corrections are made. Remember that it took humanity thousands of years to realize that human slavery is a barbaric practice that is not essential to a functioning economic system.

The investment finance industry, especially the portion that deals with stocks, is primarily built on fallacies. The reason why finance professionals do not see the stock market as a Ponzi scheme is because they believe the credibility for an idea rests on repetition, tradition, and people who recite it, rather than proof, logic, or facts.

The **FIRST** fallacy and I believe the most fundamental falsehood that leads to other false ideas, is the notion that stocks are equity instruments that represent ownership.

Finance professionals will argue, "The stock market can't be a Ponzi scheme because the value of a stock represents value in a company, and ownership instruments are being exchanged in the transactions." But, there's practically no truth to this idea

because the value of a stock has no *legitimacy*. It is just an arbitrary number derived from a Ponzi-exchange process, and the value is not backed by anything.

A share of Google can trade around $1,100, but Google explicitly states in writing that the par value of their stock is only $0.001. Google also says they do not pay their investors any dividends, and their Class C shareholders have no voting rights. So, if you own a share of GOOG, you won't receive any money from Google's business activities, you won't be allowed to vote on any corporate issues, and Google isn't obligated to pay you anything more than $0.001 for that share you bought for $1,100.

Does that really sound like a legitimate ownership instrument?

If I mailed you a chair that was missing three legs, the seat cushion and the backrest. Whatever I sent you, can I really call it a chair?

For a value to have legitimacy, there must be someone or something in place to back that value. The value of the dollar is backed by the United States government. The value of a house is backed by the intrinsic physical value of the house itself. But, the value of stocks is not legitimately backed by anyone or anything.

The idea that today's common stock represents the real intrinsic value of a company is a baseless and unproven idea, and if people are selling such an idea to make money, then it is also a *fraudulent idea*.

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* The analysis of the stock market is based on observable scenarios that are foreseeable in practice. It ignores hypothetical scenarios and unforeseeable actions—such situations are speculative and usually immaterial.

* The analogy with the chair was inspired by a line from Lee Smolin's book *The Trouble with Physics.*

The reason why stocks are assumed to be equity instruments comes from history and what was described in proposal number one.

Before the 1900s, stocks paid *dividends*. History shows that stocks were designed to be legitimate equity instruments with a profit-sharing agreement between the shareholders and the companies they owned. *Capital gains*; the Ponzi profits from other investors in the buy low, and sell high gamble was meant to be a secondary form of profit. It was never meant to be the primary or only way for investors to make money. Stocks were not intended to be Ponzi assets that are destined to be shuffled between investors indefinitely, but they mutated in a very disturbing way over the past century. Finance people refer to stocks as "equity" instruments, but it's nothing more than an artificial label. Today's stocks are fundamentally different things from the equity instruments they once were.

The **SECOND** fallacy, which is a product of the first fallacy is the idea that an asset value is the same thing as cash. When people see a share of Google that's trading at $1,100, they'll just assume that's $1,100 in real money. However, an asset value that comes from the exchange of money is fundamentally different from the money that is being exchanged.

The value of a stock is a cerebral idea. It is a figment of our imagination, which is why the price can rise and fall sharply at any given moment. The value is not backed by anyone, which is why investors don't know how much their stocks are backed by or when they will see that money. But what we do know is that if someone buys a share of Google for $1,100 and it drops to $900, Google will not make up that $200 difference and Google has no obligations to pay that person anything close to $900 either.

On the other hand, real money is an instrument for trade that is designed to serve as a medium of exchange for goods and services. It is in both physical and electronic form, and for

the most part, it is finite and traceable. You can carry it in your wallet or store it under your mattress. It is legal tender that is issued and backed by the government. It is what investors ultimately care about and want, and why companies like Google need to print stocks to get legal tender.

As of June 2019, the NASDAQ and NYSE had a combined value of over $36 trillion and growing—and here I am, writing a book about the imminent demise of the stock market. The reason why this astronomical number and potential future market growth doesn't concern me is that a $36 trillion market value means investors believe they are entitled to possess $36 trillion in real money. But there is only $1.7 trillion of cash circulating in the US economy, and $3.3 trillion in existence in the entire US economic system, which includes the money in your wallet right now.

Cash and asset value are nothing alike. They are from two entirely different worlds of our reality and $36 trillion of stock value = $0 in real money. If the $36 trillion of market value, or even a fraction of it, had any truth to it, we should be able to close the market tomorrow and send investors home happy with their stocks and all that value. But we all know what would really happen. If the market closed tomorrow, every investor holding stocks would be in a world of hurt trying to realize the value of their stocks without the inflow of cash from new investors. Stocks are priced in terms of cash, but they are virtually worthless unless they can be converted into cash.

The **THIRD** fallacy is the idea that the stock market is positive-sum for investors and the system produces more wins than losses. This idea is essential to the existence of the investment finance industry because it lets finance firms label their products and services as *investing* rather than *gambling*.

However, the positive-sum idea is an unproven assumption.

The obvious way to validate the positive-sum assumption is by adding up all the money investors have won and lost over

the years and see if that sums up to something positive. But, that's not possible because no one knows how much money people have lost. There are no databases that track investor losses, and no one knows how much investors have been winning or losing over the years.

Another way to validate the assumption is to follow the cash flow of a typical stock transaction and see how the money that enters the system can exceed what investors contribute. But, we did that earlier, and it shows a negative-sum scenario.

The main reason why people think the stock market is positive-sum is that they believe in the second fallacy, and think: *People must have made money because the stock market has grown to $36 trillion.*

But a real positive-sum situation needs to consider the wins and losses of all the investors, not just the early investors but also the last investors—those who are holding $36 trillion of imaginary money that doesn't exist.

I STARTED MY CAREER PASSIONATELY watching CNBC and studying stocks at a hedge fund. I believed in the investment system, and I still believe there is a need for financial services from banks, savings and loan programs, insurance products, and tax advisors. There are legitimate investment activities that involve tangible assets like real estate and debt instruments like bonds, which are also used to help businesses raise capital.

There is value in the efficient allocation of capital. But there is a massive difference between agents who help connect investors with companies and agents who make commissions by shuffling money with imaginary instruments. There is something fundamentally wrong with the assumption that we can create an infinite amount of imaginary paper like stocks, which have no legitimate promise of repayment from anyone and

turn those stocks into real cash or tangible assets, which are finite and limited in quantity.

My skepticism of how the investment system works started in school. Classes on economics that talked about the benefits of trade, exchange of knowledge, and debt instruments all made sense. Those ideas weren't perfect and always produced both winners and losers, but the logic behind why those ideas could net more winners felt reasonable. And more importantly, as imperfect as some of the ideas are, they were still trying to address real problems that arise naturally, like how to feed a growing population with limited resources.

In contrast, finance academics try to solve artificial problems created by other people in finance. There's nothing organic about the stock market and situations where investors can make money while the company they owned lost billions. When it came to classes with topics involving stocks or other forms of synthetic financial instruments, something about the logic always felt wrong—as if something deep and fundamental was completely missing. I saw a lot of dollar signs in textbooks representing the value of stocks, but I also knew that stocks are fundamentally different from real dollars. You can't take a share of Google to the grocery store and get food with it. But when the books attached the dollar sign to asset values, it made it look and sound like you could, and something just didn't feel right about that.

At first, I just ignored those concerns because they seemed so basic. It was unimaginable to think that a prestigious industry like finance, with so many well-educated people, could be going about their day-to-day activities without acknowledging the difference between an imaginary asset value and real cash currency. I just assumed that all those smart people on Wall Street must have known what they were doing and thought: *They are experienced, and I'm just a novice. I must be missing something. I'm sure I'll figure it out later.*

But the more I learned about the investment system, the more I realized that these simple, fundamental questions are completely unanswered and brushed off as unimportant. The industry focused on developing sophisticated asset pricing models and other convoluted ideas built on top of layers of complications and assumptions. But basic foundational questions—like "Is the stock market even positive-sum for investors?" and "Are stocks even legitimate equity instruments, to begin with?"—were ignored entirely and didn't interest anyone either.

It wasn't easy to accept at first, but over time, it became impossible to ignore and deny. The industry is built on the fundamental assumption that money can grow on trees and that it is possible to create cash by shuffling ambiguous promises. Yet they never did anything to validate this assumption.

The author Michael Lewis did a remarkable job exposing operational fraud through his books *The Big Short* and *Flash Boys*.

His books shed light on the inner workings of elaborate and complex deceptions in the industry.

My goal is to explain *one pure deception* that makes up the infrastructure of the industry—something obvious, but something we've all been taught to ignore. This book is not just another story about how some people in finance pulled off yet another scam. Nor is it about how banks and complex systems are broken and riddled with conflicts of interest. Instead, it will elucidate something far more fundamental—the origin of investment profits—and show why the stock market itself, even in the absence of insider trading and other headline-worthy crimes, is a scam at the foundational level.

I am certain the reason we have highly improbable market crashes—which can instantaneously wipe out trillions in market value—and an endless list of compliance and economic issues is because systems like the stock market are not legitimate structures, to begin with, and it is not designed for investors to prosper.

I think everyone can agree that there are two inherent characteristics when it comes to a scam. One, someone made a lot of money. And two, something about the scenario doesn't make sense. Tesla's stock shot up from $20 to more than $380 a share, so someone made a lot of money. This also happened while the company lost $6.1 billion. You be the judge.

If the stock market is similar to a giant Ponzi scheme, and it's as obvious as tracing the cash flow of a typical stock transaction, then why is it legal? Why are companies allowed to issue Ponzi assets, and why are finance professionals allowed to sell them to investors?

Where are the regulators and why aren't they doing anything about this?

Unfortunately, I have no answer for this. I do not know how the SEC can ignore such apparent issues. My best guess is that

the regulators are either in denial, confused, or just plain stupid—and I use the word "stupid" with great care and caution.

If you look at the SEC's website, you will find blatantly contradictory information. In one area, they define a Ponzi scheme as:

> *"An investment fraud that involves the payment of purported returns to existing investors from funds contributed by new investors."*

But in another area they advertise the following as a way for investors to make money with stocks:

> *"Capital appreciation, which occurs when a stock rises in price."*

From my experience, the biggest scams are legal in practice. It's the stuff that regulators and newspapers do not focus on because they are constructed from the ideas taught at universities and treated as quotidian positions in the job market. Those who engage in these activities do not look or sound like criminals. They have beautiful offices in prime locations and advanced degrees from respected schools like Harvard, UC Berkeley, MIT, and the like. They are female, male, young, old, Asian, White, Black, Hispanic, Middle Eastern, etc. They have great work ethics, and most of them are not bad people. But good people can do bad things without realizing it—and intelligent people can choose to remain ignorant of their own reality.

People are much too intelligent to be brainwashed, but we can be miseducated, and it's tough to unlearn something after we've learned it. The real problem is not Wall Street, which

*For people who are unfamiliar with stocks and missed the irony: What the SEC defines as capital appreciation can only be realized through the process of investors buying and selling stocks and exchanging money with each other—which is exactly how the SEC defined a Ponzi scheme.

represents the finance industry at large, but the universities that teach unproven ideas, so people can work on Wall Street. Finance professionals have been programmed to think of imaginary instruments as things with real intrinsic value. But it is the universities that are programming these false ideas without validating them.

A great inspiration for why I decided to write this book is Dr. Nassim Nicholas Taleb. His book *Fooled by Randomness* helped flip a switch in my head and changed the way I thought about the industry. I read the book in 2008 while I was working for a hedge fund that was racking up fictitious, but legal, accrual accounting profits while the financial system at large was on government-funded life support. Dr. Taleb's book validated a lot of what I already suspected about the investment industry. But the thing that really hit home was knowing that there was someone else out there who didn't think like the rest of the industry did—and realizing that sometimes the entire world really is crazy. Just because you think differently doesn't mean you are wrong.

My critics will say this is the work of a conspiracy theorist, and my words are more likely to bring trouble than success. But, the annoying thing about truth is, it's hard to ignore after you see it… And, it really bothers me when our world's biggest scam artists are lauded as the world's wisest investors and innovators. Now, the nice thing about truth is, it's not concerned with criticism. Truth is grounded in logic, and logic will transcend the test of time. Whether people realize the truth today, tomorrow, or centuries from now, the truth in these pages will be realized because knowledge evolves towards what is true.

CHAPTER 1

A-Cruel Accounting

YOU DON'T HAVE TO MAKE PROFIT TO REPORT PROFIT

April 27, 2010: Goldman Sachs hearing before the Permanent Subcommittee on Investigations.

Senator Tom Coburn questions Goldman Sachs's CFO David Viniar about how his firm recorded $12.9 billion of government bailout money.

> Sen. Coburn: *In the year it should've been paid, but it wasn't. It was paid later, so that should've enhanced your revenues by a certain percent, a number of billions of dollars. Is that correct?*
>
> David Viniar: *Eh…no…the eh…*
>
> Sen. Coburn: *You didn't recognize the payoff ($12.9 billion) from those insurance products to you as revenue when you got it from AIG?*
>
> David Viniar: *No, we did not. That position is marked to market…they were just basically paying us the money they owed us. But because we mark all our positions to market, that revenue had come in already.*

"That revenue had come in already?"

How did Goldman Sachs collect the money AIG owed them before AIG received the money to pay them?

Someone once asked me, “What would you say are the things that surprised you most about working in finance?”

I responded, “First of all, there is no certainty in what we do. Ever. You can make or lose as much in a day for investors as you can in a year.” Then, I paused, thinking hard about how to express the third point as simply as possible, and finally said, “And there is a difference between making a profit and accounting for it.”

I ARRIVED IN LOS ANGELES in late 2007 hoping to get a job in quantitative analysis. By this time, I had already worked for a hedge fund that collapsed in Fairfax, VA, and a trading firm out of Shanghai.

My first two interviews were with Washington Mutual and Bernstein Alliance. From the preparation interviews with the headhunter to the actual interviews with the office managers, I could tell that sales—convincing others to hand over their money—was going to be a more significant focus than research. There were a lot of financial advisor positions in LA, but analysis jobs were hard to come by. However, I did have a warm lead that I was planning to explore.

My former boss in Virginia introduced me to a hedge fund called HB Onyx in 2006. They had an office in LA, and I was already working with them on a commission basis concerning raising capital for their fund. I wasn’t counting on them for a job but knew it was only a matter of time before we met in person. I also knew their strategy had been generating around 18% annual returns, and their fund grew from $20 million to over $100 million in the previous two years. So, they were probably hiring.

*Aliases were used for certain people and firms in this chapter.

I had lunch with Leonard, a young French gentleman in his late twenties who had started working for HB Onyx at the same time I started with my old fund in Virginia. He showed me around their offices at what was then called the Wachovia Building on Federal and Wilshire. They were in the process of renovating a much larger space on a higher floor as well as hiring people for all kinds of positions, including analysts.

He talked about how much they had grown over the past year and how much money they were managing. He was extremely proud of where he was and what they achieved. I still remember him saying, "We've accomplished so much already. If we can do all this when we're this young, imagine what we can do when we get older."

It felt humbling.

We were two professionals reconnecting but at very different levels. A year and a half before, we had both been entry-level people starting our careers at small hedge funds. I even wrote a letter to the State Department explaining the kind of work we did to help Leonard advance his visa status. Now, I was still looking for an analyst job while he was a junior partner at a hedge fund and in charge of hiring analysts.

What a difference a year makes when you work for the right fund.

I went home after lunch, sat in front of my computer for a while, and said to myself, "It doesn't matter where I am now but where I am going." I wrote a humble email to Leonard, asking HB Onyx to consider me for one of the analyst positions. A week later, I interviewed with the senior partner Walter, and HB Onyx welcomed me to their team.

I was thrilled to be a part of it!

HB Onyx was a fast-growing firm with smart, ambitious people I could learn from, and I believed they could provide an environment for me to grow. I even had a dream a few weeks

after I started, where one of the top investment banks (I think it was Goldman Sachs) offered me a job in LA, but I turned it down because I thought HB would provide more growth opportunity for my career.

WHAT APPEALED TO ME most about HB Onyx was their strategy. I actually believed they could deliver what they were selling: an investment strategy that helped people make money with a high degree of certainty.

HB Onyx was involved in a *premium financing* strategy that dealt with an esoteric market called life settlements (LS) where investors invested in life insurance policies. Investors in the LS market purchase life insurance policies from insured individuals for a lump sum of cash. After they own the policy, the investors will continue paying premiums to keep the policy active and, when the insured passes away, collect the death benefit as payment for the investment. Investors buy the financial interest in the policy, but the insured's name and time of death is still the determining factor for when the policy will pay out.

The concept is essentially a gamble on the insured's mortality. The sooner the insured passes away, the quicker the investor can collect the death benefit from the insurance company. The longer the insured lives, the more the investor will have to pay in premiums to keep the policy active.

Unlike stocks where anyone can create a company and issue billions of shares, unwanted and active life insurance policies for elderly individuals in their seventies are extremely hard to come by. Usually, if someone did have a policy at that age, they probably had it for a while and wanted to keep it. And if they didn't have a policy, chances are they just didn't need one or want one.

A genuine life settlement policy might end up on the market with a scenario that looks like the following:

A father in his forties buys a life insurance policy to protect his family financially in case he passes away unexpectedly. Fast-forward thirty years and nothing unexpected has happened, the kids are all grown up, working—financially secure—and with families of their own. Dad is retired and doesn't need the policy anymore. At this point, he just wants to stop paying premiums on the unwanted policy. He has a few options, one is to cancel the policy with the insurance company, and another is to sell it to an investor in the LS market. The only thing the insured cares about is not paying premiums, and both options can achieve that.

As you can imagine, these scenarios are rare, which is why genuine LS policies are scarce.

The life settlement market was booming in 2006. There were a lot of investors with cash but not enough policies for sale on the market. According to HB, these policies were in such high demand that investors were buying them for twice the cost of the premiums required to take out a policy. This means if someone purchased a life insurance policy with $5 million worth of coverage/death benefits, and paid $400,000 in premiums for the first two years, investors were ready to buy that policy for $800,000 when it hit the market.

If you can take out a policy for $400,000 and sell it for $800,000, you would want to take out and sell as many as possible. But again, life insurance policies, unlike stocks, cannot be created or replicated with ease.

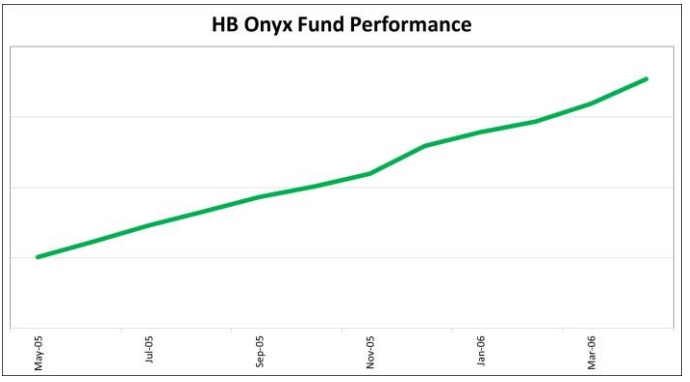
Finding elderly insured individuals with a lot of coverage they no longer needed was difficult. It was much easier to find elderly individuals who didn't have any life insurance and convince them to take out policies regardless of whether they needed it or not. And this is where HB's premium financing strategy came in.

HB offered what were essentially two-year risk-free loans for insurance premiums, so individuals could take out life insurance policies they didn't necessarily want or need and, later, sell it in the life settlement market. HB believed the policies were worth twice as much as the premiums they were lending out and used it as collateral to secure the loan. They attached what they called a *put option* to all their loans, which basically said the borrower has the right to sign the policy over to HB and be fully released from their loan obligations.

The borrower, let's call him Mr. Smith, didn't have anything to lose. Mr. Smith might not need an insurance policy with $5 million worth of coverage, and in most cases, couldn't afford one. But if he took out a policy, HB was going to pay for everything through a loan. He pays nothing out of pocket, and he'll receive coverage for two years. If he sells the policy for a profit when the loan comes due, then great. And if not, no problem; just exercise the put option—sign the policy over to HB—and walk away. This was why people like Mr. Smith got involved.

It was an ideal situation for HB too. They were issuing loans on insurance policies that were going to be worth twice as much as the loans. If they lent out $400,000, the loan was secured by something they thought was worth $800,000. This left a lot of room for fees, profit, and even mistakes. It seemed like a win-win situation for everyone involved…except maybe the insurance carriers, but that wasn't our concern.

When I joined them at the end of 2007, HB had been reporting steady profits month after month since 2005. The strategy was not correlated with the stock market and did not suffer any associated rises or dips. Their performance chart looked like a beautiful, smooth, upward-sloping curve. And with a performance like that, HB had investors kicking down their doors with cash.



HB's problem wasn't a lack of money, but finding seniors who wanted to finance the premiums for life insurance policies they didn't need. They worked closely with independent insurance agents on that end because, for liability reasons, they wanted to maintain the position that they did not sell life insurance policies—but only financed premiums. However, it was obvious that HB gave the agents a way to sell free life insurance to people like Mr. Smith.

MY JOB WAS TO ANALYZE how much the policies were thought to be worth at the end of the two-year loan. We used an industry-standard valuation model designed by actuaries, which took into account three primary factors:

1) **Cost of insurance**: The cost of premiums relative to coverage.
2) **Life expectancy (LE):** How long the insured should live for, which is also how long the investor should expect to pay premiums. (This was quoted in months.)
3) **The internal rate of return (IRR):** The expected annual return of the entire investment.

We had no control over the first factor. The cost of insurance was a part of the insurance contract/policy offered by the insurance company, so it wasn't something we could change.

There wasn't much control over the second factor either. Life expectancy reports were issued by third-party underwriters, who reviewed medical records for the insured. The big underwriters at the time, 21st, Fasano Associates, and AVS Underwriting, all had different models and approaches. They all looked at the same medical records, but one might credit Mr. Smith's LE a few months for playing crossword puzzles and keeping his mind sharp, while another might ignore it altogether. Sometimes we would get three reports with similar numbers like 175, 180, and 182 months. But sometimes there were huge discrepancies with gaps of more than 60 months. There were a lot of bright people working at these firms, but in the end, it was all opinionated math, and nothing could be validated until Mr. Smith actually died.

Shorter life expectancies made the value of the policies higher because it implied a quicker death and earlier payoffs for the investor. Hypothetically speaking, someone could ask Mr. Smith to eat a salty sandwich and see the doctor for a poor checkup, hoping the underwriters would deduct a few months from his LE, but that didn't happen often.

The third factor was the internal rate of return, something we had complete control of. An investment is priced by its future cash flow, how much money goes out and how much money comes back. If the premiums were paid monthly, the cash flow for a life insurance policy would look like a small outflow every month for the premiums and one big inflow from the death benefit when the insured passes away. The IRR is the annual rate of return on the entire duration of the investment.

The important thing to understand is that the IRR is a number *we set manually*. The lower we set the IRR, the higher the policy's value appeared in the model and vice versa. In late

2007 and early 2008, HB believed the market was pricing policies at around 14% IRR, so that's the number we used in our model.

I plugged all this information into the model, got a value, and made a recommendation. I was working with numbers at a fast-growing hedge fund with what seemed to be a flawless strategy. It was everything I had envisioned and wanted a few months earlier. I was proud of where I worked and optimistic about where we were going. I came to the office early and stayed late. I even made it a point to eat a light lunch to maximize my productivity through the afternoon.

I had already gone through the collapse of one hedge fund before joining HB, and I didn't want to see it happen again.

The first few months were great. We moved into the newly renovated offices and received gifts from happy investors who were getting annual returns of 18%. Our strategy was quantitative, straightforward, and had a lot of certainties.

That's what I believed…for the first few months.

AS I BECAME MORE FAMILIAR with the valuation process, I started to notice some holes in our approach. I began to realize that several pricing factors were assumed, and when there are assumptions, there is uncertainty.

Of the three analysis factors, the IRR concerned me the most because it was something we set manually. We used 14% because Walter said the market was using 14%, but this wasn't something anyone could confirm or verify. From what I saw in early 2008, no one at the office knew anything about how to sell a policy on the life settlement market.

The LS market wasn't like the stock market or real estate, where you can go online and see how much things are selling for. The deals were done privately, with brokers, phone calls, and emails. No one was obligated to report any data on the

transactions. Our model might say the policy was worth $800,000 because we set the IRR at 14%. But if a buyer set their IRR at 15%, the value would drop to something like $700,000, and if they set it at 16%, it would be even lower. In the end, the buyers were the ones with the cash. We couldn't exactly tell them to pay $800,000 just because we think they should be earning 14% instead of 16%.

The LEs provided by the underwriters were also different, at times with wide variances, like a four-year gap for someone who was expected to live for a maximum of fifteen years. We took the average number from the reports we received, but some firms used a weighted average, which means they would give more credibility or weight to one underwriter over another. Weighted averages weren't any more accurate because the underwriter's numbers were opinionated, to begin with. My guess is, it made the firms think they looked smarter for having a slightly different opinion, which is common in finance. This also showed how fragile these assumptions were. People could have opinions about factors that looked fixed and express biases by using different weighted averages.

The numbers we generated looked solid because they came from a computer model that was designed by programmers and actuaries. But the truth is, our model was just giving us outputs based on our inputs. We could manipulate averages and change the IRR setting to make the model spit out whatever we wanted.

We were in charge of designing the process and making up the formulas. We picked which factors to plug in, but we had no way to validate the accuracy of our projections until the loans were repaid or the policies were sold. This was when I realized that old saying "numbers don't lie" is complete bullshit. The fact is, numbers can lie because people can lie. Ultimately, we control the formulas and factors. Numbers will do whatever we want them to do.

THE OPINIONATED MATH CONCERNED ME, but what really confused me were the returns HB Onyx was reporting. HB had been reporting 18% annual returns. Their performance chart looked like a smooth, upward slope with no volatility, jumps, or dips. But where was this profit coming from?

I understood that they issued loans rolled up with fees, but all they were doing was lending out money. Nothing was paid back. They started financing policies in late 2006, so when I went to work there in 2007, the two-year loans had not come due yet. How could they be reporting these fantastic profits when none of the loans had been paid back?

The answer is, it was recorded with a process called *accrual accounting*. HB was reporting unrealized phantom profits in real time on the assumption that it would materialize in the future. It turns out that such a smooth, upward-sloping line on a performance chart can only be created with accrual accounting, as the profits reported are assumed, and therefore, are not subject to any real gains and losses.

Applying the accrual accounting process to a more transparent business would be like a restaurant that reports profits every month for two years without selling any food. Then, on the last day, expects to sell enough food to make up for what they reported over the two-year period. It seems ludicrous when we apply this accounting process to a real business, but it is the norm for convoluted investment transactions, like premium financing and other esoteric financial strategies.

Accrual accounting lets firms account for imaginary profits in real time, even when there is no guarantee it will ever materialize in the future. Two essential conditions make this type of accounting possible: One, the asset has to be illiquid, and two, the asset has to be difficult to price. This makes the assumed value of the asset impossible to validate and refute, which essentially allows the fund manager to mark the value of the asset according to his or her imagination.

Stocks are liquid. You see the closing price every day. You can make an assumption about what the price will be in the future, but you will still need to report what it did that day, week, or month. Real estate is less liquid. The value of a house is usually derived from how much neighboring homes in the area recently sold for. But you'll never know how much a house is worth until it's sold. Data on the life settlement market is practically nonexistent. The policies sold in the market are usually sold only once, and no one has to report anything.

HB Onyx was issuing loans based on the values we generated in our model—the same numbers I could manipulate by assuming one LE is better than another and adjusting the IRR—and reported profits based on how much money they *should* make later.

In the real world, you can say you made a profit when you buy something for $5 and sell it for $6. HB bought for $5 and assumed it would sell for $6. They bought stuff, then bought more stuff, and reported annual profits of 18% without selling anything. You can't do that with a legitimate business. You can't do that with anything outside of finance. That's not the norm in the real world, but it's very normal in finance.

THE TRUTH HIT ME about six months into my position, in early 2008. I realized that despite my steady paycheck, the new office, and the fancy cars and condos that the partners owned, HB Onyx hadn't made any real profits at all. Their success was not the result of intelligence, ingenuity, or even luck, but how they used accrual accounting.

Their growth from $20 million to over $100 million basically followed a process where they issued loans and reported the accrual returns of 18% per year. As investors flocked in with more money, HB would issue more loans.

The realization was both scary and exciting. An image of our office rocking on a big, pink bubble kept playing in my head. I wasn't happy about the discovery but felt a ping of excitement from it. A magnificent catastrophe was about to unfold, and there's always a degree of entertainment value in that. I didn't start it, and I couldn't stop it…so, shit, I may as well enjoy the show.

For some reason, the rest of the office was completely oblivious. The other analysts felt they were in a nice office with routine duties. They didn't go through a fund collapse like I did before I joined HB, so I can't fault them for thinking everything was stable. The lack of concern from the partners, however, was a little perplexing. They constantly bragged about how much money they made and how they wanted to move to a bigger office on a higher floor. When I heard them talk, I just kept thinking: *BUT YOU HAVEN'T MADE ANY MONEY!*

It was early 2008, and the economy was starting to sour due to what was happening in the real estate market. No one at HB cared because it didn't affect life insurance values—the same values we projected from our own computers. I remember a day when Leonard walked into the office with a newspaper in one hand, calling out, "I love this economy!" as he read about rising unemployment figures. He thought it was great—the economy was going to hell, but we were making money because we were reporting unrealized profits of 18% a year.

Walter walked out of his office one day with a smile on his face, the kind you try to conceal but can't. He put his hands together, paced a little, and quietly said to someone, "All right, it looks like I made more money than I thought." All I could think was, *Eh…No you didn't.*

My manager, Aaron, went around the office at the end of one of those months telling everyone, "We hit a record month!" because we had issued something like $10 million in loans. In reality, this meant nothing. Any idiot can issue loans

and buy stuff. Spending money is easy. The real trick is getting it back.

I couldn't contain myself and whispered to the other analysts, "A record month for us, or the insurance companies who took our money? Only time will tell."

There were only two times when I heard someone else at the office express concerns about the imaginary profits we were reporting. The first time was Karen, an analyst who started at HB the same time I did. During the first few weeks on the job, she had mentioned, with a hesitant look on her face, how all the profits we were reporting were *accrued*.

We were both learning the basics, and I assured her by saying, "Yeah, that might be true now, but we'll make it back later. These guys know what they're doing." The truth is, I barely knew what accrued meant back then, but she clearly did.

The second time was closer to when the rest of the economy was going to hell, and people at HB thought they were invincible. For reasons I can't remember, we (the analysts) decided to randomly test some of the policies in our portfolio using the Valuation Basic Table (VBT), a standardized table published by the Society of Actuaries. This was like using a simple average for the life expectancy rather than the LE reports based on the medical records and opinionated math. The valuation that resulted from these tests were all deep in the red—so deep that Aaron walked by, saw them, and said, "That can't be right. If there's any truth to those numbers, we should just pack up and go home." We all wrote it off as something that couldn't happen without further thought as to *why* it couldn't happen.

I didn't share their optimism. I tried to internalize how I felt, but being Hyperactive-Impulsive ADHD, I had a bad habit of talking more than I should. It became apparent that I was pessimistic about what we were doing and became a pariah for it.

A part of me wanted to warn the investors of the danger, but I didn't know how to do that without jeopardizing my job and, possibly, my career. I later learned that this decision between doing what is professional versus moral comes up often in finance.

REPORTING UNREALIZED PROFITS is one thing, what was even stranger was how some investors looked like they were able to cash out their investments.

But where was the cash coming from?

The loans hadn't matured, and nothing had been paid back. Accrual accounting gave HB Onyx the ability to report phantom profits. Collecting the actual money was a separate matter. An asset value is just an idea, but real money is finite and traceable, and comes from a source. How were people getting paid out with real money?

HB's *lockup*—how long investors were committed for—was a little over two years because of the two-year loans. But apparently some early seed-investors were able to cash out after the lockup period, but before any of the loans came due. I remember Aaron saying to me, "The first investors technically invested risk-free. They put their money down before we issued any loans and cashed out before any of them came due."

Two things came to mind: *Damn! I wish my friends had invested when I told them to in the very beginning!* And again, *But where is the money coming from if no one has paid back any loans?*

The partners were also cash-rich buying expensive cars, condos and taking exotic vacations. But from what I observed, HB's investors were the only ones contributing money to the fund at that time. HB did get a cut of the sales commissions from the policies they funded, which could explain their toys and spending habits to a degree. But the problem is, that

money also came from their own investors. The sales commission on a life insurance policy comes from the premiums, and the premiums come from the loans, and their investors fund the loans. Whichever way you look at it, the source of the cash always pointed back to their own investors. Sometimes it looked like it was shuffled through the fund itself, and sometimes it was shuffled through an insurance company by way of premiums and commissions.

All of this concerned me, but I wasn't ready to write off everything we were doing. Above all, I thought Walter and Leonard were decent people with good intentions. I was not optimistic about our firm's future, but my fears had not been confirmed either. For all I knew, the policies could be worth what our models projected and more. Maybe I was worried over nothing…

THE FIRST LOAN CAME DUE in mid-2008, and the borrower/insured couldn't sell the policy for what he thought it would be worth in the market. A major alarm should've gone off, but it didn't. Instead of being concerned, HB did something unimaginable. The partners said they bought the policy, which the market rejected, with their investor's money through a separate life settlement fund they had created. This meant the left hand was feeding the right, and it was more evidence that money was being shuffled between their investors.

I was in disbelief when I heard this and thought: *Let me get this straight; we issue a loan based on an assumed value we generate with our model. And when we can't sell the policy for that assumed value in the market, we just buy it back ourselves to justify our assumptions? What the F?!*

Over the next few months, more loans came due, unpaid, with policies accepted as repayment for the loan. But HB still

wasn't concerned. Instead, they went on a buying spree, purchasing additional policies from the life settlement market.

Finding it harder and harder to hold my tongue, I said to the other analysts (louder than necessary), "Maybe we ought to figure out how to get rid of the policies we're already holding before spending more money on new policies!"

But things didn't stop there.

At this time, when the entire strategy seemed questionable, Leonard decided to start selling naked put options, making HB responsible for repaying other people's loans as well. HB was already obligated to take back their own policies as repayment for their loans. Now, they were selling promissory notes saying they would repay premium-financed loans other lenders had issued. Leonard treated this additional liability like it was risk-free profit.

Taking on additional liabilities at that time seemed ridiculous, but I remember hearing one interesting explanation for why someone in HB's position might want to do this: The put options were liabilities, but with the accrual-accounting process, the potential losses from these liabilities wouldn't show up for at least two years. From time zero to year two, this liability could be recorded as profit. So hypothetically speaking, HB could cover the losses from their activities in 2006, which were surfacing in 2008, by taking on more liabilities, which wouldn't show up until 2010.

It was an interesting idea—and probably a tactic that bigger entities with the luxury of recording billions in losses had used before. But I think a simpler and more likely explanation was that the partners were blinded by their fictional success and ignored the looming fallout.

I voiced my concerns to Leonard and Aaron in a private meeting one morning, before the other analysts arrived. I said, "If we keep buying back our own assets with our own money,

what we are doing is"—I shifted uncomfortably in my chair—"I really don't want to say it but…it's kind of like a Ponzi scheme."

There was an uncomfortable silence. Aaron didn't say a word, but Leonard finally responded with, "We try to sell it in the market as much as possible and try not to make it a practice to buy back our own policies."

The fund was sitting on a massive portfolio of policies we might have to take back without knowing their real value. The profits HB Onyx had been reporting were accrued, assumed, and unrealized. We were taking money from our investors to pay off the loans our investors funded. It was looking like a Ponzi scheme—but one that was completely *legal*.

They fired me a few weeks after that meeting. And I wrote a final email to Walter sharing, "The mistakes in premium financing will not be realized for at least two years."

CALL IT A COINCIDENCE OR CALL IT FATE, but just one week after I was fired, things started falling apart for HB Onyx and the industry as a whole. The life settlement industry wasn't dependent on stocks or other economic factors. The main thing that affected valuation was medical underwriting, which had remained stable for more than a decade.

For some strange, synchronistic reason, the same month, and possibly week, in 2008, when Lehman Brothers went bankrupt, and stocks went to hell. All the leading medical underwriters that provided LEs—21st, Fasano Associates, AVS Underwriting, all of them—announced they were changing their evaluation tables. Under the new tables, the LE numbers they had provided in the past would now be increased by about 25%. So an individual who had a life expectancy of 10 years was now expected to live 12.5 years. This meant that investors

would have to change their evaluations and price in an additional 25% of premiums for their entire portfolio. This alone wreaked total havoc with the numbers. But there was more.

HB wasn't the only firm that had started a premium-financing program back in 2006. Now, other loans that had been premium financed were also coming due, and an overwhelming supply of premium-financed insurance policies flooded the market. The life settlement market, which, according to HB, had too many investors and not enough policies in 2006, all of a sudden had too many policies and not enough investors in 2008. As a result, the buyers were able to pick and choose as they pleased. They were not purchasing policies at 14% IRR, as HB assumed when they issued the loans. They weren't even pricing them at 15%. They were pricing them around 24% IRR or higher. This alone depressed the assumed value of most policies by almost half. But still, there was more.

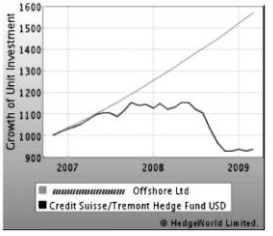
Insurance companies have never been fond of life settlement transactions and will not issue a policy unless there is genuine *insurable interest*, a real need for insurance coverage. It was clear that premium-financed policies funded by hedge funds like HB Onyx did not have insurable interest and were destined for investment purposes. To get around this, firms like HB set up dummy trusts to hide the source of the funds and trick insurance companies into issuing policies. Some insurance agents who worked with HB even submitted false applications, for which they later went to jail. But, in HB's defense, this was probably done without their knowledge.

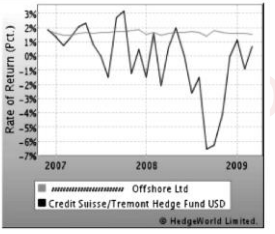
In addition to the change in LEs and IRR, premium-financed policies were flagged by the insurance companies, and the validity of the policies became entirely questionable. This meant there was a chance the insurance companies would deny the death benefit payment when the insured passed away. As a result, HB's policies were stigmatized as *dirty paper* by the market, which depressed their value even more.

Each of these events—the change in LE, the change in IRR, and the dirtiness of the paper—on its own could collapse their strategy. But all three were in play simultaneously, creating a perfect storm. A policy that cost $400,000 in premiums and was thought to be worth $800,000 when the loan was issued could be worth close to nothing when it hit the market in 2008. Some of the policies' values were in the negative, which technically meant HB's policies were so worthless that they should be paying people to take it off their hands.

So what did HB Onyx do?

They kept reporting profits in a smooth, upward slope. Using tricky accounting to report profits didn't surprise me, but the audacity to continue advertising their performance on sites like Reuter's Hedge World did.





Over the next two years, many life settlement funds and premium financing programs went out of business. But for some reason, HB Onyx was still standing.

I got a call from an insurance agent in 2010 who wanted to find out what I knew about HB, specifically the put options they sold. His client had taken out a premium-financed loan through a full-recourse lender who expected to get their money back regardless of whether or not the borrower could sell the policy. In an effort to protect his client from the possibility of a bad market—which became a reality—he had bought a naked put option from HB for around $60,000 when the loan was issued back in 2008. His problem was, the loan came due, the policy couldn't sell, and HB wasn't paying. They were hiding, stalling,

not answering their phones, and doing everything they could to avoid paying off the loan, which was around $1 million.

My answer to him was simple, "HB Onyx is 100% responsible for repaying any loan the put option is attached to."

HB's lights were still on, but they were fading. They were out of cash and the reality inside the office was very different from the lucrative profits they reported. Someone at their office told me one of the young partners, Jonah, left the firm and went into hiding. Managers like Aaron, along with a bulk of the staff, were also let go. The office was surviving with a skeleton crew. The analysts' work was relegated to answering phones and hiding the partners from angry investors and clients. The running joke was how the analysts all wished they would get fired, so they could collect unemployment and look for new pastures.

HB had no money and plenty of obligations, one of which was paying off the $1 million loan the insurance agent had called me about.

So what did they do?

They reneged.

HB sold a naked put option for around $60,000 in 2008, and when it was time for them to be accountable, they just didn't pay.

The amazing thing is, if someone sells iPhones on eBay, takes people's money, and then mails out boxes of newspaper, it's only a matter of time until there's a knock on their door with the cops waiting outside. That's for items, which are worth only a few hundred dollars. But in finance, entities like HB can sell contracts with empty promises to repay loans for tens of thousands of dollars, renege on them, and suffer no repercussions or criminal liability.

Isn't that amazing?

HB did end up getting sued by some of the people who purchased their put options. But why did it even have to come to that? They'd clearly defaulted on their commitments. Did the people they screwed over really have to spend more money on lawyers to drag HB Onyx to court to seek justice? We can call 911 to report a robbery when a few hundred dollars are in question. Can't we have a similar process for finance firms that sell worthless contracts for tens or even hundreds of thousands of dollars?

THE ONLY THING HB Onyx was holding in the end was a distressed portfolio of policies that were worth close to nothing. The policies in their portfolio were not real assets, regardless of how it was recorded and accounted. I tried to explain this point to Aaron when he walked by the analysts' desks and saw all the red numbers from the VBT tests.

I remember him saying, "But, I don't get it. That doesn't make sense. I mean, these are assets after all, and there's got to be some value there."

My response was, "You can't think of these things as something real, like a house. If someone doesn't pay the mortgage, the bank can take the house and sit on it. Regardless of whether or not the bank can sell it, there's still a house there—that is real value. But these policies are just imaginary things people thought up. If we don't pay the premiums, they'll disappear as if it never existed."

The policies in HB's portfolio wasn't worth much, if anything at all, due to the IRR and LE changes, but the thing that made it very dangerous was that the insurance companies flagged it as *dirty* paper. There was a real possibility that the insurance companies would contest or stall the death benefit payments because of how the policies were originated. Either action

would be disastrous for investors. But some people thought differently.

A company called Gerova offered to acquire HB Onyx for $94 million in stocks and $11 million in cash. This made no sense to anyone who knew what HB was holding. The thought that the partners would come out smelling like roses made me disgusted. But the celebration at HB didn't last long.

Just one day after Gerova publicly announced their acquisition of HB, an investigative journalist at *Forbes* published a detailed article titled "NYSE-Listed Gerova Has Close Ties to Westmoore Ponzi Scamster."

Apparently, Gerova had skeletons in their closet too. Over the next few weeks, Gerova's stock crashed, and they backed out of the deal.

HB ultimately lost their portfolio to a hedge fund called Fortress, through some shady foreclosure when HB defaulted on a line of credit. I don't know the details, but I remember reading about how HB vowed they would go after Fortress for whatever they had done.

Two things surprised me about that fallout, however. One, someone was stupid enough to give HB Onyx a line of credit on the crap they were holding. Two, apparently Fortress thought they got a bargain acquiring HB's garbage through that foreclosure. I thought it was hilarious.

I don't know what Fortress was thinking. My guess is, they analyzed the portfolio with the usual quantitative method but also ignored something that couldn't be quantified, the *dirty paper* factor—the possibility that the insurance carriers would contest the validity of the policy and the death benefits.

The legal battles became a reality in 2012 when Fortress found themselves in a fight with a life insurance company who denied $33 million in death benefits. The insurance company's argument was, as predicted, that the policies were not

properly issued, there were misrepresentation and fraud, and therefore, they didn't have to honor them.

I don't know what the outcome was or if the battle is still raging. But according to a Bloomberg article in 2014, "the largest of its 2010 life settlements funds had a $19 million deficit," and Fortress was looking for help.

HB Onyx closed their doors in 2011. Some of the independent insurance agents they worked with went to jail for fraud-related charges. The last I heard, the partners at HB were facing multiple lawsuits. Regardless of how things turned out, I think the partners still walked away with a lot of money, cars, condos, and other toys.

Sometimes I wonder how Jonah and Leonard's parents felt about what their kids did. These were two young guys in their late twenties who looked very successful at a hedge fund. But the simple truth is, they got rich from losing and taking other people's money. They weren't dumb, but they weren't any smarter than anyone else in their position. They just got lucky by taking part in a system that allowed them to record fictitious profits before their failures were exposed.

THE THINGS THAT ARE *LEGAL* in finance are far more destructive than what is *illegal* in finance.

This was my first experience witnessing what I call a *legal scam* in finance. A classic Ponzi scheme shuffles cash from one investor to another with nothing in between. This is essentially what HB did when they bought back their own policies with their own investors' money, but with one difference: there was a piece of paper in between the transactions, in this case, a life insurance policy with an assumed value that can't be verified or refuted.

When cash is shuffled from one investor to another, it is illegal. But when it is shuffled through a synthetic asset, no matter how fictional the value is, it is considered legal because accrual accounting lets the industry account for unrealized profits. In finance, accounting for profits is equally, if not more, important than earning them.

In 2007, I read Alan Greenspan's book *The Age of Turbulence*. He proposes that hedge funds are an instrumental part of the financial system because they help remove the inefficiencies caused by larger banking institutions—kind of like the grease between the gears. I believed this in 2007 and even quoted Greenspan to Aaron, adding, "Hedge funds are tools, like a spoon or fork. It's ridiculous for anyone to think they'll go away."

I loved finance so much back then that everyone around me felt it. My girlfriend at the time told me she had a dream where I was listening to music. And in that dream, I said I could see the symphony of notes, and I was trying to apply what I saw to the movements in the stock market.

The first thought that came to mind when she told me wasn't, *Oh how sweet*. But, *Hm…is that actually possible.*

That's how passionate I was about the industry in 2007. But I didn't feel that way after 2008.

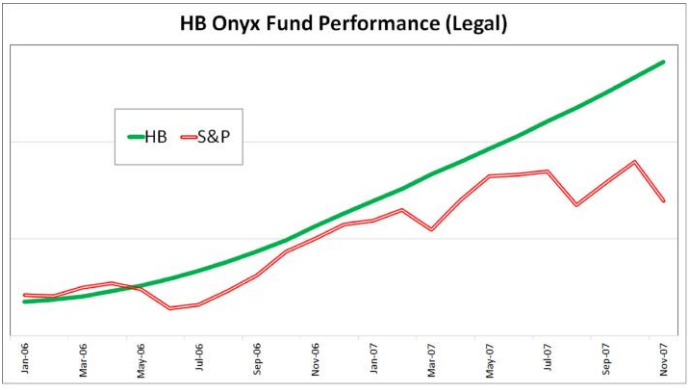
Hedge funds like HB Onyx engaged in schemes that, if anything, made the financial system less efficient and more volatile. Taking out insurance policies so the fund managers can take bets on when an individual dies creates no value for society. Even if HB's strategy had been successful and the partners were right about everything, their success and profit from taking advantage of insurance companies would ultimately result in higher premiums for people who actually needed insurance for legitimate purposes.

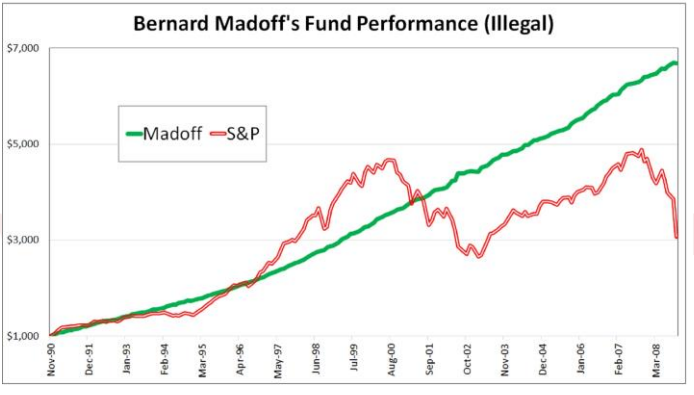
At one point, Deutsche Bank wanted to set up a *synthetic* life settlement market that cut out the insurance companies altogether. They tried to construct a portfolio that tracked the lives of a few thousand people and let investors bet on when they were going to die. As ridiculous as this idea sounds, it would be a good thing in the sense that it would give financial institutions a way to gamble on artificial insurance products and keep them away from real insurance products that affect those who need insurance. But like most financial innovations, it's all just another way for people to shuffle money. It gives people in finance something to do, but it serves no purpose for society as a whole.

I used to have a lot of respect for how hard people in finance worked. Sure, they got paid a lot of money, but they also worked some crazy long hours, and I respected that. But after HB and the financial crises of 2008, I said to a friend, "Long hours in finance don't mean shit. All the extra hours we work are spent thinking up ways to gamble, ways to shuffle other people's money, and new ways to take other people's money."

The accrual accounting method is both legal and common. I am fairly sure this is how Bear Sterns, Lehman Brothers, and Merrill Lynch were able to pay their employees hefty bonuses during a time when they were losing massive amounts of money. Those firms went under in a matter of weeks, but it took years of hard work and overtime to make that happen.

Who will be the next HB Onyx is anyone's guess…but if you see returns with an upward sloping line and low volatility, you can be certain that it is accrued and assumed…or just a straight-up Ponzi scheme.


HB Onyx Fund Performance (Legal)
HB
S&P
Jan-06
Mar-06
May-06
Jul-06
Sep-06
Nov-06
Jan-07
Mar-07
May-07
Jul-07
Sep-07
Nov-07


Bernard Madoff's Fund Performance (Illegal)
$7,000
$5,000
$3,000
$1,000
Madoff
S&P
Nov-90
Dec-91
Jan-93
Feb-94
Mar-95
Apr-96
May-97
Jun-98
Jul-99
Aug-00
Sep-01
Oct-02
Nov-03
Dec-04
Jan-06
Feb-07
Mar-08

CHAPTER 2

The Backbone of the Industry

ABC: ALWAYS BE CLOSING

"In many deceits, the victim overlooks the liar's mistakes, giving ambiguous behavior the best reading, collusively helping to maintain the lie, to avoid the terrible consequences of uncovering the lie."

—Paul Ekman

A lawyer once told me that there exists a concept in law that says, "If someone is lying about something small, they are also lying about something big."

To me, a small lie is when asset managers tell their clients they can help them grow their assets. The bigger lie is that they do not disclose the fact that they are powerless to prevent them from losing what they already possess.

BEFORE I JOINED HB ONYX, my first job in finance was at a start-up hedge fund in Fairfax, Virginia, called Rubin Asset Management. It was a hedge fund that traded stocks, and my official title was Analyst and Office Manager.

The fund manager, John Rubin, started his career as a stockbroker at one of the big banks in New York. He later became an investment advisor who, at one point, had his own radio show and around a hundred clients. In 2006, the hot item was hedge funds. He got sick of dealing with the individual portfolios of all of his clients and convinced many of them to pool their money together in a collective fund under Rubin Asset Management, John's hedge fund.

The first thing I noticed when I started working was that the backbone of the business was not analysis, but sales. I researched stocks, economics, growth, and the usual stuff, but the background message that dominated the day-to-day activity was, "We have to get more money into the fund." A whiteboard in my office had "ABC: Always Be Closing" written on it, which was left there by whoever used the office before me. It bothered me because I had always sucked at sales, but started to realize that this was what I had to do to succeed in this business.

John was the best salesman I'd ever met. Those who knew him well told me he was capable of closing nine out of ten people he sat with. I remember a time when a client walked out of his office after a meeting. The investor, who was in his seventies, had a concerned look on his face as he was staring down at a piece of paper that outlined all the fees. As he was getting ready to leave, he turned to John and said, "It looks like you're making more money than I am."

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* A lot of people have asked me what a hedge fund is over the years. The short answer is, it's just a pool of money from various sources.

Without hesitation, John smiled and replied with sincerity and optimism, "That may be true, but that's gonna change!"

I was open to the idea of becoming a great salesman like John, but the problem was I really didn't believe in what we were selling. Everything we did felt like gambling. The stuff I learned in school was only good for coming up with intelligent-sounding bullshit that made it sound like we knew what we were talking about:

"Yes, the equity market is acting a little funny right now. But stocks tend to behave a little strange when we're looking at an inverted yield curve in the bond market. But that's all right. The important thing is what's happening in commodities. We're not seeing any contango, and as long as oil is moving inversely against stocks, it'll act as a nice hedge for any portfolio."

It sounds intelligent, which is why the monkeys on CNBC can debate these points all day, but it's all bullshit.

The analysis techniques from school were useless. The biggest problem with the information in textbooks is that they all had fixed assumptions. Factors like the interest rates, discount rates, and correlation were all fixed values that were given to you. If you plug those things into a formula and execute a process the right way, you'll get a definitive answer. But in the real world, those fixed assumptions are not fixed. At any given moment, the Federal Reserve can announce a change in the interest rate and the correlation between two assets can move from positive to negative.

I quickly realized that it is not difficult to come up with an investment strategy that could correctly predict what a stock might do nine times out of ten. But the issue is that tenth time—the one time it doesn't do what it's supposed to do because an underlying assumption had changed—that had more

weight and wiped out all the positive returns from the nine times it did work and more.

John was selling the idea that we could protect our client's money and make it grow, but I didn't see how that was actually possible. I wanted to believe his message, but I couldn't see any logic to it.

John definitely believed it was possible, which is probably why he was such a great salesman. Even during one of the worst performing months, when the fund was down as much as 10%, he would say to me, with conviction, "Don't worry about the performance because the performance will come. The key is to get more money into the fund. Trust me. Don't worry about the performance because the performance will come…"

And the question that kept repeating in my head was, "*How?*"

I asked my older sister for advice. She is an MIT and Harvard alumna with an MBA and investment banking experience in New York and Hong Kong.

I said, "Do you have any advice on what I should look for when it comes to stocks?"

She explained what she did as an investment banker and the tools she used—models, balance sheets, growth projections—the usual stuff you hear about on CNBC. But she concluded with, "To be perfectly honest, all that research stuff is nice and all, but in the end"—she started to giggle—"it all comes down to your gut feeling…Ha-ha-ha."

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* In practice, the problem where one loss can account for more than all the gains doesn't show itself in a one out of ten situation, but can reveal itself in a one in a million situation. This is also called "tail risk" and something Nassim Taleb wrote about extensively in his books Fooled by Randomness and The Black Swan.

She also added that she was terrible at investing her own money and couldn't give me any advice on how to buy stocks.

I talked to a seasoned trader that worked indirectly with John and asked him, "Is there anything we can do to make our decisions a little more certain, even just once, for even just a little bit?"

He laughed and replied, "Are you asking if we can get into a sure thing? Ha-ha."

There was no need to elaborate because the answer was clear; there is no certainty in what we do and no way to attain it. Ever.

The only reasonable advice I've ever received about forecasting market movements was from one of my former business teachers who was once some big shot for Citi Group in South America. His advice was, "When you forecast, make sure you forecast either the direction or timing, but never both. You can say the market will move up, or the market will move in April. But don't say the market will move up in April!"

It's actually a cheap trick to minimize the probability of being wrong, which is why it's the only trick that made sense. He also added that he was so bad at forecasting that, at one point, Citi Group told him to stop forecasting and do something else.

Some days, I went to work as early as 5:00 a.m. and left as late as 7:00 p.m. I watched CNBC religiously and kept myself busy with research because it made me feel like I was doing something for our clients. We were collecting fees on the money they gave us, and if I couldn't repay them with probabilistic certainty, I was determined to repay them with my hours. In reality, investing in stocks takes a few clicks of the mouse, and the rest is up to luck. I later came to realize that people in finance didn't create extra work for themselves to deceive their clients; they create it to deceive themselves.

In the end, all those long hours didn't count for anything. John never listened to any of my suggestions—not that I had a magic formula or anything. His fund collapsed in about a year, after losing a significant amount of money for his investors.

Despite how things ended, I consider John, a decent person. His promises and ambitions to grow his clients' assets were sincere, and he wasn't using dirty tricks like accrual accounting to report fictitious profits based on assumed earnings. What he didn't realize was that taming market forces and delivering on those promises were beyond his control—the control of *any* asset manager.

CHAPTER 3

The Idea of Investing

INVESTING AND GAMBLING

"Wall street is one big turf war. By benefiting one person, you're disadvantaging another…The person buying a stock thinks he knows something the person who's selling doesn't know…The basic concept of Wall Street, which the regulator and academics lose sight of, is that it's a for profit enterprise."

— Former Chairman of the NASDAQ, Bernard Madoff

THE ONLY REASON PEOPLE INVEST in the stock market is that they think they are going to make money. But the reason they think they are going to make money is because that is what they are told by financial professionals who sell investment services.

The fact is, Wall Street would not exist without the continuous inflow of money from Main Street. Hedge funds and banks make up a small percentage of the money that goes into the stock market. The majority of the money that Wall Street

plays with comes from regular people who make regular contributions to their 401(k)s, IRAs, and mutual funds. The money that goes into most retirement plans goes into the investment system and almost always finds its way to the stock market or some other synthetic asset.

The reason why people keep throwing money into Wall Street is because they believe in the “Idea of Investing,” which basically says that it’s possible to make money with money—let your money work for you—and it can be done in an intelligent way that is safe and fundamentally different from gambling.

The idea of investing creates a demand for investment services, but this idea is also entirely artificial and unproven. As a society, we’ve learned to accept the idea of investing as a normal part of life (we work; we save; we invest for retirement, college, etc.), but if we traced the origin of investment profits, we would also see that the idea is extremely illogical.

We can break down the stock investment process with a physical example because cash, the only thing investors care about, can be physical and, for the most part, is finite. Think of the investment system as a bucket and common stocks as paper napkins. Throw the napkins into the bucket with $100 of real cash. Spin the bucket around, mix it up, shake it up, and ask, "How can we get $110 of cash out of that bucket?"

The simple answer is, we can’t. The paper that makes contact with cash doesn’t miraculously turn into cash, and the cash inside the bucket won’t magically multiply. The only way to get $110 out of that bucket is if someone else puts in another $10—and that someone else is pretty much always another investor who wants to get back more money than they put in.

This is why Wall Street is not capable of producing real cash profits for stock investors. Stock value appreciation strategies—buy low, sell high—assume that the source of profits come from an infinite pool of money created by the stock market and that it is available to anyone with the right tools. But the stock market is not an infinite pool of money that people can draw from. Money that is taken out of the market comes from the pockets of other investors. There is no such thing as a magic bucket that can turn synthetic instruments into real cash. The money that people see in their stock investment accounts is not real; it does not exist, which is why those balances can rise and fall sharply at any given moment.

In most situations, people are smart enough to question something that sounds too good to be true, but when it comes to money—especially the lure of easy money—our ability to apply reason becomes stupefied. The idea that we can create cash with synthetic instruments like stocks is as ridiculous as it sounds, but people (including me at one point) believe it. And, I think the reasons why people believe this absurd idea is because, it is a nice idea we all want to believe in.

One reason why finance professionals think it's possible to create money from synthetic instruments is that they ignore the difference between an asset value and real money. They think and quote things in terms of *asset value*, as in, how much stocks are assumed to be worth in terms of cash, but forget that it is not cash or anything close to how much real money investors are entitled to. The problem with asset value is that it's not real; it's just an idea from the imagination.

As of June 2019, the NYSE and NASDAQ have a combined value of more than $36 trillion, but there is only $1.7 trillion of cash circulating in the US economy ($3.3 trillion in total in existence), which includes the money people are hiding under their mattresses. Investors will never get the $36 trillion they feel entitled to because it doesn't exist.

The average person, who knows little to nothing about stocks or finance, can see this reality better than people who have studied finance—mainly because they haven't been programmed to think of an imaginary asset value as a cash equivalent.

So a good question is: Why don't ordinary people ask these obvious questions?

Why don't more people ask Wall Street how they intend to make good on $36 trillion of stocks when there is only $1.7 trillion of cash in circulation? Or how they can generate $110 of cash from a bucket that only has $100 without taking money from other investors?

This is where things get complicated.

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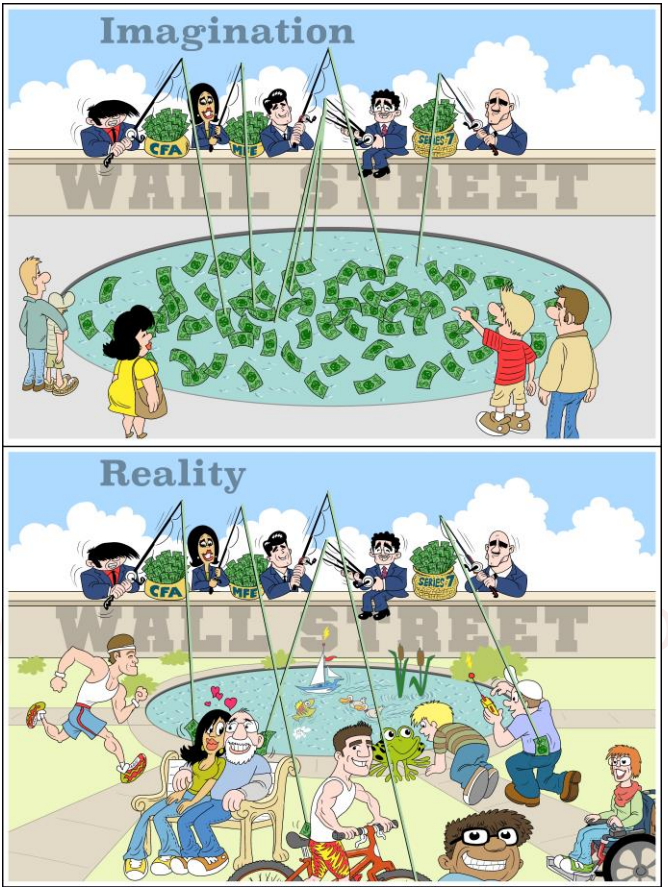
* The $1.7 and $3.3 trillion quoted here is the *Monetary Base*. The *M1* and *M2* are other measurements of money, which includes the currency in circulation. The M2 is the most lenient measurement of money, which was around $14.8 trillion in June 2019, which is still very far from $36 trillion.

Explaining why it's not possible to pull out $110 from a bucket that only has $100 and napkins is easy. Things that are true tend to be simple to explain and easy to comprehend.

But if I took the other side and tried to explain how money grows on trees and why it's possible to create $10 from shuffling a bucketful of imagination, well, that would be a lot harder. I would need a lot more ink, paper, and esoteric math. Whatever explanation I end up offering will be sketchy at best.

Selling the idea of investing goes beyond the catchy slogans and temptations of easy money. A big part of Wall Street's success, and why they've been able to dodge these simple questions, is because the industry has people that make the investment system extraordinarily complicated. Finance academics, quants, financial engineers, and other intelligent sounding people play an indirect, but important role in selling the idea of investing. They make Wall Street's activities look intelligent, legitimate, and extremely difficult to understand. This, in turn, also deters ordinary people from asking simple questions like, "Where does the cash come from?"

If you tell people, they can put their money into a system that will give back more than they put in, no matter how self-entitled or greedy they are, most of them are still smart enough to ask, "How?" But if you make that system extremely difficult to understand and sell the idea that you are smarter than them—that you know more about this money-printing system than they do—most people will stop asking how.



The sad truth is that no one wants to ask “How?” to begin with. Deep down inside, everyone wants to believe that there is a bottomless pool of money we can all fish from. We all want to believe that there exists a system where we can hire experts who can magically make our money grow. Unfortunately, this bottomless pool of money doesn’t exist, and every dollar that gets pulled out of the system comes from the pocket of another investor—someone who doesn’t want to be separated from their money.

The people who work in financial research play an important role; they make the complexities of the system look and sound legitimate. A complicated system allows excuses for more fees, and it makes the simple but unanswered questions concerning the origins of investment profits seem unnecessary. But despite how many mathematicians, economists, and PhDs there are on Wall Street, not one of them has proven whether or not the idea of investing is even valid or can properly address questions like, "Where does the cash come from?"

THE IDEA OF INVESTING is also grounded by our general perception of what the word “invest” implies. Investing is seen as a money making activity where success is believed to be dependent on intelligence and resourcefulness, but not blind luck—something that is fundamentally different from gambling.

Investing and gambling are perceived very differently in our society. Investing is seen as something erudite people go to school for, while gambling is stigmatized as something that is driven by stupidity and greed. The assumption is, you invest with Wall Street and gamble in casinos. You need brains and books to be a good investor and luck to be a good gambler.

But what is the real difference between investing and gambling? Forget public perception and your personal feelings, and seriously think about the real technical differences between these two activities.

The fact is, these two activities are practically identical because both investors and gamblers have one common goal in mind: they want to make money with money, and it makes no difference whether they are buying stocks or betting on numbers in roulette. But with that said, most people who own stocks do not like to be thought of as gamblers, and legal systems with strict anti-gambling laws ignore gambling activities

that involve financial instruments. This is why you have to be 21 to play blackjack, but only 18 to open an online trading account. Unfortunately, there isn't a clear way to differentiate these two activities. Most of the things people think of and label as *investments* are actually *gambles*.

Misusing vocabulary is a pervasive problem in the finance industry. Most of the time, it's done out of pure ignorance, but sometimes it's done deliberately to speak favorably about the industry. For example, the word "hedge" by definition means an action that minimizes risk or exposure to a position, but the industry also calls the riskiest investment funds "hedge funds." By definition, the word "arbitrage" means a risk-free trade that involves pricing discrepancy and simultaneous execution, where a trader buys and sells an asset simultaneously (an opportunity that is practically nonexistent). But most finance professionals don't acknowledge the critical details in the definition—they'll attach the word "arbitrage" to anything with a pricing discrepancy even if the strategy is not risk-free and does not involve simultaneous execution.

This problem of misusing vocabulary is as bad as it sounds and causes as many issues as you can imagine. But most people are unaware of it because financial journalists contribute a great deal to the problem. I remember watching a segment where a Yahoo! Finance reporter used the term "Twitter Arbitrage" to describe a strategy where people bet on stocks based on stuff that came out on Twitter. I'm pretty sure you can imagine why that is not risk-free with simultaneous execution. And I'm pretty sure you can imagine how someone on Wall

* Finance people like to differentiate trading and investing, and associate trading with gambling. However, there is no real difference between trading and investing. Both words describe the action of buying and selling stocks. Investing is usually seen as something long-term, but trading can be short-term or long-term. A ten-year investment can also be called a ten-year trade.

Street might see that segment and start attaching arbitrage to other ridiculous ideas that don't fit the definition.

However, unlike hedge and arbitrage, where the misusage is often a blatant contradiction to the definition, I think people get the words "invest" and "gamble" confused because of the outdated definitions offered in the dictionary. Merriam-Webster and Dictionary.com have the following:

> **Invest:** "to commit (money) in order to earn a financial return," or "to put (money) to use, by purchase or expenditure, in something offering potential profitable returns" (First known use 1613)
>
> **Gamble:** "to play a game in which you can win or lose money or possessions," or "to play at any game of chance for money or other stakes." (First known use 1772)

These definitions describe two fundamentally different activities. Investing requires purchasing an asset, while gambling is playing a game that doesn't involve anything tangible. However, when the word "invest" came into use in the 1600s, land was the basis for investment, not synthetic financial instruments like stocks. This means the definition for *invest* was referring to tangible assets, not intangible things like stocks, which have no physical value and can disappear at any given moment.

Today, the words "investing" and "gambling" are often used to describe the same activity but with a difference in the perceived *level of risk.* People think of gambling as something that has more risk than investing, but they don't see these two things as fundamentally different activities. With this in mind, it's clearly more reasonable to redefine *invest* and *gamble* with respect to the level of risk associated with the activity. But what should be the risk threshold that separates investing from gambling?

One thing I give the casino industry credit for is that they are honest about the odds of their games. They openly admit their games are engineered to provide the house with an edge of about 2% over the player—an advantage that's big enough for them to make their money with the long run average, but not too big to deter people from playing. Casinos can easily engineer a game that gives them a more significant advantage, but they wouldn't make money because no one would play.

If you play *normal* blackjack, following the rules outlined in the basic-strategy chart that tell you what moves you should make on the initial hand (hit, stay, split, etc.), the casino's edge can be reduced to just 0.5%. This means a player has a 49.5% chance of winning and a 50.5% chance of losing—almost 50/50.

If casinos can offer gambling games where the player has close to a 50% probability of winning, then it's reasonable to expect investing activities to have a probability of success that is greater than 50%.

This is where we start to see a big problem. There is no way to calculate the real probability of success for any stock or group of stocks (and most investment strategies in general).

It is possible to calculate the definitive probabilities of winning or losing for a casino game because the rules of those games are well-defined. For card games like blackjack, the number of cards doesn't change, and the values on the cards don't change. There might be some minor differences at different casinos, but the rules at every table are well-defined, and once the game is in motion, they don't change. But this is not true for stocks.

* "Normal blackjack" pays players 150% on their bet when they get blackjack. Las Vegas now has new blackjack tables that only pay 120%.

The different factors that can affect stock prices are practically infinite. There is no way of calculating the definitive probability of winning or losing because the rules are not defined, and the factors are constantly changing. Sometimes a company reports better-than-expected earnings and sometimes it doesn't. Sometimes a stock price goes up after the good report comes out, but sometimes it goes down. Sometimes a company will announce a merger, and sometimes they'll reject offers and say they will never sell. At any given moment, a company could issue more stocks because they need to raise money and saturate the market with more shares. The only thing that directly affects the price of a stock is the inflow of cash from new investors, but many indirect factors can influence the actions of the new investors.

Wall Street sells the idea of investing and tells everyone the stock market offers better odds than casino games. But this is not something they can show.

The idea that the stock market offers favorable odds for investors is not based on some math formula that can truly show it is favorable. It's based on an *absence* of legitimate math and the *inability* to show that the odds are unfavorable. Wall Street firms are legally allowed to portray the stock market as an investment vehicle with a probability of success that is greater than 50%, even when they don't know what the real probability of winning is at all.

When in doubt, think positive, right?

CNBC USED TO HOLD A CONTEST called the Million Dollar Portfolio Challenge. It was a stock investing competition where players were given a mock portfolio with $1 million and a few months to buy and sell stocks. The person with the most money in their portfolio at the end of the contest was declared the winner. It

was free to join, and it attracted as many as 375,000 contestants in some years. The contestants ranged from novices with no investing experience to professionals who worked on Wall Street.

In 2007, a woman named Mary Sue Williams won the contest. Mary had never invested in stocks before. She bought one stock at a time and picked her stocks based on things people were wearing on the streets. She was a waitress in a small town in Indiana, with no training or experience in investing, and she beat out thousands of people, including finance professionals and finance students, in the investment game.

The Observer conducted a similar contest in 2012. The contestants received a mock portfolio of £5,000 and a year to invest in the London Stock Exchange. But there was one minor difference. The contest was between amateur students, finance professionals, and a cat. Yes, a cat—a house feline named Orlando who did all of his investing by throwing his favorite toy mouse onto an electronic grid. Orlando, the cat, won the competition. Needless to say, the cat had never taken any finance courses or passed any exams either.

These are just two of the many experiments that had similar results over the past forty years. I'm sure there are some experiments where financial professionals won the contest as well, but we can see a pattern of how animals and amateurs with no investment training or experience can outperform well-paid financial professionals.

The results from these experiments support an idea that was started in 1973 by Princeton University professor Burton Malkiel where he claims, "A blindfolded monkey throwing darts at a newspaper's financial pages could select a portfolio that would do just as well as one carefully selected by experts."

If you think about it, there's no legitimate profession in the world where experiments like this will yield such results. An animal or amateur can never be a better janitor, dentist, cobbler,

or server than someone who is trained in that line of work. But an animal or amateur can be a better investor than the people holding advanced degrees in finance.

I thought hard about why these experiments and results can *only* happen with investment finance. The only thing I could come up with is that legitimate jobs, like being a police officer, pilot, writer, artist, etc., all require real skills, but finance is of the gambling nature and requires luck.

RIGHT ABOUT NOW, there are usually a handful of people who are thinking: *You're not telling us anything new. Everyone knows playing with stocks is like gambling.*

Unfortunately, this is not true. Many people believe stocks are legitimate investment instruments because that is what they are told by the media, government regulators, and universities.

Calling stocks gambling instruments is a severe accusation and something Wall Street has never admitted on an official level—like to the United States Congress, who has the power to introduce new anti-gambling laws. This is why the advisors at Alliance Bernstein, Ameriprise, and other asset management firms never refer to the services they sell as gambling—that and because they would most definitely be out of business if they did.

But even if everyone did think of stocks as gambling instruments, how stocks are perceived is irrelevant compared to how stocks are treated by our regulators.

Mutual funds are supposed to be highly regulated investment funds that are available to the public. They are advertised and treated as a safe investment instrument for long-term retirement planning. But 60% of mutual funds play with stocks,

and at the end of 2018, these highly regulated retirement instruments held almost $7 trillion worth of domestic stocks and trillions more in international stocks.

Ask yourself: If everyone acknowledged that playing with stocks is like gambling, would the federal government allow the money that goes into pension plans (401(k), IRA, etc.) and retirement instruments to end up in the stock market? Would our universities teach classes on stock analysis if they admitted that the odds of winning in the market weren't any better than those offered at a casino?

Of course not. These things would not be happening if everyone knew and treated the stock market as a form of gambling. But all these things are happening right now, every day, because the government, regulators, and the finance industry do not acknowledge stocks as gambling instruments.

When was the last time you heard a reporter or sponsor on Bloomberg use the word “gamble” to describe stocks or stock-related services? And when was the last time you heard them say “invest”? If you can’t remember the latter, just turn on your TV and give it a minute.

Stocks are not some exotic financial instrument that only a small percentage of the population gets involved with. It is a pervasive instrument that affects a lot of regular people who are saving for retirement.

It’s not enough to think: *Everyone knows that stocks are a form of gambling*, and laugh when we hear stories about a cat beating finance professionals in investing contests. There is a severe implication behind these events. Misusing the word “invest” to describe a gamble is no different than a doctor abusing the word “cure” for placebo.

If stocks are gambling instruments, then they need to be treated as such. The United States has strict laws against online gambling, while online trading firms like Schwab, E*Trade, and

Ameritrade are allowed to promote their services to people who are eighteen and barely out of, or perhaps still in, high school.

There are plenty of people who get addicted to online trading and have lost unimaginable amounts of money. We usually don't hear about it because the reality of what online trading is, hasn't been properly classified yet. The people who lose are usually too embarrassed to talk about it, and they rationalize their losses as the results of unlucky investing.

In Fairfax, Virginia, the same city where John Rubin ran his hedge fund out of, the police department used heavily armed SWAT teams to raid poker games held in private homes. There was even an incident where an officer shot and killed an optometrist as they were attempting to arrest just one person for betting on sports. The shooting was an accident, but the Fairfax County Police Department felt justified using aggressive, gun-flashing tactics to enforce anti-gambling laws.

On the other hand, people like John go to work every day in Fairfax, Virginia, gambling other people's money from 9:30 a.m. to 4:00 p.m., but never got hassled by the police. There was even a Scottrade near John's office that actively called people to solicit business. If the Fairfax County Police cared about anti-gambling, they would shut down every finance firm that claims to invest other people's money and cannot prove how they intend to be successful.

But, that isn't going to happen anytime soon, and that's because Fairfax County and the United States laws don't care about gambling. They only care about what people perceive as gambling according to outdated definitions in the dictionary.

A Few Years Ago, I Wrote A Letter to Merriam-Webster asking for advice on how to propose changes to the way the words

"investing" and "gambling" are defined in the dictionary. I explained how invest and gamble should not describe two fundamentally different activities, but, based on the way the words are used in our modern language and their origins, the definitions should be differentiated by a specific level of risk associated with the activity. I proposed the following definitions (also in the Lexicon section):

> **In a scenario** where the payout is one-to-one, and the exchange, transaction, or wager does not involve the transfer of any tangible assets.
>
> > **Investing:** a scenario where the odds ARE quantitatively defined and favorable for the investor (favorable meaning greater than 50% success rate).
> >
> > **Gambling:** a scenario where the odds ARE quantitatively defined and not favorable for the investor (equal to or less than 50% success rate), OR a scenario where the odds CANNOT be quantitatively defined at all.

There is no definitive way of calculating the odds of success in the stock market, and therefore, stocks and stock-related instruments are all different forms of gambling.

I haven't met a single person—including finance people—who disagrees with these proposed definitions. It doesn't mean people in finance are ready to admit stocks are gambling instruments, but they do respect the logic of these definitions.

THERE'S NOTHING WRONG WITH THE *IDEA OF INVESTING*. The issue is no one has ever shown that it's possible. There is no proof or even evidence that shows we are entitled to earn free money over time by trading imaginary paper like stocks. There is no such thing as an infinite pool of money investors can draw

from, and there are no formulas that can show the odds of winning on Wall Street are better than the games at a casino.

I met a professional card counter named Mike Aponte a few years back. Mike was one of the original leaders of the MIT blackjack team that was the basis of Ben Mezrich's book *Bringing Down the House* and the subsequent movie *21*. His name is well-known in the casino community, and he's not allowed anywhere near the blackjack tables in Las Vegas, Atlantic City, or pretty much anywhere around the world.

I assumed that advantaged players like Mike, who spent a lot of time inside casinos, also enjoyed playing other games, like roulette, craps, or baccarat. So I asked him, "What else do you like to play besides blackjack?"

He thought about my question with a puzzled look and then replied softly, "You know…on my first trip to Vegas with the team. I put a dollar in one of those slot machines at the Vegas airport when I got off the plane. That was the only time I've ever gambled."

CHAPTER 4

A Legitimate Idea

POSITIVE-SUM, AND THE ABSENCE OF PROOF

"The greatest enemy to knowledge is not ignorance, it is the illusion of knowledge."

— Stephen Hawking

THE IDEA OF INVESTING CREATES A DEMAND FOR INVESTMENT SERVICES. It helps explain why people think they need investment advice and why financial professionals can make careers out of selling it. But it doesn't explain why financial professionals believe in what they are selling.

Despite my criticism of the industry, I think most financial professionals actually want to help people. Most of them actually believe that investment systems like the stock market are positive-sum and what they are selling has something of value.

The idea of *positive-sum* comes from Economic Game theory, and it is defined as a situation where the net balance between the positives and negatives add up to something positive. This fundamental idea is the starting point for every legitimate idea in economics and finance. Economists do not sit around developing negative-sum ideas and look for ways to hurt the most people. They try to come up with positive-sum policies that create more winners than losers. The same applies to investing. No one wants to mess with a system that yields heavier losses than wins. People want to put money into structures that produce more wins.

When economists work on an economic policy, like a free-trade agreement that lowers taxes on imports, they examine both the winners and the losers of the situation. The calculations are always skeptical at best, but if the policy looks like it might yield more wins than losses—a positive-sum situation—then it would make sense to develop the idea further. And if it doesn't, the idea will get buried.

A positive-sum situation acknowledges that there will be both winners and losers, but as a whole, people win more than they lose. A negative-sum situation implies more is lost than won, and a zero-sum system implies the wins and losses are equal. The investment finance industry is built on collecting transaction and management fees, which means a zero-sum investment system, in theory, is always a negative-sum system in practice because of the presence of fees. So, if the stocks are zero-sum instruments conceptually, then they are also negative-sum instruments for investors in reality.

In economics, adding up all the positives and negatives to determine if a scenario is positive, negative, or zero-sum isn't easy, because the unit of measurement isn't always monetary or tangible; it can be emotional as well, like when people spend money, a negative, watching a movie they enjoy, a positive.

But, in finance and investing, money is the only unit of measurement that matters to investors. As I mentioned before, regular people from Main Street contribute money to retirement plans that find its way to the stock market because they want to make their money grow. To them, things like entertainment value, job creation, and technical innovations are secondary, at best, if they exist at all. The average investor doesn't care about running the company, shareholder meetings, or voting rights, and even if they do care, it's because they think their efforts will help them get more money back later.

A legitimate investment system has to be positive-sum for investors, with respect to cash, because that is what investors ultimately care about.

The obvious way to investigate the positive-sum assumption for stocks is to add up all the cash profits and losses from investors over the years and see if the net balance is positive. This is also where we run into a big problem: no one knows how much money investors have lost in the stock market. There is no database that keeps track of investor losses, and from what I understand, the industry doesn't want to track such data either.

When I asked some investment bankers why such a database has never existed, one replied, "Are you kidding me? Wall Street would never let it happen. That would make everything we're doing look extremely questionable."

It's obvious that people in finance have made a lot of money from the stock market, and so have the companies that issue the stocks. But what we don't know is whether or not investors—the ones who are contributing all the money—have made money from the stock market, or if the system is even positive-sum.

The burden of proving the positive-sum assumption rests with the finance professionals and academics. They are the ones who make money from selling stocks and stock-related

services, so they have the responsibility of showing why it is favorable for the investors who are paying their fees. This is also something they have never done before. On the other hand, critics of the stock market do not have to show why the system is illegitimate or negative-sum because it is an artificial system that shuffles cash and ambiguous promises, something that is extremely questionable, to begin with—and something that remains false until proven true. This clarification of responsibility for the burden of proof is obvious but necessary. Finance professionals tend to ignore the obvious.

The investment industry does have models, formulas, and graphs that make the stock market look positive-sum, but all of the examples I've seen contain the "*universal error*" of assuming asset value as an equivalent to cash—something I've mentioned before and will elaborate on in the next chapter. With the right formula, anyone can project whatever number he or she wants on a report. The assumed asset values on a computer screen can be infinite. However, cash in real dollars in the real world is finite.

Again, the US stock market has a value of over $36 trillion, but there is only $3.3 trillion of cash available in the entire US economy with only $1.7 trillion of it in circulation.

Ordinary people who know very little about finance can see the problem with this discrepancy, but Wall Street and finance academics celebrate as the stock market climbs higher and this gap between assumed entitlement and reality grows wider.

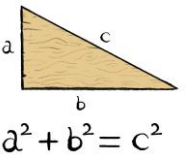
IT IS NOT UNCOMMON to run into someone who's passionate about finance and calls it a science, but I assure you, these are also the only scientists that believe a valid idea does not require any proof.

So what is a *valid idea* in science and academia?

A valid idea in science has to be validated through the scientific process and comes in two primary forms, *theorems* and *theories*. A theorem requires proof with logical connections between axioms or other proven theorems, which is often seen in math. A theory is an idea that cannot be proven by connecting logic but is deemed valid through experiments and observations, which is a process that is usually seen in physics.

A theorem is an idea that has to be formally proven, and once it is proven, it is treated as a truth that holds under any condition within its defined universe. This is why theorems are sometimes confused with axioms or definitions, which are self-evident truths and defined statements. In mathematics, there is no such thing as a legitimate idea with the absence of proof.

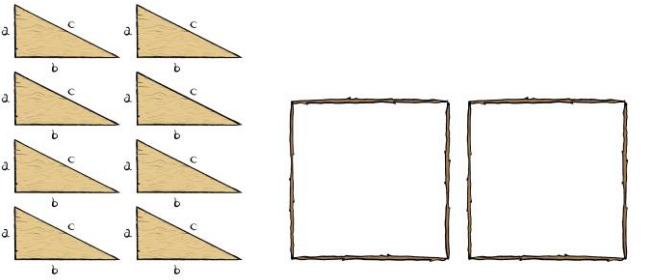
The Pythagorean theorem from Euclidian geometry describes the relationship between the sides of a right triangle with sides {*a, b, c*}.



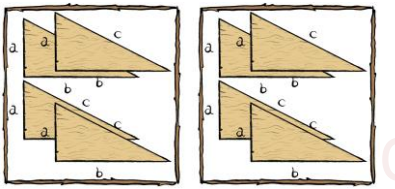
The theorem is a *statement* that basically says, "For any right triangle: the length of the hypotenuse side, *c* squared (c^2), is equal to the sum of side *a* squared and side *b* squared ($a^2 + b^2$)." This statement is expressed as a *formula*: $a^2 + b^2 = c^2$. We can tell if the formula works by plugging in random numbers, but we know the formula works for any right triangle within the Euclidian universe (flat space with no curved surfaces) because it is derived from the theorem that Pythagoras proved.

Some scholars believe Pythagoras proved his theorem using a method called *proof by rearrangement*—a somewhat visual proof.

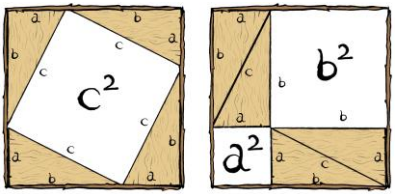
Step 1: The proof starts with two square frames of equal sizes and eight triangles of identical side lengths.



Step 2: The next step is to put four triangles inside each square.



Step 3: Rearrange the triangles to show how the uncovered space in the left frame has the area c^2, and the uncovered space in the right frame has the area a^2 and b^2.



$$a^2 + b^2 = c^2$$

Conclusion (Q.E.D.): Both the square frames are of equal size, and so are the four triangles inside each frame. This means the uncovered space in both frames are equal as well.

Many believe this was how Pythagoras connected the logic and proved his theorem.

Proofs are difficult for people to grasp because they involve abstract ideas and relationships, rather than numbers. Don't worry if you did not understand all the details. The important thing to understand is that valid ideas in legitimate academic fields like math require proof.

Ideas in math and science build on each other. The Pythagorean theorem is from geometry, but the idea is used in theorems for calculus and linear algebra as well. It is dangerous to develop complex ideas on top of simple ones that have never been proven. Imagine if a formula did not hold true under certain conditions on a flat piece of paper, in two dimensions, and we started using it in models for constructing buildings in three dimensions!

The mathematician Ian Steward wrote in *Concepts of Modern Mathematics*:

> *"There are theorems which most practicing mathematicians are convinced must be true; but until someone proves them, they are unjustified assumptions, and cannot be used except as assumptions."*

In contrast, there are ideas in finance, which many finance professionals are convinced must be true. Even when they have been proven false, people are still convinced they are true.

The finance industry uses theorems that have been proven in the field of mathematics. But there are no financial theorems or proof of any kind that support the positive-sum assumption about investment systems like the stock market.

It is important to recognize that there is also a big difference between *evidence* and *proof.* A typical mistake people tend to make is confusing evidence for proof. It is not uncommon to hear someone say, "Of course the stock market is positive-sum.

Look at all the people who have made money!" However, this is *evidence*, not *proof*, and this exact statement could be said about Bernard Madoff's Ponzi scheme in 2005, which didn't end up so well for his investors in 2008.

A proof does not just look at a few data points, such as how some people made or lost money. It looks at the underlying structure to see if the system can logically produce more money than people put in and accurately predict outcomes even for situations that have not been observed.

AN INTERESTING THING ABOUT PROOFS is that it does not require data. Pythagoras could not have proven his theorem by plugging numbers into the formula starting from one and going toward infinity. People think highly of data these days, but data can only produce likelihoods, not certainty. Data can help illustrate, and model ideas people conceive, but it cannot prove the validity of an idea.

However, there are legitimate ideas in science that are also unprovable and rely only on data for validation. The next best thing to a theorem is a theory, which is a hypothesis or educated guess that has been validated through experiments and observation. Theories are legitimate ideas that are usually observed in physics.

The scientifically accepted description of gravity is a theory, and it is not something we can prove. We have formulas that describe how gravity works and experimental data to validate the accuracy of those formulas, but there is no way to connect logic or axioms and definitively say that gravity will work the same way every time, under any and all conditions.

It has been told that Einstein once said, "No amount of experimentation can ever prove me right; a single experiment can prove me wrong."

Theoretical physicist Lisa Randall, says, "A theory yields a specific set of equations and predictions; ones that are born out of successful agreement with experimental results."

Dr. Stephen Hawking said in his book *A Briefer History of Time,* "A theory is a good theory if it satisfies two requirements. It must accurately describe a large class of observations on the basis of a model that contains only a few arbitrary elements. And it must make definite predictions about the results of future observations."

In contrast, a good theory in finance is one that describes a few observations using complex models containing many debatable elements and makes no definitive predictions about future events.

Scientists have slightly different interpretations of what a theory is, but the general consensus is that a theory is an idea that has been validated with experimentation and can yield repeatable results. It can explain historical observations and be used to predict the outcomes of future events.

So are there any validated financial theories that support the positive-sum assumption about stocks and the idea of investing?

Absolutely not.

The word "theory" gets thrown around a lot in finance, but it's used to describe just about *any* nice-sounding idea. The idea doesn't always have to hold true on paper, and it's often something that has been tested with observed outcomes that failed the experimentation process. It is usually used to describe ideas that would normally be regarded as *failed hypotheses* in legitimate sciences.

You can find ideas like "The net present value of a stock is a reflection of the future cash flows" or "Owning stocks is like owning a piece of a company" in textbooks. They are treated

like self-evident truths or unquestionable facts by finance professionals and preached to the public without hesitation or thought. But those ideas are not theories, theorems, or even the mildest form of truth. They are conjecture or hypotheses at best or ideas that failed the validation process and would've been rejected as rubbish in legitimate science fields.

THE PUBLISHED ACADEMIC IDEAS in finance are usually in the form of *models*, which are essentially elaborate calculators that don't prove anything factual but illustrate data points. A famous one used for pricing options is the Black-Scholes (BS) model. Two of the authors, Myron Scholes and Robert C. Merton, were even awarded a Nobel Prize for their work.

The BS model was designed to help determine the price of derivative contracts called *options*—which are like side bets for stocks. As you can imagine, an instrument that prices options can be useful if you are an options trader on Wall Street. The research that went into constructing the model will also look meaningful if you're a finance academic that thinks: *The stock market is a complex system, and options are complicated instruments. It's important to develop models to illustrate the data and help everyone gain a better understanding of how the markets work.*

This sounds reasonable, which is why our universities love this type of research. But let's take a step back, look at the big picture, and examine the fundamentals of why options even exist. Does the BS model and its application for pricing options add any value to the real world if the stock market isn't even positive-sum, to begin with?

The only reason option contracts exist is because investors buy stocks. But the only reason investors buy stocks is because

* Fischer Black, passed away before the Nobel Prize was awarded.

they believe the stock market is positive-sum and they will get back more money than they put in. But if the stock market is zero or negative-sum, then investors wouldn't be buying stocks. And if investors don't buy stocks, then there wouldn't be a need for options contracts either. And if no one is playing with options, the Nobel Prize-winning BS model that those brilliant mathematicians worked so hard on is essentially worthless.*

The positive-sum assumption is the foundation of every financial idea and innovation. If the stock market is not positive-sum, then the instruments and research developed for the market and its derivatives, including textbooks and university courses, are essentially worthless.

We can use mathematical theorems to create an elegant-looking quantitative model for any casino game and diversify our bets in almost an infinite number of ways for a game like roulette. However, such models and tools have no value for the player, or the greater world if the game is not even positive-sum, to begin with.

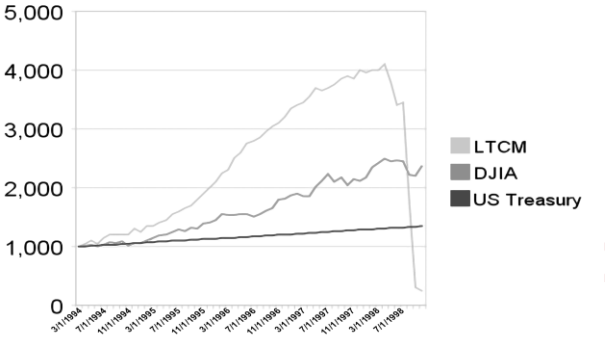
There is a difference between modeling the behavior of a financial instrument and assuming that such instruments or research are creating something of value for society. Financial models and innovations might serve a purpose on Wall Street because they are designed around the artificial rules and games people on Wall Street play. But they have little, if any purpose at all, in the real world we live in.

The published works in math and physics have helped advance our understanding of technology and medicine with tangible results. The published works in finance are developed to

* The BS model is a multivariable quantitative model, and like all forms of math, including the equation 1 + 1 = 2, it can be applied to things outside of finance as well. So, the BS model could have some usefulness outside of finance as well. But BS was designed to price options, and to my knowledge, it is only used by option traders.

help the industry shuffle other people's money and collect fees, at best, or create economic disasters, at worst.

The two Nobel laureates, Scholes and Merton, served on the board of directors for Long-Term Capital Management. The hedge fund was founded in 1994 and is famous for nearly collapsing the financial system in 1998 with what some called *high-risk arbitrage* trading strategies. The disaster was averted with a bailout that involved government and private intervention, and the firm went out of business after the fiasco.



As I mentioned in Chapter 2, it's not difficult to come up with a strategy that works nine out of ten times. But the issue is that tenth time—the one time that it does not work.

THE FINANCE ACADEMICS UNDERSTAND the importance of the positive-sum idea, but they have done nothing to show that it is even valid for the stock market. And if you think about it, why would they even try? How would validating the positive-sum idea benefit these institutions in any way?

If they do somehow prove the stock market is positive-sum, then it's business as usual. But if they discover that stocks are zero or negative-sum instruments, then they would have dug their own graves.

The heart of the problem is not Wall Street but the universities and academics that teach these flawed ideas so people can work on Wall Street.

The first time I realized the troubling role our universities play on Wall Street was after seeing the movie *The Inside Job*. The documentary explored the issues that led up to the 2008 financial crises. One of those issues is how interconnected Wall Street is with our top universities. The documentary exposed a pattern of how academics from top schools like Harvard, Columbia, and UC Berkeley, make money on the side consulting for Wall Street firms, serving on their boards of directors, and advocating Wall Street-friendly policies to the government. This was not a complete surprise to me, but it was the first time I saw someone point the finger directly at our prestigious academic institutions and convey: *You are a culprit. You are not free from guilt. You are a part of the problem.*

And it made perfect sense.

FOR A MOMENT, LET'S IGNORE EVERYTHING I have presented and assume we know absolutely nothing about the stock market other than that it is a system where people have won and lost money.

Some believe the system is positive-sum because they know people who have made money, and some believe the system is zero or negative-sum because they know people who have lost money. Both sides have evidence to support their claims, but neither side knows what the total score is (how much has been won or lost comprehensively).

Looking at this situation from a completely neutral perspective, both sides have valid arguments and the truth will require some research. Therefore, wouldn't it be prudent for our universities to investigate both arguments?

Of course, they should—but they don't.

Our universities assume the positive-sum argument is correct and ignore the other side of the argument altogether. It's not that they didn't investigate the negative-sum argument; it's that they did not investigate anything at all! They just indoctrinated the positive-sum assumption as truth and ran with it.

Finance academics have actually gone to great lengths to rationalize why proof for the positive-sum assumption is unnecessary. A shared excuse I've come across is: Finance should not be compared to a hard science like math or physics. Finance is a soft science like economics and medicine, which do not always yield definitive or repeatable results. It sounds reasonable, but then again, all good excuses sound reasonable to some degree.

The problem with that comparison is that economics and medicine are imperfect social sciences that were developed to address real problems that arise *naturally*, like how to provide shelter and education for a growing population, or how to treat illnesses caused by mutating bacteria or viruses.

On the other hand, the problems in finance are all *artificial* problems created by the finance industry itself, spawned by the minds of people who study and teach finance. There is nothing natural about market crashes and derivative contracts. The industry created these synthetic instruments so they can sell services and collect fees. They have done nothing to show whether or not their ideas make sense, or if the investment system they so passionately believe in is even positive-sum.

Finance is nothing like economics or medicine. It is more like a racket that tries to solve the very problems it creates.

IT IS THE RESPONSIBILITY OF OUR UNIVERSITIES to teach valid ideas and investigate questionable ones, but this is not what has been happening in finance departments. They invest money

into researching complex ideas that *assume* the stock market is positive-sum, and not a dime to investigate whether the underlying assumption is even valid. Even worse, they have a process that actively rejects any research that questions the validity of these fundamental assumptions.

I attended a graduate school fair a few years back where several business and economic schools from across the US were in attendance. One of the things I wanted to find out was whether or not it was possible to get into a Ph.D. program if your research idea is fundamentally different from the topics that school is researching. I wanted to go to graduate school, and needless to say, I was having a hard time finding a school that cared about researching whether or not the stock market is positive, zero, or negative-sum.

During a Q&A session, I asked the professors on the podium, "What advice can you give someone who wants to research something that might not be in line with what the school is currently researching?"

They thought about it in silence for a while, and then one of them responded, "That's a good question…I think the important thing is that you want to make sure the school is a good fit for you."

The suggestion that people should apply to schools that share their interest sounds reasonable, but it is also a backward way of thinking. Every good scientist understands that ideas evolve from "funeral to funeral"; this means a new idea that will be discovered tomorrow will not only be more revealing and accurate than what we have today, but it will also prove many—perhaps even all—of our current beliefs around that subject false.

"You want to make sure that we are a good fit for you" sounds like reasonable advice, but it also advocates a process that actively rejects new research.

If you think stocks are great and want to research how they can be integrated into the social security system, you'll be a good candidate for just about any school out there, even though no one knows if the stock market is even positive-sum. But if you want to investigate the depth of investor losses over the past century, you'll have a tough time finding an institution that cares, even though there is no shortage of investors who have lost money in the system.

As for why this is the case, my only guess is that it is because researching investor losses is not profitable for the universities and the results could discredit their business and finance schools, which are also extremely profitable departments.

OCCAM'S RAZOR is a concept that says the explanation with the fewest assumptions is often the best. The simple explanation for why there are no theorems or theories that can show how investment systems like the stock market are positive-sum is because systems like the stock market are not positive-sum.

The flags are everywhere if you ignore the conventional teachings and look at the finance industry from a completely unbiased perspective.

Investment finance is the only industry where experiments have shown that animals and amateurs with no investing experience can outperform seasoned professionals who hold advanced degrees in the subject. It is the only industry that claims its structure is positive-sum, even when almost nothing is known about how much investors have lost. It is the only industry where people can report imaginary profits that will never materialize. The only industry that lets firms advertise the value of their services without evidence of its effectiveness. And the only industry where it is considered normal to misuse vocabulary like *arbitrage* and *hedge* to describe things that are not risk-free and very risky.

Finance professionals are some of the most productive and industrious people in the world, but unlike other industries, there is little evidence their efforts will lead to anything of value. If you give a janitor or dentist an extra hour to work, they will provide a more sanitary environment or a happier patient. If you give a financial analyst extra time to work, they might come up with a scheme that leads to the next financial crisis. Make no mistake about it: the collapse of 2008 and every financial crisis before it could not have happened without an army of financial professionals working overtime in the years leading up to it.

These points do not formulate a definitive proof that condemns the industry, but it is more than enough evidence to hint at the possibility that there is something false and illegitimate at the fundamental level. But instead of questioning or investigating these issues, our top universities are telling people to ignore the obvious contradictions and focus on developing sophisticated models based on unproven assumptions—which adds no value or certainty to the ideas they teach.

We have a tendency to assume wealth and repetition as validations for truth. But truth has to be grounded in logic.

If the investment system were positive-sum, finance professionals wouldn't need to wear suits to sell services any more than a restaurant would need advertisements for handing out free food.

CHAPTER 5

The Universal Error

ASSET VALUE ≠ CASH

"You know what a Fugahzi is?"

“No-Fugazi, it’s a fake.”

“Fugazi, Fugahzi, it’s wahzi, it’s a woozie. It’s fairy dust. It doesn’t exist. It’s never landed. It’s not on the elemental chart. It—it’s not fucking real. We don’t create shit. We don’t build anything.

So if you got a client who bought stock at $8 and now sits at $16, and he’s all fucking happy. He wants to cash in. Liquidate. Take his fucking money and run home. YOU DON’T LET HIM DO THAT! Because that would make it REAL!

NO! What do you do?

You get another brilliant idea. A special idea. Another ‘situation,’ another stock—to reinvest his earnings and then some. And he will, every single time, because they are fucking addicted. And you just keep doing this, again and again and again. Meanwhile, he thinks he’s getting shit rich, which he is—on paper. But you and me, the brokers. We’re taking home cold-hard cash via commission, mother-fucker.”

—The Wolf of Wall Street

In His Book *Thinking, Fast and Slow*, Dr. Daniel Kahneman talks about a study conducted by psychologists Christopher Chabris and Daniel Simons that demonstrated how focus on a task can make people effectively blind to things that would normally attract attention.

In their experiment, Chabris and Simons showed a video of a basketball game to thousands of test subjects who were asked to count the number of passes one of the teams made. Halfway through the video, a person in a gorilla suit appears and walks across the court for about nine seconds, thumping at its chest. The real test was to see if the subjects, who were counting the number of passes, noticed the gorilla crossing the court. The result was, more than half the test subjects did not notice the gorilla during the game.

In the words of Dr. Khaneman, "The gorilla study illustrates two important facts about our minds: we can be blind to the obvious, and we are also blind to our blindness."

The biggest lies are the ones hiding in plain sight. We look for hidden things in dark corners, but when something is obvious, it doesn't even feel like anything is missing.

THE REASON WHY $1 TRILLION of value can disappear in a day is because: $36 trillion of stock value = $0 in real money. The money didn't go anywhere. There was nothing there to begin with. It started at $0 and remains at $0. The numeric market value is nothing more than an imaginary idea Wall Street planted inside people's heads, and it's not real.

I have regarded the stock market value of $36 trillion for the NASDAQ and NYSE as a meaningless number throughout the book. In this section, I am going to go a little deeper and explain why this number is so irrelevant.

* The NYSE and NASDAQ lost $1 trillion of value on August 14, 2019.

A few years ago, I watched a finance professor at the University of Chicago start his Introduction to Asset Pricing class by showing the graph above, describing:

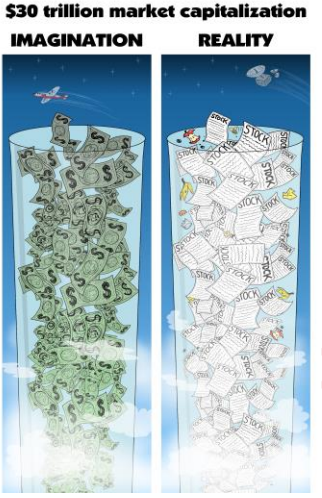
> *"This is if you invested one dollar in 1926 in stocks and how much MONEY you would have at each date (without inflation). If your great-grandfather or grandmother put one dollar in stocks in 1926, you would have about $250 REAL DOLLARS today (2013)."*

This is a common example used in many Introduction to Finance courses. It's meant to show how people can make money from stocks and make the stock market appear positive-sum. But this example is also entirely flawed.

The first problem is how the professor did not consider all the investors that are involved. He describes how an early investor in 1926 can buy into the market for $1 and cash out for $250 in 2013, and live happily ever after. However, he does not consider the fact that a new investor in 2013 is also going to be down $250.

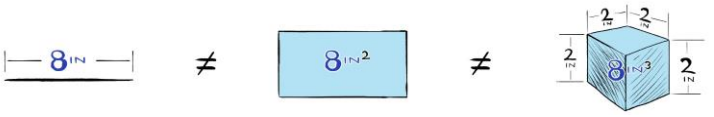
The professor's technique of concluding stories prematurely on a high note, and focusing on the winners, is common in finance, and it can make any shady scenario look positive-sum.

The second problem, and the more important one, is the *universal error* of assuming asset value as a cash equivalent. The professor says “money” and “real dollars” when he is referring to an assumed asset value and not “money” or “real dollars” at all. His chart does not represent “how much money you would have at each given date.” It represents how much money the early investor from 1926 thinks he is entitled to at each given date. But in reality, the investor is really down -$1 because that is how much he paid for the stock.



The universal error of not distinguishing the difference between an assumed asset value and cash gives people a false perception of reality, and it is probably the most fundamental and technical reason for how we arrived at a $36 trillion market value with zero real dollars ($0) in the market.

IN MATH AND SCIENCE, it is absolutely necessary to use proper notations to distinguish things that are fundamentally different. A line that is eight inches long is fundamentally different from a surface area of eight square inches, and both are different from volume, which can be stated as eight cubic inches. The length, the surface area, and volume are completely different, which is why we have specific notations for each value. If we didn’t, we would have a complete mess, and many of our technologies and innovations would not exist.



This is where I see a big problem with finance and economics. Our current reporting systems use the universal dollar/currency symbol **$** to represent things that are fundamentally different. The characters "$100,000" are used to represent $100,000 of cash, $100,000 in real estate, and $100,000 in stocks. However, cash, real estate, and stocks have about as much in common as a line, surface area, and volume.

Government-issued cash currency was created as a medium of exchange to assist transactions and the exchange of goods and services. It is called *legal tender*, which means it is legally recognized as a valid form of payment for all debts, public and private. It is uniquely different from real estate, stocks, and pretty much everything in our world.

If you have $100,000 in your bank account, that is the amount of money you are entitled to. It is not all in the form of cash currency sitting idly in the bank. Some of it is in the form of demand deposits because the cash is usually loaned out to other people, but there are names attached to every dollar that is lent, and the people who borrowed the money have a responsibility to repay what they took. If the borrower can't pay it back, the bank will pay it back, and if the bank can't pay it back, the Federal Deposit Insurance Corporation will pay it back (up to a limit). Ultimately, you are entitled to the $100,000

you see in your account, and it is backed by multiple private and government guarantors.

Real cash-currency is finite in quantity. Governments have ways of increasing the money supply and can create money with relative ease, but they understand it carries severe economic consequences, so when it is done, it is done with a lot of control and prudence.

Real estate and other tangible goods can be priced in terms of cash, but they also have intrinsic physical values, which exist even in the absence of cash. If the real estate market closed tomorrow, the people who want to buy homes would be disappointed, and the agents would be out of work, but the people who own homes would still have their homes. If they needed to, they could barter their homes for other necessities without exchanging money.

Stocks are intangible things that are priced in terms of cash, but the price of a stock is not legitimately backed by anyone. If you have a $1,100 share of Google, the only money you are entitled to from Google is the par value of $0.001. This also means if you are holding $110,000 in Google stocks, you are technically only owed $0.10.

Stocks are like IOU notes based on real companies but without the “I” or a defined person or entity who is responsible for repaying the note. If the stock market closed tomorrow, and money from new investors stopped entering the system, the investors holding stocks would have no way of getting their money back. Even under the best conditions where they can redeem some of their stocks with the underlying company beyond the par value, stock investors still won’t receive anything close to the $36 trillion of value they think they are entitled to because that amount of money simply doesn’t exist.

Now, there are occasions when a company uses its stocks like currency in a business transaction—but it is wrong to confuse this rare action with the assumption that stocks are a form

of currency. The existence of these situations just means that there are limited circumstances where someone will accept stocks as payment. But in no way, are stocks anything close to the credibility of legal tender backed by the government. Companies create stocks because they need to raise cash. However, cash is never created as an instrument to raise stocks.

An important characteristic, which separates things that are real versus imaginary, is the amount of work involved in the replication process. Tangible goods like a house, take time, labor, and resources to reproduce. They are difficult to replicate and finite in quantity. On the other hand, imaginary things like stocks can be issued by anyone. They are easy to replicate and can be infinite in quantity.

Ultimately, it's all about legitimacy. A real estate transaction has legitimacy because the value of the property is backed by the physical value of the property itself. The value of a dollar has legitimacy because the value is backed by the United States government. The value of a bond is also legitimate because there is a defined entity that is responsible for repaying the face value of the bond. However, the value of stocks has no legitimacy because neither the underlying company or anyone has any obligations to repay the shareholders anything.

If you have $100,000 in cash, you can buy whatever you want with it. If you have a house that is worth $100,000 and can't sell it, you are still left holding a house. But if you have $100,000 of stocks and can't sell them for cash, you could be left holding nothing.

It Is Clear That There Are Fundamental Differences between cash, tangible goods, and stocks. However, these differences

* Sometimes I treat the par value of $0.001 as zero (for obvious reasons).

are not apparent when we use the same characters—$100,000—to represent all three.

Small things, like notations, can make a big difference.

The improper use of the dollar symbol **$** doesn't seem very significant, but it might be the key reason for why finance and economic ideas are so underdeveloped. It is hard to imagine how something so simple can be responsible for so many problems, but any mathematician can tell you that the power of the right symbol is not something to be overlooked. It's easy to see how 17 + 4 = 21. Now, try adding XVII + IV.

The universal error may have created many problems, but the good news is, there is a simple solution: we just need to come up with a way to notate different things, differently. Obviously, we should keep the currency symbol **$** as it is when referring to cash, but for tangible assets, we might want to use something like **^**, so the property that is worth one hundred thousand dollars is written as **^100,000**. And for stocks and other questionable assets, we should use **†**, like **†100,000** in stocks. It will look and feel a little awkward at first, but it's not hard to get used to. It is not a perfect solution, but it's a start.

Proper notations will help eliminate the universal error in the written form, but verbally, the world of finance will have to learn how to properly use words like *dollar*, *money*, and *cash* on their own. Fixing the verbal issues are going to be a lot tougher because it is habitual, and people in finance are gifted at misusing vocabulary.

However, I think as the general population gains a better understanding of what stocks are and why their values are so meaningless compared to cash and tangible things, they will also be able to hold the industry more accountable for their flaws.

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* This is the *caret* symbol: ^ This is the *dagger* symbol: †

As I mentioned before, I believe people are far too intelligent to be brainwashed, but we can be miseducated. For many, the false programming starts with examples like the one from the University of Chicago. For some, their education will end with graduate degrees and classes from people like Gabriel Bitran, who taught at the Sloan School of Business at MIT for thirty-five years, and ended his career pleading guilty to fraud charges from the SEC.

I'm not suggesting all finance academics will end up committing crimes, but finance is the only industry, and the only academic field I know of where a professor can face a jail sentence practicing what he preaches.

As Dr. Taleb once said, "Education makes the wise slightly wiser, but it makes the fool vastly more dangerous."

CHAPTER 6

The Stock Market

DIVIDENDS AND PONZI PROFITS

"In a classic Ponzi scheme, you can keep it going as long as there is somebody else to bring more money."

— Yahoo! Finance reporter Aaron Task

"I DON'T KNOW WHAT YOU and that group of yours are trying to cook up, Tan, but what you're describing sounds a whole lot like a Ponzi scheme."

That's what my friend's father said to me when I tried to recruit his son into a network marketing group I joined when I was eighteen. I was actually trying to get my friend involved in a pyramid scheme, but I must have explained it poorly because his dad definitely thought I was trying to get his son involved in a Ponzi scheme.

That was the first time I heard the term *Ponzi scheme*. I had a feeling it was something bad but didn't know how the scam worked.

A few years later, my friend Paul explained the process during a lack lustered attempt to recruit me. He said, “Tan, someone told me about a way you can make 10% on your money every month. You want in?”

“Sure! What is it?” I replied.

“I can tell you, but only if you commit. But after you find out, you’ll probably say it’s really, really stupid,” said Paul.

“Dude, what is it?”

“I’ll only tell you if you commit. You in?”

“NO! Just tell me already!”

Paul was a close friend. He knew I was curious and impatient and he wanted to get a good laugh in before letting me off the hook. After a few more exchanges, with him withholding information and me trying to extort it, he finally explained how it worked.

It was a classic Ponzi scheme, and I thought it was brilliant.

A PONZI SCHEME is a scam where current investors’ profits are paid out with either their own money or money from other investors. Here is what you should do if you want to run your own Ponzi scheme:

Step 1: Start by making up some clever-sounding investment strategy that is simple enough to understand but difficult to verify, and tell people they can make a nice return—let’s say 10% a month (or a year or whatever sounds believable and good).

Step 2: Take the cash from those who want to invest.

Step 3: At the end of the month, pay your investors the 10% on their money like you promised.

The success of the proposed investment strategy, which really doesn’t exist, is completely irrelevant because you are

going to pay your investors with the money they gave you or the money you receive from other investors. You'll make your fee from shuffling their money, and they'll keep giving you money because they think the profits are coming from some legitimate external source—a non-investor or end-users from business activities. As earlier investors get paid out with the fantastic returns you promised, more will join, and you can always deliver what you promised as long as there is cash coming in from new investors.

You can pull off the scam with just about any fictitious investment strategies, but the ones that involve tangible assets, like art or real estate, can be more difficult. Those are physical goods, so if someone wants to see them, you'll have to find a way to produce them. Bogus strategies involving financial instruments like stocks work a lot better because they only appear as numbers in reports. Most people in finance have no idea what a stock even looks like, or what to do if they held the physical note in their hands.

The interesting thing about a Ponzi scheme is that investors can still make money even if the scheme ends up collapsing. In fact, the scam can actually produce more winners—people or accounts that realize profit—than losers. This is why a majority of Bernard Madoff's investment accounts showed a net profit despite the fact that more money (total cash) was lost in the scam than won. The last investors will suffer the greatest, or maybe even all the losses, so the trick is staying out of that latter group—like knowing when to sell when it comes to holding stocks.

The Ponzi *schemes* (noun) we've heard about, like Madoff's fund, are the ones that collapsed, but the Ponzi *process* (verb) can continue indefinitely as long as investors keep contributing money into the system. To me, a *scheme* implies something short term with a foreseeable end, but an investment system

that follows the Ponzi *process* can continue indefinitely for decades or even more than a century. Regardless of how long a Ponzi scheme can stay afloat, the general consensus is that they are all destined to collapse. This idea isn't proven but sounds sensible for a scam that sells itself as having infinite potential in a world that has finite resources and cash.

Ponzi schemes experience signs of trouble when there is an absence of cash from new investors or if enough of the current investors want their money back and realize what they thought they had isn't really there. Both scenarios will lead to a collapse or a massive pullback at best.

Again, the US stock market is valued over $36 trillion. But there is only $3.3 trillion of cash in existence in the entire US economy, which includes the spare change laying around your home right now.

FAMOUS FINANCE GURUS, many of whom still believe in the stock market, have been dropping hints about the similarities between the stock market and a Ponzi scheme for decades.

In his book *A Random Walk Down Wall Street*, Dr. Burton Malkiel writes:

> *Robert Shiller describes bubbles in terms of "positive feedback loops." It starts when any group of stocks begin to rise. The updraft encourages more people to buy the stocks, which causes more TV and print coverage, which causes even more people to buy, which creates big profits for early stockholders. The successful investors tell you at cocktail parties how easy it is to get rich, which causes the stocks to rise further, which pulls in larger and larger groups of investors. But the whole mechanism is a kind of Ponzi scheme.*

People in finance will agree with what Dr. Shiller and Dr. Malkiel said about how bubble scenarios are created with a Ponzi-like process. But what is the real difference between a bubble scenario and what finance professionals call normal growth? What is actually causing the appreciation in stock prices?

The only difference between the bubble and growth scenario is *speed*—how fast the prices are rising. But speed does not cause the inflation in stock prices. It just implies that the inflation is happening quickly. The thing responsible for the rising stock prices in both bubble and growth scenarios is additional cash from new investors.

The "Bond King," Bill Gross, said he thinks there's something Ponzi-like happening with stocks because the growth in stock values has outpaced the growth in the Gross Domestic Product (GDP), the general measurement of overall growth in the economy.

In an interview in 2012, he said, "The 6.6% real return belied a commonsensical flaw, much like that of a chain letter or yes, a Ponzi scheme…If wealth or real GDP was only being created at an annual rate of 3.5% over the same period of time, then somehow stockholders must be skimming 3% off the top each and every year."

I don't agree with all the technicalities of his statement, but Bill Gross is a highly respected person on Wall Street, and he used the word "Ponzi" in association with the stock market.

When I refer to the word "Ponzi" in these pages, it is to describe a specific process of how money is exchanged between participants. When someone on Wall Street uses the word "Ponzi," it is a synonym for fraud or scam.

The former Director of the Quantitative Strategies Group at Goldman Sachs, Fischer Black, wrote a short essay stating, "Certain economic quantities are so hard to estimate that I call

them 'unobservables'…Our estimates of expected return—the amount people expect to make or lose when buying a security—are so poor they are almost laughable."

In his book titled *Antifragile*, Dr. Nassim Nicholas Taleb states, "Risk is not measurable outside of casinos or the minds of people who call themselves risk experts." He goes on to explain, "The impossibility of calculating the risks of consequential rare events and predicting their occurrence" as the black swan problem.

Both Dr. Black and Dr. Taleb attributed the shortfalls of financial analysis to some unforeseeable factor(s). And, I believe the unforeseeable factor they are talking about is the Ponzi Factor: money that comes from new investors. The Ponzi Factor is not unforeseeable; it's just impossible to calculate. It's hiding in plain sight and ignored in financial analysis.

As for why? Well, first of all, you can't quantify the Ponzi Factor. And if you can't quantify something in financial analysis, you just ignore it. Second, and most importantly, acknowledging the existence of the Ponzi Factor is also an admission that the stock market is similar to a Ponzi scheme.

THE STOCK MARKET IS SIMILAR TO A PONZI SCHEME because it is a system where current investors' profits are *dependent* on cash contributions from other investors. As I mentioned in the introduction, the Ponzi process is self-evident when we look at a typical stock transaction. When an investor buys a stock for $10 and sells it for $11, that $11 comes directly from another investor, and then that new investor will start looking for yet another investor who might want to pay $12 for the stock, and so on.

The important thing to notice is that the underlying company doesn't contribute any money into the transaction, and the company isn't obligated to buy back their own shares

for anything more than the par value of $0.001. Therefore, the company cannot be *directly* responsible for whether or not their investors will make money.

It is possible to argue that the company can be *indirectly* responsible for the earlier investors' profits by reporting good earnings, or in Tesla's case—since the company never made any money, just hyping themselves up in the media and pumping up the demand for their stock. But indirect factors are speculative and irrelevant compared to the direct factor that is definitively responsible for the earlier investors' profits—the cash from another investor.

If a company is not directly responsible for the investors' profits, then the relationship between the shareholders and the business becomes disconnected, and whether or not the stock is an equity instrument that represents ownership in the company also becomes questionable, something I will elaborate on later.

There are supposed to be "two ways" for investors to make money with stocks. One is through *dividends*, which is money that comes from business profits. The second is through *capital gains*—the buy-low, sell-high gamble on possible stock value appreciation. Profits from dividends are legitimate profits because they come from business activities and are paid by the underlying business. Profits from capital gains are Ponzi profits because they come from other investors. There is nothing wrong with a scenario where investors can make money from both dividends and capital gains. But there is something extremely wrong with a zero-sum scenario where the only guaranteed way investors can make money is by taking it from other investors with capital gains. And sadly, this is exactly how most stocks work in the current system.

The majority of the stock market is made up of *common stocks*, which are basically notes with the company's name on them, but they don't guarantee any dividends or payments. In

some cases, like with Google's class C shares, which make up the majority of the company's shares, they don't even come with voting rights. Common stock shareholders are not entitled to any operational profits from the business, and the only practical way investors can make money is by selling their shares to other investors using the Ponzi process.

There are exceptions, of course. Companies like Microsoft and McDonald's have a history of paying *regular* dividends—whether the amounts paid are *reasonable* compared to the profits the companies earn can be subjective, but they do pay their investors on a regular basis. However, these are exceptions, and we can't use exceptions to generalize what is the norm for common stocks in the overall market.

Finance people will argue that all common stockholders do have a "claim" to dividends, but this is not a legitimate claim. There is a difference between something that *can* happen versus something that is *legitimately likely* to happen. In practice, most public companies never pay dividends because they are not obligated to. They can always make up an excuse for why they can't pay, and there are enough fine print and legal loopholes in their documents to let them get away with it. This is why companies like Google, which is about as mature and successful as a public company can get, have never paid dividends.

A shareholder's "claim" to dividends is meaningless because the normal practice is; public companies do not pay dividends, and shareholders receive nothing from the business. A common stock in the open market is treated like a game of hot potato among investors. It gets passed around from player to player, no one wants to hold it as an end product, and every player wants more money back than they put in. The companies that issued the stocks won't contribute any money to the game, but they'll encourage the frenzy from the sidelines with phrases like "We're going to make our share value grow and

our shareholders happy!" This is why I refer to common stocks as *Ponzi assets*.

There are extremely rare situations where a company pays nonguaranteed dividends. But these unlikely events are unforeseeable and, for most companies, nonexistent. If it happened once, it might never happen again. And even if does occur, the amount of money the firm gives back is minuscule (like a small fraction of a penny on the dollar) compared to the profits they take and hoard from investors. Even finance people don't consider those actions as sources of profit for stocks.

The legitimacy of an investment instrument needs to be judged by how the instruments behave on a regular basis—not by unscheduled events that may never occur. And what we can clearly observe from day to day are investors cannibalizing each other while the company they believe they own hoard profits. There is no way to predict "if" or "when" a company will pay dividends. But what is predictable, certain, and observable is that if investors want to receive money for the stocks they are holding, the only *foreseeable* way it can happen is if they sell it to other investors and engage in the Ponzi process.

SOME FINANCE JUNKIES ARE THINKING: *What about stock buybacks?! Public companies have returned hundreds of billions of dollars to investors through buybacks!*

The critical word that is missing from their vocabulary and calculation is "dilution": the additional shares public companies print before and after the buyback.

Contrary to what you may have heard from the media, academics, and even Wall Street critics like Bernie Sanders: stock buybacks are not returns to investors. Most buybacks are complete scams. On the surface, it might look like companies are returning money to investors. But unlike dividends, which are

paid and done, stock buybacks can be rescinded when companies print more shares after the buyback. Such dilution can come from initial public offerings by new companies, secondary offerings by existing companies, or employee stock compensation. All three scenarios add new shares to the market and extract money from investors.

I investigated 1,274 firms that engaged in buybacks between 2009 – 2016 and found 59% of them had increases in their shares outstanding between 2004 – 2018. A legitimate stock buyback should decrease a company's total shares outstanding, but 755 (59%) of the companies showed increases in their shares outstanding around the years they supposedly bought back stocks. This means most buyback companies don't return money to investors, but they actually take money from investors when no one is looking.

The existence of *false buybacks* should not be a surprise. If you think about it, public companies like Morgan Stanley and AT&T have been buying back stocks for almost a century. If their buybacks were legitimate, they should've acquired all their shares by now and become private. The reason they are still public is that they print more shares than they buy back. The table below shows a few of the 755 companies that engaged in false buybacks between 2009 – 2016.

Notable Dilutors

Ticker	Name	Shares2004	Shares2018	% Increase
AMZN	AMAZON	403,354,000	488,969,000	21%
BAC	BANK OF AMERICA	2,971,610,000	9,814,197,000	230%
C	CITIGROUP	515,700,000	2,442,137,000	374%
JPM	J P MORGAN CHASE	2,040,271,000	3,325,411,000	63%
T	AT&T	5,226,000,000	7,278,000,000	39%
MS	MORGAN STANLEY	1,084,700,000	1,720,155,000	59%
NFLX	NETFLIX	346,738,000	436,085,000	26%
NVDA	NVIDIA	497,724,000	610,000,000	23%
VZ	VERIZON COMMUNICATIONS	2,770,000,000	4,132,015,000	49%
WFC	WELLS FARGO	3,384,058,000	4,707,244,000	39%

Firms bought back stocks between 2009-2016. The Shares are split adjusted. www.ThePonziFactor.com

* The data for the buybacks will be available at www.ThePonziFactor.com by August 2019.

The most disturbing thing about the companies on that list is that most of them also paid dividends. In fact, dividend companies made up 539 of the 755 companies that engaged false buybacks. It was an unexpected and puzzling discovery. At first, I had problems interpreting the results. It's easy to see why Ponzi asset firms wouldn't care about dilution because they don't have to pay dividends on diluted shares. However, the data showed that 71% of the false buybacks belonged to dividend firms, which shows that dividend firms printed diluted shares without much concern for additional dividend liabilities.

If a company is simultaneously diluting while they pay dividends, then the money they are receiving from selling diluted shares to investors is also being used to pay dividends. The company will not draw a straight line between the two actions, but it's clear that money is going into a pot that gets mixed and paid out to other investors. That's how capital gains work, but it's also true for many dividends as well. Like many of my discoveries over the years, it was not something I wanted to accept when I first saw it, which is why I had a hard time interpreting self-evident and obvious results.

The discovery opens new questions about the legitimacy of dividends. Unfortunately, I will not get into the details about *false dividends* (in this book) because it is still a research in progress. However, I am comfortable saying that based on what I have seen, more than half of the dividends out there are being paid with money that is tied to dilution.

Buyback Firms: 2009 - 2016 | Analysis Years: Fifteen & Twenty											
Years	Total Buyback Firms	Legit Buybacks		False Buybacks		Legit Buybacks		False Buybacks		Buybacks	
		Dividend	Non-Dividend	Dividend	Non-Dividend	Dividend	Non-Dividend	Dividend	Non-Dividend	Legit	False
2004 - 2018	1274	433	86	539	216	34%	7%	42%	17%	41%	59%
1999 - 2018	1059	334	55	500	170	32%	5%	47%	16%	37%	63%
					Mean	33%	6%	45%	17%	39%	61%

(On a technical note, this also means that if investors are reinvesting dividends with one of the false buyback companies, they are essentially paying their own dividends—because they are receiving dividends from the company, and then giving that money back to the company in exchange for the diluted shares. The company takes their money, stirs it in the pot, and redistributes it as dividends!)

Extreme Dilutors

Ticker	Name	Shares2004	Shares2018	Diff
CCOI	COGENT COMMUNICATIONS	711,400	46,472,000	6432%
CIDM	CINEDIGM	647,300	35,143,000	5329%
CYTR	CYTRX	803,778	33,638,000	4085%
PTX	PERNIX THERAPEUTICS	394,250	14,506,000	3579%

Firms bought back stocks between 2009-2016. The Shares are split adjusted. www.ThePonziFactor.com

In addition to the notable dilutors, there were also some *extreme dilutors* whose shares outstanding increased by as much as 6,432%. These extreme cases were the result of standard dilution from printing shares, and multiple reverse-splits in efforts to salvage the stock price. For example, the biotechnology company CytRx Corp. (Ticker: CYTR) had about 804,000 split-adjusted shares at $2/share in January 2004. By 2012, the price dropped to $0.32/share, at which point CYTR did a reverse-split and combined 12 shares into 1 to raise the price to $3.81/share. By 2017, the price dropped to $0.36/share, at which point they did another reverse-split to bring the price up to $2.18/share. By December 2018, CYTR's total shares outstanding was 33.6 million, which is astronomically higher than what they had in 2004. The actions of CYTR looks like a form of price manipulation, but it's also legal.

BUT the most important thing to keep in mind is that from the perspectives of CNBC, Bloomberg, and many finance academics: CYTR is a biotech company with a history of buying back stocks.

Finance junkies like to rationalize false buybacks by saying, "The dilution was probably from stock compensations, not secondary offerings." Their assumptions are that secondary offerings are bad because it shows the company ran out of money and needed to sell diluted shares to investors, but employee stock compensation is standard practice. But if they thought about it a step deeper, they'd realize that stock compensation is essentially the same thing. The only difference is, stocks are printed for the employees, who will then sell it to investors.

The concept of employee stock compensation is a scam that is closely related to buybacks. Some buybacks are specifically designed to pay the board of directors and CEOs. The top dogs at a company can decide how many shares they want to print for themselves and use the company's money to buy their shares. A stock is worthless unless it can be converted into cash, and sometimes that's how it is converted. But that's not the real scam. That is as legitimate as stock compensation gets.

The real scam is in the perception that companies can compensate their employees with stocks. The simple truth is, companies don't pay their employees with stocks. They print stocks, and in most cases, investors who buy stocks are paying those employees. Employees cannot technically get paid with stocks because they don't want stocks. They want money. The reason they'll take stocks is because they can get their money through the Ponzi process. If stocks are a real form of compensation, the CEOs and employees should hold those stocks forever. They should not feel a need or be allowed to cash the paper they print with investors and pension plans.

The issues with dilution also elucidate the fact that stocks are not finite. Most companies are not prudent about issuing diluted shares, but freely print as many as they need. The non-finite nature of stocks is also why the idea of voting rights is a complete joke, and why stocks cannot be considered or compared to real assets with tangible value. A real asset must have

two critical elements. One, it must be finite with a limited number of owners (shares). Two, it must have a value that can be realized without money from other investors—a value that is not strictly dependent on the Ponzi Factor. These two elements exist with real ownership. And they also exist with certain stocks like Apple Inc., who pays dividends and buys back shares without printing more…for now.

The simple truth is, people in finance don't know how to add and subtract. Quoting buybacks without dilution is as foolish as saying "revenue = profit" without considering the expense. But that's what published finance academics do on a regular basis. There are plenty of research firms that track buybacks, but no one tracks dilution. Finance reporters who quote other people's research are not trying to deceive their readers. They report false information because they blindly trust the words of notable finance professors like Aswath Damodaran who teaches at NYU.

As the economist Robert D. Arnott once said, "Most of these myths can be used to rationalize a higher, not a lower [equity return]. No one seems to construct a myth or a fable to explain why we should expect lower returns!"

THE REASON WHY COMMON STOCKS exist is because companies can use them to raise money they'll never have to pay back. Firms have the option of using bonds or preferred stocks to raise money as well, but those instruments would obligate the firm to repay what they borrowed or share profits (guaranteed dividends) with their investors. Those obligations do not legitimately exist with common stocks. There might be some language in the documents that make it sound like the company will repay their common stock investors at some point, but there's nothing definitive, and firms can always find a way to avoid paying their investors.

It's important to understand that stocks do not make a company more legitimate or credible. It just shows that the company needed money at some point. Every company that uses common stocks to raise money will claim something optimistic, like how they are already successful but need the additional capital to expand. This might be true for some, but not all. Some firms deliberately use stocks as a way to bail out their early investors and avoid going bankrupt.

In contrast, successful companies that have money tend to stay *private*. Private companies grow with the profits they take in from normal business activities, rather than the money they can raise from issuing Ponzi assets. This is why there are no publicly traded stocks for companies like In-N-Out Burger, Zuffa (also known as the UFC), and Gore & Associates (the firm that makes advanced materials like Gore-Tex). These are just a few examples of the many private companies that innovate and grow organically with real profits generated from business activities. Their investors' profits (if they have investors) are dependent on the success of the business, *not* the inflow of cash from other investors.

THE IDEA THAT "a company is not directly responsible for its shareholders' profits" contradicts everything that is preached by the world of finance so it might be hard to accept at first. Another way to see this disconnect in responsibility is by asking yourself the following question: Are you, the reader, right now, responsible for Google's investor profits?

Obviously, the answer is no. But why?

I'm sure you can come up with many reasons, but the most relevant one is probably because you have no obligations or plans to pay Google investors any money. Therefore, you cannot be responsible.

Now, the scary thing is, Google feels the same way because Google has no obligations or plans to pay their investors any money either. Therefore, Google cannot be responsible for their shareholders' profits.

I doubt Google executives would say this on TV in the clear, concise way that I have expressed it, but they do admit this in writing in documents that are often ignored by the public and media. Here is a statement from Google's latest (2016) Securities Exchange Commission (SEC) 10-K filing:

> *"We have never declared or paid any cash dividends on our common stock. We intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future."*

The finance industry sells the idea that owning stocks is like owning a piece of a company and makes it sound like the shareholders' profits are directly dependent on the success of the business. But companies cannot be directly responsible for their shareholders' profits because profits from capital gains do not come from the underlying business.

Sometimes I ask people, "How much money do you think you would have made if you owned Google stocks from 2007–2011, during a four-year period where the company reported over $28 billion in profits?"

Some say a lot; some say a little. But the answer is *nothing*.

The price of Google stocks in 2007 was the same as it was in 2011. Google doesn't pay dividends, so shareholders receive nothing from their business operations. Google investors'

profits are *directly dependent* on cash contributions from other investors and the Ponzi process.

Google's chart does shows some peaks and valleys during that four-year period, so it was possible to make or lose money during that time frame. But any profit would be the result of luck, and it doesn't change the fact that Google made over $28 billion in profit during this period and didn't share any of it with their investors.

Again, whether or not investors can make money in a Ponzi scheme is never in question; the issue is where those profits come from.

Finance professionals try to undermine the existence of this *Google scenario* because it contradicts what they preach about stocks and ownership. I've heard a wide range of explanations rationalizing why this could've happened. But the problem is it happened—and not only did it happen, but it happens often.

Company	Time Period	Net Income	Dividends	Share Price Begin, End Period		Capital Gains
B. Hathaway (BRK-A)	2008–2012	$49,457,000,000	***$0.00***	$134,200	$134,200	***$0.00***
Google (GOOG)	2007–2011	$28,656,500,000	***$0.00***	$542	$542	***$0.00***
Apple (AAPL)	2007–2009	$14,354,000,000	***$0.00***	$186	$186	***$0.00***
Yahoo (YHOO)	2009–2012	$5,421,570,000	***$0.00***	$16	$16	***$0.00***
Regeneron (REGN)	2014–2016	$1,664,096,000	***$0.00***	$336	$336	***$0.00***
Chipotle (CMG)	2014–2015	$911,983,000	***$0.00***	$494	$494	***$0.00***
Facebook (FB)	2012–2013	$776,500,000	***$0.00***	$26	$26	***$0.00***
Netflix (NFLX)	2011–2013	$205,150,000	***$0.00***	$287	$287	***$0.00***

The net income data are from the United States Securities and Exchange Commission's Form 10-K filings.
The details for the specific months for the time period quoted are available in the Endnotes.

As for their positions on dividends—sharing business profits with their shareholders—here's what some of them said in their SEC 10-K filings.

> **Berkshire Hathaway:** *Berkshire has not declared a cash dividend since 1967.*

> **Facebook:** *We have never declared or paid cash dividends on our capital stock…and we do not expect to declare or pay any dividends in the foreseeable future.*

Netflix: *We have not declared or paid any cash dividends, and we have no present intention of paying any cash dividends in the foreseeable future.*

Google: *We have never declared or paid any cash dividends on our common stock. We intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future.*

These Google scenarios, when shareholders make *nothing* while the companies they think they own report amazing profits, are scattered throughout the market. It took me less than forty minutes to find these examples. I picked somewhat neutral time frames to show how investors made nothing while the companies made millions or billions; if I wanted to be more selective, I could choose a time frame where shareholders would've *lost* money while the company they owned made millions or billions.

The companies in this example are also some of the best companies in the stock market, which is why they have recognizable names (most are on the S&P 500) The majority of companies listed on the market are smaller firms that are far less stable, less profitable, and with names, you will not recognize.

Finance professionals have come up with a lot of excuses for why these Google scenarios exist, all of which are different, hypothetical, and unprovable—indirect factors. Some of the popular ones are: *The price of a stock is also dependent on other economic and industry factors*; *the market trades on future, not current, information*; and *the stock was undervalued at time-zero*. And of course, the dumbest excuse, which is also the most popular: *Well, investors could've made money if they held the stock for a little longer*. Yes, and I could've won the lottery last week if I'd picked different numbers.

The excuses for why these Google scenarios can happen are only limited by the imagination. I admit that some of the

excuses could even have some degree of validity, but so does the single simplest explanation of all, which is that stock prices are not directly dependent to the performance of the underlying company, but *are* directly connected to how much cash new investors contribute to the system.

Again, these Google scenarios are not meant to show why people cannot make money with stocks—because they can. Even Madoff investors made money, and that was a well-known scam. These scenarios show how the company's performance is not directly responsible for its investors' profits, and there is no legitimate connection between common stocks and the underlying company.

The effects of the Ponzi Factor doesn't have directionality, so given the existence of the Google scenario, there should also exist an inverse to the Google scenario as well—a situation where investors could make money while the company they owned lost billions.

A perfect example of an inverse to the Google scenario is the *Tesla scenario* from the Introduction. The stock for Tesla Motors went from $20 in 2010 to over $380 in 2018, during a period when the company reported a net loss of $6.1 billion. Unlike the Google scenario where the company made billions, but its investors walked away with nothing, Tesla's investors could've gotten rich while their company lost billions. Both these scenarios are possible because profits from stocks do not come from the underlying companies, but at the expense of other investors. And like the Google scenario, these are never one-off situations. If you find one, you'll find many.

Company	Time Period	Net LOSS	Share Price Begin, End Period	Shares Outstanding (millions)
Tesla Motors (TSLA)	2010 - 2018	($6,138,000,000)	$20 → $380	95m → 173m
Tableau (DATA)	2013 - 2018	($486,100,000)	$51 → $125	8m → 72m
Wayfair (W)	2014 - 2018	($1,207,400,000)	$25 → $147	11m → 62m
ServiceNow (NOW)	2012 - 2018	($1,140,700,000)	$25 → $178	120m → 179m
Palo Alto Networks (PANW)	2012 - 2018	($1,060,000,000)	$57 → $215	66m → 95m
Intercept Pharma (ICPT)	2012 - 2018	($1,733,500,000)	$18 → $101	16m → 30m
Bluebird Bio (BLUE)	2013 - 2018	($1,438,400,000)	$25 → $122	24m → 55m

Here's another interesting question, which is specific to the Tesla scenario: How does Tesla Motors stay in business? Their stock can trade around $380, but that's not real money. That's an imaginary value generated from investors who are now feeding off each other. Tesla's rent and utility bills, on the other hand, are very real and need to be paid with real cash. So how do they keep their lights on when they're losing billions? Aren't they going to run out of money at some point?

The answer is yes, Tesla will run out of money at some point, and when they do, they will just print more stock, which is why their shares outstanding increased from 95 million in 2011 to 179 million by June 2019.

Some investors can make money while their company loses billions, and some investors can make nothing while their company is making billions. Both the Google and Tesla scenarios are possible because investors' profits are not directly dependent on performance or growth of the underlying companies, but directly dependent on cash from other investors.

In academic jargon: The Google and Tesla scenarios are *counterexamples* that disprove the conjecture that owning stock is like owning a piece of a company. It is evidence that shows how stock prices are not a reflection of future earnings or growth. The logic is simple, and the mechanics are irrefutable. The stock market is a pay-as-you-go system that is supported by the cash inflows from new investors, and owning stock is nothing like owning a piece of a company.

Like Dr. Emanuel Derman said in his book *My Life as a Quant*, "When you own stock, you are guaranteed nothing!"

THE IDEA OF OWNERSHIP IS ALSO KNOWN AS *EQUITY*, and it is fundamental to the legitimacy of stocks as an investment instrument. What I've shown thus far brings severe doubt to the association between stocks and equity. But, why does the

world of finance refer to stocks as equity instruments in the first place? How did the word "equity" even get associated with stocks?

Like other fundamental ideas in finance, the equity association has never been researched. From what I have seen, it's an assumption that was passed down by word of mouth and in textbooks but never questioned or investigated.

By definition, *equity* implies the existence of ownership interest. Stocks are called equity instruments because they are supposed to represent an ownership interest in the company. But based on evidence like the Tesla and Google scenarios, and the existence of Google's non-voting Class C shares, the assumption that stocks represent real ownership interest is laughable. It is tempting to assume that stocks have some real intrinsic value because they are associated with the word "equity," but if you look at how the first and early stocks behaved, and why stocks were initially created, it will be clear that the word "equity" does not apply to the common stocks being issued today.

Unlike the other ideas I've presented, which for the most part were derived from observation and logic, what I'm about to share is grounded in history. I am pointing this out because the world of finance has access to the same historical material, but finance classes do not teach history, and most finance people are completely unaware of the things I'm about to share. So, an interesting question to keep in the back of your mind is, why does the world of finance, especially people like Warren Buffet, ignore history?

Let's start from the beginning and try to understand the origin of stocks and how stocks came into existence. I think two aspects of human nature that have not changed over time are that; people are protective of their money, and people are usually suspicious of new things. So how did stocks gain traction amongst the first investors? What was it that made the first

investors want to take a chance with these new investment instruments?

As I mentioned in the Introduction, let's look at two investment proposals and think about how early investors would've responded:

Proposal One:

A business owner says to investors, "If you invest in my business, I'll give you a share of the company, and if the business makes money, you'll receive a share of the profits too. The share is also transferable so you can sell it to another investor. If you're lucky, you might even get more than you paid."

Proposal Two:

A business owner says to investors, "If you invest in my business, I'll give you a note that says you own a share of the company. However, you won't receive any money from the business. The only guaranteed way you can make money is by selling that note to someone else. Maybe you'll get lucky and get more than you paid!"

Again, which scenario do you think early investors would have taken into consideration, and which do you think they would have ignored? Do you think the early investors would've handed their money over in exchange for a note that didn't promise any form of repayment?

According to historians, the first stocks came into existence in the early 1600s in Europe, and the first joint-stock companies were in the shipping and trade business. The fact that the first stocks were related to the shipping industry was not a coincidence. If you think about it, shipping was an expensive and risky business that also had very low hands-on work involvement by owners. The owners secured the financing, but they didn't have to go on the long voyages themselves. The his-

torian Ranald C. Michie described it as a situation where "*Ownership and operation were divorced.*" It was an ideal situation for silent investors—people who want to own a business without getting their hands dirty. And naturally, in return, investors also expected to receive a portion of the business profits.

Back then, people didn't get involved in something that didn't pay dividends. It is documented that companies like the Dutch East India Company—which was also believed to be the first joint-stock company to issue stocks—and the South Seas Company paid annual dividends that yielded between 12%–62%. This means if the stock was $100 a share, the investor would receive anywhere between $12–$62 for every share he or she owned every year. This shows that the first public companies didn't just pay dividends, but they paid *reasonable & regular* dividends. Those companies didn't pay something unscheduled and trivial, they shared a reasonable amount of profits with their investors and paid them on a regular basis. It shows how vital dividends were for the investors. And, it also shows how much the underlying companies respected their investors' participation, ownership, and profit-sharing agreement.

The practice of paying dividends was not unique to early European stocks; it was also the norm for American companies until the twentieth century. According to Dr. Bryan Taylor, from Global Financial Data Inc., "*virtually all*" stock returns during the 1800s came from dividends, not capital gains. Dr. Taylor also says that "*the behavior of financial markets in the 1800s, because of the returns to investors, was fundamentally different before and after 1914,"* and mentions that one reason why dividends were important was that most people invested in bonds at the time and thought stocks were risky. Dividends weren't just important to the early European investors; they were an intrinsic part of early US stocks as well.

As I mentioned earlier, there are two ways investors can make money with stocks: dividends and capital gains. These two profiteering methods are fundamentally different. Profits from dividends come from the business, whereas profits from capital gains come from other investors. This is a material difference that regulators and people in finance ignore, but it is literally the difference between legitimate investment profits and Ponzi profits, and the difference between a real equity instrument and a gambling instrument.

If you eliminate dividends from stocks, the stock becomes a fundamentally different financial instrument. History clearly shows that stocks were designed to pay dividends. But today, the common stocks that are being sold to investors behave nothing like the way stocks are supposed to function.

The early stocks before the 1900s were indeed real equity instruments because they paid dividends. They had a legitimate connection to the business because investors' profits came from the business. The early stocks were not just Ponzi assets that investors traded; the money investors made was directly dependent on the success of the underlying businesses. There's even evidence that says the very first stock market crash, which took place in London in 1720, was triggered after the South Seas Company missed its dividend payment.

Sure, investors at the time also made money speculating on capital gains; however, their profit was not entirely dependent on the Ponzi process like it is now.

Dividends were not just a source of profit for investors—they were not just an ornamental accessory when the idea of the stock was first conceived. Dividends were an essential component that legitimized stocks as real equity instruments in a company. It established a connection between stocks and the underlying businesses through a profit-sharing agreement. History shows that dividends made stocks legitimate investment instruments. Dividends were the primary source of profits for

investors, and the only reason the first investors invested in stocks. The presence of dividends in an investment is also inline with what we expect from basic intuition and logic: If people invest in a company, then they should expect to receive a share of the profits from the business they own. Frankly, it would be a little disturbing if the investors didn't expect it.

Stocks are transferable securities, so there's always the possibility of making money through capital gains. But capital gains were meant to be a *secondary* source of profit for the investment—a side bet from selling legitimate equity instruments that paid dividends. The possibility of earning capital gains does not bridge a connection between the stock and the underlying company. It does not legitimize stocks as real equity instruments because it does not establish a genuine investment and profit-sharing relationship between the shareholders and the business.

The legitimacy of stocks as an equity instrument is dependent on dividends, not capital gains. There is nothing in history that shows stocks were designed around the idea of capital gains, nor is it logical to think that an owner of a company is not entitled to any profits from the underlying business. Investors back then weren't stupid. They wouldn't have gambled on the new stock investment instrument if there was no profit sharing agreement or legitimate promise of repayment from the underlying company. Investors would have invested in government bonds, which they were familiar with and the idea of stocks would have been dead on arrival.

Stocks came into existence because of dividends, and stocks without dividends are nothing more than Ponzi assets.

The common stocks that dominate the stock market today are not equity instruments—they are a mutated form of what legitimate equity instruments once were. When people refer to stocks as equity instruments now, it is nothing more than a false, artificial label. The same people who think common

stocks are legitimate equity instruments are also the same people who know nothing about the real history of stocks. They are unaware of the fundamental differences between the early stocks when the idea of the joint-stock company was first conceived, and the common stocks that dominate the market now. The early stocks were legitimate equity instruments because they paid dividends, and the common stocks today are Ponzi assets because they don't.

THE ABSENCE OF DIVIDENDS doesn't just affect the legitimacy of stocks and stock investors. It probably has the worst impact on low-income people who struggle to pay rent. The simple truth is, when companies hoard profits and end up with too much money to play with, they start wreaking havoc on other areas of the economy.

An interesting thing about the nineteenth century, when firms paid dividends, was that there was practically no inflation. In contrast, as dividends disappeared, and Ponzi profits became dominant in the twentieth century, we started to experience the worst inflation in recorded human history.

Inflation is a problem that affects everyone, and it is especially noticeable in sectors like the real estate market, which is extremely sensitive to supply and demand. The San Francisco Bay Area has been dealing with an affordable housing crisis with no solution in sight. According to the Bureau of Labor Statistics, rent prices increased over 33% between 2014–2019. There are students, and young professionals in the city who have to share a bedroom with one—or sometimes two—other people. And employees who make $100,000 a year in Mountain View, California might still consider living in a van to save money on rent. The local government is exploring rent control and eviction restrictions as an emergency measure, but it's not a real solution and the government doesn't understand the

real problem. What the city officials don't realize is that the housing inflation plaguing their city is tied to the distribution of Ponzi assets.

A big contributor to the San Francisco rent inflation crises is Google, and companies like Google, and their participation in the real estate market. Google makes a lot of money, and they don't share it with their investors. As a result, the company has more money than they know what to do with, so they start investing in real estate—a market that is completely disconnected from their core business. This, in turn, drives up real estate prices, inflates rent, and drastically affects ordinary people who are completely unassociated with the company.

One way Google affects inflation is with direct participation in the real estate market—buying up land and properties. Another way is indirect participation when they pay their employees astronomical salaries and their people drive up rent, property, and even food prices in the areas they touch. Usually, there's nothing wrong with paying people a lot of money for good work or buying real estate if they can afford it. But for public companies that hoard profits, which should go to investors, that money is associated with the distribution of Ponzi assets—something that is artificial and dirty.

Google is aware of the damage they are doing and goes to great lengths to hide it. There is no question that they have a MASSIVE real estate department, and for all we know, it might even rival their technology departments. However, you won't find much if you search for it online. There might be a job posting that slipped through the cracks, but you won't find anything substantial.

The people in Google's real estate department used to have Linkedin profiles in 2013, but there's no trace of them now. I remember coming across a guy with the title "Director of Google Real Estate" (or something) and thinking: *Now, that's a man I want to harass later.* But when I searched for his profile

recently, I couldn't find anything on him or his entire department. They were completely expunged from Linkedin and most of the internet. It's not easy hiding anything online, but the presence of Google's massive real estate department is practically non-existent. The only way that can happen is if there's an active effort to hide it. And the only reason Google would want to hide it is that they know the effects of their actions. But, don't take my word for it. Go online and search for "Google's real estate department" and see what you can find.

Of course, it's not all bad. Google develops the land they own, so there are positive effects on those areas. But I'm pretty sure Google investors did not buy Google stocks because they want them to play with real estate. They invested in the company for their technology, and their shareholders probably want to receive dividends rather than ABSOLUTELY NOTHING from the company.

The problem with a lack of dividends isn't just limited to the investors who invest in stocks. It is the source of many other economic issues as well. The actions of Google and companies like Google are not the only things driving up inflation, creating wage inequality, and getting people kicked out of their homes, but their actions do play a significant role.

ANOTHER REASON WHY finance people associate stocks with equity is because of voting rights. History clearly shows that the presence of dividends was far more important than voting. In fact, historians who wrote about the early stocks said plenty of things about dividends but didn't mention anything about voting. I think it is entirely possible that the early stocks didn't even have voting rights, or that the corporate structure was not democratic. Again, the reason why the earlier investors bought stocks was because of dividends and the possibility of

making money, not because they wanted to go on voyages across oceans or experience the joy of running a company.

There are also several other issues with the argument for associating stocks with equity through voting. First, stocks like Google's Class C shares don't even have voting rights, so the argument doesn't even apply. However, most finance professionals are unaware of the existence of non-voting Class C shares, which is why they will still use voting as a point for debate.

Second, from a quantitative perspective, voting has close to *zero* value. This is evident in the narrow gap between the prices of Google's non-voting C shares and voting A shares. The last time I checked (July 2019), the price of a Google C share was $1,139/share, and their A share was $1,140.32—a difference of $1.32. This means investors who are buying and selling Google shares without any knowledge of the Ponzi process—investors who fully believe in the stock market system—believe the right to vote is only worth $1.32 for a stock that is trading around $1,140. In other words, the right to vote is just worth a 0.12% premium.

And lastly, in my candid opinion, which is also shared by honest investment bankers who understand how easy it is to manipulate votes in a corporate structure…when it comes to stocks, voting is bullshit. It's an ornamental detail that makes stocks sound legitimate so firms can avoid paying dividends.

Finance is different from politics. Voting sounds important, but in practice, it has little value for financial instruments with complex rules that can change at any given moment. Most investors never go to shareholder meetings or vote on anything. They don't read the thick packets they get in the mail. The only thing they care about is how much their stock is trading at. Even if there's an ideal situation where every investor reads their mail, goes to meetings, and votes, there are a multitude

of things a company can do to abate their voices—like issuing more stocks to dilute the existing shares.

If you asked any shareholder whether they want to receive *reasonable & regular* dividends like what the early stocks paid, or whether they want to vote, I'm almost 100% certain that most of them would say they want to receive dividends. But I'm also certain they are not receiving any dividends from the common stocks they're holding. But why? Can't they just go to the next meeting and vote to receive dividends? If voting was so useful and easy to exercise, then common stock investors should be receiving dividends. But they are not! And it's because in practice, it is difficult to evoke corporate change, and voting is bullshit.

A real-world example is the story of how Google's non-voting Class C shares came into existence. Google didn't always have non-voting C shares. At one point all their stocks were voting Class A and B shares, but they figured out a way to distribute C shares to their investors through a contentious 2-for-1 stock split in 2014. In a standard 2-for-1 split, one share of stock becomes two identical shares at half the value, so one $10 Class A share would become two Class A shares at $5 each. What Google did was different. They split their Class A shares, but their shareholders didn't end up with two Class A shares. Instead, they ended up with one Class A share and one Class C share with no voting rights. So, one Class A share, which was trading around $1,200 at the time, turned into one A share at $600, and one C share at $600.

A lot of finance people will even admit that there is never a good reason for why any company would split their stock because it is an artificial form of price manipulation (in Google's case, also class manipulation). The company typically offers some excuse for the action, but there's usually a hidden agenda that they will not disclose because they do not have to. Google tried to make the split sound nice by calling the C shares

they hacked out of their investors' Class A shares a *dividend*, even though it negatively affected their shareholders. I personally think Google split their stocks because the price had been hitting a $1,200 ceiling and it's easier to Ponzi up the price of a $600 share back to $1,200 than to increase $1,200 to $2,400. But the point is, if Google's shareholders had a real voice and votes that mattered, I'm pretty sure they would have requested reasonable & regular cash dividends from the billions in profits Google was reporting, rather than letting Larry and Sergey (Google's founders) stick them with non-voting C shares that were carved out of their A shares.

The entire voting argument is really just an excuse for the world of finance to justify not paying dividends. Yes, a voting A share does give investors more voice than a non-voting C share, but a Class C share is basically a pure Ponzi asset—something that should not even be legal. Just because shareholders can vote or go to annual meetings doesn't mean their voices will be heard or they'll get what they want. Even if they sue their own company, there is no guarantee anything positive will result from it.

Finance people have said to me, "But Tan, there are great success stories where shareholders voted out bad leadership and turned a company around."

Yes, I agree that such stories might exist. However, the problem with such stories, like all success stories in finance, is that they don't acknowledge how many unsuccessful stories there are—times when shareholders pressed for action and ended up with nothing more than stress and legal bills.

The shareholders' rights argument comes up a lot in my debates. Passionate finance junkies always reach a point where they can't explain how shareholders can make money without cash from new investors, which is an observable fact, and they start making up hypothetical arguments like: *Shareholders*

have rights! They own the company so they can change things, or even sell the entire company if they wanted to!

Hypothetically speaking, shareholders can get organized, put together evidence, hire lawyers, and take action against the company. But it is almost never practical or successful in practice. Debates that are dependent on what can be accomplished through lawsuits and organized actions are unforeseeable events with uncertain outcomes. Conversations about shareholders' rights are a waste of time in the search for truth because it is a hypothetical debate about what shareholders *might* do, and also a speculation on their probability of success. It does nothing to defend the company's responsibilities concerning the stocks they issue nor explain why stocks without dividends are not Ponzi assets. If anyone has to hire lawyers to fight for what they think they are entitled to, then they've already lost.

Can shareholders take organized action and try to make their company pay dividends?

Yes.

Are they going to be successful?

Probably not, but then again, who knows?

Can anyone get into a long-winded debate about hypothetical scenarios of what can be accomplished when shareholders sue their companies?

Absolutely.

Will anyone know the results of those hypothetical scenarios through the debate?

Absolutely not.

Every company is different, and there are plenty of loopholes in their documents. The only thing that's certain is that nothing is ever certain when lawyers are involved.

If someone in finance wants to defend the existence of common stocks and explain why they are not Ponzi assets, they need to make their argument concerning *observable* conditions that are foreseeable, certain, and absent of hypothetical scenarios involving organized actions.

During the natural day-to-day course of events in the stock market, what we can clearly *observe* is that companies like Google do not share business profits with their investors, and the only practical way their investors can make money is through the Ponzi process.

If an asset's price appreciation is dependent on the Ponzi process, then that scenario is a Ponzi scenario and that asset is a Ponzi asset. It doesn't matter if the CEOs and directors are getting paid with Ponzi assets or even if a company is hoarding their own stock. It doesn't matter if people made money historically. Heck, it doesn't even matter if *everyone* prior to the current shareholders made money. The only thing that matters is whether or not the current shareholders will get the cash they feel entitled to, from the stocks they are holding, in the absence of cash from new investors.

Real returns must be narrowly defined as *real money that has been returned to investors*. It cannot be an idea of money that can only be realized under certain conditions.

If we define a Ponzi scheme as *A system where current investors' profits are dependent on cash from new investors*, then the stock market is a Ponzi scheme.

The Securities and Exchange Commission defines a Ponzi scheme as:

> *"An investment fraud that involves the payment of purported returns to existing investors from funds contributed by new investors."*

Remove the opinion word "fraud" from the definition, and what do you have?

The stock market.

CHAPTER 7

Two Paths

"A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it."

—Max Planck

SO, WHAT DOES ALL THIS MEAN IN THE END? If the stock market is a giant Ponzi scheme, how much harm is it actually doing? The economy seems to be growing, people have jobs, and that's what really matters, right?

Things might seem nice at the moment, but it's likely that we've gotten used to living with the bad. Issues like housing inflation and income inequality are manageable for now, but that can change.

There are two ways to deal with the information that has been revealed.

The **FIRST** way is to rationalize the existence of the Ponzi Factor and look on the bright side.

From an investment perspective, Ponzi structures are bad for investors, but it's a wonderful system for firms that need to raise capital. Companies can borrow money that doesn't have to be repaid. Having less liability to the investor gives firms more freedom to grow the business faster. Sometimes that leads to innovations that can help society in other nonmonetary ways. The current system might be ripping off investors, but there are some positive outcomes as well.

We don't know if the economic positives under the current system outweigh the negatives. But for a moment, let's assume a hypothetical situation where the current system does yield a positive-sum economic situation. This means we believe that both the monetary and non-monetary positives, like technical innovations and job creation, outweigh the negatives, like inflation and investor losses.

If that is true, and the stock market is producing an economic benefit, then it would make sense to explore more ways to develop Ponzi systems, and find more ways to implement the Ponzi structure in other areas of the economy. This is not a complete joke. Given how companies like Google and Tesla have made innovations over the years under the current system, there is some evidence and room to make an argument for why the Ponzi Factor has a place in the economy.

The **SECOND** way to deal with reality is to acknowledge the stock market as a negative-sum gamble, and look for ways to reform the system—or dismantle it.

An important thing to keep in mind about this second approach is that there is absolutely no reason to assume all of the innovations and good things we've experienced under the

current system will simply disappear if public companies are held responsible to their investors. There are plenty of legitimate ways to raise capital and plenty of businesses in our economy that grow and innovate without issuing common stocks. Google has plenty of money to share with their investors, but instead, they're using it to purchase beachfront real estate. It is wrong to think progress and innovations will come to a halt without the existence of Ponzi assets.

Regulating the current system properly is easy. All we have to do is apply some common sense:

Dividends: If companies are profitable, they have to share the profits with their investors. If a company is not profitable and cannot pay dividends, then their stocks cannot be transferred and traded for Ponzi profits.

Vocabulary: Firms cannot be allowed to use the word "invest" when they are selling unproven "gambles."

Clawbacks: Finance professionals cannot be allowed to keep the money they never earned. If they lose money for their clients, they have to give back all the money they took in the process: fees and commissions. From the CEOs to the analysts, everyone has to give back everything they took.

The reason these obvious ideas haven't been implemented is because they will obliterate a majority of Wall Street activities and jobs. I think the regulators know what is right, but the people in charge care more about avoiding an industry Armageddon on their watch than protecting investors from unproven gambles.

The regulators might not act, but there is something investors can do to bring back dividends.

If investors want to encourage companies to pay dividends, all they need to do is stop buying stocks. That's right. Just stop

buying stocks. If you have extra money, invest it in real estate, bonds, Treasury bills, time deposits, or even hide it under the mattress. Put it anywhere other than in the Ponzi assets that make up the stock market. If you make regular contributions to a 401(k), IRA, or pension plan on a regular basis, tell the people in charge to distribute your money into anything but stocks and stock-related instruments, which include many mutual funds.

The reason why companies can get away with not paying dividends is because they can. But investors are the ones who contribute money into the system, and therefore investors also have the power to control the system. Just stop buying stocks. Stop playing with Ponzi assets. Stop making money off each other, and start looking to the companies for the profits.

Boycotting stocks can bring back dividends for a while, but it's not a permanent solution. History shows that stocks were legitimate equity instruments with dividends until the early 1900s, but that didn't stop speculation and bubbles in the 1700s and 1800s. Ultimately, those legitimate equity instruments evolved into the Ponzi assets they are today. Even if companies do start paying dividends, over time finance professionals will blind people with capital gains and the industry will shift the focus back to Ponzi profits.

The idea of classifying stocks as gambling instruments will have a broader and more enduring effect on reforming the industry. I believe it is also something that is inevitable, but it's not a permanent solution either. In the early 1700s in London, stock speculation was more or less treated as a form of gambling. Parliament acts like the Bubble Act of 1720, and the Bernard Act of 1734, did discourage speculation until the late 1700s. However, "stockjobbers"—the early finance professionals—eventually figured out ways around the system, and over time they overcame the system. This piece of history shows that reform, even if it is drastic, can still be temporary. Greed and gambling have ways of sneaking back into the economy.

The clawback idea is meant to place the finance industry under the same logical principle that applies to other industries, by not rewarding incompetence and failure. If you hire a plumber to fix the sink, and he ends up destroying your entire kitchen, chances are you won't owe the plumber any money, and he will be liable for the damages. Without clawbacks, finance professionals can destroy a lot of kitchens, get paid, get new clients and destroy more kitchens. The former CEO of Bear Sterns, Alan Schwartz, received a total compensation of $37.3 million in 2006 and he was listed as one of Fortune's 25 Highest-paid men. After his firm collapsed in 2008, Alan admitted to a Financial Crisis Inquiry Commission, "I believe that we've never believed we had the ability to predict the next market movement." Alan is now a managing partner at the financial services firm Guggenheim Partners.

Some people will say, "But clawbacks can seriously deter people from working in the finance industry." And yes, that is exactly what clawbacks are meant to do. It is a rule that is designed to deter people from stockjobbing and gambling away other people's money.

If a service cannot provide something of value to the consumer, then that service has no reason to exist. I have nothing against gambling or casinos, because casinos provide entertainment value for people who want to gamble. What I have a serious problem with is when people sell unproven gambles as investments because then it becomes a scam. Gambling is not a fraudulent activity, it's just a risky one. Gambling is only fraudulent when it is sold as an investment, and this type of sales is the backbone of the investment finance industry.

Dividends, gambling, and clawbacks are ideas that can help reform the current system. However, these ideas aren't new, and will probably only have a temporary effect even if they are implemented. Of course, these ideas are worth trying again, especially now with the awareness of the universal error. But,

I'm more in favor of abolishing the stock market system altogether.

I have spent years thinking of meaningful ways to fix the system, and I've lost count of how many times I've rewritten this final chapter. My conclusion, which may not be the correct or best conclusion, is that a meaningful way to reform the system might not exist.

On one hand, there's nothing wrong with the idea of breaking up a company into smaller shares of equity, and I don't think the idea of a joint-stock company will ever disappear. However, history clearly shows us that the existence of this simple and pure idea, which I still believe in, will breed people who will devise ways to game the system for their own benefit, and in the process, diminish the economic benefits the system is designed to produce. Even if Wall Street goes through major reforms, with enough time, people will find loopholes and ways to corrupt it.

On the other hand, it is clear that no one can pull $36 trillion out of their ass to bail out the current investors, and this bomb is only going to get bigger over time.

The stock market is built on fallacies and imagination. There is nothing logical or sustainable about it, and I can't see the current system surviving another millennium. I do not see all the details on the path to its destruction, but I believe it will implode and vanish at some point in the future.

I did not write this book to criticize the investment system. I wrote it to show how the features of the stock market meet the definition of a Ponzi scheme, and make a case for why the biggest scam in the history of our species should be dismantled.

An economy without a stock market might sound inconceivable right now, but I think it's a reality we will have to face sooner or later. One way or another, investors will realize the

stocks they are holding will never yield its cash equivalent. Despite how tranquil and nice things seem right now—and possibly for years or even decades to come—the messy business of dealing with the trillions in imaginary value will reveal itself. If Ponzi schemes are destined to collapse, then so will the market systems that share the same mechanics and logic.

One thing even finance people will agree with is that it's not a matter of "if" the stock market will crash again but "when." I don't know when the next crash will happen or what the experts will blame it on, but I'm certain the crashes we've witnessed thus far are just symptoms of a disease—foreshadowing something far more destructive.

At some point there will be one magnificent crash that will end the stock market permanently. The market will not be able to bounce back from it because unlike the dot-com crash or the housing bubble—which were blamed on *indirect* issues like failing businesses and bad loans—this last unrecoverable crash will be the result of something *direct* and fundamental: investors pulling their money out of the system as they realize the reality of the Ponzi Factor, and how their wealth is tied to the massive Ponzi scheme we now call the stock market. Little by little, the reality of the Ponzi Factor will sink in, and over time, it will become impossible to ignore.

This final crash will change the face of our economic and financial system. Its destruction is unimaginable, but we will evolve from it.

I Believe Humans Are Capable Of Making Drastic Changes to better our environment, and we can evolve from centuries of misguidance.

A while back, I told one of my old economics professors that I thought the investment system was a massive scam. His response was, “Tan, you might not like it, but you’ve got to deal with it because it’s everywhere!”

He was right. The zero-sum scam I’ve described is everywhere. But it will change because it has to change.

It wasn’t too long ago when a good part of our society still believed that human slavery was an essential part of our economic system. I am sure there were people throughout history, even in ancient times, who questioned the practice, and said things like, “I think there’s something fundamentally wrong with this whole treating people like property thing…”

And that is why I wrote this book.

I am speaking up now and saying there is something fundamentally wrong with an industry that has convinced investors they are entitled to $36 trillion that doesn’t exist. There is something fundamentally wrong with an industry that sells imaginary products without any proof of their legitimacy or value. And there is something fundamentally wrong with an industry that pays people unimaginable amounts of money for creating absolutely nothing.

I have no doubt that centuries from now, kids in middle school will study our history and say, “People didn’t know the difference between $36 trillion of imaginary money and real currency? They actually believed colorful charts on screens could help them gamble? They just completely ignored the history of stocks, all the market crashes, and the lack of academic proofs? Were people really that stupid back then?”

Looking back, we now realize that a functioning economy is not dependent on the barbaric practice of trading people like property. Over time, we will also realize that it is not dependent on trading cash for unaccountable promises.

You don't need to be a mathematician or a logician to understand why money doesn't grow on trees.

If you find yourself in a debate with passionate finance junkies, do not be intimidated by their industry-laced jargon. Just remember the following, as they play a character from CNBC: They have no idea how much money their industry has lost for people. They do not know the real history of stocks. They believe an assumed asset value is the same thing as cash. And they cannot explain the origin of profits for stocks without describing the Ponzi process.

They will misuse words like "theory" to describe ideas that have failed experimentation, and talk about fictional concepts with factual conviction. They will use hypothetical arguments to debate the observable and try to discredit everything I have stated. But, there is one fact they cannot refute.

The Ponzi Factor can explain 100% of all historical market crashes, future bubbles and crashes, and what is happening every time the stock market jumps or drops. What caused the tulip bubble crash in 1637, the stock market crashes of 1929 and 1987? What caused the dot-com crash in the early 2000s and the financial crisis crash in 2008?

It was a lack of cash from new investors.

The Ponzi Factor also works in the other direction. Why doesn't Warren Buffet feel the need to pay dividends? Why does Google have so much money to spend on real estate? Why are cryptocurrencies, like bitcoin, hitting epic highs? And, how did Bernard Madoff run up a $50 billion scam?

Because their investors are paid with the money from other investors.

Despite everything I've said, I'm sure many of you still believe in the *idea of investing*. You still believe there is a way to park your money in an account and magically watch it grow—and that we are somewhat entitled to this phenomenon.

That's okay. Even I still have a hard time letting go of that idea completely. It's hard to unlearn what we've been taught, and it takes time for the truth to sink in. I just hope I've shared enough information for you to question the idea.

I don't expect real change to happen quickly, or even in my lifetime. But, the annoying thing about truth is, it's hard to ignore after you see it… Even if you don't completely agree with the message I've conveyed at this moment, the things I've stated will be like background music that gets louder and louder over time. Every time the market dips or crashes will be a reminder of the existence of the Ponzi Factor, and with every reminder, the window to the truth will also open a little wider.

> *"All truth passes through three stages. First, it is ridiculed. Second, it is violently opposed. Third, it is accepted as self-evident."*
>
> —Arthur Schopenhauer

Real profits come from end-users. Ponzi profits come from other investors.

The truth really is just that simple.

THE END

POSTFACE

"It's funny how the economy is about to collapse because people are only buying what they need." –Tan Liu, March 30th, 2020

The Ponzi Factor is the most comprehensive research ever compiled on the negative-sum nature of capital gains. What you just read was not a perspective or opinion, but a proof that is grounded in logic, and backed by history and data. There are others, like Mark Cuban, who have also called the stock market a Ponzi scheme, but this is the only research that *proved* it.

If you understood what you just read, you will never go back to seeing the stock market the same way again. The good news is, your enlightenment is just beginning and you will see the truth reveal itself with greater clarity in the months and years ahead. The bad news is, just because you can see why 2 + 2 = 4 doesn't mean others will. Some people are determined to see stocks as ownership instruments and there is nothing anyone can show to make them change their mind.

Over the past two years, I have debated hundreds of finance junkies who never read the book, and three, who have. All their defenses for why they believe Ponzi assets are equity involved hypothetical assumptions about the future and the universal error. No one came close to defending Ponzi assets with observable facts in practice. The few critics who read the book, ignored everything they read. They mentally blacked out all the inconvenient facts they didn't want to accept. I recently concluded a three-month long conversation with an economics student and the final outcome was: He acknowledged that Google's class C shares with no dividends or voting rights, *was never* ownership, *is not* ownership now, and *is not going to be* ownership for the foreseeable future. BUT he still believes it's ownership! He also argued that hypothetical assumptions are more important than observable facts, and that I should allow

hypotheticals in the proof, even though hypotheticals are completely unprovable.

Those experiences made me realize my debates are never factual, but psychological. The idea that non-dividend stocks are equity is a mental illness. Some people will believe whatever they want to believe, regardless of the facts. It does not matter how educated they are or how logical you are when you explain 2 + 2 = 4. If someone wants to believe that a system that shuffles money between investors can produce more money than investors contribute, and 2 + 2 = 5, they will find a way to *rationalize* why the answer is 5. In the book, I said "People are much too intelligent to be brainwashed, but we can be miseducated." But I was wrong. People can be brainwashed, and many will fight to stay brainwashed.

BUT keep in mind that Ponzi schemes are profitable for early investors and a lot of severely brainwashed people have also made a lot of money from Ponzi assets. In contrast, a lot of *logical* people have also lost a lot of money betting against Ponzi assets from Tesla, which *does not follow* any logic. If we look at the unrealized returns to Ponzi assets like Tesla and Shopify between 2019-2020, we'll see that they are much greater than legit dividend stocks from IBM or Verizon. It's not right, but that's way it is right now.

The recent economic response to the coronavirus also showed that the US Government is willing to do whatever it takes to keep the world's biggest Ponzi scheme from collapsing, even if it means introducing widescale moral hazard and printing trillions of dollars that can lead to hyperinflation. No one saw that coming, and no one know what the fallout will be. I think we can expect to see greater income inequality, social unrest, and higher inflation.

The Ponzi Factor was written under the assumption that regulators like the SEC were ignorant or neutral. But now, it's clear that the regulators are *dirty cops* who will bend rules to

artificially support the world's biggest Ponzi scheme. A lot of people blame the Federal Reserve for supporting the stock market, but I blame the SEC. The Fed's monetary policy can only influence the *performance* of Ponzi assets. The SEC is responsible for the *existence* of Ponzi assets. The coronavirus was a catalyst for what should've been an apocalyptic collapse, but the stock market didn't go anywhere. It's not right. But rather than fighting it, I think it's better to take that into consideration and deal with it. Unfortunately, with interest rates at 0%, America is now a country where people can lose what they have by saving money. The current system is basically forcing people to invest, gamble, or get left behind.

I did not write this book to give investment advice, and the last thing I want to do is offer advice on stocks. But I am comfortable in sharing the following. If you want to buy stocks:

- Get a solid company that *is not going away* (Apple, Amazon, Lockheed Martin).
- Learn how to use two options strategies; *covered calls* and *cash secured* puts. They are simple and safe strategies that can improve your cashflow and cost basis.
- Know that Ponzi assets like TSLA and dividend stocks like IBM behave very differently. They react differently to news and fundamentals, and those behavior can also change over time.

And finally, NEVER forget The Ponzi Factor. Don't expect *any* stock price to behave logically. Don't cry when you see a stock drops 3% after the company raises dividends, guidance, and beat earnings and revenue estimates (LMT on 10/21/2020). The Ponzi Factor is always in play, and this is the only research that can definitively explain *why* prices move in the opposite direction from fundamentals.

Is the stock market similar to a Ponzi scheme? Absolutely.

But can you make money from a Ponzi scheme if you get in early? Yes.

In the final chapter, I said stock market will *ultimately* collapse… But you should also consider the *foreseeable*—a world with interest rates at 0%, inflation, and a government that is backing the biggest Ponzi scheme in human history. It's a messed-up situation and I don't have all the answers.

We are all feeling uncertain about the future. But we are all in this together, and we will get through it together.

SUPPORT

The Ponzi Factor is a non-profit enterprise. It for sale at Amazon, iBook, and Audible, but the book is also available for free to anyone who wants it. If you enjoyed the book, please leave a review on Amazon or Goodreads.com. It is the easiest and most effective way for you to share the truth. You can also support the cause in the following ways:

- Share the book. Download the free PDF at www.ThePonziFactor.com. You have my permission to share it with anyone and everyone.
- Let's connect on social media. Find "The Ponzi Factor" on Facebook, Instagram, Twitter, YouTube, and TicTok. You can also connect with me on LinkedIn, and Facebook.
- Get the audiobook: www.bit.ly/ThePonziFactorAudio

Lastly, this book was self-published in February 2018 because of timing. The project started in 2012 and took far longer than expected. By late 2017, I was in a hurry to release the book thinking: *What if Google starts paying dividends?* No effort was made to find publishers and Google still has no plans to pay their shareholders.

Thank you for your support. I will continue fighting the good fight. I will be ruthless, and I will be relentless…and I will finish with my shield or on it.

—Tan Liu

Lexicon

ANALYSIS

DIRECT FACTORS: Absolute determinants of profit. Fundamental factors that do not change. Direct factors make up the mechanics of transactions. Direct factors can determine if a scenario is positive, zero, or negative sum. Factors that can explain causality.

INDIRECT FACTORS: Speculative determinants of profit. Factors based on opinions and events that may or may not occur. Indirect factors are typically unprovable. In the best case scenario, these are factors that can show associations.

FALSE BUYBACKS: A scenario where the shares outstanding for a company do not decrease around the year it announced or engaged in stock buybacks.

FALSE DIVIDENDS: Dividend payments that are connected to dilution.

IDEA OF INVESTING: The assumption that it is possible to make money with money and in the absence of labor—and this experience is dependent on intelligence and skills, rather than luck; something that is fundamentally different from gambling.

INVESTING AND GAMBLING

In a scenario where the exchange, transaction, or wager does not involve any tangible assets, and the payoff is one-to-one.

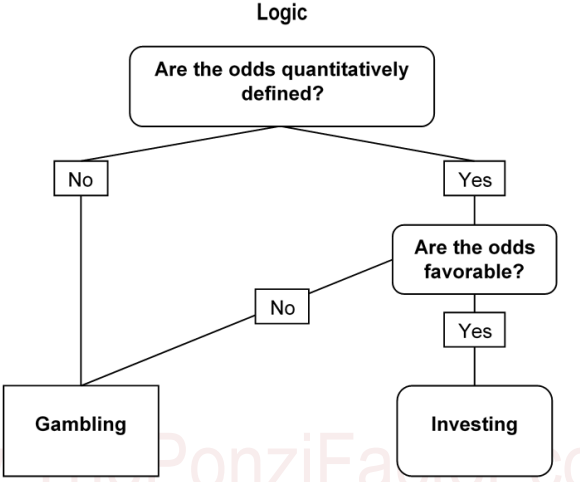
INVESTING: A scenario where the probability of success is quantitatively defined and greater than 50%.

GAMBLING: A scenario where the probability of success is quantitatively defined and less than or equal to 50%, OR a scenario where the probability of success cannot be quantitatively defined.

Quantitative definitions with *expected value*:

INVESTING: In an exchange that does not involve tangible goods; a scenario where the probability of success can be defined and the *expected (monetary) value* of the wager is positive.

GAMBLING: In an exchange that does not involve tangible goods; a scenario where the probability of success can be defined, and the *expected (monetary) value* of the wager is zero or negative, OR a scenario where the probability of success cannot be defined.



LEGITIMACY

LEGITIMACY IN PRACTICE: An event that is foreseeable and likely to occur in practice. An event that is not just hypothetically possible.

LEGITIMATE ASSET: When the value of an asset is backed by a defined entity or thing that posses *real value* ("*Real Value*" will be defined later in the *Value* section.)

PONZI ASSET: Something that has no physical or intrinsic value, but only a monetary value that is not backed by any entity. Ponzi assets only posses *Ponzi value*, which can only be realized through a monetary exchange in a scenario where no defined entity has to take part in the exchange. ("Ponzi Value" is defined later in the *Value* section.)

PONZI FACTOR: The process wherein current the investor's profits are *dependent* on cash from a new investor.

Scenarios

Google Scenario: A scenario where shareholders make nothing for a period while the underlying company report profits.

Tesla Scenario: A scenario where shareholders can make money from stock value appreciation during a period while the underlying company suffers extraordinary losses.

Sums

Negative-Sum: The net sum of all the wins and losses are negative.

Positive-Sum: The net sum of all the wins and losses are positive.

Zero-Sum: The net sum of all the wins and losses are equal to zero.

Transactions

End-User: An individual or entity that purchases goods or services with the intent to use or consume the goods or services.

Complete Transaction: A transaction when all parties involved in the exchange are content with holding, consuming, or using the final product. A complete transaction involves at least one end-user.

Money/cash is the medium of exchange for any and all goods and services. Therefore money/cash is a final product all parties are content with holding.

Only complete transactions can be analyzed to determine whether an investing/gambling scenario is positive, zero, or negative sum.

Incomplete Transaction: A transaction when some parties involved in the exchange are not content with holding, consuming, or using the product that resulted from the transaction. Incomplete transactions do not involve end-users.

Universal Error: The error of treating the assumed monetary value of an asset as a cash equivalent.

Value

The word “value” does not have a uniform or universal definition. The legitimacy of value can range from *Ponzi values* to *real values* and other forms of value in between.

PONZI VALUE: A value that can only be realized through a monetary exchange in a scenario where no defined entity has to take part in the exchange. (Can also be considered imaginary or speculative value.)

LEGITIMATE VALUE: A value that can only be realized through a monetary exchange where there is a defined entity that has to take part in the exchange. (A bond can have legitimate value. A bond does not have physical or intrinsic value, but the company that issued the bond is responsible for repaying the face value of the bond.)

REAL VALUE: A value that can be realized with or without a monetary exchange. (A house is an example of something that has real value.)

Endnotes

General

This project started in 2012. The material was updated several times to compensate for changes in the data and news. The final version was first published in February 2018, updated in August 2019, and October 2020.

As of 2019, roughly 35% of the stocks on the NYSE and NASDAQ paid dividends, but it's not that simple. The ratio changes as new Ponzi assets enter and exit the market. Many of those dividends are also micro dividends or "false dividends" that are tied to dilution (from Chapter 6).

Introduction

Madoff's winners: According to the Madoff Recovery Initiative. As of January 2018, the number of accounts that were Denied Claims (because the money withdrawn exceeded the principal investment) was 2,696, and the number of Allowed Claims was 2,625. Investigators are still uncertain of the number of investors that were involved. Each account can have anywhere from one to thousands of investors.

$36 trillion market capitalization: The market capitalization data are from the World Federation of Exchanges. The combined market capitalization for the NYSE and NASDAQ was $35.889 trillion in June 2019.

Measurements of money; the monetary base, M1, and M2 money supply:

There are different measurements for the money supply. The one I referenced throughout the book was the Monetary Base, but there are also the M1 and M2. The Monetary Base represents the amount of cash currency that is in existence in the US economy. It is the base form of money, which all other forms of money are derived from. In June 2019, the US Monetary Base has a total of $3.275 trillion with $1.739 trillion in circulation (As of August 2020, the total was $4.807 trillion with $2.007 in circulation). The currency that is in circulation includes what is in your wallet and in use in the economy. The currency that is not in circulation are held as reserves.

The M1 and M2 money supply includes the currency in circulation (the $1.7 trillion element of the Monetary Base) and other money-like things such as banknotes, which are derived from cash currency and backed by banks.

In June 2019, the seasonally adjusted M1 was $3.824 trillion and basically consists of:

- currency that is in circulation
- traveler's checks
- the amount in interest-free and interest-bearing checking accounts
- the amount of money that is reflected in checking accounts are also known as Demand Deposits, Other Checkable Deposits, and Negotiable Order of Withdraws (these items are not real cash currency, but money the bank says their clients can spend, which they will back—this amount is based on a reserve limit kept by the bank)

The seasonally adjusted M2 was $14.7712 trillion in June 2019 and basically refers to everything in M1 plus:

- savings deposits: accounts that pay interest, but can't be used as direct access for payment
- time deposits (certificate of deposit) that are less than $100,000
- money market funds: assets that are composed of secure debt instruments like treasury bonds

Banks are allowed to lend out more money (legitimately backed notes) than they have on hand because the US has a *Fractional Reserve* banking system. Some people are against the fractional reserve system and think it's a scam in itself, but that's a separate subject altogether.

The Analogy: "If I mail you a chair that was missing three legs, the seat surface, and the backrest. Whatever I sent you, can I really call that a chair?"

This analogy was inspired by something Lee Smolin said in his book *The Trouble with Physics* as he described the incompleteness of string theory.

Chapter 3: The Idea of Investing

The money Wall Street plays with comes from normal people:

According to the 2019 Investment Company Fact Book published by the Investment Company Institute, over 60% of mutual funds are holding stocks.

According to the United States, Internal Revenue Services, Individual Retirement Accounts (IRAs) almost exclusively invest in publicly traded securities like stocks or other synthetic assets. The IRS also imposes an additional 10% tax if the IRA invests in tangible goods—called *collectibles*.

Chapter 4: The Idea of Investing

DEFINITION OF ACADEMIC IDEAS: Aside from the big two—theorems and theories—there are a few other legitimate academic ideas that require validations. Here is a list of those ideas in simple language, which is more readable, but also less definite without the rigorous academic grammar.

(From my experience, many academics who have PhDs in math and science still struggle with the nuances of these terminologies.)

FOUNDATIONAL ASSUMPTIONS

DEFINITIONS: Any defined statement; it does not require proof or validation.

Examples: We can define a table as a flat board supported by four legs. We can define the symbol Ω (omega) be the set of all outcomes in a game of dice.

AXIOM: A self-evident idea that is accepted as true without any proof.

POSTULATE: A modern synonym for axiom.

IDEAS THAT MAY OR MAY NOT BE TRUE:

CONJECTURE: An educated guess. An unproven theorem.

HYPOTHESIS: A proposed explanation for an observable phenomenon. An educated guess that requires further testing. An unvalidated theory.

EXPRESSIONS:

FORMULAS: A mathematical expression; the Pythagorean theorem is *expressed* in the formula $a^2 + b^2 = c^2$. The formula does not explain why the idea works but how it can be used in calculations.

MODEL: Something that takes inputs and produces an output or outputs; a model can consist of one or multiple formulas; models can be used to illustrate data, but they can't explain *why* anything works.

VALID CONCEPTS:

THEOREM: A true statement of *great significance* proven with axioms, other proven statements, and logic.

COROLLARY: A true statement, that resulted from a proven theorem. *Smaller ideas* that are proven in the process of proving a theorem.

LEMMA: A true statement that was proven, and is meant to be used to prove another theorem.

PROPOSITION: A true statement that is less significant than a theorem.

THEORY: A hypothesis that has been validated with experimentation and testing. Theories can answer the question of *why* something happens.

LAW: A valid idea that is naturally observable. Unlike theories, laws are not proposed ideas that can explain *why* something works.

KEY DIFFERENCES:

AXIOM VS. POSTULATE: According to multiple sources; these two are pretty much the same thing. *Merriam-Webster's* simple definition seems to propose that a "postulate" has more of a suggestion tone to it, while an "axiom" is something that is completely self-evident.

THEORY VS. MODEL: Both of these involve the observation of data; however, a theory helps explain *why* something happens with experiments and data to validate the assumption. A model just takes in data and outputs results. A model is a tool that can help test theories. Theories are ideas that try to answer meaningful questions.

THEORY VS. LAW: A law is based on observations. A law can explain *how* something works based on what has been observed. On the other hand, a theory can explain *why* observations occur.

THEOREM, PROPOSITION, LEMMA, AND COROLLARY: The nuances between these terms are extremely subtle. They are all true statements, and you have to be somewhat familiar with proofs to truly appreciate the differences. The following passage from *The Book of Proof* by Richard Hammack offers a concise explanation of their differences:

> *It is important to be aware that there are a number of words that mean essentially the same thing as the word "theorem," but are used in slightly different ways. In general the word **theorem** is reserved for a statement that is considered important or significant (the Pythagorean theorem, for example). A statement that is true but not as significant is sometimes called a **proposition**. A **lemma** is a theorem whose main purpose is to help prove another theorem. A **corollary** is a result that is an immediate consequence of a theorem or proposition.*

Chapter 6: The Stocks Market

Analysis: The analysis of the stock market is based on observable scenarios that are foreseeable in practice. It ignores hypothetical scenarios and unforeseeable actions—such situations are speculative and usually immaterial.

Google scenario months: For design considerations, the months for the periods were left out of the chart in the manuscript.

Company	Time Period	Net Income	Dividends	Capital Gains
B. Hathaway (BRK-A)	Jan 2008–Dec 2012	$49,457,000,000	***$0.00***	***$0.00***
Google (GOOG)	Jul 2007–Sept 2011	$28,656,500,000	***$0.00***	***$0.00***
Apple (AAPL)	Oct 2007–Sep 2009	$14,354,000,000	***$0.00***	***$0.00***
Yahoo (YHOO)	Oct 2009–Oct 2012	$5,421,570,000	***$0.00***	***$0.00***
Regeneron (REGN)	Feb 2014–Nov 2016	$1,664,096,000	***$0.00***	***$0.00***
Chipotle (CMG)	Jan 2014–Dec 2015	$911,983,000	***$0.00***	***$0.00***
Facebook (FB)	Jun 2012–Jul 2013	$776,500,000	***$0.00***	***$0.00***
Netflix (NFLX)	Jul 2011–Aug 2013	$205,150,000	***$0.00***	***$0.00***

Income for partial years are estimated based on the annual net income reported in the 10-K filing.

Why Google?

I was hard on Google, but the company was actually targeted for unrelated (non-financial) political reasons. When I started this project in 2012, I had no idea what Google's finances looked like, how their stocks behaved, the existence of their class C shares, or how they withheld billions in profits from their investors. All I knew was; Google had common stocks, and like all public companies, there's always more dirt hiding under the surface.

Google is now called Alphabet Inc. I referred to the company as Google rather than Alphabet because that's the name people are familiar with.

Why nonguaranteed dividends and other possible payment methods not taken into account:

Rare situations where a company engages in trivial payments were not taken into consideration for several reasons:

- A lot of public companies never engaged in one-off payments.
- These events are unforeseeable and speculative. Even if a company engaged in a payment at some point, there's no way of knowing if it will ever happen again. The legitimacy of an investment instrument needs to be based on what is observable on a regular basis, not something that may or may never happen.
- When these payments do take place, the amount that's given back to the market is minuscule and immaterial.
- These payments are often *tainted*. They can be the result of litigation, or if a payment was made, something unclear happened later to nullify the payment.

An example of a *tainted* situation is when Google announced a stock repurchase in 2016. According to a Business Insider article, Google bought back about 5 million shares of their own stock. If this is true, then the total number of shares outstanding from December 2015 to December 2016 should've been reduced by about 5 million shares. But this didn't happen. According to Google's 2015 and 2016 10-K filings, the number of shares outstanding for the company didn't reduce by 5 million, but it increased by 3 million.

Google's Shares Outstanding

	2015	2016	Difference
Class A	292,580,627	297,117,506	**4,536,879**
Class B	50,199,837	47,369,687	**-2,830,150**
Class C	345,539,303	346,933,134	**1,393,831**
	688,319,767	**691,420,327**	**3,100,560**

Source SEC 10-K filings (Google Inc., Alphabet Inc.)

A number of things could have happened. Google might have bought back 5 million shares but also issued an additional 8 million (-5m + 8m = 3m), or some of their employees could have exercised stock options or other possibilities. I'm not speculating on what Google did or didn't do, but only pointing out that the number of shares outstanding in the SEC 10-K filings does not reflect a stock repurchase of 5 million shares.

Even if the buyback was legitimate, Google can print new shares and rescind what they returned in the future..

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"I do not come with accusations, but only suspicion. I cannot trigger market crashes, but I can invoke what you already know."

Tan Liu was born in Beijing, China. He moved to the U.S. when he was six and was raised outside Washington D.C. Unlike his sister who finished high school and got a scholarship to MIT, Tan took a less traditional path and went straight into the working world. He was employed as a bike courier after high school and later supported himself through college as a freelance photojournalist for networks such as CNN, MSNBC, and Fox. In addition to his professional life, Tan also spent many years volunteering as a youth mentor in D.C. and Inglewood, California.

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