THE VVI GUIDE TO
VALUE
INVESTING

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PREFACE: THE YOUNG MAN & THE OLD PROSPECTOR

In 1849, there was a young man from Boston who got caught up in the excitement of the California gold rush.

Like so many young men of the day who were traveling West to get rich from gold, he decided that he too would seek a fortune for himself in the California rivers, which were said to be overflowing with gigantic piles of dazzling gold nuggets.

So the young man sold all his possessions and set off for California, determined to become the best gold prospector in the land.

After a few weeks of hard travel, the young man arrived at the Sacramento River, which was rumored to hold richest supply of gold. But when the young man arrived at the prospecting camp, it was already teeming with hundreds of other men and women just like himself, each determined to become rich and find more gold than the next.

Nevertheless, the young man was not deterred, and he set up his tent. He knew that he was smarter than everyone else in the camp, and he was confident that he'd be able to outwork them all. He even noticed – much to his amusement – that there was a very old prospector who lived in the camp… although his tent was somewhat set apart from the others.

"Who is that old man?" he asked one of the other gold miners in the camp. "And what in the world does he think he's doing here?"

"Just some old prospector who lives around here," the miner replied. "But he mostly keeps to himself."

The young man scoffed. "Look at him. He doesn't belong here. He's more likely to give himself a heart attack than to find gold in this river."

"Now, now, don't be so confident," said the miner. "Word around here is that that old man is the best gold prospector on the West Coast."

"We'll see about that," replied the young man, and he set off for the old prospector's tent.

"Old man!" he shouted as he stuck his head into the tent. "I hear you're the best gold prospector on the West Coast. Is this true?"

The old prospector just shrugged his shoulders.

"Well… enjoy it while you can," said the young man. "Because there's a new kid in town."

The young man shook his head as he walked back to his own tent. "That old prospector won't be able to keep up with me," he thought to himself. "I'm smarter, stronger, faster, and certainly more determined than he is. He doesn't stand a chance." And with that, the young man crawled onto his cot and blew out his lantern, excited and filled with hope for the day ahead.

When the young man awoke at dawn the next morning, however, the prospecting camp was already bustling with activity. So he wolfed down his breakfast and set off down the riverbank, gold pan in hand, in search of his fortune.

The young man worked very hard the entire day, standing waist deep in water and breaking his back under the hot California sun. By the time that dusk began to settle, he had about a handful of small gold pebbles. The young man looked at the other young men and women around him and was very pleased with his work. His small pile of gold was at least bigger than the others, and some of his competitors hadn't even managed to find any gold at all. A smile crept over his face as he walked back to the camp.

That smile soon vanished, however, because just as he was reaching his tent the young man noticed the old prospector returning from his own day's work. And the old prospector didn't just find a small handful of gold pebbles. His satchel was stuffed with giant gold nuggets, many as large as a grown man's fist!
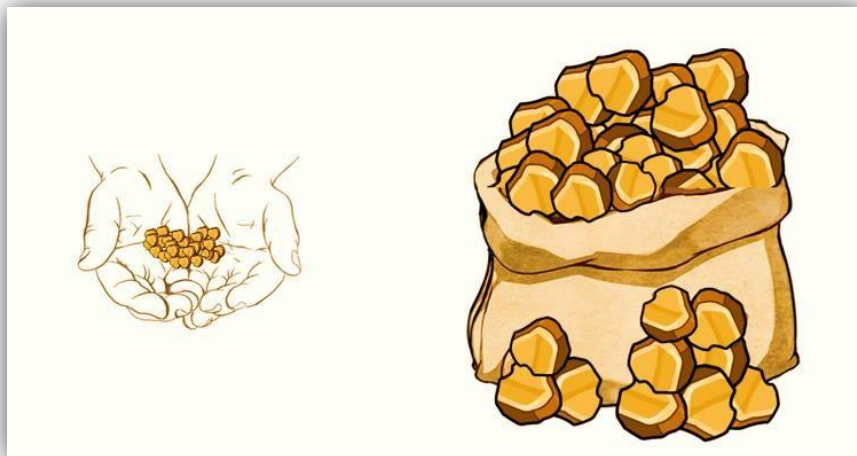
The young man was dumbfounded. "Surely the old man just had a lucky day," he thought to himself. "But to make sure he doesn't find more gold than me again, tomorrow I'll wake up an hour early and double my efforts."

So the next day the young man woke up an hour early and worked twice as hard. But at the end of the day, all he had was a little more than a handful of gold pebbles to show for it and the old prospector, once again, had an entire satchel filled with giant gold nuggets.

The young man was beginning to get irritated. "You know, maybe I'm just not searching in the right area," he thought. So he hired a geologist and together they studied the area and determined that the most fruitful place to pan for gold was actually in the opposite direction of where the young man had gone the previous two days.
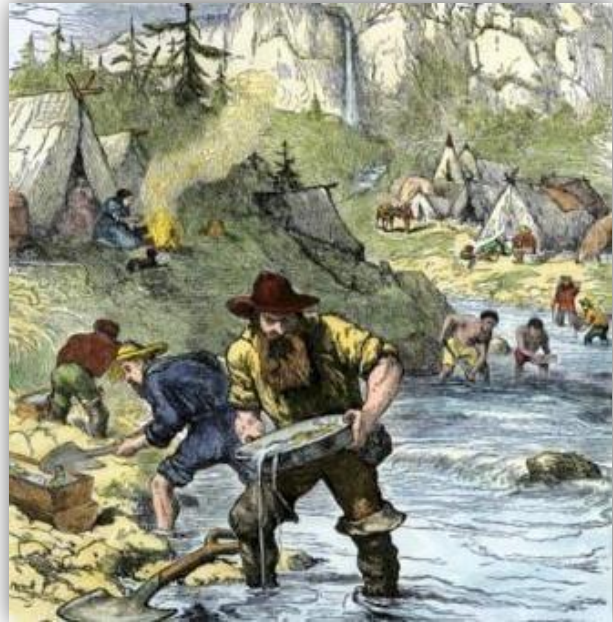
The next day came and the young man slaved away under the hot sun in the area where the geologist had sent him. And at the end of the day he managed to find two handfuls of small gold pebbles. But the old prospector once more returned to the camp with an entire satchel filled with giant gold nuggets.

The young man howled with despair.

This pattern continued to repeat itself over the next several months. Each day the young man would set off and work harder than he had the day before. He worked longer. He hired geologists and surveyors and engineers and consulted with experts. He studied advanced mining techniques. And he spent all his savings, down to the last penny, on new machines and equipment.
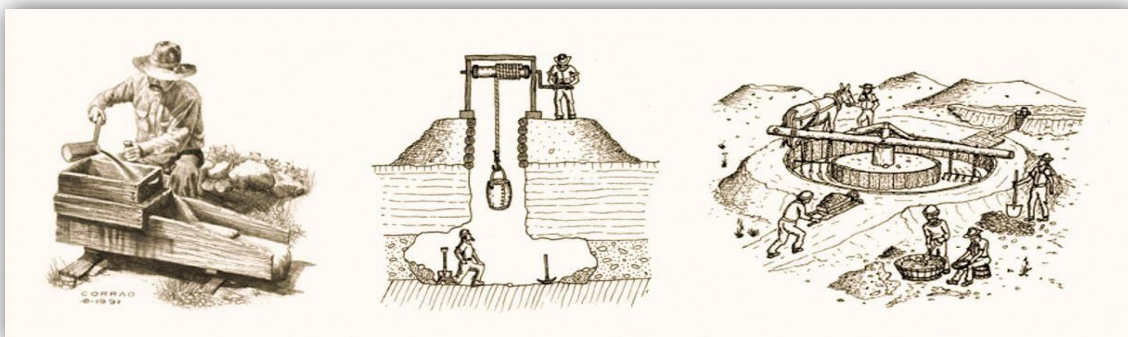
But he never came away with more than a few handfuls of gold pebbles. Meanwhile, the old prospector – day in and day out – returned to the camp with a full satchel of gold nuggets.

After several months, the young man was exasperated. He had spent all he had on experts and consultants and new fancy machines, and yet he had made virtually no progress. And although he continued to find a few gold pebbles every day, it wasn't nearly enough to support himself.

Discouraged, broke, and exhausted, the young man concluded that he would return home to Boston.
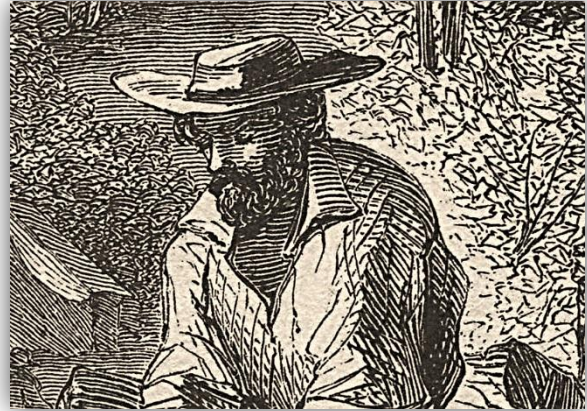
Before he left, however, he decided he should talk to the old prospector.

The young man stuck his head into the old prospector's tent once again. "Ahem, um, sir?" he said. "I wanted to apologize for what I said to you several months ago. You're clearly a great prospector, much better than I ever could be. I guess I'm just not cut out for this line of work."

The old prospector didn't say a word.

So the young man started to leave… but then hesitated.

"If- if you don't mind…" he said "How did you find so much gold? I worked harder than you, I worked longer than you, I hired experts and consultants, I bought fancy machines, and I studied all the latest techniques! Was there a hidden riverbed that my surveyors and I didn't find? Did you invent a new machine? Or do you know a secret method for finding gold that I was never able to discover? Please, sir, tell me your secret!"

The old man smiled and shook his head. "Son, why don't you show me the last place you looked for gold." So the young man led the old prospector to a bend in the river, a few hundred yards away from the camp, where he had been working the previous day.

Taking out his map and about twelve complicated scientific instruments, the young man began wading around in the water, periodically stopping to either dig around in the mud or recalibrate his instruments.

After a while the young man was still empty-handed. "See! No gold here!" he proclaimed.

Smiling, the old prospector observed the entire scene for a few moments, then walked a couple steps up the riverbank to a pile of rocks. He kicked the pile of rocks, bent down to push some dirt aside, and picked up a giant gold nugget that was larger than his head!

The young man's jaw dropped. "How'd you find that?!" he asked.

The old prospector chuckled.

"You see, while you and all the other miners in the camp were trying to find the perfect place to dig for gold by talking to experts and consultants, buying fancy new machines, and running complicated calculations, all I had to do every day was simply walk along the riverbank and find the piles of rocks that you and everyone else had chosen to overlook."

And with that, the old prospector turned to walk back to the camp, giant gold nugget in hand.
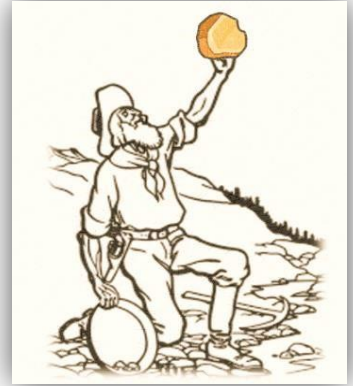
1: INTRODUCTION

First of all, I want to thank you personally for taking the time to read The VVI Guide to Value Investing!

I was really excited to write this book. My goal was to have everyone be able to learn something new from reading it – whether you've never opened a brokerage account before or if you run your own hedge fund. I hope I've succeeded.

Over the next 100 pages or so, you'll learn:

□ What value investing is,

□ What value *is not*,

□ How and why value investing was developed,

□ Why you should care about value investing in the first place,

□ Who the most famous value investors are,

□ What specific investing strategies these superstar value investors employ,

□ The meaning of essential value investing terms like Mr. Market, intrinsic value, and margin of safety,

□ How to value a stock,

□ What kinds of companies and investments value investors look for,

□ Where the best places to find great value investments are,

□ And most importantly - how to start *thinking* like a value investor.

We'll get to all that in a bit.

But before we get going, I want to explain why I chose to open this book with that story about the young man and the old prospector:

1. VALUE INVESTING IS A TIMELESS INVESTING PHILOSOPHY THAT CONSISTENTLY WORKS

I have an obvious confession to make: I didn't invent any of the concepts in this book. I wish I could take credit for them, but I'm just not that smart. So nothing that you're about to read is new, revolutionary, or groundbreaking. In fact, these concepts are really old – the main principles of value investing were developed in the 1930's during the Great Depression (and actually were created in response to the wild speculation that helped cause the Stock Market Crash of 1929 in the first place).

It's just like in the story. The young man tried to learn the newest, trendiest mining techniques and bought the latest, fancy machines, while the old prospector stuck to his own strategy, which had worked for him day in and day out. Just like his strategy – the value investing strategy has stood the tests of time.

Now, sometimes – like during the Dot Com craze of the late '90s – people forget that value investing exists. And sometimes value investing goes out of fashion. But its core principles always work (that's why I named my website Vintage Value Investing).

2. IN ORDER TO SUCCEED AT INVESTING, YOU MUST THINK AND ACT DIFFERENTLY THAN THE CROWD

The old prospector's tent was set apart from the others in the camp, he mostly kept to himself, and he walked up and down that riverbank alone. On the other hand, the young man followed the crowd, travelling across the country to California like so many others and panning for gold in the same areas as everyone else at the camp.

If you want to be a good investor, you must think differently than everyone else. This is what famous value investor Howard Marks calls "second-level thinking." It's not enough to say, "I think this company is a great company so I'm going to invest in it" if everyone else thinks the same thing (first-level thinking). You have to say, "I think this company is a great company so I'm going to invest in it, even though everybody around me disagrees" (second-level thinking).

Remember, your goal in investing is to beat the market-average return (otherwise, why not just invest in an index fund?). But above-average returns require aboveaverage thinking. Your expectations and your analysis must diverge from the norm. Your thinking must be both different and better than everyone else's.

As a corollary to this, the best investments (almost by necessity) are the ones that everyone else overlooks.

3. THESE CONCEPTS ARE NOT EASY TO IMPLEMENT. BUT THEY ARE SIMPLE.

Finally, and probably most importantly, these concepts are incredibly simple.

Note that this does not mean easy to apply. Investing is anything but easy. You must be able to analyze and act on an unending and constantly changing stream of information about companies, customers, competitors, industries, the overall economy, global events, etc. – all while contending with the vagaries of other investors' emotions, as well as your own.

But this doesn't mean that investing should be made any more complicated than it already is.

Complicated mathematical equations and extremely precise computer models are useful for making predictions about things like the weather, or for charting a space shuttle's flight pattern into orbit. But these are "level one" chaotic systems – the weather and the shuttle's flight pattern do not react to predictions made about them.

Financial markets, on the other hand, are "level two" chaotic systems – they do react to predictions made about them. So security prices are constantly updating and changing as market participants attempt to make predictions about the underlying assets. Consequently, the more complicated an investment strategy is, the less effective it actually becomes. The great investor is able to recognize this chaos and how unpredictable the future is, and keeps her investing strategy as simple as possible, which protects her from her greatest adversary – herself.

In this sense, the wise investor stays out of the water and simply walks along the riverbank, picking up the giant gold nuggets of investing opportunities as they appear.

I truly believe this is the real key to great investing, and it's a common theme I've seen in every successful value investor's story.

Make it simple. Get the big things right. And then use just a little bit of common sensne.

2: THE FOUNDATION

Alright! We're almost ready to get started!

But first I want to make sure we're ALL on the same page here – whether you're an investing newbie or a financial whiz kid.

So let me quickly explain two very important concepts that I'll be using a lot throughout this book.

THE TIME VALUE OF MONEY

Did you ever watch the Popeye cartoons or read the Popeye comic strips as a kid?

Hopefully you did and didn't have a deprived childhood, but in any case Popeye the Sailorman is a cartoon character who has enormous forearms and eats spinachto give him superhuman strength - and he's awesome.

But I really want to talk about Popeye's but J. Wellington Wimpy.

You see, whereas Popeye is pugnacious, erratic, and courageous (especially after a shot of spinach), Wimpy is, well, he's wimpy. He's soft-spoken, lazy, cheap, but he's also clever and sometimes deceitful.

And while Popeye loves his healthy spinach, Wimpy loves hamburgers. In fact, Wimpy's entire personality can be summed up in his famous catchphrase:

"I'll gladly pay you Tuesday for a hamburger today."

Sounds exactly like something a scam artist like Wimpy would say to get out of paying his restaurant tab, right?

Well, maybe.

But maybe not.

Maybe Wimpy was actually an investing genius…

Maybe, just maybe, Wimpy was simply applying a fundamental principle of finance…

That's right. I am talking about the Time Value of Money.

The Time Value of Money (TVM) is a concept that says that a dollar received today is worth more than a dollar received tomorrow. Let's see why:

Investing is the act of purchasing assets – such as stocks or bonds – in order to move money from the present to the future. However, the conversion of present cash into future cash is burdened by the following problems:

Individuals prefer current consumption over future consumption: Delayed gratification is hard for most people and, all things being equal, we would rather have things now than wait for them.

Inflation: When the money supply increases, prices also often increase. Consequently, the purchasing power of currency decreases over time. That is why your grandpa keeps reminding you that it used to only cost him $0.20 cents to take your Nana to the movies, not $15 bucks.

Risk: The future is uncertain, and there is always a chance that future cash delivery may not occur.

To overcome these problems, investors must be compensated appropriately. This compensation comes in the form of an interest rate, which is determined by a combination of the asset's risk, it's liquidity, it's maturity (if it has one), the expected inflation rate, and the "risk-free rate", which is the rate on the safest investment possible (generally, people usually use the 3-month U.S. Treasury Bill, because these notes are backed by the full faith – and the full taxation and currency-printing powers – of the United States government).

This "compensating" interest rate (which we call the discount rate) can come in a variety of forms.

Sometimes we might calculate the discount rate as the risk-free rate plus some risk premium, taking into effect the asset's risk, liquidity, and maturity.

Other times the discount rate will be determined by the company's capital structure (if we're talking about WACC) or by the investor's required rate of return (as in NPV calculations).

No matter the interest rate used, the conclusion is always the same: a dollar received today is worth more than a dollar received tomorrow. This is because you can invest that dollar today (that is, move it to the future) and earn interest on it (that is, receive compensation to account for risk, inflation, etc.).

So if your bank's savings account pays 3% a day, then a dollar today is worth exactly $0.03 more than a dollar paid tomorrow (a dollar today is worth $1.03 paid tomorrow; if instead you only received $1.00 tomorrow – or $1.01 or $1.02 – you would be upset because you missed out on the opportunity to get that $0.03 in interest). Similarly, a dollar received tomorrow is only worth as much as $0.971 received today ($0.971 invested today at a 3% per day interest rate would give you $1.00 tomorrow).

So, that's why I think Wimpy was just being smart with his money.

By buying a hamburger today but only paying for it on Tuesday, he was essentially getting his hamburgers at a discount. Why? Because a dollar on Tuesday is worth less than a dollar today.

INTRINSIC VALUE

Okay, now that we're Time Value of Money experts and we know that a dollar in the future is worth less than a dollar today, we can now talk about the concept of Intrinsic Value.

I want you to imagine a bond to start with.

What's a bond?

A bond is essentially a loan to a company. The company borrows your money (or the principal), and promises to pay you regular interest (or coupon) payments for the life (or maturity) of the bond. When the bond finally matures, the company pays you a final coupon payment and also pays you back the original principal amount.

So for example, let's say we have a bond with a face value of $100, with a 10% coupon rate, that matures in 5 years. The cash flows on that bond would be:

In Year 1: +$10 coupon payment

In Year 2: +$10 coupon payment

In Year 3: +$10 coupon payment

In Year 4: +$10 coupon payment

In Year 5: +$10 coupon + $100 face value back Total Cash Flow: $10 x 5 + $100 = +$150.

Those are the real, actual cash flows for that bond. You invest in the bond, get your $10 coupon payments, and then get the $100 face value back after 5 years. So at the end of 5 years you have $150.

Now… what is the value of that bond? In other words, how much would you pay to own that bond? Would you pay $150?

Well, probably not, right? You wouldn't pay $150 today just to receive $150 over the next 5 years because of all the reasons we mentioned when we were talking about the Time Value of Money. You would want to be compensated for (1) delaying your current consumption in favor of future consumption, (2) inflation, and (3) the risk that you might not get paid back.

Therefore, the intrinsic value of that bond (or, how much you would be willing to pay for that bond), is something less than $150.

But how much less?

To answer that question, we'd have to discount – or reduce – the cash flows in each year in the future to make them worth less than if we were receiving them today.

There is a simple formula to determine the present value of money received (or paid) in the future:

$$PV = FV \, / \, (1+i)^n$$

where:

PV = present value,

FV = future value,

i = the interest (or discount) rate,

n = number of periods.

And if we want to calculate the future value of money received (or paid) today, we can simply rearrange the equation as follows:

$$FV = PV \times (1 + i)^n$$

In fact, if we know any 3 of the 4 variables (PV, FV, interest rate, and number of periods), then we can easily solve for the 4th one.

Side Note

Instead of doing the math by hand, which can get pretty cumbersome, you can calculate Present Value in Microsoft Excel with this function:

=PV(rate,nper,pmt,fv)

where:

PV=present value

rate = discount rate

nper = number of periods

pmt = coupon payment per period (generally

for bonds calculations, otherwise "0" works)

fv = future value

Note: PV and FV must have opposite signs (one must be a cash inflow and one must be a cash outflow).

The Future Value function is similar:

=FV(rate,nper,pmt,pv)

These equations can of course be performed using a financial calculator, as well. (The most popular financial calculators are the Texas Instruments BA II, the HP 12CP, and the HP 10BII). Please consult your financial calculator's instruction manual for more information.

Back to the bond.

We said earlier that in Years 1-4 we were going to receive $10 of interest per year and the $10 of interest and the $100 face value of the bond ($110 in total) in Year 5.

Now let's say that our discount rate (i.e., the rate we must be compensated with) is 5%. We can now calculate the present value of these cash flows:

In Year 1: $+\$10/(1 + 5\%)1 = +\$9.52$

In Year 2: $+\$10/(1 + 5\%)2 = +\$9.07$

In Year 3: $+\$10/(1 + 5\%)3 = +\$8.64$

In Year 4: $+\$10/(1 + 5\%)4 = +\$8.23$

In Year 5: $(+\$10 + \$100)/(1 + 5\%)5 = +\$86.19$

Total Present Value: $+\$121.65$

So the intrinsic value of the bond – the amount we'd be willing to pay for it today – is $121.65. That's just the present value of the total amount of cash flows that we'll receive in the future, which we've discounted back to today.

(By the way, note that if we used 10% as our discount rate – i.e., the same rate as the 10% coupon rate on the bond – then the present value of the bond would be $100, which is the same as the face value of the bond. This works because our rate of return – 10% - is the same as the compensating rate – 10% – that we required to (1) delay consumption, (2) face inflation, and (3) incur risk.)

Okay, so it's not that hard to understand the intrinsic value of a bond, right? You just add up all the future cash flows and discount them back to the present using some discount rate.

Well, the intrinsic value of a stock is the exact same thing.

If the intrinsic value of a bond can be defined as the present value of the bond's future cash flows, then the <u>intrinsic value of a stock</u> can be defined simply as:

The discounted value of the cash that can be taken out of the business during its remaining life.

So if I want to calculate the intrinsic value of one share of Apple stock, I'd just calculate how much cash I think Apple is going to generate from today into the future, and I'd discount all of those cash flows back to the present using a discount rate. The intrinsic value of Apple would then just be the sum of those present value cash flows.

Now, instead of calculating the present value for each projected year, there's a special formula we can use to simplify things. It's called the Gordon Growth Model (also sometimes called the Dividend Discount Model):

$$Intrinsic\ Value = \frac{Cash\ Flow\ in\ Year\ 1}{Discount\ Rate - Growth\ Rate}$$

Note: This equation only works when we you a constant rate of growth, and when that rate of growth is less than the discount rate (the PV of an investment that grows faster than your required compensating rate is infinity).

So for Apple, if I think the company's going to generate $20 in free cash flow next year and continue to grow at 10% per year, I could use a 12% discount rate to calculate an intrinsic value of:

$$\frac{\$20\ of\ FCF\ in\ Year\ 1}{Intrinsic\ Value\ (12\%\ Discount\ Rate - 10\%\ Constant\ Growth\ Rate)} = \$1,000$$

| 3: WHAT IS VALUE INVESTING?

Okay awesome!

Now that we understand that a dollar today is worth more than a dollar tomorrow, and that the intrinsic value of a company is just the discounted value of the cash that that company is going to generate during its life, we can finally answer maybe the most important question of this book:

What is Value Investing?

The term "value investing" is actually a funny one.

Benjamin Graham, who developed the core tenets of value investing and is considered to be "The Father of Value Investing," actually never used the term value investing in any of his work. The term he used was *"intelligent investing."*

Over the years, the term "intelligent investing" has been mostly forgotten – probably because people who didn't subscribe to his ideas (speculators, day traders, and technical analysts) didn't want to call what they were doing "dumb investing" (although I'd say that's probably the proper term for it).

So people started calling Ben Graham's ideas "value investing," because he was one of the first people to stress the importance of focusing on <u>intrinsic value</u> instead of <u>market price</u>. And so for better or worse, that's what his ideas are called today: value investing. And that's what I call his ideas as well, although I'll sometimes use value investing and intelligent investing interchangeably.

The problem we face today, though, is that over time value investors who followed Ben Graham's school of thought have tended to favor companies that fit certain characteristics – namely companies that are disfavored by other investors, which tend to be more mature, low growth, and relatively lower valued companies – and have eschewed companies that fit certain other characteristics – namely companies that are liked too much by other investors, which tend to be newer, hotter, trendier, faster growing, and relatively higher valued companies.

As a result, many institutions on Wall Street, the media, and even some investors themselves, started to define value investing not by the intelligent investing concepts that Ben Graham had developed – but by the characteristics that value investors tended to look for in companies.

Picture a pyramid. Let's call the entire pyramid "value investing":

The Value Investing Definition Pyramid
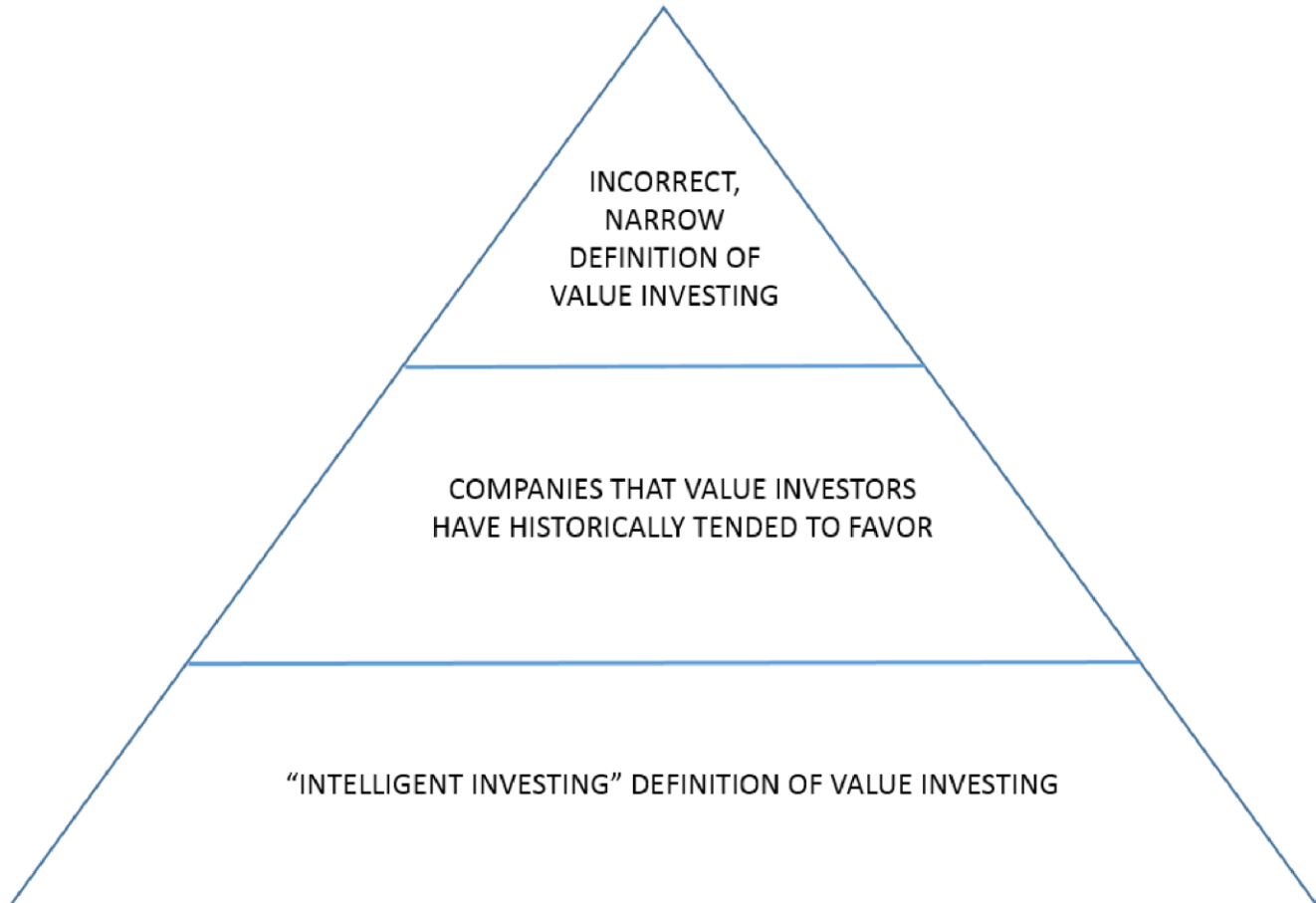
At the base of the pyramid, we have Ben Graham's "intelligent investing" concepts – which is the <u>real</u> value investing we want to talk about.

In the middle, we have the types of companies that value investors have historically tended to invest in – but in no way are <u>required</u> to solely invest in if they follow Ben Graham's principles.

Then at the top of the pyramid, we have the <u>wrong</u> concept of value investing, because it defines it just way too narrowly.

So before I get into what value investing – *i.e. intelligent investing* – really is, I want to peel back the layers and dispel some of the myths and misconceptions that are out there and explain first what value investing isn't, starting at the top of that pyramid.

VALUE INVESTING VS. GROWTH INVESTING

The biggest myth I hear is that value investing means investing in low P/E, low P/B, or high dividend yield stocks, and that value investors only invest in low growth, mature, or unpopular companies.

Morningstar Style Box™
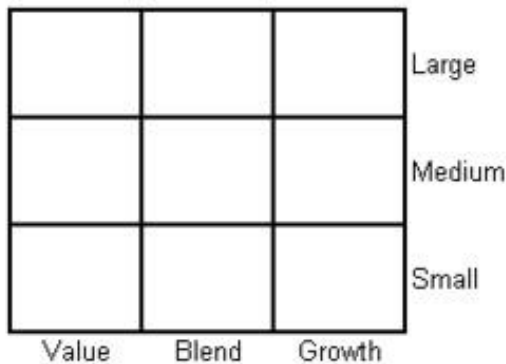
This is the top of the pyramid, and it's influenced by the middle of the pyramid. It's one of the biggest misconceptions when it comes to value investing, and it continues to be perpetuated because it's an easy, simple, and in my opinion lazy way to classify value investors.

Take, for example, the style box that Morningstar has popularized. The style box helps characterize mutual funds by their focus on large-cap, medium-cap, and small-cap stocks (top to bottom), and by their "value" or "growth" orientation (left to right).

A value stock, according to Morningstar, has a low price/earnings (P/E) ratio, low price/book (P/B) ratio, low price/cash flow (P/CF) ratio, and a high dividend yield.

A growth stock, on the other hand, has high long-term projected earnings growth, high historical earnings growth, and high sales, cash flow, and book value growth.

Or, take this explanation of value investing and growth investing by Fidelity:

Value Investing:

- Focuses on companies with lower-than-average sales and earnings growth rates.

- Holdings generally feature stocks with lower P/E and P/B ratios.

- Stocks generally have higher dividend yields.

- Fund can potentially capitalize on turnaround situations.

Growth Investing:

- Focuses on companies with above average rates of growth in earnings and sales.

- These stocks tend to have above-market P/E and price-to-sales (P/S) ratios, as the rapidly growing sales and earnings justify a higher-than-average valuation.

It would seem that if you own a brokerage account, then you must sit squarely in one or the other camp. You're either a "value" investor or a "growth" investor.

So, you might ask, what's better: value investing or growth investing?

Well… that's not the right question to ask, because this is the completely wrong way to think about it.

You see, value investing and growth investing shouldn't be thought of as contrasting strategies, on opposite ends of some imaginary style spectrum.

In fact, I'd even go as far as to say that there is no such thing as growth investing.

Let's break it down.

GROWTH IN INVESTING

Again, growth investing is usually described as investing in companies that have high historical and projected revenue and earnings growth rates, and usually have above-market P/E and P/S ratios because the rapidly growing sales and earnings justify a higher-than-average valuation.

But as Warren Buffett has said, value and growth "are joined at the hip."

See growth is always a component in the calculation of the intrinsic value of a stock. Sometimes growth is enormously important to the calculation of value. Sometimes it's not important at all. Sometimes growth positively impacts value. Sometimes growth can negatively impact value. But

you have to take it into account to some extent when you're projecting the future cash flows of a business – whether you're talking about a "growth" stock or a "value" stock.

That being said, business growth by itself – as in "this is a high growth company" or "this is a low growth company" – doesn't tell you much about intrinsic value at all. Take the airline industry in the U.S. for example. Investors regularly pour money into airline businesses to finance growth. But if you added up all the profits generated by the airline industry from the time the Wright Brothers took off at Kitty Hawk to today – the cumulative profits would be… $0! So the airline industry has experienced tremendous growth since Kitty Hawk, but has generated no cumulative value for shareholders!

Being a high growth company can actually negatively impact intrinsic value in some cases. Growth only benefits investors when every dollar used to finance that growth creates more than a dollar in long-term value. Growth can hurt intrinsic value if a high growth business requires additional capital to support itself, but can't earn a sufficient return on that capital – like most airlines, for example.

So, investing just in so-called "growth" stocks solely on the basis of growth doesn't seem very logical now, does it?

Now, let me take this one step further and abolish the term "growth investing" all together.

THERE IS NO SUCH THING AS GROWTH INVESTING

Morningstar, Fidelity, and many others position growth investing and value investing as polar opposites of each other.

As I mentioned earlier, value investing is supposedly the act of purchasing stocks that have low P/E ratios. People call it value investing because investors are looking to get back more value than they're paying out. So you would only purchase a low P/E stock if you thought you were getting it for less than its true value.

Well, if growth investing is the opposite of value investing, then what is the opposite of purchasing assets for less than their true value? It would be purchasing assets at a price greater than their true value.

But paying more for a stock than it's worth – and then hoping that you can sell it eventually for an even greater price – isn't investing at all! That's speculation.

Now, even if a "growth investor" were to buy a "growth stock" that was supposed to grow earnings at an above-average rate, he or she would necessarily have to pay a higher multiple for those earnings in the first place. In other words, the growth rate of those earnings has already been baked into the purchase price.

We can see why this is true through a quick example using the Time Value of Money concepts we learned just a short while ago. Let's say Company A generated $100 of earnings last year and is projected to grow 4% per year. Assuming a 12% discount rate, we can use the Gordon Growth Model to calculate the intrinsic value of Company A:

- Intrinsic Value of Company A = Earnings in Year 1 / (Discount Rate − Growth Rate)

- Intrinsic Value of Company A = ($100 x 1.04) / (.12 − 0.4) Intrinsic Value of Company A = $1,300

The P/E ratio (assuming market price = intrinsic value) for Company A would be $1,300 / $100 of earnings = 13.

Now assume that Company B also generated $100 of earnings last year, but is projected to grow 8% per year.

- Intrinsic Value of Company B = Earnings in Year 1 / (Discount Rate − Growth Rate)

- Intrinsic Value of Company B = ($100 x 1.08) / (.12 − 0.8) Intrinsic Value of Company B = $2,700

The P/E ratio for Company B would be $2,700 / $100 of earnings = 27.

As you can see, you end up paying more for the company that is growing faster.

Now what if this wasn't the case? What if you calculate the intrinsic value of Company B and it comes out to be $2,700 – but you pay $3,700. Well, like we said before, that wouldn't be investing – that would be speculating.

And what if you calculate the intrinsic value and it comes out to be $2,700 but you only pay $1,700 – that is, you're getting back more value than you're paying out? Well, that's just smart investing!

Consequently, growth investing simply cannot exist you're either investing or you're speculating!

THE INCORRECT DEFINITION OF VALUE INVESTING

Okay, now let's get rid of the definition of value investing as a strategy of investing in low P/E, high dividend yield, slow growth, and mature companies.

Well, first of all, just like high growth by itself tells you next to nothing about the true intrinsic value of a company, the characteristics that Morningstar and Fidelity associate with value investing – low P/E ratio, high dividend yield, slow growth, mature industry, etc. – also tell you next to nothing about the true intrinsic value of a company.

A company with a low P/E ratio might be a great investment, but it also might be a terrible investment. The same holds true for a company that's in a mature industry or has a high dividend yield or is a slow grower. Those facts just don't tell you enough on their own about intrinsic value.

Moreover, the Morningstar and Fidelity definitions of value investing also imply that a value investor cannot invest in a stock that has a high P/E ratio or in a business that has experienced higher-than-average sales growth. And that's just silly.

In our previous example, we calculated the intrinsic value of Company B to be $2,700. What if the market price of Company B was $1,700, giving it a high P/E ratio of 17. According to Morningstar and Fidelity, value investors only invest in companies with low P/E ratios. But if a value investor could purchase Company B for only $1,700 – when it had an intrinsic value of $2,700 – do you think he would pass on the investment because the stocks P/E ratio was "too high." Obviously not!

Take a look at Benjamin Graham's investment in The Government Employee Insurance Company (better known as GEICO). GEICO was founded in 1936. By 1940 the Company had booked its first underwriting profit of $5,000. Graham started investing in the Company in 1948 and by the next year the Company's profits exceeded $1 million. That's an annual growth rate of 94% from 1940 to 1948! Ben Graham invented value investing, but GEICO definitely looks like a "growth" investment to me.

Here's another example: At various points in 2010-2012, I invested heavily in Microsoft stock and Google stock. Last year, I invested in Apple stock. Microsoft and Apple have meager dividend yields of about 2% and Google doesn't even pay a dividend. They each have high P/E and P/B ratios. And all three would certainly be classified as "growth" stocks by places like Morningstar and Fidelity – not "value" stocks.

So why would I, a devout value investor, invest in Microsoft, Google, and Apple?

The answer is simple:

Because their stock prices were well below my calculations of their intrinsic value.

I said that "growth investing" cannot exist because you're either investing or you're speculating. In the end, the term "value investing" shouldn't <u>really</u> exist either, because it's kind of redundant, isn't it? Doesn't every investor want "value" in their investments, whether you call yourself a value investor or a so-called "growth investor"?

Would you really be investing if you didn't look for value at least sufficient to justify the amount paid? Of course not! You'd never pay more than the value you're getting in return.

So now we have arrived at the base of the pyramid – the <u>real</u> value investing.

SO, WHAT IS VALUE INVESTING THEN?

So, then you might ask, what is value investing?

In his book *Value Investing: From Graham to Buffett and Beyond*, Professor Bruce Greenwald from Columbia Business School says that value investing – in the manner initially defined by Benjamin Graham – rests on three key characteristics of financial markets:

1. The market prices of financial securities are subject to significant and capricious movements.

2. Graham personified these movements into a character that he called "Mr. Market." Despite these gyrations in the market prices of financial assets, most of them do have underlying or fundamental economic values that are unrelated to their prices. Graham called this "intrinsic value."

3. A strategy of buying securities only when their market prices are below the calculated intrinsic value will produce superior returns in the long run. The lower the market price is below intrinsic value the better. It's the proverbial buying $1 dollar for $0.50. That is true value investing.

Let me dig in to these three key characteristics:

First, Mr. Market.

Mr. Market is a parable that Ben Graham used in his teachings, and it forms the first main principal of value investing. Here's Ben Graham introducing Mr. Market in his book The Intelligent Investor:

Imagine that in some private business you own a small share that cost you $1,000. One of your partners, named Mr. Market, is very obliging indeed. Every day he tells you what he thinks your interest is worth and furthermore offers either to buy you out or to sell you an additional interest on that basis. Sometimes his idea of value appears plausible and justified by business developments and prospects as you know them. Often, on the other hand, Mr. Market lets his enthusiasm, or his fears run away with him, and the value he proposes seems to you a little short of silly.

Warren Buffett, who studied under Graham, has also talked about Mr. Market. In fact, he once called Mr. Market a *"drunken psycho"*. Here's Buffett talking about Mr. Market in one of his Berkshire Hathaway Shareholder Letters:

> *Ben Graham, my friend and teacher, long ago described the mental attitude toward market fluctuations that I believe to be most conducive to investment success. He said that you should imagine market quotations as coming from a remarkably accommodating fellow named Mr. Market who is your partner in a private business. Without fail, Mr. Market appears daily and names a price at which he will either buy your interest or sell you his.*

> *Even though the business that the two of you own may have economic characteristics that are stable, Mr. Market's quotations will be anything but. For, sad to say, the poor fellow has incurable emotional problems. At times he feels euphoric and can see only the favorable factors affecting the business. When in that mood, he names a very high buy-sell price because he fears that you will snap up his interest and rob him of imminent gains. At other times he is depressed and can see nothing but trouble ahead for both the business and the world. On these occasions he will name a very low price, since he is terrified that you will unload your interest on him.*

The stock market, of course, is exactly like Mr. Market. Except that instead of just one guy, the stock market is comprised of many, many different investors. But as a crowd, they often act a lot like Mr. Market does. Every day, you have the option to buy or sell shares of companies to other investors in the stock market.

Sometimes, investors will be euphoric and optimistic, and stock prices will be very high – higher than they should be if you look at the underlying fundamentals. Other times, investors will be gloomy and pessimistic, and stock prices will be very low – lower than they deservedly should be.

Which brings us to the second key characteristic: the price that Mr. Market offers to you for a company is not the same as the company's actual <u>intrinsic value</u>.

Remember earlier when we said that the intrinsic value of a company is just the discounted future cash flows that the business generates?

Well, the market price of the company's stock has absolutely nothing to do with those cash flows. In other words, market price is one thing, and intrinsic value is a totally different thing. And although market price and intrinsic value can be the same on any given day, they're often different.

So you have Mr. Market coming up to you every day, offering you a price to buy or sell to you. And then you have your own idea of intrinsic value in your head.

And that brings us to the third key characteristic.

You don't have to buy or sell to Mr. Market unless it's advantageous <u>to you</u>. So a shrewd investor would sell to Mr. Market when he's overly optimistic and offers a price higher than what you think intrinsic value is, and buy from him when he's overly pessimistic and offers you a price that you think is lower than intrinsic value.

Here's Ben Graham again:

If you are a prudent investor or a sensible businessman, will you let Mr. Market's daily communication determine your view of the value of a $1,000 interest in the enterprise? Only in case you agree with him, or in case you want to trade with him. You may be happy to sell out to him when he quotes you a ridiculously high price, and equally happy to buy from him

when his price is low. But the rest of the time you will be wiser to form your own ideas of the value of your holdings, based on full reports from the company about its operations and financial position.

The true investor is in that very position when he owns a listed common stock. He can take advantage of the daily market price or leave it alone, as dictated by his own judgment and inclination... Basically, price fluctuations have only one significant meaning for the true investor. They provide him with an opportunity to buy wisely when prices fall sharply and to sell wisely when they advance a great deal. At other times he will do better if he forgets about the stock market and pays attention... to the operating results of his companies.

Those three key characteristics can be succinctly summarized into two core tenets.

Value Investing Is Nothing More Than:

- Knowing the difference between price and intrinsic value, and

- Paying less than the value you receive in return.

That's it. Just two core tenets.

Now, there are many other topics that are very much a part of the value investing philosophy, such as: "margin of safety", the importance of performing bottoms up fundamental analysis, the proper way to think about risk, etc. – all topics that are covered in this book.

But remember that in the end, everything else is simply a corollary of those two main tenets: (1) Knowing the difference between price and intrinsic value, and (2) Paying less than the value you receive in return.

4: FAMOUS VALUE INVESTORS

THE SUPERINVESTORS OF GRAHAM-AND-DODDSVILLE

You might be thinking right now, "Okay, I understand what value investing is... But why should I care?"

The best person to answer that question is Warren Buffett. In 1984 – on the 50th anniversary of the publishing of the classic value investing textbook Security Analysis by Ben Graham and his teaching partner David Dodd, Buffett wrote an article for Columbia Business School's magazine Hermes.

That article was called *The Superinvestors of Graham-and-Doddsville:*

Is the Graham and Dodd "look for values with a significant margin of safety relative to prices" approach to security analysis out of date? Many of the professors who write textbooks today say yes. They argue that the stock market is efficient; that is, that stock prices reflect everything that is known about a company's prospects and about the state of the economy. There are no undervalued stocks, these theorists argue, because there are smart security analysts who utilize all available information to ensure unfailingly appropriate prices. Investors who seem to beat the market year after year are just lucky. "If prices fully reflect available information, this sort of investment adeptness is ruled out," writes one of today's textbook authors.

Well, maybe. But I want to present to you a group of investors who have, year in and year out, beaten the Standard & Poor's 500 stock index...

Before we begin this examination, I would like you to imagine a national coin-flipping contest. Let's assume we get 225 million Americans up tomorrow morning and we ask them all to wager a dollar. They go out in the morning at sunrise, and they all call the flip of a coin. If they call correctly, they win a dollar from those who called wrong. Each day the losers drop out, and on the subsequent day the stakes build as all previous winnings are put on the line. After ten flips on ten mornings, there will be approximately 220,000 people in the United States who have correctly called ten flips in a row. They each will have won a little over $1,000.

Now this group will probably start getting a little puffed up about this, human nature being what it is. They may try to be modest, but at cocktail parties they will occasionally admit to attractive members of the opposite sex what their technique is, and what marvelous insights they bring to the field of flipping.

Assuming that the winners are getting the appropriate rewards from the losers, in another ten days we will have 215 people who have successfully called their coin flips 20 times in a row and who, by this exercise, each have turned one dollar into a little over $1 million. $225 million would have been lost, $225 million would have been won.

By then, this group will really lose their heads. They will probably write books on "How I Turned a Dollar into a Million in Twenty Days Working Thirty Seconds a Morning." Worse yet, they'll probably start jetting around the country attending seminars on efficient coin-flipping and tackling skeptical professors with, "If it can't be done, why are there 215 of us?"

By then some business school professor will probably be rude enough to bring up the fact that if 225 million orangutans had engaged in a similar exercise, the results would be much the same — 215 egotistical orangutans with 20 straight winning flips.

I would argue, however, that there are some important differences in the examples I am going to present. For one thing, if (a) you had taken 225 million orangutans distributed roughly as the U.S. population is; if (b) 215 winners were left after 20 days; and if (c) you found that 40 came from a particular zoo in Omaha, you would be pretty sure you were on to something. So you would probably go out and ask the zookeeper about what he's feeding them, whether they had special exercises, what books they read, and who knows what else. That is, if you found any really extraordinary concentrations of success, you might want to see if you could identify concentrations of unusual characteristics that might be causal factors.

Scientific inquiry naturally follows such a pattern. If you were trying to analyze possible causes of a rare type of cancer — with, say, 1,500 cases a year in the United States — and you found that 400 of them occurred in some little mining town in Montana, you would get very interested in the water there, or the occupation of those afflicted, or other variables. You know it's not random chance that 400 come from a small area. You would not necessarily know the causal factors, but you would know where to search.

I submit to you that there are ways of defining an origin other than geography. In addition to geographical origins, there can be what I call an intellectual origin. I think you will find that a disproportionate number of successful coin-flippers in the investment world came from a very small intellectual village that could be called Graham-and-Doddsville. A concentration of winners that simply cannot be explained by chance can be traced to this particular intellectual village…

In this group of successful investors that I want to consider, there has been a common intellectual patriarch, Ben Graham. But the children who left the house of this intellectual patriarch have called their "flips" in very different ways. They have gone to different places and bought and sold different stocks and companies, yet they have had a combined record that simply cannot be explained by random chance. The patriarch… set forth the intellectual theory for making coin-calling decisions, but each student has decided on his own manner of applying the theory.

The common intellectual theme of the investors from Graham-and-Doddsville is this: they search for discrepancies between the value of a business and the price of small pieces of that business in the market… Our Graham & Dodd investors, needless to say, do not discuss beta, the capital asset pricing model, or covariance in returns among securities. These are not subjects of any interest to them. In fact, most of them would have difficulty defining those terms. The investors simply focus on two variables: price and value.

Buffett then goes on to review the investment records of 9 investors, all of whom once worked for Ben Graham or were influenced by his work and then went off to successfully apply Graham's value investing concepts in their own individual ways.

I'm going to talk about some of those people in a little bit, but first, I have to talk about the Father of Value Investing himself, Ben Graham.

BENJAMIN GRAHAM

Benjamin Graham – the Father of Value Investing and the Deacon of Wall Street – was born in London in 1894, but his family moved to New York City when he was just one year old. He was a bright and precocious child and graduated from Columbia University as salutatorian when he was just 20 years old.

After he graduated, Columbia offered him positions to teach in the English department, the Mathematics department, and the Philosophy department. But instead, Graham took a job on Wall Street and eventually opened his own firm – the Graham-Newman Partnership.

Graham did pretty well for himself for about 15 years, from the time he graduated in 1914 to 1929. But he still hadn't honed his investment strategy, and he lost most of his money in the Stock Market Crash of 1929.

It was that experience that led him to develop the main concepts of value investing. The idea of separating intrinsic value from market price and the importance of investing with a margin of safety in order to protect yourself were actually unique thoughts at the time, and they really stood in contrast to the speculative thinking that had caused the stock market bubble and pop in the first place.

Graham started teaching at Columbia Business School around this time and, together with his teaching assistant David Dodd, published Security Analysis in 1934, which laid out these ideas that he had been developing over the previous 5 years. This textbook is now considered to be the "value investors'" bible and is the longest running investment text ever published. Graham also wrote The Intelligent Investor in 1949, which Buffett has described as "the best book about investing ever written."

Graham is probably most famous for using a "cigar butt" investing strategy.

He would specifically look for stocks that were so cheap that their market capitalizations were less than the liquidation value of the companies. In some cases, the market cap was even less than the cash the company had on its balance sheet! In these instances, Graham really would be buying $1 dollar for just $0.50. So just like a bum walking down the street might find a used cigar butt on the sidewalk that was still good for a few puffs, Graham would find companies that were almost dead and bankrupt, but that were still good for a nice investment gain.

Graham called these types of stocks "net-net" stocks, because he was looking for companies that were trading for less than their "net current asset values" (NCAV). Graham would take a firm's current assets – so it's most liquid assets like its cash, accounts receivable, and inventory – and

he'd subtract <u>all</u> of the company's liabilities (short-term and long-term). The firm's long-term assets, like its plant, property, and equipment were considered worthless. If that value – current assets minus total liabilities (or NCAV) – was worth more than the company's stock, then he would invest.

It's incredibly difficult to find stocks this cheap anymore, and you really need a diversified portfolio to be able to employ this strategy effectively.

But it worked very well for Graham during his career.

From 1936 to 1956 – so for two decades – Graham's investment firm posted annualized returns of about 20%, compared to the 12% average return for the overall market during that time.

Through his teaching and his writing, Graham had many disciples, many of whom went on to become successful investors themselves, including Bill Ruane, Irving Kahn, and Walter Schloss.

But Ben Graham's most famous disciple? Warren Buffett, of course.

WARREN BUFFETT

Warren Buffett doesn't need much of an introduction. He's the "Oracle of Omaha" and the world's most famous – and most successful – investor.

Warren Buffett was born in 1930 in Omaha, Nebraska. He was probably an even brighter and more precocious kid than Ben Graham was: Buffett was already investing in the stock market when he was 10; he bought a 40 acre farm when he was 14 for $1,200 using his own savings; and by the time he finished college, he had accumulated $9,800 in savings (the equivalent of almost $100,000 today).

Buffett attended Wharton at the University of Pennsylvania for 2 years of college, then transferred to the University of Nebraska-Lincoln, where he graduated when he was just 19. After being rejected by Harvard Business School, Buffett enrolled at Columbia Business School. Here he studied under Ben Graham and was the only student ever to earn an A in Graham's class.

After he graduated from Columbia, Buffett worked as a stockbroker for 3 years. He then worked for Graham's investment firm for a few years, before starting his own investment firm in 1956 when he was just 26 years old.

Warren Buffett's investment firm bought a failing textile manufacturer in 1965 and, although the textile manufacturing operations were eventually shut down and the business transitioned into a vast array of different fields, the name – Berkshire Hathaway – lives on. Today, Berkshire is the fourth largest public company in the world.

Buffett's investing strategy is very simple. He just looks at four things when he evaluates a purchase:

1.   The business must be one that he can understand. Buffett says he only has a few circles of competence – industries and business models that he truly knows about (insurance, manufacturing, consumer products) – and he sticks to those circles of competence. That's why he doesn't invest very much in high tech industries. He just doesn't understand them.

2.   The business must have favorable long-term prospects. This will be determined by the industry dynamics and by the company's economic moat, which is a concept that we'll cover in Chapter 7: The Qualities of Great Companies.

3.   The business must be operated by honest and competent people. Reputation is everything for Buffett. One of his most famous quotes is that it takes 20 years to build a reputation but only 5 minutes to ruin it.

4.   The business must be available at a very attractive price. This is pure Ben Graham value investing. Buffett's only going to buy a stock or a company if its purchase price is less than what he calculates its intrinsic value to be.

From 1965-2015 (50 years!) Berkshire's share price has increased by a compound annual growth rate of 21%, compared to 10% for the S&P 500!

WALTER SCHLOSS

Walter Schloss (who was born in 1916 and died in 2012) was one of the 9 "superinvestors" that Warren Buffett wrote about in his The Superinvestors of Graham-and-Doddsville article (see *Appendix I*).

He was one of the most successful value investors to have ever played the game, yet most people have never heard of him.

So who was he?

Well, Walter Schloss proves that you don't need fancy diplomas, a genius IQ, or numerous letters after your name to be successful in the stock market – you need only have passion for your work and discipline over your own emotions.

Schloss never had a formal education. When he was 18, he started working as a runner on Wall Street. He then attended investment courses taught by Ben Graham at the New York Stock Exchange Institute, and eventually worked for Graham's investment firm.

In 1955, he left Graham's company and set up his own investment firm, which he ran for nearly 50 years.

How did Walter Schloss pick stocks?

Here is his approach in brief:

- Investors are best served using a Benjamin Graham value approach, looking for stocks that are hitting new lows and those trading at a price lower than their book value per share.

- Stocks are selected from among well-known companies. Exclude foreign stocks and those in industries with which the investor is unfamiliar.

- Criteria for initial consideration include: 10-year track record, no long-term debt, stock at or near its 52-week low price, high inside ownership.

- Have a well-diversified portfolio of up to 100 stocks.

- In general, target a 50% profit from any holding before selling. If a stock's price is falling and the company's fundamentals are sound, buy more.

- From 1956 to 1984, Walter Schloss's partnership produced a compound annual return of over 21%. He continued to manage his fund until 2000, eventually earning 15.3% per annum for over four and a half decades.

His return of over 15% per annum for nearly 50 years solidifies him as one of the most consistently successful investors ever.
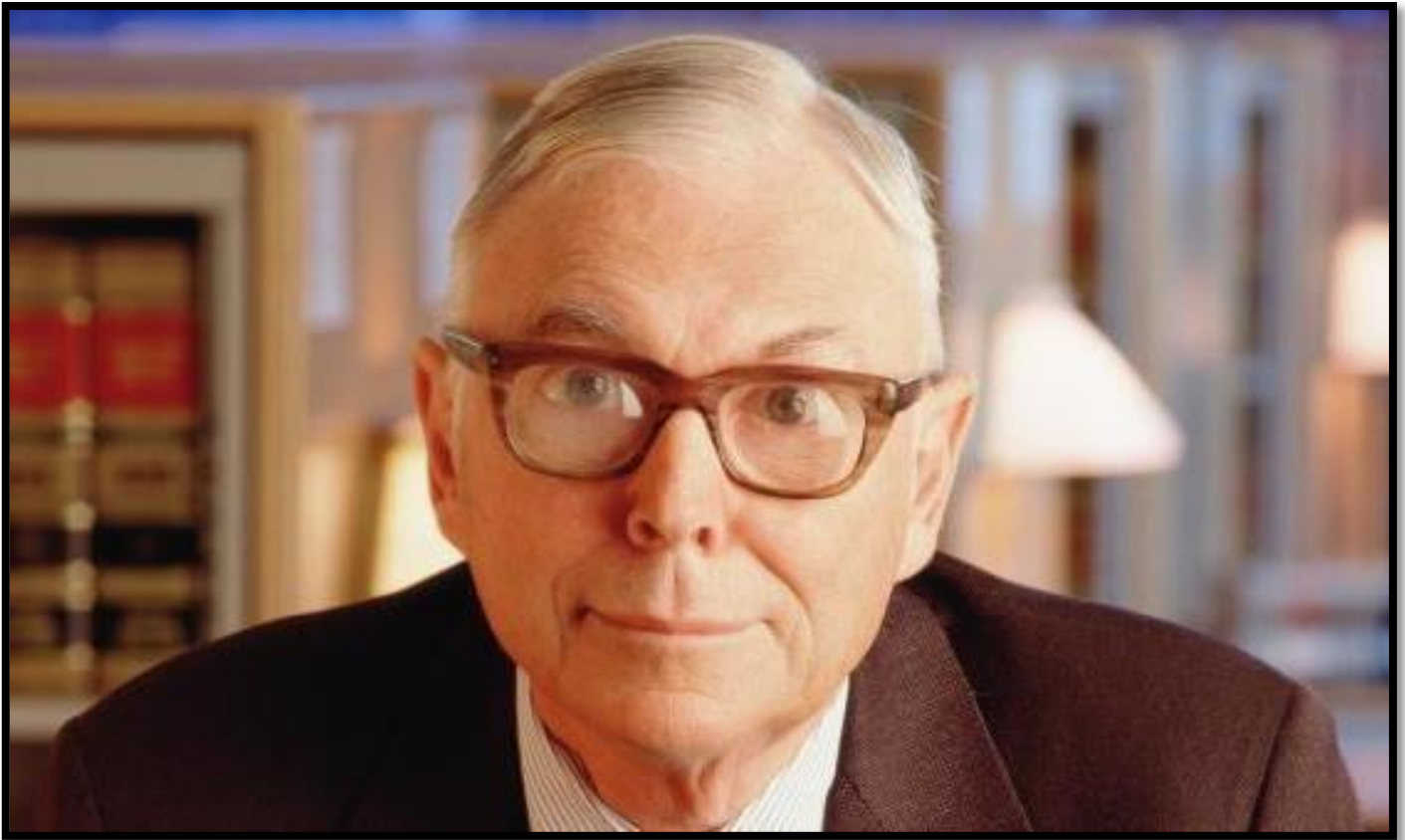
CHARLIE MUNGER

Charlie Munger is Warren Buffett's long-time business partner and Vice Chairman at Berkshire Hathaway.

Like Warren Buffett, Charlie Munger was born in Omaha, Nebraska in 1924. As a teenager, Munger actually worked at Buffett & Son, a grocery store owned by Warren Buffett's grandfather, although Warren and Charlie wouldn't actually ever meet until 1960.

When he was 19 – the same age that Buffett graduated from college – Munger dropped out of college to serve in the U.S. Army Air Corps during WWII. Eventually, Munger worked his way into Harvard Law School and set up a major law firm.

Buffett met Munger in 1960 and convinced him to become an investor. So Munger set up a partnership.

Eventually, Munger became Buffett's long time business partner and the Vice Chairman at Berkshire Hathaway. And while Buffett was the once that convinced Munger to leave law and become an investor, Munger is credited for convincing Buffett to stop investing in only cheap, cigar butt style stocks and instead to invest in amazing companies at attractive prices.

In other words, Munger convinced Buffett to stop investing in good companies at amazing prices and instead to invest in amazing companies at good prices.

In contrast to standard financial theory, Charlie Munger adamantly believes that you should only diversify your portfolio if you don't know what you're doing. He says that if you're rational, you should want to own as much of a good investment as you possibly can.

Consequently, his portfolio was concentrated in a small number of securities – but his investments were still based on the same Graham-and-Dodd value investing principles.

Charlie Munger's approach to investing can be summarized in the following ten-point checklist:

1. Measure Risk – All investment evaluations should begin by measuring risk, especially reputational.

2. Be Independent – Only in fairy tales are emperors told they're naked.

3. Prepare Ahead – The only way to win is to work, work, work, and hope to have a few insights.

4. Have Intellectual Humility – Acknowledging what you don't know is the dawning of wisdom.

5. Analyze Rigorously – Use effective checklists to minimize errors and omissions.

6. Allocate Assets Wisely – Proper allocation of capital is an investor's number one job.

7. Have Patience – Resist the natural human bias to act.

8. Be Decisive – When proper circumstances present themselves, act with decisiveness and conviction.

9. Be Ready for Change – Live with change and accept unremovable complexity.

10. Stay Focused – Keep it simple and remember what you set out to do.

In the end, Munger says it all comes down to preparation, discipline, patience, and decisiveness.

Charlie Munger's investment partnership generated a compound annual rate of return of 20% from 1962 to 1975, compared to only 5% for the Dow.

There are several other notable value investors who weren't direct disciples of Ben Graham, but are still worth mentioning nevertheless. Here are three of my favorites!:

SETH KLARMAN

Seth Klarman runs the Baupost Group, a hedge fund based in Boston. He is known for his focus on special situations, which includes complex transactions like spinoffs, carve-outs, and merger arbitrage. He's also the author of a book on value investing called *Margin of Safety: Risk-Averse Value Investing Strategies for the Thoughtful Investor*. The book is out of print, but used editions sell for as much as $700-$1,000.

HOWARD MARKS

Howard Marks runs Oaktree Capital Management. Oaktree invests across a range of asset classes, but Marks really made his name by applying value investing strategies to the world of distressed debt investing. Marks writes and publishes monthly "Oaktree memos", which have been compared to Buffett's Shareholder Letters. He's also the author of *The Most Important Thing: Uncommon Sense for the Thoughtful Investor*, which he wrote after Warren Buffett urged him to write a book.
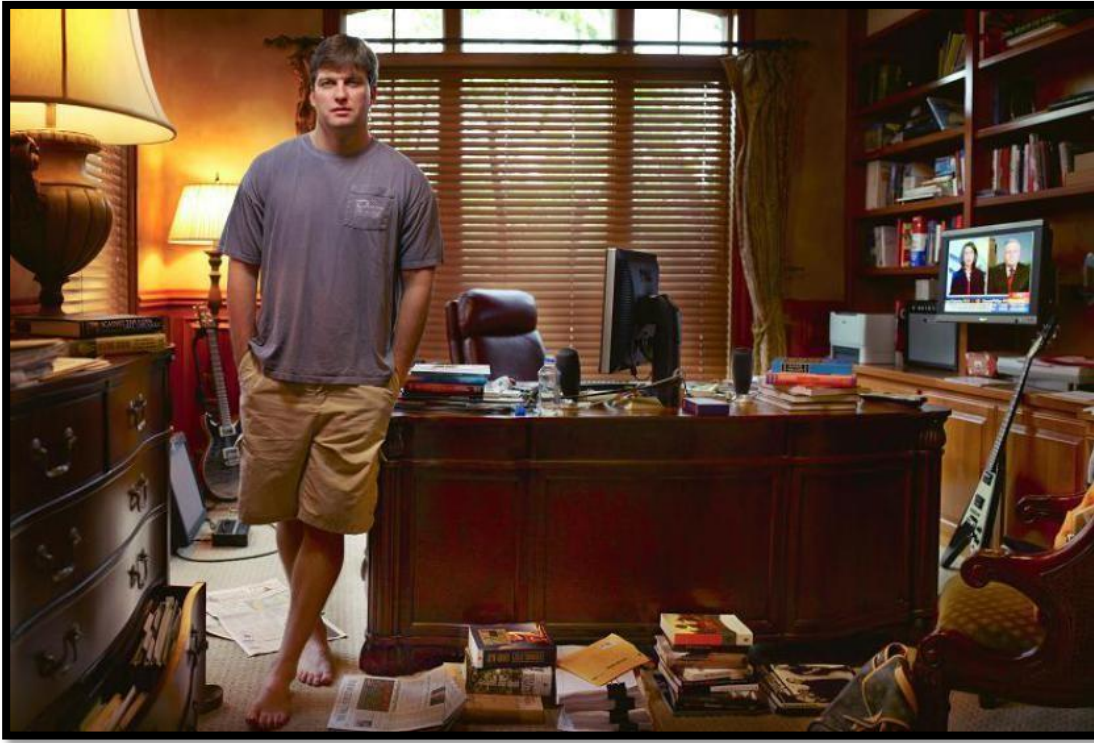
MICHAEL BURRY

Dr. Michael Burry was one of the heroes of Michael Lewis's book *The Big Short: Inside the Doomsday Machine*, which tells the story about how he correctly predicted the credit and housing bubble collapse in 2008 and decided to bet against Wall Street, earning billions of dollars in the process.

The story of exactly how Dr. Michael Burry got started investing in the first place is just as interesting as his big short. You see, in the late 1990's, Michael Burry was just doing his residency in neurology at Stanford Hospital and Clinics. While off duty at night, Burry would focus on his hobby: investing. He also discussed his ideas on his own blog, in early internet chat rooms, and on other message boards and sites, including Silicon Investor and MSN Money.

Burry did well investing for his own account, and the ideas he discussed online gained him a small following on these early message boards. After he finished his residency, Michael Burry decided that he was going to start his own hedge fund. Joel Greenblatt – a famous value investor who had been reading (and profiting) from Burry's posts – promptly contacted him, offering Burry a million bucks to help seed Burry's new fund.

Eventually, Michael Burry made his famous subprime trade and went from a completely unknown (but very successful) stock picker to one of the most famous fund managers in the game. And the rest is history.

Burry is a big time value investor and follows many of Ben Graham's and Warren Buffett's strategies.

His overall investment strategy can be described as follows:

- Invest with a margin of safety. Michael Burry's main goal is to protect his downside so that he can prevent a permanent loss of capital. Consequently, known catalysts are not necessary; sheer, outrageous value is enough.

- Perform bottoms-up, fundamental research. Michael Burry doesn't care about the level of the stock market, and he has no restriction on potential investments: they can be large cap stocks, small cap, mid cap, micro-cap, tech or non-tech. It doesn't matter, as long as Burry can find value in it. That being said, Burry has found that out-of-favor industries provide great opportunities to buy shares of best-of-breed companies at steep discounts.

- Screen through large numbers of companies by looking at the EV/EBITDA ratio. Acceptable ratios vary with the industry and its current position in the economic cycle.

- Intrinsic value is determined by free cash flow. If a stock passes this loose screen, Burry then looks harder to determine a more specific price and value for the company. This involves looking at true free cash flow and taking into account off-balance sheet items. Burry tends to ignore price-earnings ratios and thinks that return on equity is both deceptive and dangerous. Burry prefers minimal debt.

- Michael Burry also invests in "rare birds" – mostly asset plays, but also arbitrage opportunities and companies selling at less than two-thirds of net value (net working capital less liabilities, i.e. Ben Graham's net-net stocks, or companies that are selling for less than their liquidation value).

- Burry also mixes in the types of companies favored by Warren Buffett – companies with a sustainable competitive advantage, as demonstrated by longstanding and stable high returns on invested capital – if they become available at good prices. These can include technology companies, if Burry is able to understand them. Burry also classifies these types of Buffett-style

investments as rare birds, and – when found – believes they are deserving of longer holding periods.

- Michael Burry believes that portfolio management is just as important as stock picking:

- Number of stocks to hold: Burry likes to hold 12-18 stocks diversified among various depress industries. This allows him to focus on his best ides while smoothing out volatility (not to reduce risk, but to reduce personal stress).

- When to buy: Burry uses some rudimentary technical analysis to determine when to buy a stock – specifically he prefers to buy within 10-15% of a 52-week low that has shown itself to offer some price support.

- When to sell: Burry's turnover generally exceeds 50% annually. He's not afraid to sell if a stock has had a quick 40% or 50% pop. Burry will also sell a stock if it hits a new low. While he acknowledges potentially turning his back on greater value, Burry says this prevents any on stock from blowing up his portfolio.

- Investing is neither science nor art... it's a scientific art. Finally, Michael Burry says that fundamental analysis isn't a sure-fire way of succeeding in the stock market – but it does at least put the odds on your side.

5: ESSENTIAL VALUE INVESTING CONCEPTS

MARGIN OF SAFETY

Let's talk about margin of safety, which I've mentioned a couple of times throughout this book.

The concept of "margin of safety" is an essential part of Ben Graham's teachings and is a key ingredient in value investing. But I didn't include it in the definition of value investing because it's really something that's just driven by the second core tenet – paying less than the value you receive in return.

In any case, margin of safety might be one of the most important factors in determining whether an investment will be successful or not. The very last chapter in Ben Graham's book The Intelligent

Investor is actually called "Chapter 20: 'Margin of Safety' as the Central Concept of Investment."

In that chapter, Graham writes:

> *Confronted with a challenge to distill the secret of sound investment into three words,*
> *we venture the motto, Margin of Safety.*

The beauty of "margin of safety" lies in both the concept's simplicity and in its effectiveness in protecting investors from making big mistakes.

You see, Graham really was a pioneer in behavioral finance before behavioral finance was even a thing (Graham coined the term "margin of safety" in 1934; prospect theory – the basic building block of behavioral economics wasn't even developed until 1979!). Graham's margin of safety concept was one of the first tools that allowed investors to overcome their own biases, creating a protection against the "unknown unknowns" of an investment.

So what is margin of safety?

It's a very easy concept to understand.

Again, let's start out once more by applying the idea first to bonds.

As Ben Graham points out, "all experienced investors recognize that the margin of safety concept is essential to the choice of sound bonds."

For example, if you are investing in a bond, you would probably want to make sure that the company has historically generated enough cash flow to cover interest payments and other fixed charges 3-times, 4-times, or even 5-times over in any given year.

Graham continues:

> *This past ability to earn in excess of interest requirements constitutes the margin of safety that is counted on to protect the investor against loss or discomfiture in the event of some future decline in net income… The margin above charges may be stated in other ways – for example, in the percentage by which revenues or profits may decline before the balance after interest disappears – but the underlying idea remains the same.*

This makes sense, right?

A bank wouldn't loan you money if you could only <u>just barely</u> pay the interest every month. They'd want there to be some cushion in case something goes wrong in the future (like you lose your job, or you get sick). That cushion is the bank's margin of safety.

Ben Graham simply took this simple fixed income concept and applied it to all assets, including stocks. According to Graham:

> *"The function of the margin of safety is, in essence, that of rendering unnecessary an accurate estimate of the future. If the margin is a large one, then it is enough to assume that future earnings will not fall far below those of the past in order for an investor to feel sufficiently protected against the vicissitudes of time."*

Warren Buffett compares margin of safety to driving across a bridge:

> *"You have to have the knowledge to enable you to make a very general estimate about the value of the underlying business. But you do not cut it close. That is what Ben Graham meant by having a margin of safety. You don't try to buy businesses worth $83 million for $80 million. You leave yourself an enormous margin. When you build a bridge, you insist it can carry 30,000 pounds, but you only drive 10,000 pound trucks across it. And that same principle works in investing."*

Here's another quote from Buffett:

> *"If you understood a business perfectly and the future of the business, you would need very little in the way of a margin of safety. So, the more vulnerable the business is, assuming you still want to invest in it, the larger margin of safety you'd need. If you're driving a truck across a bridge that says it holds 10,000 pounds and you've got a 9,800 pound vehicle, if the bridge is 6 inches above the crevice it covers, you may feel okay; but if it's over the Grand Canyon, you may feel you want a little larger margin of safety... "*

RISK

Essentially, you get a margin of safety when you buy a stock for less than its intrinsic value. This allows for human error, bad luck, unpredictability, or just extreme volatility. The more <u>risk</u> there is in your calculation of intrinsic value and the less certain you feel about it, the larger you'd want your margin of safety to be.

But what is risk?

According to modern portfolio theory, risk can be divided into two elements: systematic risk and unsystematic risk.

- Systematic Risk: Also called undiversifiable risk or market risk – is the risk inherent in the overall market and is not specific to a particular stock or industry. This type of risk is both unpredictable and impossible to completely avoid. It cannot be mitigated through diversification.

- Unsystematic Risk: Also called nonsystematic risk, specific risk, diversifiable risk, or residual risk – is the company- or industry-specific risk that is inherent in each investment. This type of risk can be reduced through diversification. By owning stocks in different companies, different industries, and different types of assets and securities, investors can be less affected by an event or decision that has a strong impact on any single asset.

- Total Risk = Systematic Risk + Unsystematic Risk

This distinction should make intuitive sense.

If you own only one stock, then the systematic and unsystematic risk in your one stock portfolio is very high. The stock market could tank (systematic risk) or your company could lose a key customer (unsystematic risk).

But if you own 1,000 stocks – like you might if you own an index fund – then the systematic (market) risk in your 1,000-stock portfolio is unchanged but your unsystematic (company-specific) risk is almost zero, because an isolated negative event at just one company wouldn't affect the other 999 companies in your portfolio. So, the overall risk is lower.

For the average investor, diversification reduces risk because it reduces unsystematic risk. That is why the majority of people are best off by just owning an index fund.

Although the difference between systematic and unsystematic risk might make sense, modern portfolio theory (MPT) takes a wrong turn when it tries to explain how to measure risk.

According to modern portfolio theory – which is taught in business schools everywhere – an asset's exposure to systematic risk is measured by its beta (ß).

What is beta?

In MPT, the beta (ß or beta coefficient) of an investment measures an asset's exposure to systematic risk by indicating whether it's more or less volatile than the market.

A beta less than 1 indicates that the investment is less volatile than the market, while a beta more than 1 indicates that the investment is more volatile than the market. Volatility is measured as the fluctuation of the stock's price around its mean (i.e. the standard deviation).

MPT says that risk equals reward, so a highly volatile stock should have an equally high required rate of return – which means that a business with a highly volatile price would also have a very low intrinsic value (remember the Gordon Growth Model: Intrinsic Value = CF in Yr 1 / (Discount Rate – Growth Rate). If our discount rate increases, then the denominator would increase, which would decrease the stock's intrinsic value).

Beta is a concept that sounds nice in an academic setting, but just doesn't make sense in the real word. Personally, it's aggravating that beta and modern portfolio theory are still taught as fundamental and cornerstone concepts in almost every business school… this might help students feel good when they pass a test, but it causes serious problems when these students start actually investing their own (and other people's) money.

Why is beta so dumb?

Beta is driven by market prices, not fundamentals

First of all, beta uses market prices to measure risk – instead of using fundamentals. As Ben Graham used to say: "In the short run, the market is a voting machine but in the long run, it is a weighing machine." In other words, in the short run, the market tends to reflect popular opinion (market prices), but in the long run the market reflects intrinsic value (fundamentals).

We've seen with Mr. Market that prices often have nothing to do with the underlying economics of a business. So how can market prices tell us anything about the riskiness of a business?

Beta implies that a lower stock price means more risk

 Secondly, financial theory says that a stock whose price drops by a large amount (i.e. a high beta stock) is more risky than a stock whose price hasn't dropped by that much. But if the underlying economics of a business that is selling for, say, $100 a share haven't changed, has that business suddenly become riskier just because other investors in the market have caused its price to drop to $50 per share?

Definitely not! In fact, the stock would now have a higher margin of safety, which means it would actually be considered less risky.

> For a value investor, this should come as no surprise. We like to buy dollar bills for $0.50 and would be even happier if we could buy a dollar bill for $0.40.

Famous value investor Seth Klarman of the Baupost Group (who we discussed in *Chapter 4: Famous Value Investors*) wrote in his book *Margin of Safety*:

> *"I find it preposterous that a single number reflecting past price fluctuations could be thought to completely describe the risk in a security. Beta views risk solely from the perspective of market prices, failing to take into consideration specific business fundamentals or economic developments. The price level is also ignored, as if IBM selling at 50 dollars per share would not be a lower-risk investment than the same IBM at 100 dollars per share.*
>
> *Beta fails to allow for the influence that investors themselves can exert on the riskiness of their holdings through such efforts as proxy contests, shareholder resolutions, communications with management, or the ultimate purchase of sufficient stock to gain corporate control and with it direct access to underlying value.*
>
> *Beta also assumes that the upside potential and downside risk of any investment are essentially equal, being simply a function of that investment's volatility compared with that of the market as a whole. This too is inconsistent with the world as we know it. The reality is that past security price volatility does not reliably predict future investment performance (or even future volatility) and therefore is a poor measure of risk. "*

Warren has this to say about beta:

"I would like to say one important thing about risk and reward. Sometimes risk and reward are correlated in a positive fashion. If someone were to say to me, "I have here a six-shooter and I have slipped one cartridge into it. Why don't you just spin it and pull it once? If you survive, I will give you $1 million." I would decline — perhaps stating that $1 million is not enough. Then he might offer me $5 million to pull the trigger twice — now that would be a positive correlation between risk and reward!

The exact opposite is true with value investing. If you buy a dollar bill for 60 cents, it's riskier than if you buy a dollar bill for 40 cents, but the expectation of reward is greater in the latter case. The greater the potential for reward in the value portfolio, the less risk there is.

One quick example: The Washington Post Company in 1973 was selling for $80 million in the market. At the time, that day, you could have sold the assets to any one of ten buyers for not less than $400 million, probably appreciably more. The company owned the Post, Newsweek, plus several television stations in major markets. Those same properties are worth $2 billion now, so the person who would have paid $400 million would not have been crazy.

Now, if the stock had declined even further to a price that made the valuation $40 million instead of $80 million, its beta would have been greater. And to people that think beta measures risk, the cheaper price would have made it look riskier. This is truly Alice in Wonderland. I have never been able to figure out why it's riskier to buy $400 million worth of properties for $40 million than $80 million."

Warren Buffett tells us to not "worry about risk the way it is taught at Wharton. Risk is a go/no go signal for us – if it has risk, we just don't go ahead."

According to Buffett, risk is exactly as the Merriam-Webster dictionary defines it:

> *"The strategy we've adopted precludes our following standard diversification dogma. Many pundits would therefore say the strategy must be riskier than that employed by more conventional investors. We disagree. We believe that a policy of portfolio concentration may well decrease risk if it raises, as it should, both the intensity with which an investor thinks about a business and the comfort-level he must feel with its economic characteristics before buying into it. In stating this opinion, we define risk, using dictionary terms, as "the possibility of loss or injury."*

So to Buffett, risk has nothing to do with volatility. Risk is simply the probability of losing your initial investment. If there is a chance that he might lose money on an investment, then Buffett simply doesn't invest.

But where does risk come from then? Certainly not from stock prices, as we've seen.

The answer is simple: Risk comes from our inability to know what will occur in the future, which is always uncertain.

Consequently, the best way to protect yourself from risk – from the possibility of losing your investment – is by sticking within your circle of competence, being diligent, investing with a margin of safety, and preparing for the worst to happen.

BOTTOM-UP, FUNDAMENTAL ANALYSIS

One final principle that is central to the value investing philosophy is the importance of performing bottom-up, fundamental analysis. Let's take a look at these two terms – and their opposites:

Fundamental Analysis vs. Technical Analysis

If the objective of analysis is to determine what stocks to invest in and at what price, then there are two basic methodologies that investors rely on:

- **Fundamental Analysis:** This investing approach examines the underlying forces that affect the company and its stock price, which includes an analysis of underlying financial data (e.g. revenue, profit margins, cash flow), industry factors (e.g. market forces, customer base, competitive position), and the overall economy.

- **Technical Analysis:** This investing approach assumes that all information is already reflected in the price of a security. Technical analysts evaluate securities by analyzing statistics generated by market activity, such as past prices and volume. Technical analysts do not attempt to measure a security's intrinsic value, but instead use charts and other tools to identify patterns that can suggest future activity.

We already know that the first core tenet of value investing is knowing the difference between price and intrinsic value. Consequently, it should come as no surprise that value investors employ fundamental analysis in their pursuit of determining the intrinsic value of a business – analyzing financial statements, industry dynamics, and broader economic forces to come up with an intrinsic value figure, and then comparing that number to the stock's price in the market.

If you ever meet someone who calls themselves a technical analyst, my suggestion is to hold your wallet tight and speed walk away in the opposite direction.

Bottom-Up Analysis vs. Top-Down Analysis

While perhaps not as obvious a concept as fundamental analysis, bottom-up analysis is also a key theme within the value investing philosophy. The opposite of bottom-up analysis is top-down analysis. Let's look at the distinction between the two approaches:

Top-Down Analysis: This investing approach starts with an analysis of global economics, including both international and economic indicators such as GDP growth rates, inflation, interest rates, etc. Top-down analysts subsequently narrow their search to an analysis of specific geographic regions and/or industry. Only then do top-down analysts refine their search to the best business in the area being studied.

Bottom-Up Analysis: This investing approach starts with specific businesses, regardless of industry and geographic region, and proceeds in reverse of the top-down approach.

Seth Klarman explains the dangers of using a top-down approach much better than I ever could:

"The alternative to a bottom-up, value approach would be to predict, from a topdown perspective, what the market might do, and then whip one's portfolio around frenetically to conform to every further hunch – futile random outbursts of greed/fear, buy/sell, bull/bear, and long/short, ad infinitum. Attempting to outguess the short-term direction of the market is a common but flawed strategy based more on whim and guesswork than on any sustainable competitive advantage or edge. Here's the problem: those who invest in top-down fashion need to be right not only about market direction, but also about the magnitude, path, and timing of each market trend. While the long term is, by definition, a series of short terms, paying too much attention to the short term inevitably means taking your eyes off, and risking never attaining, the longer-term prize.

We are convinced that it is far easier to be right about the value of specific assets or securities (a bottom-up approach) than to make accurate macroeconomic assessments (a top-down orientation). Even if we have a strong sense about how a currency might move, or what GDP growth or the inflation rate might be, experience tells us that we are more likely to be correct about whether a stock, a bond, a building, or a business is undervalued than about our macro premise. Macro investing is really hard. A currency can appear over- or undervalued for a very long time without correcting. Policy statements and central bank actions can prop up even the most egregious imbalances. Sovereign credits that seem destined to default sometimes find ways to muddle through or get bailed out. What looks like a trend can turn out to be a head-fake or blip on the screen.

The difficulty of top-down investing is nicely illustrated by the stock market's response to the 2016 election result. Before Election Day, the market generally rallied when polls were strong for Clinton, and fell when Trump's chances seemed to improve. Thus, those who forecast a Trump win could reasonably have expected an accompanying market sell-off. But a sharp rally ensued instead. In macro forecasting, investors must be correct not only about the anticipated event, but also about how the market will react to it."

Ben Graham employed a bottom-up, fundamental analysis approach. So did Walter Schloss. And so does Warren Buffett and Seth Klarman. I suggest that you do, too.

Don't know where to start? Follow Warren Buffett's example when he was just getting started investing pick up a list of every company in the stock market and start with the letter "A".

ANALYZING FINANCIAL STATEMENTS

As mentioned above, fundamental analysis is a key part of value investing. This means that you should be digging into a company's financial statements.

However, you can't look at these financials in isolation – it's important to compare a company's results to other companies in the selected industry, companies outside of the industry, and against other years to determine whether or not that company might actually be an attractive investment.

This causes difficulties since it's hard to compare companies of different sizes. For example, if Company A has $3,000,000 of debt outstanding and Company B has $30,000,000 of debt outstanding, is Company A less risky than Company B? We have no way of knowing, because we don't know the cash positions of Companies A and B, how profitable Companies A and B are, etc.

Fortunately, there are two forms of analysis that we can perform that will help us look at income statements and balance sheets of different sizes, so that we can compare apples-to-apples – they are: horizontal analysis and vertical analysis.

Both are very easy to understand. Let's start with horizontal analysis.

WHAT IS HORIZONTAL ANALYSIS?

Horizontal analysis, also called time series analysis, focuses on trends and changes in numbers over time. Horizontal allows you to detect growth patterns, cyclicality, etc. and to compare these factors among different companies.

As an example, let's take a look at some income statement items for Apple and Google.

Apple (AAPL)			(US $ in Millions)		
	FYE September				
	2014	2015	2016	2017	2018
Revenue	182,795	233,715	215,639	229,234	265,595
Gross profit	70,537	93,626	84,263	88,186	101,893
EBITDA	60,449	82,487	70,529	71,501	81,801

Google (GOOG)			(US $ in Millions)		
	FYE December				
	2014	2015	2016	2017	2018
Revenue	66,001	74,989	90,272	110,855	136,819
Gross profit	40,310	46,825	55,134	65,272	77,270
EBITDA	21,475	24,423	29,860	33,061	35,356

It's almost impossible to tell which is growing faster by just looking at the numbers. So we have to do some calculations. We can perform horizontal analysis on the income statement by simply taking the percentage change for each line item year-over-year.

Apple (AAPL)				(US $ in Millions)	
	FYE September				
	2014	**2015**	**2016**	**2017**	**2018**
Revenue	182,795	233,715	215,639	229,234	265,595
Gross profit	70,537	93,626	84,263	88,186	101,893
EBITDA	60,449	82,487	70,529	71,501	81,801
Revenue	-	27.9%	(7.7%)	6.3%	15.9%
Gross Profit	-	32.7%	(10.0%)	4.7%	15.5%
EBITDA	-	36.5%	(14.5%)	1.4%	14.4%

Google (GOOG)				(US $ in Millions)	
	FYE December				
	2014	**2015**	**2016**	**2017**	**2018**
Revenue	66,001	74,989	90,272	110,855	136,819
Gross profit	40,310	46,825	55,134	65,272	77,270
EBITDA	21,475	24,423	29,860	33,061	35,356
Revenue	-	13.6%	20.4%	22.8%	23.4%
Gross Profit	-	16.2%	17.7%	18.4%	18.4%
EBITDA	-	13.7%	22.3%	10.7%	6.9%

By using horizontal analysis, we can now clearly see that Google's revenue, gross profit, and EBITDA grew faster than Apple's in every year except for 2015 (and one EBITA exception in 2018), with 2016 looking particularly rough for Apple.

We can even take this one step further by calculating the compound annual growth rate for each line item from 2014 to 2018 (you can do this in Excel by using the function: =rate(nper, pmt, pv, fv)) – this tells us the average rate the companies grew in each year.

Apple (AAPL)						(US $ in Millions)
	FYE September					'14-'18
	2014	2015	2016	2017	2018	CAGR
Revenue	182,795	233,715	215,639	229,234	265,595	9.8%
Gross profit	70,537	93,626	84,263	88,186	101,893	9.6%
EBITDA	60,449	82,487	70,529	71,501	81,801	7.9%
Revenue	-	27.9%	(7.7%)	6.3%	15.9%	
Gross Profit	-	32.7%	(10.0%)	4.7%	15.5%	
EBITDA	-	36.5%	(14.5%)	1.4%	14.4%	

Google (GOOG)						(US $ in Millions)
	FYE December					'14-'18
	2014	2015	2016	2017	2018	CAGR
Revenue	66,001	74,989	90,272	110,855	136,819	20.0%
Gross profit	40,310	46,825	55,134	65,272	77,270	17.7%
EBITDA	21,475	24,423	29,860	33,061	35,356	13.3%
Revenue	-	13.6%	20.4%	22.8%	23.4%	
Gross Profit	-	16.2%	17.7%	18.4%	18.4%	
EBITDA	-	13.7%	22.3%	10.7%	6.9%	

Our horizontal analysis (time series analysis) is now officially complete.

WHAT IS VERTICAL ANALYSIS?

Vertical analysis, also called common-size analysis, focuses on the relative size of different line items so that you can easily compare the income statements and balance sheets of different sized companies.

Let's go back to our income statement items for Apple and Google. Through our horizontal analysis, we know that Google has been growing at a faster and more sustained rate than Apple… but is it a relatively more profitable company? Do both companies' profits seem to be sustainable?

To perform vertical analysis (common-size analysis), we take each line item and calculate it as a percentage of revenue so that we can come up with "common size" results for both companies.

Here are just the numbers once again. I've added a line for research & development costs as well.

Apple (AAPL)					(US $ in Millions)
	FYE September				
	2014	2015	2016	2017	2018
Revenue	182,795	233,715	215,639	229,234	265,595
Gross profit	70,537	93,626	84,263	88,186	101,893
R&D Expenses	(6,041)	(8,067)	(10,045)	(11,581)	(14,236)
EBITDA	60,449	82,487	70,529	71,501	81,801

Google (GOOG)					(US $ in Millions)
	FYE December				
	2014	2015	2016	2017	2018
Revenue	50,175	59,825	66,001	74,989	90,272
Gross profit	29,541	33,967	40,310	46,825	55,134
R&D Expenses	(9,832)	(12,282)	(13,948)	(16,625)	(21,419)
EBITDA	16,432	18,518	22,339	24,818	30,418

Now, let's divide each line item by revenue.

Apple (AAPL)					(US $ in Millions)
	FYE September				
	2014	2015	2016	2017	2018
Revenue	182,795	233,715	215,639	229,234	265,595
Gross profit	70,537	93,626	84,263	88,186	101,893
R&D Expenses	(6,041)	(8,067)	(10,045)	(11,581)	(14,236)
EBITDA	60,449	82,487	70,529	71,501	81,801
Revenue	100.0%	100.0%	100.0%	100.0%	100.0%
Gross Profit	38.6%	40.1%	39.1%	38.5%	38.4%
R&D Expenses	3.3%	3.5%	4.7%	5.1%	5.4%
EBITDA	33.1%	35.3%	32.7%	31.2%	30.8%

Google (GOOG)					(US $ in Millions)
	FYE December				
	2014	2015	2016	2017	2018
Revenue	50,175	59,825	66,001	74,989	90,272
Gross profit	29,541	33,967	40,310	46,825	55,134
R&D Expenses	(9,832)	(12,282)	(13,948)	(16,625)	(21,419)
EBITDA	16,432	18,518	22,339	24,818	30,418
Revenue	100.0%	100.0%	100.0%	100.0%	100.0%
Gross Profit	58.9%	56.8%	61.1%	62.4%	61.1%
R&D Expenses	19.6%	20.5%	21.1%	22.2%	23.7%
EBITDA	32.7%	31.0%	33.8%	33.1%	33.7%

So, what does this tell us?

For starters, in 2018, Apple generated $0.38 (in profit) for every $1 dollar in sales it made. Google did much better and generated $0.61 for every $1 in sales it made. However, let's take a look at the elephant in the room: R&D expenses.

As we can see, Google's R&D expenses are much higher than Apple's. Apple is spending around 4.4% on R&D every five years, while Google is averaging a whopping 21.42%. These R&D expenses are significant given each company's almost identical average EBITA (Apple: 32.62%, Google: 32.86%).

Google

While Google does spend a lot more on R&D than Apple does, Google's profit margins remain healthy and strong YoY. Its spending is increasing almost at the same pace as its earnings (when averaged). Google is in a good phase of business at the moment and will likely continue to expand and announce new products and tech as they normally do.

However, Google's stock price is significantly more than Apple's. This can obviously be a big barrier to entry to investors wanting to get in on a business-like Google.

Apple

Apple's gross profit has declined has bounced up and down a few points in the last five years, while its R&D expenses have increased from 3.3% to 5.4% over the same time period. This could suggest that Apple is facing tough competitive pressures. Why?

- Trends in gross margin generally reveal how much pricing power a company has. Because Apple's gross margin is declining, this probably means that (a) Apple is dropping the price of its products to match lower cost competitors, (b) Apple's costs to produce its products are increasing and Apple is unable to increase prices to offset this, or (c) a combination of both.

- This increase in R&D suggests that Apple is doubling down its efforts to create new, innovative products to offset its competition.

HORIZONTAL AND VERTICAL ANALYSIS OF THE BALANCE SHEET

Just like we performed horizontal and vertical analysis on the income statement, we can also run these calculations on the balance sheet (when performing vertical analysis of the balance sheet, line items are usually taken as a percentage of total assets). The process to calculate these ratios is similar to the examples we went through above and are fairly straight forward.

However, I've found that horizontal and vertical analysis of the balance sheet is much less helpful than on the income statement (ratios and YoY growth rates are basically requirements when analyzing any income statement) and can often be distorted by accounting policies (for example,

is a debt-to-equity ratio really useful if the equity number used is simply a result of various accounting choices made over the years?).

Rather than calculate a "pure ratio" of the balance sheet, we can instead calculate "mixed ratios" – such as an interest coverage ratio (operating income / interest expense), leverage ratio (debt / EBITDA), or even efficiency ratios like days sales outstanding (DSO) and days payable outstanding (DPO).

6: HOW TO VALUE A STOCK

REVIEW OF THE FOUNDATIONS: INTRINSIC VALUE, PV, FV, AND THE GORDON GROWTH MODEL

Much of this book so far has covered the <u>qualitative</u> aspects of value investing.

Now let's dig into some of the <u>quantitative</u> techniques you will need to know in order to calculate the intrinsic value of a stock.

Now, we did review this briefly in *Chapter 2: The Foundations*. So let's quickly review that before we move on to the more advanced lessons:

Intrinsic Value

We began our discussion of intrinsic value by describing how a bond works. We then said that a stock follows the same principles as a bond. So, if the intrinsic value of a bond can be defined as the present value of the bond's future cash flows, then the <u>intrinsic value of a stock</u> can be defined simply as:

> The discounted value of the cash that can be taken out of the business during its remaining life.

Present Value & Future Value

To determine the present value of money received (or paid) in the future, we use the following formula:

$$PV = FV / (1+i)^n$$

where:

PV = present value,

FV = future value,

i = the interest (or discount) rate,

n = number of periods.

And if we want to calculate the future value of money received (or paid) today, we can simply rearrange the equation as follows:

$$FV = PV \times (1 + i)^n$$

Gordon Growth Model

Finally, we covered the Gordon Growth Model (also sometimes called the Dividend Discount Model), which we can use to calculate the intrinsic value of a company when we have a constant rate of growth:

$$Intrinsic\ Value = \frac{Cash\ Flow\ in\ Year\ 1}{Discount\ Rate - Growth\ Rate}$$

Note: This equation only works when we you a constant rate of growth, and when that rate of growth is less than the discount rate (the PV of an investment that grows faster than your required compensating rate is infinity).

Of course, the big caveat here is that we must assume that cash flow will continue to grow at a constant rate. When this isn't the case, the Gordon Growth Model will not yield an accurate result.

For that, we need to use some real math. So, get out your calculators and load up your Excel: it's valuation time.

DISCOUNTED CASH FLOW ANALYSIS

Do you remember the Present Value formula? If not, here it is again:

$$PV = \frac{FV}{(1+i)^n}$$

In the PV equation we take a future cash flow and divide it by 1 plus the discount rate, taken to the power of n (where n is the number of periods).

For example, let's say we are going to receive $25 next year and our discount rate is 15%. How much is that future $25 worth to us today? Answer: $22.75.

Year	Cash	Present Value
1	$25.00	$21.74

Now what if we receive the $25 in *two years* instead of next year? Answer: $18.90.

Year	Cash	Present Value
1	$25.00	$21.74
2	$25.00	$18.90

As you can see, the $25 received in two years is worth less to us today than the $25 received next year.

Now let's say we're going to receive $25 for the next 10 years (and let's keep the same 15% discount rate). What is the total value to us today? Answer: $125.47.

Year	Cash	Present Value
1	$25.00	$21.74
2	$25.00	$18.90
3	$25.00	$16.44
4	$25.00	$14.29
5	$25.00	$12.43
6	$25.00	$10.81
7	$25.00	$9.40
8	$25.00	$8.17
9	$25.00	$7.11
10	$25.00	$6.18
Terminal Value		$0.00
Sum of Present Values		$125.47

So, in order to get a 15% return on a cash flow of $25 per year, you would need to pay $125.47 today.

Discounted Cash Flow

Now that you're an expert on calculating present values, we can easily run a DCF analysis to value a stock.

These are the inputs you need to calculate the intrinsic value of a stock:

Free Cash Flow (Mil)	$25
Shares Outstanding (Mil)	1
Terminal Value Multiplier	0x
Required Rate of Return	15%
Margin of Safety	15%
Growth Rate Years 1–5	0%
Growth Rate Years 6–10	0%

- Free Cash Flow (found in the cash flow statement)

- Shares Outstanding (found in the income statement)

- Terminal Value (multiplier determined by the investor)

- Discount Rate (rate of return)

- Margin of Safety (a percentage subtracted from the calculated value)

- Growth Rate (value determined by the investor)

Example: AAPL

Now, lets use Apple (AAPL) as an example. All you need to do is fill in the appropriate fields. You can find most of this information for free at sites like Quick FS.

So, according to our research, AAPL currently has $73,365 million in Free Cash Flow and has 17,257 million in shares outstanding (we'll get to terminal value later).

The Discount Rate is essentially your rate of return, since you are discounting the cash flows to the return you desire. This input is up to the investor of course, but I normally default to 15%.

The Margin of Safety is simply a percentage off of the intrinsic value calculation. You can set this to whatever you desire, but a greater margin of safety lowers your risk. This input is also up to the investor, but I generally go with 10% to 15%. We will discuss this later on as well.

Lastly, we have the Growth Rates. This is simply the calculation that you think the Free Cash Flow will compound per year. Since companies rarely grow at an exact rate year after year, it is best to break it down into years 1-5 and 6-10 with different rates for each period.

But how do you determine a growth rate? This is a very subjective number, as each investor will probably come up with different growth rates depending on their individual analysis. To keep things simple for this example, let's assume that AAPL will continue to grow its cash flow at a rate of 10% per year for the next five years, then slow down to 6% per year for the following five years.

After we come up with all the numbers, we plug them into our calculation. Here's the result:

As you can see, the calculator discounted the present values of all the future cash flows. You'll notice that with each passing year the values get smaller and smaller. This is due to the time value of money.

Now, all we have to do is add up all of our present values and divide them by the number of shares outstanding.

Vintage Value
INVESTING

INPUT			OUTPUT		
Free Cash Flow (Mil)	$73,365		Year	FCF Growth	Present Value
			1	$80,702	$70,175
Shares Outstanding (Mil)	17,257		2	$88,772	$67,124
			3	$97,649	$64,206
Terminal Value Multiplier	0x		4	$107,414	$61,414
			5	$118,155	$58,744
Required Rate of Return	15%		6	$125,244	$54,147
			7	$132,759	$49,909
Margin of Safety	0%		8	$140,725	$46,003
			9	$149,168	$42,403
Growth Rate Years 1-5	10%		10	$158,118	$39,084
			Terminal Value		$0
Growth Rate Years 6-10	6%		Sum of Present Values		$553,209

Intrinsic Value
$32.06

According to our calculations, our intrinsic value of AAPL is $32.06 per share. If you were to look up the share price today, you would see that AAPL is currently trading at $120.89! What's wrong with our calculation? Did we mess up?

Terminal Value

Here's where we can get into Terminal Value, and why it is so important. Projecting the cash flows of a business for 10 years is hard enough, but most businesses last much longer than that. So how do we account for those years?

Think of terminal value as the entire rest of the business's future cash flows. There are multiple ways to calculate this, but I find the terminal multiple to be the easiest method. Basically, we are multiplying the year 10's cash flows and discounting by our discount rate. My default multiplier is usually 10x.

Another way to think of the terminal value is if the business was sold at year 10 for a multiple of its cash flows. To do this, you could determine the multiplier based on the company's historical Price to Free Cash Flow. This number is easy to calculate on your own, but in order to quickly

view a historical perspective, a platform like *Stock Rover* makes it really easy to do. Here is AAPL's historical P/FCF ratio:
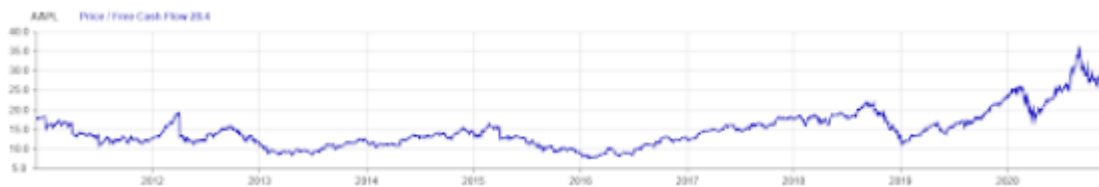
Source: *Stock Rover*

AAPL's current P/FCF is currently over 28, which is a 10-year high. This is a relatively high multiple for any company, not just AAPL. However, when the company was trading at more reasonable valuations, the P/FCF ratio hovered between 10 – 15. For our example, let's split the difference and go with a terminal multiple of 12. Plug it into our DCF calculation, and let's see what AAPL's intrinsic value is now:

INPUT		OUTPUT		
		Year	FCF Growth	Present Value
Free Cash Flow (Mil)	$73,365	1	$80,702	$70,175
		2	$88,772	$67,124
Shares Outstanding (Mil)	17,257	3	$97,649	$64,206
Terminal Value Multiplier	12x	4	$107,414	$61,414
		5	$118,155	$58,744
Required Rate of Return	15%	6	$125,244	$54,147
		7	$132,759	$49,909
Margin of Safety	0%	8	$140,725	$46,003
		9	$149,168	$42,403
Growth Rate Years 1-5	10%	10	$158,118	$39,084
		Terminal Value		$469,013
Growth Rate Years 6-10	6%	Sum of Present Values		$1,022,222

Intrinsic Value
$59.24

By plugging in the terminal value, we can now see that the sum of the present values ballooned, as did the intrinsic value price, which is now $59.24 per share. That was almost double the intrinsic value of our previous calculation!

This is why terminal value is so important. Too large of a number can really inflate the intrinsic value of your calculations. The same goes for growth rates as well. In order to combat over calculating and inflating your intrinsic values, be sure to use conservative growth rates and terminal multiples.

Margin of Safety

Lastly, we come to the Margin of Safety. In order for an investor to reduce their risk, they should buy a stock at a price that trades below its intrinsic value. That means we should still look to buy AAPL at an even lower price than we have calculated.

So what should that amount be? Again, this is another personal decision by each investor. Sometimes a margin of safety for a stock may not be price, but the strength in its business operations. In this example, AAPL is the largest company in the world by market capitalization and therefore is highly unlikely to go bankrupt anytime soon.

Taking this into account, let's assume a modest margin of safety discount of 10%. This 10% is simply a percentage knocked off of the intrinsic value calculator that we already made. Think of this as a sale at a store that has reduced the price of your favorite T-shirt by 10%. Now here is our final buy price:

INPUT		OUTPUT		
		Year	FCF Growth	Present Value
Free Cash Flow (Mil)	$73,365	1	$80,702	$70,175
		2	$88,772	$67,124
Shares Outstanding (Mil)	17,257	3	$97,649	$64,206
		4	$107,414	$61,414
Terminal Value Multiplier	12x	5	$118,155	$58,744
		6	$125,244	$54,147
Required Rate of Return	15%	7	$132,759	$49,909
		8	$140,725	$46,003
Margin of Safety	10%	9	$149,168	$42,403
		10	$158,118	$39,084
Growth Rate Years 1-5	10%	Terminal Value		$469,013
Growth Rate Years 6-10	6%	Sum of Present Values		$1,022,222

Intrinsic Value
$53.31

And there you have it, we have finally calculated our buy price for AAPL for a total of $53.31! Now, AAPL is currently trading far above this value and would therefore be considered to be quite overvalued. However, now you know what this business is really worth to you as an investor. You can simply set this value on your watch list and wait for a buying opportunity.

Side Note

*If the cash flows we were using for the projections were prior to cash flows used to pay debt like interest payments and principal payments (i.e. **unlevered cash flow**), then the next step would be to subtract the current market value of the company's debt (which, as it turns out, would be equal to the those future debt payments, discounted back to the present value in the same way manner as we just showed in our example) and to add the company's cash balances.*

*If the cash flows we used were after cash flows used to pay debt (i.e**. levered cash flow**), then we don't have to subtract the current market value of the debt (the math should result in the same final intrinsic value for the company's equity).*

The distinction between these two types of cash flow will be covered in further detail in the next section

FREE CASH FLOW AND ENTERPRISE VALUE

When we say cash flow, what we're really talking about is Free Cash Flow.

Free cash flow is the amount of cash that a business generates that is available for distribution to all of the security holders of that company, including both debt holders and equity holders.

There are multiple formulas investors use to calculate Free Cash Flow ("FCF"). Here are the most common ones:

1. FCF = EBIT x (1 – Tax Rate) + Depreciation & Amortization - Change in Net Working Capital – Capital Expenditures

2. FCF = Operating Cash Flow – Capital Expenditures

3. FCF = EBITDA – Change in Net Working Capital – Capital Expenditures

No matter which formula you use, FCF incorporates three major items:

1. First, FCF starts with the "profits" of the company (whether that is EBIT, Net Income, or EBITDA) and adjusts for all non-cash items (like depreciation, amortization, and accounting adjustments) to determine the "cash profits" of the business.

2. Then, FCF adjusts for changes in net working capital. Net working capital is Current Assets (not including cash) minus Current Liabilities. Current Assets includes things like accounts receivable and inventory, and Current Liabilities includes things like accounts payable. If working capital increases (e.g., the company invests in inventory, accounts receivable increases, or accounts payable decreases), then this is a use of cash; if Working Capital decreases, then this is a source of cash.

3. Finally, FCF must account for the company's investments in its long-term assets, including its Property, Plant, and Equipment. This is called the company's Capital Expenditures.

Unlevered Free Cash Flow vs. Levered Free Cash Flow

At this point, I think it's important to note that there are actually two types of free cash flow: unlevered FCF and levered FCF.

- **Unlevered FCF:** Unlevered FCF is a company's cash flow before taking payments to debt (interest and principal payments) into account. It is the cash flow that is available to all providers of capital to the business (i.e. both equity holders and debt holders).

- **Levered FCF:** Levered FCF is a company's cash flow after taking payments to debt (interest and principal payments) into account). It is the cash flow that is available to just the equity holders.

As mentioned in the Side Note in the previous section, if we use unlevered FCF in our projections, then we must subtract the market value of the company's outstanding debt to get to the intrinsic value of the equity. If we are using levered FCF in our projections, then we can skip this step since the market value of the company's outstanding debt (which is just the present value of the debt's future cash flows) has already been included in our projections.

Often, it is easier to project unlevered FCF, discount it back to today, and then subtract the market value of the company's debt.

Enterprise Value

The distinction between unlevered FCF and levered FCF is a little easier to understand once you know about Enterprise Value:

Enterprise Value = Market Value of Equity + Market Value of Debt – Cash

Enterprise value is what you would pay to acquire an entire company (not just a share of equity).

It's very similar to the way the housing market works. Say you buy a house for $100,000, putting 20% down and taking out a mortgage for the rest. After you close, your equity in the house would be $20,000 and the debt outstanding would be $80,000. If I wanted to buy that house from you, I wouldn't pay just $20,000. I'd have to pay $20,000 (market value of equity) + $80,000 (market value of debt) = $100,000. To make the analogy complete, let's say you were going to leave a briefcase containing $10,000, which is essentially the enterprise value of the house.

If we use unlevered FCF when we run our DCF analysis and make our projections, then we are calculating Enterprise Value. Consequently, we must add the market value of debt and subtract cash from the present value of the unlevered FCFs. Rearranging the above equation:

Intrinsic Value of Equity = Enterprise Value – Market Value of Debt + Cash
                              ⌙→ *calculated from our DCF analysis*

If we are using levered FCF, then our DCF analysis has already calculated the company' Enterprise Value <u>less</u> the market value of the company's debt (which is just the present value of the debt's future cash flows, which have been included in our projections).

However, our projections haven't included the amount of cash the company has, since cash doesn't generate cash <u>flow</u>. As such, our only step after we discount the cash flows back to today is to add cash.

$$\textit{Intrinsic Value of Equity} = \boxed{\textit{Enterprise Value}} - \textit{Market Value of Debt} + \textit{Cash}$$
$$\hookrightarrow \textit{calculated from our DCF analysis}$$

WARREN BUFFETT'S OWNER EARNINGS

So… how does Warren Buffett – the best value investor of all-time – calculate intrinsic value?

When I first started investing, this was my <u>biggest</u> question (I wanted to invest exactly like Buffett does).

As it turns out, Warren Buffett essentially runs a DCF to determine a company's intrinsic value, although – Warren Buffett being Warren Buffett – he does it slightly different than everyone else.

Buffett has created his own definition of cash flow that he calls Owner Earnings, which is a slight variation on the Free Cash Flow definitions we covered earlier.

Warren defines Owner Earnings as follows:

"If we think through these questions, we can gain some insights about what may be called "owner earnings." These represent (a) reported earnings plus (b) depreciation, depletion, amortization, and certain other non-cash charges… less (c) the average annual amount of capitalized expenditures for plant and equipment, etc. that the business requires to fully maintain its long-term competitive position and its unit volume. (If the business requires additional working capital to maintain its competitive position and unit volume, the increment also should be included in (c). However, businesses following the LIFO inventory method usually do not require additional working capital if unit volume does not change.)

Our owner-earnings equation does not yield the deceptively precise figures provided by GAAP, since (c) must be a guess – and one sometimes very difficult to make. Despite this problem, we consider the owner earnings figure, not the GAAP figure, to be the relevant item for valuation

purposes – both for investors in buying stocks and for managers in buying entire businesses. We agree with Keynes's observation: "I would rather be vaguely right than precisely wrong."

Okay. So Buffett takes net income, adds back all non-cash charges, subtracts the amount of capital expenditures required to maintain the business's current operations, and adds any investments in working capital the company would have to make in order to maintain its sales volume.

While this sounds complicated, Buffett's Owner Earnings is actually exactly the same as the Free Cash Flow calculations we saw earlier, except Buffett determines intrinsic value by looking at the company in a "no growth" situation.

Warren essentially views a company as a bond with an annual interest payment and says, "If I owned this company today, and if revenue never grows and margins stay flat, and if the company only invests as much as it needs in marketing and its asset base to maintain its current level of sales, then how much Free Cash Flow could the business consistently generate on an annual basis?"

In other words, Warren Buffett's Owner Earnings is just Free Cash Flow in a 0% growth scenario.

In a 0% growth scenario, changes in net working capital would be 0, because sales aren't growing so accounts receivable, inventory, accounts payable, and other current items remain flat. And capital expenditures would be equal to "maintenance capital expenditures" (an item that we would have to estimate), because "growth capital expenditures" would be equal to 0. So:

Owner Earnings = EBIT x (1 – Tax Rate) + Depreciation & Amortization –
Maintenance Capital Expenditures

By using Owner Earnings, Buffett can easily run a DCF analysis in his head. And by assuming 0% growth, Buffett is able (a) to compare the yield on any business (i.e. Owner Earnings / Purchase Price) to the yield of any other investment, like bonds, real estate, and other stocks, and (b) to make a binary decision as to the riskiness of an investment by asking himself whether the company will be able to maintain or grow its current level of cash flow (0) or not (1). If the yield is attractive compared to other investments, and if he thinks that company will be at least able to maintain its current level of cash flow, then Buffett invests.

HOW TO CHOOSE A DISCOUNT RATE

You're now officially a valuation expert! Which means we can turn our attention to what is a somewhat existential question when it comes to valuation:

What discount rate are we supposed to use?

This is certainly not an easy question to answer, and the problem is exacerbated by the fact that the discount rate used in any DCF analysis valuation plays a huge role in determining intrinsic value.

To see how, let's return once more to the Gordon Growth Model, assuming that that our company generated $100 in FCF this year and is projected to grow 4% per year, with a 12% discount rate. The intrinsic value of the company in this first example would be $1,300.

Intrinsic Value = FCF in Year 1 / (Discount Rate − Growth Rate)

Intrinsic Value = ($100 x 1.04) / (.12 − 0.4)

Intrinsic Value = $1,300

No let's use a discount rate of 9%, which just 3 percentage points lower than the 12% we used in our previous example. The 9% discount rate results in an intrinsic value of $2,080 – 60% higher than in our previous example!

Intrinsic Value = FCF in Year 1 / (Discount Rate − Growth Rate)

Intrinsic Value = ($100 x 1.04) / (.9 − 0.4)

Intrinsic Value = $2,080

Note that this is purely a function of the way our calculation works – the growth rate we are projection hasn't changed at all. In fact, using the right discount rate is probably even more important than getting the growth rates right, since the discount rate has larger effect on intrinsic value than the growth rate does. If you don't believe me, then take a look at the following two examples.

In our first example, we used a 12% discount rate and a 4% growth rate to end up with an intrinsic value of $1,300. If we decrease the discount rate by 20% to 9.6%, intrinsic value jumps up by 43% to $1,857:

Intrinsic Value = FCF in Year 1 / (Discount Rate – Growth Rate)

Intrinsic Value = ($100 x 1.04) / (.9.6 – 0.4)

Intrinsic Value = $1,857

Now what happens if we use the same 12% discount rate, but this time we were off on our growth rate estimate by 20%. A 4.8% growth rate results in an intrinsic value of $1,456 – just 12% higher than in our original example.

Intrinsic Value = FCF in Year 1 / (Discount Rate – Growth Rate)

Intrinsic Value = ($100 x 1.04) / (.12 – 0.4.8) Intrinsic Value = $1,456

The importance of the discount rate compared to the growth rate makes sense mathematically, since the discount rate will always be larger than the growth rate.

So… what how do we come up with a discount rate?

Well, a finance professor would likely tell you to use the Weighted Average Cost of Capital (WACC).

Weighted Average Cost of Capital

A company finances its assets by using either debt or equity. The WACC is the cost of the company's debt (interest payments) and the cost of the company's equity (shareholders' required return), both of which are weighted proportionately to the company's overall capital structure. Therefore, a company's WACC is the overall required return that a firm must achieve to satisfy both its debt holders and its shareholders.

As an example, suppose that lenders are charging a 10% interest rate on the money they have lent to a firm, and suppose that shareholders require a minimum 20% return on their investments in order to retain their holdings in the firm. And let's say that the company's debt outstanding and equity value are equal.

On average, then, projects funded from the company's pool of money will have to return 15% to satisfy debt and equity holders. The 15% is the WACC.

If the only money in the pool was $50 in debt holders' contributions and $50 in shareholders' investments, and the company invested $100 in a project, then in order to meet the lenders' and shareholders' return expectations, the project would need to generate returns of $5 each year for the lenders and $10 a year for the company's shareholders. This would require a total return of $15 a year, or a 15% WACC.

The actual calculation for WACC is:

$$WACC = (E/V) \times Re + (D/V) \times Rd \times (1 - T)$$

Where:

Re = Cost of equity

= Expected return of the asset as determined by the Capital Asset Pricing Model (CAPM)

= risk-free rate + beta of the security x (expected market return – risk-free rate)

Rd = Cost of debt (i.e. interest rate on the debt)

E = Market value of the firm's equity

D = Market value of the firm's debt

V = E + D = Total market value of the firm's financing (equity and debt)

E/V = % of

T = Corporate tax rate

As you can see, WACC uses beta, which we know is not an accurate measure of risk from our discussion on page 50. So don't worry about the algebra here – we won't be using WACC.

Build-Up Method

A viable alternative to the WACC is called the build-up method.

We begin with the risk-free rate, which is the theoretical rate of return on investment with zero risk. Although no investment truly has no risk, investors usually use the rate of return on the three month U.S. Treasury Bill, which is considered to be the safest investment in the world (this is the shortest term security offered by the United States government, and it's backed by the full faith – and the full taxation and currency-printing powers – of the U.S. government). However,

for a long term holding like a stock investment, I recommend using the yield on the 20-year U.S. Treasury bond.

Then, we add certain risk premiums to the risk-free rate. The risk premium added depends on the amount of risk associated with the business's earnings. The build-up method equation is as follows:

Discount Rate = Rf + ERP + Rs + Rc

Where:

Rf = Risk-free rate

ERP = Equity risk premium

Rs = Size premium

Rc = Specific company risk

The equity risk premium is driven by several factors, but is generally about ~4-6%. The size premium applied could be anywhere from ~0-4%, depending on the company's size. Investors can also adjust for additional risk criteria, such as a country risk.

Warren Buffett's Discount Rate

Once again, Warren Buffett value stocks a little bit differently than everyone else. Here is what he and his business partner have to say about discount rates:

"**Buffett**: *Charlie and I don't know our cost of capital. It's taught at business schools, but we're skeptical. We just look to do the most intelligent thing we can with the capital that we have. We measure everything against our alternatives. I've never seen a cost of capital calculation that made sense to me. Have you Charlie?*

Munger: *Never. If you take the best text in economics by Mankiw, he says intelligent people make decisions based on opportunity costs — in other words, it's your alternatives that matter. That's how we make all of our decisions. The rest of the world has gone off on some kick — there's even a cost of equity capital. A perfectly amazing mental malfunction.*

Buffett: *10% is the figure we quit on – we don't want to buy equities when the real return we expect is less than 10%, whether interest rates are 6% or 1%. It's arbitrary. 10% is not that great after tax.*

Munger: *We're guessing at our future opportunity cost. Warren is guessing that he'll have the opportunity to put capital out at high rates of return, so he's not willing to put it out at less than 10% now. But if we knew interest rates would stay at 1%, we'd change. Our hurdles reflect our estimate of future opportunity costs. "*

For Warren Buffett and Charlie Munger, everything is a function of opportunity cost – which is the return of your next best investment option. Buffett says this is at least 10%, which is "not that great after tax."

Remember our discussion of Owner Earnings? By calculating Owner Earnings and comparing that a stock's purchase price, Buffett basically transforms a stock into a bond (Owner Earnings / Purchase Price = essentially the stock's interest rate). The Buffett just compares that rate to the yield on all other opportunities in his investment universe. And the minimum yield he looks for is 10% after-tax, although this figure would be higher if interest rate are higher.

You can use Buffett's method, as well. Just ask yourself: What is my opportunity cost?

Everyone has the opportunity to buy a low-cost index fund that tracks the entire stock market, so everyone's opportunity cost should be (at a minimum) the return of the S&P 500.

The S&P 500 has had a 9.6% annualized return for the past 50 years. However, if you are an active investor then you will have to sell your investments every once and a while. The maximum long-term capital gains for most people fluctuates between 10 – 15%. Therefore, you need a 15% pre-tax return in order to beat the stock market after taxes.

So, your discount rate – according to Buffett's and Munger's principles – should be 15%. However, this is different for each investor. If you are content with 9.6% returns over the long run, then you should simply invest in an index fund and call it a day. But if you are interested in

compounding your money more than 15% annually, then a 15% discount rate should be your target.

7: THE QUALITIES OF GREAT COMPANIES

Up until this chapter, much of this book has focused on investing <u>methods</u> and <u>philosophy</u>.

We saw that you need to compare a stock's intrinsic value to its market price to determine whether it's a good investment or not. We described how the difference between the intrinsic value and the stock's market price is the margin of safety, and that you would want a larger margin of safety for riskier investments. We went over how the financial theory definition of risk as volatility is wrong, and that risk is actually just the probability of losing your initial investment. We covered the importance of performing bottom-up, fundamental analysis. And we learned how to actually calculate the intrinsic value of a stock.

Now I'd like to discuss, very briefly, some of the qualitative aspects that make up a great business.

HIGH RETURNS ON INVESTED CAPITAL

Remember that the intrinsic value of a company is just the discounted cash flows that the company will generate?

Well, managers of companies are also essentially investors. They must make capital allocation decisions every day, like what piece of machinery they should buy, how much to pay their employees, or whether or not to invest in the development of a new product. Those decisions result in future cash flows.

Just like a great stock investment is one where the market price of a company is less than the future discounted cash flows that that company will generate, a great <u>business</u> is one where the investments that a manager must make are much less than the cash flows that those investments will generate.

Imagine three types of savings accounts:

- The great one pays an extraordinarily high interest rate that will rise as the years pass, with no minimum deposit requirement.

- The good one pays an okay rate of interest, but you have to put a minimum deposit in every month.

- Finally, the gruesome account both pays an inadequate interest rate and requires you to keep adding money at those disappointing returns.

Similarly, there are three types of businesses:

- Great businesses are ones that generate a lot of cash with no need for reinvestment in the business. In other words, the business is highly scalable. Imagine something like a software company (disregarding, if you will, the need to keep up with new technology and competitive pressures). The engineers at a software company just have to write the code for a software product once, and then the company can sell and sell and sell copies of that software without the need for any more additional capital.

- Then there are good businesses. These types of companies generate a lot of cash but require some reinvestment in the business.

- Finally, there are gruesome businesses, which are ones that require a TON of reinvestment in the business but generate little to no cash. That's like an airline company, which I talked about earlier. Airlines require huge amounts of capital to invest in planes and maintenance and fuel and customer service and pilots and flight attendants. And then on top of all that, at the end of the day, airlines make a very small profit off of every flight. So, airline owners have to pour a ton of capital into their airline companies, and they get very little back in return.

What we're talking about here is return on invested capital. Just as you want a high rate of return on your stock investment, great business are ones that are able to generate high rates of return on the capital that is invested in the business to support its operations.

ECONOMIC MOATS

Now, a truly great business must have an enduring "moat" that protects those excellent returns on invested capital.

The dynamics of capitalism guarantee that competitors will repeatedly assault any business "castle" that is earning high returns.

Therefore, a formidable barrier is essential for sustained success. Here are some examples of economic moats:

- Low cost producer (GEICO and IKEA)

- Branding (Coca-Cola and Apple)

- Proprietary technology (Google and Pfizer)

- Network effects (Facebook and Moody's)

- Economy of scale (Amazon, Walmart, and McDonald's)

If you've read Peter Thiel's book Zero to One, then you'd realize that the above examples of economic moats are actually the main characteristics monopolies.

Having a monopoly is, of course, the best way to build a great economic moat, because a monopoly has no real competitors. Therefore, there's no one who can really cross the moat and storm the business "castle."

Warren Buffett knew this at a very early age.

As a kid, Buffett used to sit on the porch of his friend's house and watch the cars and the street trolley pass on the street in front of the house during rush hour. One day he said to his friend's mom, "All that traffic. What a shame you aren't making money from the people going by. What a shame, Mrs. Russell."

Even little 9-year-old Warren was thinking about businesses, and he wanted his friend's mom to set up a toll booth. Why? Because a toll booth on a single lane road is a quintessential monopoly.

ENDURING VS. ILLUSORY

Now it's important to note here the importance of having an enduring economic moat. A moat that must be continuously rebuilt will eventually be no moat at all.

The concept of enduring is really influence by two things: management and the company's industry.

Management

A business whose success depends on having a great manager is not a great business. As Buffett says:

> *"[I]f a business requires a superstar to produce great results, the business itself cannot be deemed great. A medical partnership led by your area's premier brain surgeon may enjoy outsized and growing earnings, but that tells little about its future. The partnership's moat will go when the surgeon goes. You can count, though, on the moat of the Mayo Clinic to endure, even though you can't name its CEO."*

Industry

Secondly, a business's economic moat is best protected if the company has a great long-term competitive advantage in a <u>stable</u> industry.

A long-term competitive advantage in a declining industry isn't the end of the world if it allows for consolidation and increased efficiencies, but it does you no good if the industry just disappears overnight.

And a competitive advantage in a rapidly growing industry today might be gone tomorrow, if the industry dynamics and competing players are constantly changing.

8: BEHAVIORAL FINANCE

HEURISTICS AND BIASES

Our brains are incredible things.

Every minute of every day our minds absorb tremendous amounts of new information.

Some of this information we consciously think about, question, work on, mull over, and attempt to solve.

However, the conscious part of our brain can only focus on one thing at a time. To make matters more complicated, we often have to think and act quickly.

So, our brains will often use shortcuts to help us out. These shortcuts are called heuristics.

These mental shortcuts are incredibly useful and they're often very accurate. That's why our brains evolved to use them in the first place.

Unfortunately for us, heuristics aren't infallible. Sometimes things aren't exactly as they appear on the surface (for example, a common situation has been slightly changed or is unique). In these instances, relying on heuristics can seriously hurt us and cause us to make bad decisions.

When our heuristics fail to produce a correct judgment, the result is a cognitive bias – which is the tendency to drawn an incorrect conclusion in a certain circumstance based on cognitive factors.

Cognitive biases can affect us in all aspects of life, from shopping to relationships, from jury verdicts to job interviews. Cognitive biases are especially important for investors, whose main goal should be to think as rationally and logically as possible in order to find the true value of a business.

Therefore, an awareness of the heuristics your brain uses and the cognitive biases they can cause is imperative if you want to be a successful investor.

As the father of value investing Benjamin Graham noted in _The Intelligent Investor:_

> "The investor's chief problem – and even his worst enemy – is likely to be himself."

If you've read Thinking, Fast and Slow by Daniel Kahneman (a book I highly recommend), then you probably already know some of the most important heuristics and cognitive biases that affect us nearly every day – and, importantly, that affect investors when we make capital allocation decisions.

ATTRIBUTE SUBSTITION

Attribute substitution occurs when an individual has to make a judgement (of a target attribute) that is computationally complex, and instead substitutes a more easily calculated heuristic attribute.

Let's say I ask you a question like, what is the probability of X happening? If that question is very difficult then you won't be able to answer it. But there are easier questions that are related to X happening that you <u>can</u> answer, like: Is X a surprising event? Is X a typical result of the causal factors?

So what happens is you take the answers to the easy questions, and you use it to answer the difficult questions. And you think you've answered the difficult question. But in fact you haven't – you've only answered the easier ones.

This is called attribute substation – substituting one question for another.

So if I ask you: How happy are you these days?, you might not be able to answer it, because that's a very broad question and you haven't been regularly assessing and tracking your mood. But you do know your mood <u>right now</u> – so you're very likely to tell me your mood <u>right now</u> and think that you've answered the more general question of "how happy are you <u>these days</u>?"

AVAILABILITY HEURISTIC (AKA "WHAT YOU SEE IS ALL THERE IS")

The availability heuristic is a mental shortcut that relies on immediate examples that come to a given person's mind when evaluating a specific topic, concept, method or decision.

People aren't aware of information they don't have. As former Secretary of Defense Donald Rumsfeld would say, we all have "unknown unknowns" – things we don't know we don't know.

What you do to make up for this, is you take whatever information you have and you make the best story possible out of that information. And the information you don't have, you don't feel that it's necessary.

Here's an example: Supposed I tell you about a national leader and that she is intelligent and firm. Now do you have an impression already whether she's a good leader or a bad leader? You certainly do. She's a good leader. But the third word that I was about to say is "corrupt."

The point here is that you didn't wait for the information that you didn't have. You formed an impression from the information that you <u>did</u> have. Daniel Kahneman calls this heuristic "What You See Is All There Is."

ANCHORING BIAS

Anchoring describes the common human tendency to rely too heavily on the first piece of information offered (the "anchor") when making decisions.

A good example of anchoring bias is in negotiations. Many people think that you have an advantage if you go second. But actually the advantage is going <u>first</u>.

This is because of the way the mind works. The mind tries to make sense out of whatever you put before it. So this built-in tendency that we have of trying to make sense of everything that we encounter is a mechanism for anchoring.

LOSS AVERSION

Loss aversion refers to people's tendency to prefer avoiding losses to acquiring equivalent gains: it is worse to lose one's jacket than to find one. Some studies have suggested that losses are twice as powerful, psychologically, as gains.

Here's an example: Let's say I offer you a gamble on the toss of a coin. If the coin lands on tails, you lose $100. And if it lands on heads, you win X. What would X have to be for that gamble to become really attractive to you? Most people demand more than $200 – meaning it takes $200 of potential gain to compensate for $100 of potential loss when the chances of the two are equal. That is loss aversion.

Loss aversion is a result of the way we evolved. In evolution, threats are far more important than opportunities. If you were a caveman and you had a deer in your sights and a lion, you would be much more concerned about running from the lion than chasing down the deer.

One way to protect yourself from loss aversion is to not look at investment results too often. When you look very often, you become tempted to make changes and stray from your strategy.

NARROW FRAMING

Framing refers to the context in which a decision is made, or the context in which a decision is placed in order to influence that decision.

If you asked a regular person on the street if they would take a gamble where if you lose, you lose $100, but if you win, you win $180, all on one toss of a coin – most people would decline.

However, if you ask the same person on the street if they would take the gamble if instead of one coin toss there were ten-coin tosses – most people would accept.

So when a game is repeated, then people become much closer to risk neutral and they see the advantage of gambling.

Unless the people who turned down the "one coin toss" gamble were on their deathbeds, then they made a poor decision. Why? Because the context in which they made the decision to decline was far too narrow. There are usually going to be more opportunities to gamble – perhaps not the same exact gamble – but at least one with similar odds.

To deal with narrow framing, investors need a policy for how to deal with risks, and then they need to make individual decisions in terms of that broader policy.

This concept of narrow framing is very similar to the availability heuristic (What You See Is All There Is). We tend to see decisions in isolation. We don't see the decision about whether or not to take the "one coin toss" gamble as just one of many similar decisions that we are going to make in the future.

Moreover, people are very much myopic – they have a narrow time horizon. To be more rational, investors want to look further in time. If you're thinking of where you will be five years from now, then it's completely different from thinking about how you will feel tomorrow if you took the "one coin toss" gamble and loss.

THEORY-INDUCED BLINDNESS / HINDSIGHT BIAS

Theory-induced blindness: Once you have accepted a theory, it is extraordinarily difficult to notice its flaws.

Hindsight bias: The inclination, after an event has occurred, to see the event as having been predictable, despite there having been little or no objective basis for predicting it.

Economist John Kenneth Galbraith once famous said, "Faced with the choice between changing one's mind and providing that there is no need to do so, almost everyone gets busy on the proof." Galbraith was pointing out in that quote the natural human tendency to refuse to admit when we're wrong.

One of the main reasons that we don't admit that we're wrong, is that we try to make a story about whatever happens – making a story causes us to think that we can make sense of the events and understand the events, and when we think we understand something we alter our image of what we thought earlier.

Here's an example: Let's say we have two teams that about to play football. The two teams are about evenly matched. Then they go out and play the game, and one of the teams completely crushes the other. Now after you have just seen that, you think they're not equally strong. You perceive one of them as much stronger than the other and that perception gives you the sense that this must have been visible in advanced – that one of them was much stronger than the other.

This is hindsight bias, and it's a big deal. It allows us to keep a coherent view of the world, but it also blinds us to surprises, it prevents us from learning the right thing, and it causes us to learn the wrong thing.

Usually whenever we're surprised by something (even if we do admit that we've made a mistake), we often say "I'll never make that mistake again." In fact, what we should learn when we make a mistake because we did not anticipate something is that the world is <u>difficult to anticipate</u>. The correct lesson to learn from surprises is that the world is surprising.

YOU ARE YOUR OWN WORST ENEMY

"We have met the enemy and he is us." - Pogo

Daniel Kahneman's research on heuristics and biases is definitely applicable to the world of value investing. Key takeaways for value investors are:

- Don't be too active

- Make your decisions with a long-term perspective

- Admit your mistakes

- Don't try to predict what's unpredictable

- Strive to become as rational as possible

CONCLUSION: WHERE TO FIND VALUE?

Okay! Now you know what value investing is, you know the most famous value investors and what investing strategies they used, you know how to calculate intrinsic value, you know important concepts like the time value of money, margin of safety, how to properly think about risk, and you know some of the qualities of great companies.

Congratulations, you're basically a value investing expert at this point!

So now it's time to go out in the world and apply this newfound knowledge.

But… where to go?

INVESTOR SENTIMENT

Well, first, you can find great opportunities in any market – the stock market included – when investor sentiment allows for it. This can be across the entire market – like during a recession – or it can be specifically targeted toward a particular company.

So now that we know about Mr. Market, we can take advantage when he is feeling pessimistic about the future and buy when he offers us a low price.

But as we saw earlier, Mr. Market is a capricious character. So we can be opportunistic when he's feeling gloomy, but we can't rely on him feeling down all the time.

For example, in the overall market today, there are not that many opportunities to buy undervalued stocks – especially not as many as there were in in 2009, 2010, and 2011.

So, where else can we look?

INEFFICIENT MARKETS

You want to look for qualities of markets that point to inefficiency.

What does that mean?

Well, here are the characteristics that make a capital market "efficient":

- The market has efficient systems to facilitate buying and selling.

- The market provides easy access to timely and relevant information.

- The market is highly liquid with many buyers and sellers.

- Transaction costs are low.

Ultimately, these factors mean that market prices incorporate available information quickly and efficiently to reflect intrinsic values.

An efficient capital market means less opportunity for value investors because there is less of a divergence between market prices and intrinsic values.

So, we want to look for inefficient capital markets.

Here are some examples:

- Small cap stocks (there are less investors and less information)

- International stock markets (varies by country)

- Private markets (usually have less information, fewer buyers and sellers, low liquidity, and high transaction costs)

ANYWHERE

In the end, you really can apply the value investing concepts we just talked about to ANY investing situation!

Stamp collector? Use value investing. Art collector? Find your margin of safety. Run your own business? Think about return on invested capital. The opportunities out there are endless.

I've seen people apply value investing concepts to many new markets, like baseball card collections and buying and selling websites.

And I'm excited to see where YOU will take value investing next!!

Well, I hope you enjoyed this presentation, and I really hope you get out there and apply these value investing principles to your own investing!

I wish you the best of luck!

WHERE TO FIND VALUE CASE STUDY: HOW TO INVEST IN WATER?

One of the eight films that was nominated to win the Oscar for Best Picture at the 88th Academy Awards in 2016 was The Big Short.

The movie, based on Michael Lewis's book *The Big Short: Inside the Doomsday Machine*, tells the story of four investors who predicted the credit and housing bubble collapse in 2008 and decided to bet against Wall Street, earning billions of dollars in the process.

The first of these investors that predicted the housing bubble was Dr. Michael Burry, who is portrayed in The Big Short by Christian Bale.

While the movie does a great job explaining how Michael Burry was able to make nearly $1 billion betting against the housing market in 2008, it left many viewers very puzzled about a completely different issue – the last line of the movie, printed on a placard, is:

> *"Michael Burry is focusing all of his trading on one commodity: Water."*

This is a perplexing statement, because unlike other commodities like oil, cotton, or silver, there is no market to trade water.

So how can someone invest in water? Should you just buy a rain bucket?

Well, you have 3 different options if you want to invest in water:

1. Purchase water rights

2. Invest in water-rich farmland

3. Invest in water utilities, infrastructure, and equipment.

But first, let's talk about why you might want to invest in water in the first place anyways.

WHY INVEST IN WATER?

Depending on where you live, you might take fresh, clean water for granted. I know that I normally do.

We often spout off the fact that 70% of the Earth's surface is covered in water – something we probably all learned in kindergarten. While this is true, freshwater – the kind we care about – actually only represents 2.5% of that amount. On top of that, only 1% of our freshwater is easily accessible, with most of the other 99% trapped in glaciers and snowfields. In the end, only 0.007% of the planet's water is actually available to fuel and feed the world's 7 billion people.

We all know that water is essential for life. But 0.007% of the world's total water is still a lot of freshwater. So what's the problem here?

According to the U.N., water use has grown at over twice the rate of the world's population increase in the last century. Today, we use about 30% of the world's total accessible renewal supply of water. In less than 10 years, that percentage could reach 70%. By 2025, an estimated 1.8 billion people will live in areas plagued by water scarcity, with 2/3rds of the world's population living in water-stressed regions.

Making matters worse, the water infrastructure in most developed countries is aging… and we haven't taken any steps to upgrade it yet. The American Society of Civil Engineers (ASCE)

predicts that at current rates there will be an $84.4 billion gap by 2020 between what we're spending on water infrastructure and what is needed. Without upgrades, the U.S. is facing a loss of $416 billion in GDP.

Still don't think access to freshwater is an issue?

- Just ask anyone who lives in California, which recently experienced 5+ years of one of the worst droughts on record.

- Or ask anyone who's witnessed one of the 195 conflicts since 2000 that have been caused by water.

- Or ask the residents of Flint, Michigan, who have experiencing firsthand the effects of America's aging water infrastructure.

- Clearly there's a growing and critical demand for access to freshwater and for related products and services. So how can an intelligent investor profit from it?

HOW DO YOU INVEST IN WATER?

OPTION #1: PURCHASING WATER RIGHTS

A water right gives the owner the right to use water from a water source (e.g., a river, stream, pond, or source of groundwater).

An investor who buys a water right can make money by selling (or in some states renting out) the water right for a higher price than was originally paid. Buyers might be municipalities, farmers, or corporations.

Obviously, prices depend on the demand for the water, which itself is a function of the need for water and the water's use. For example, hydraulic fracturing generates massive demand for water as the development of an oil well requires 3-5 million gallons of water, and 80% of that water can't be reused.

Fracking companies, therefore, pay as much as $3,000 per acre-foot for water rights – compared to only $50 per acre-foot paid by farmers.

Setting aside the moral implications that might arise from choosing to sell water solely to the highest priced bidder, the economics of making money from water rights faces other issues as well.

The main issue is that it's a perfect example of "greater fool theory." The water right itself doesn't provide any value. Consequently, the only way to make money from water rights is to find someone willing to pay a higher price for it than you did. Sometimes this might work out. Sometimes it won't.

Here's a perfect example:

> *T. Boone Pickens owns more water rights than anyone else in the United States. In 2011, while Texas was suffering through one of the worst droughts in more than 50 years, Pickens was trying to sell his rights to the Ogallala Acquifer (one of the world's largest) to the Dallas-Fort Worth area. Talks with Dallas were dependent on the area's drought situation. Every time it rained, negotiations fell apart. Pickens eventually sold to the Canadian River Authority for half of his asking price. He later compared the deal to buying and selling a boat: the happiest two days of owning a boat are the day you buy it and the day you sell it.*

In addition to the greater fool theory, the right to water is a highly political and litigious issue. T. Boone Pickens has huge political influence in Texas and owns enormous amounts of water rights, which is why he is pursuing his particular strategy. Additionally, water laws are very complicated and vary state-by-state – and raise the issue: how can someone own, buy, or sell a resource that is a human right and is necessary for all forms of life to survive?

In any case, the barriers to entry here mean buying water rights just doesn't make sense for the average investor.

OPTION #2: INVEST IN WATER-RICH FARMLAND

2,000 years ago the ancient Romans built aqueducts to transport water from higher elevations to lower elevations. Aqueducts – combined with pipelines and pumping systems – are still used today in some geographies, including California, Australia, and Libya.

However, transporting water is not an easy feat – nor does it entirely solve problems without creating new ones. Here are some of the issues:

4.   The actual construction of a pipeline is extremely expensive, often costing billions of dollars.

5.   Maintenance expenses to keep the pipelines going are also incredibly high.

6.   Just like any oil pipeline, the construction of a water pipeline can disrupt ecosystems, ruin scenery, and create obstructions.

7.   Most importantly, water pipelines – by their nature – are designed to divert water from a specific source. This can have serious ripple effects, affecting coastlines, aquatic life, plant life, and economic activity.

This brings us to the crux of Dr. Michael Burry's latest "water trade" and why we're talking about farmland. In a December 2015 interview with NY Magazine, Burry had this to say about water:

Transporting water is impractical for both political and physical reasons, so buying up water rights did not make a lot of sense to me… What became clear to me is that food is the way to invest in water. That is, grow food in water-rich areas and transport it for sale in water-poor areas. This is the method for redistributing water that is least contentious, and ultimately it can be profitable, which will ensure that this redistribution is sustainable. A bottle of wine takes over 400 bottles of water to produce — the water embedded in food is what I found interesting.

In another interview with Bloomberg in 2010, Dr. Michael Burry said

I believe that agriculture land – productive agricultural land with water on site – will be valuable in the future.

Certainly, compared to water rights and water pipelines, growing food in water-rich areas and selling it in water-poor areas is the least contentious and most sustainable method for water distribution.

How can we capitalize on this?

Michael Burry is incredibly media-shy, but according to my research he's been buying up almond farms. Why? Growing almonds takes a ridiculous amount of water – 1 gallon per almond. Paradoxically, 80% of the world's almond supply is grown in California, which is going through one of the worst droughts in the state's history.

Now, farmers can fallow most crops if there is a drought and just start over the next year. But you can't fallow an almond orchard. An almond tree takes 3 years to mature and produces for 18-20 years.

Without water, the tree dies and the farmer loses an enormous long-term investment. Because surface water has been rationed in California, farmers are drilling deeper and deeper for groundwater just to keep their almond orchards alive.

Michael Burry's thesis is pretty clear now. With the demand for almonds continuing to grow, the farmland with the best access to onsite water is the one that is going to win out in the end, gaining share as competing almond farmers run out of water and are forced out of the marketplace.

Just like water rights, the barriers to pursuing this investment strategy are also high. The investments would have to be made on a very localized, regional basis, and would require fairly significant amounts of capital. Again, not a great strategy for the average investor.

OPTION #3: INVEST IN WATER UTILITIES, INFRASTRUCTURE, AND EQUIPMENT

The recent crisis in Flint, Michigan – where lead from the city's aging pipe system leached into the water supply – has drawn national attention to the nation's aging water infrastructure.

By some estimates, more than $1 trillion in upgrades over the next 25 years are needed for the vast system of mostly underground pipes in the U.S., and experts are saying concerns over the aging infrastructure can no longer be ignored. In fact, the ASCE (the American Society of Civil Engineers) believes that most of our drinking water infrastructure is nearing the end of its useful life and gave the country's drinking water and sewage infrastructure a "D" grade. Without upgrades, the U.S. is facing a loss of $416 billion in GDP due to increased costs to households, loss of worker productivity, increased wasting of water… and more disastrous events like Flint, Michigan.

What kind of investments does the country need? New and improved treatment plants, expanded pipes, and better waste-water networks. The ASCE recommends financing these projects through government-backed revolving loans, tax-free private bonds, and the establishment of a federal water infrastructure trust fund and a Water Infrastructure Finance Innovations Authority with the ability to borrow from the federal government.

Additionally, bills are in process in various state capitals that could open the door to the privatization of water utilities in an effort to improve the quality and operations of poorly managed public water systems (like the one in Flint).

One way to benefit from these coming changes is to invest in the stocks of individual water utility companies. The water utility space is highly fragmented, and further privatization could lead to a roll-up play by larger companies, as well as free up access to the capital markets for infrastructure development.

The implementation of this strategy is already partly underway. American Water Works Company (NYSE: AWK), the largest publicly traded water and waste service provider in the U.S., closes approximately 15 acquisitions every year, and the second largest utility, Aqua America (NYSE: WTR), has made 300 acquisitions over the past two decades.

Other plays include investments in companies that actually build water infrastructure and equipment, such as:

- **Calgon Carbon (CCC):** A manufacturer of products that remove contaminants and odors from liquids and gases, both for industrial, municipal, and consumer markets.

- **Mueller Water Products (MWA):** One of the largest manufacturers and distributors of fire hydrants, pipe fittings and valves in North America.

- **Xylem (XYL):** A manufacturer of pumps, valves and analytic equipment used to move, test, and treat water in more than 150 countries.

- There are a ton of different individual water companies to research, and a lot to learn about how the industry works.

There are also several index funds that track water-related companies, including the Guggenheim S&P Global Water Index ETF (NYSE: CGW), which tracks 50 companies from around the world that are involved in water related businesses.

ADDITIONAL READING

I hope you learned a ton from this book! Keep learning by checking out the following:
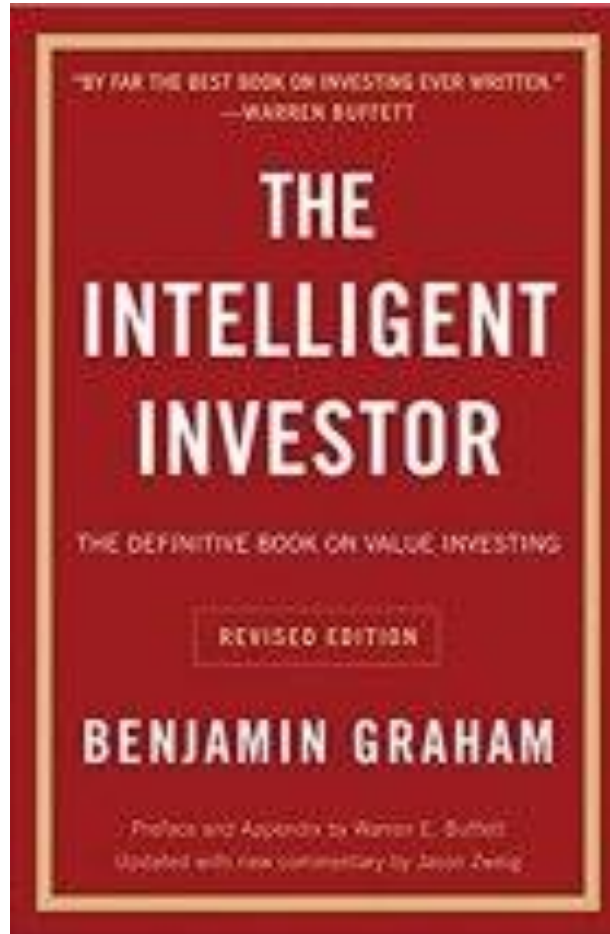
THE INTELLIGENT INVESTOR: THE DEFINITIVE BOOK ON VALUE INVESTING
BY BENJAMIN GRAHAM

If you only ever read one investment book, then let it be The Intelligent Investor by Benjamin

Graham. There's a reason why Graham is called the "Godfather of Value Investing." Benjamin Graham was probably the most influential investing figure of the 20th century, and The Intelligent Investor is probably the most influential investment book of all time. The Intelligent Investor is the value investor's bible... keep this one on your bedside table.
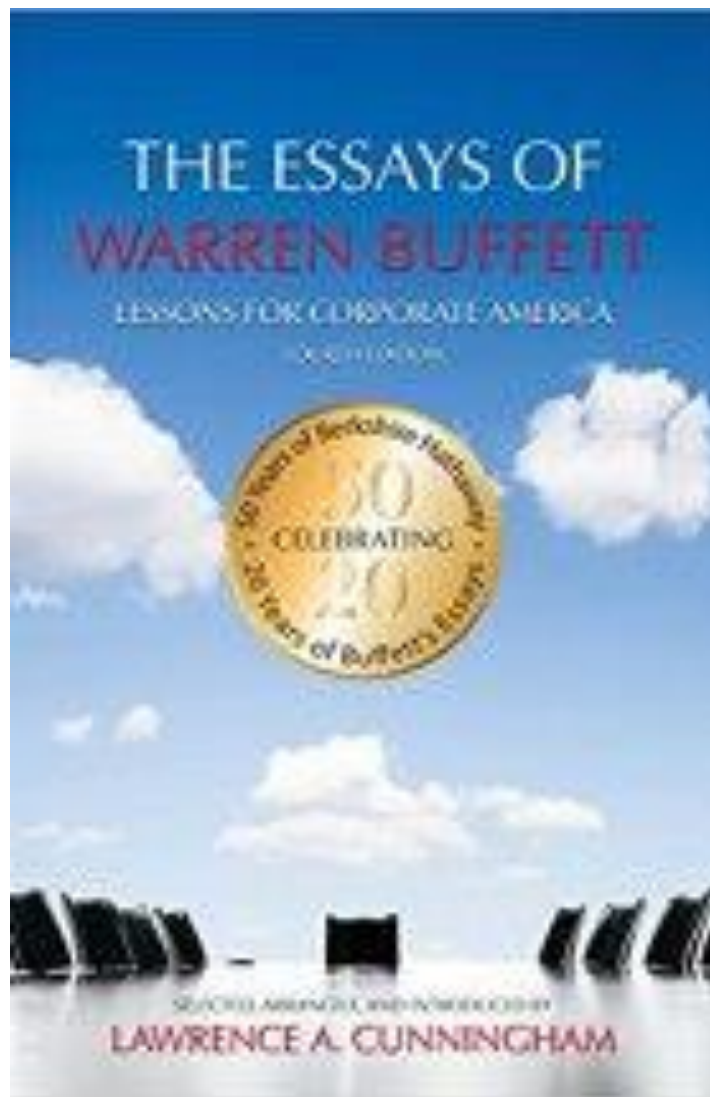
THE ESSAYS OF WARREN BUFFETT: LESSONS FOR CORPORATE AMERICA

BY LAWRENCE CUNNINGHAM (EDITOR), WARREN BUFFETT

If The Intelligent Investor is the value investor's bible, then The Essays of Warren Buffett are the value investor's New Testament. Warren Buffett has been writing essays on investing and business for 50 years, and his genius – combined with his down-to-earth charm and clear prose – makes him perhaps one of the greatest educators as well as one of the greatest investors to have ever lived. Many of these essays can be found for free online, but The Essays of Warren Buffett by Lawrence Cunningham brings them all together under one roof.
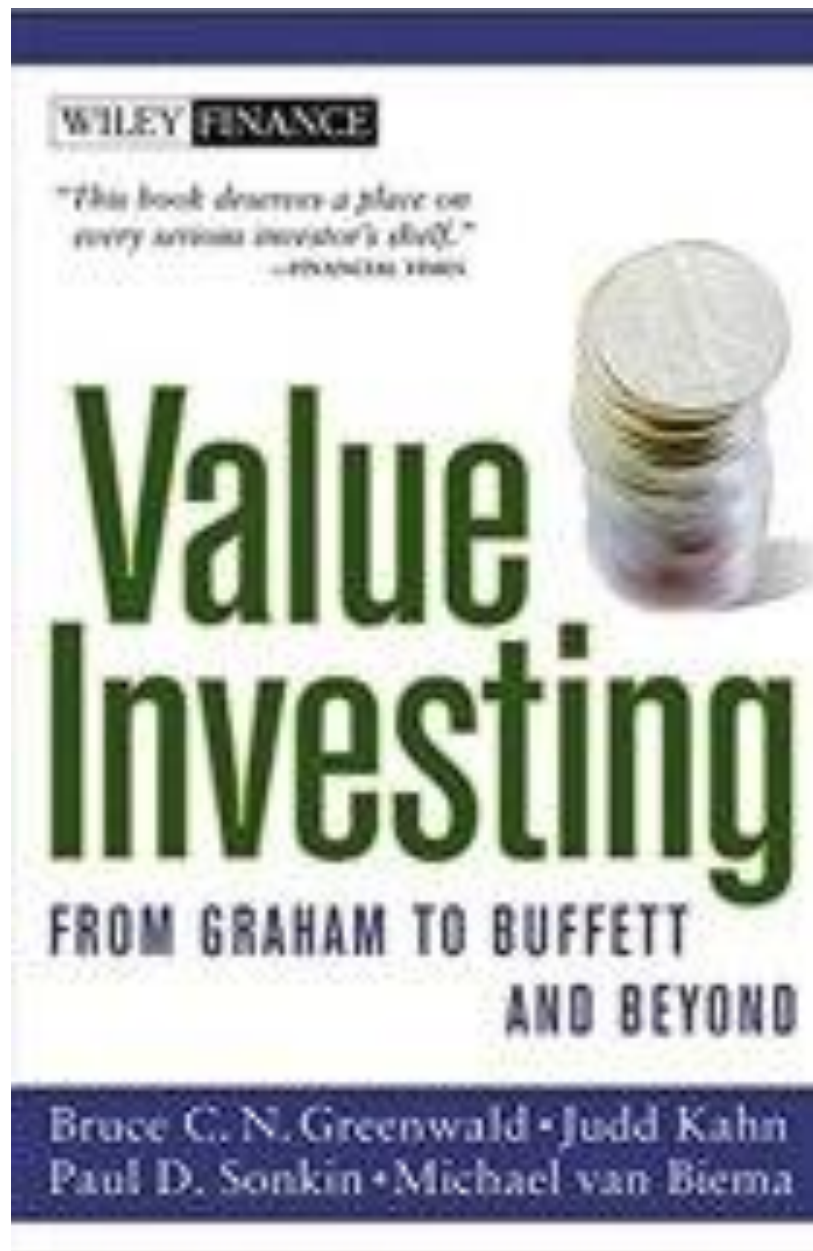
VALUE INVESTING: FROM GRAHAM TO BUFFETT AND BEYOND

BY BRUCE GREENWALD, JUDE KAHN, PAUL SONKIN, & MICHAEL VAN BIEMA

Bruce Greenwald is the Robert Heilbrunn Professor of Finance and Asset Management at Columbia University and is one of the leading authorities on value investing. This book gives the most comprehensive overview of value investing of any investment book I've read, covering general techniques of value investing as well as profiles of successful value investors such as Warren Buffett and Mario Gabelli.
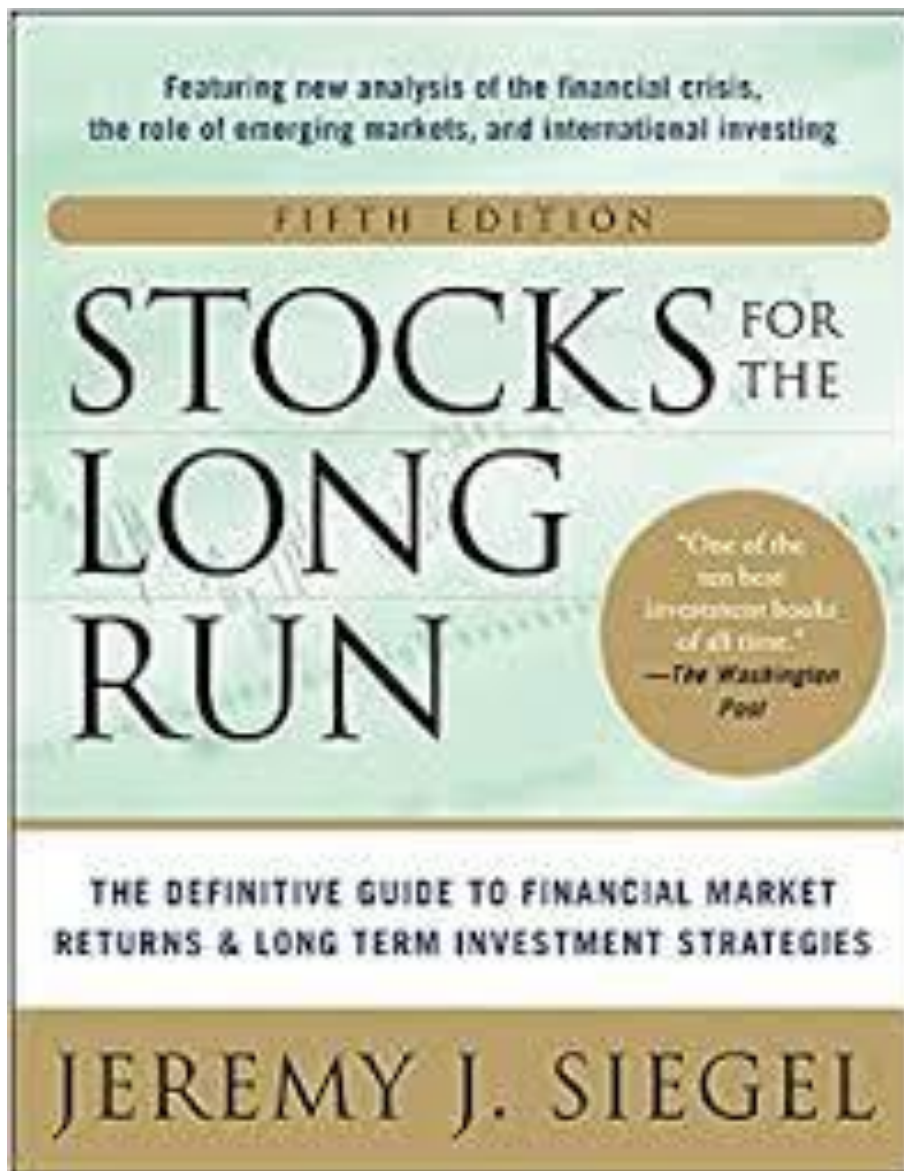
STOCKS FOR THE LONG RUN: THE DEFINITIVE GUIDE TO FINANCIAL MARKET RETURNS & LONG-TERM INVESTMENT STRATEGIES
BY JEREMY SIEGEL

Jeremy Siegel's nickname is the "Wizard of Wharton" (he's been teaching there for 45 years). His investment book Stocks for the Long Run is sometimes called "the buy and hold Bible." The book makes the convincing argument that – after you account for inflation – equities are actually the safest investment in the long run, proving the point that most people should be long-term, passive investors in the stock market.
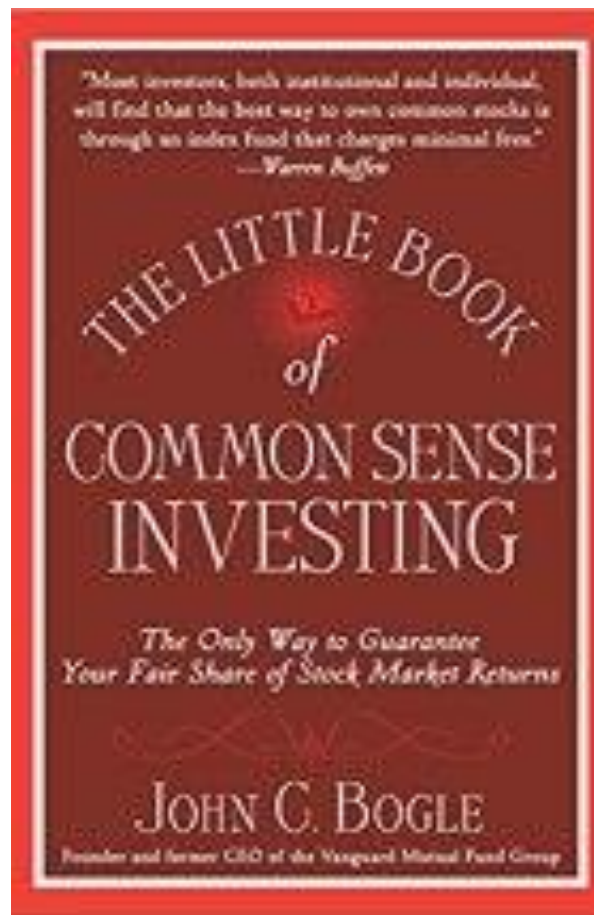
THE LITTLE BOOK OF COMMON-SENSE INVESTING: THE ONLY WAY TO GUARANTEE YOUR FAIR SHARE OF STOCK MARKET RETURNS

BY JOHN C. BOGLE

Investing is all about common sense. Owning a diversified portfolio of stocks and holding it for the long term is a winner's game. Trying to beat the stock market is theoretically a zero-sum game (for every winner, there must be a loser), but after the substantial costs of investing are deducted, it becomes a loser's game. John C. ("Jack") Bogle is the founder of the Vanguard Group and creator of the world's first index fund, and The Little Book of Common Sense Investing is a top recommendation of Warren Buffett's. There's actually a funny story that when Jack Bogle first met Warren Buffett, Jack recognized Warren, went up and introduced himself, and he said to Warren, "you know the thing I really like about you is you have rumpled suits just the same as I do" – and Jack and Warren have been good friends ever since.
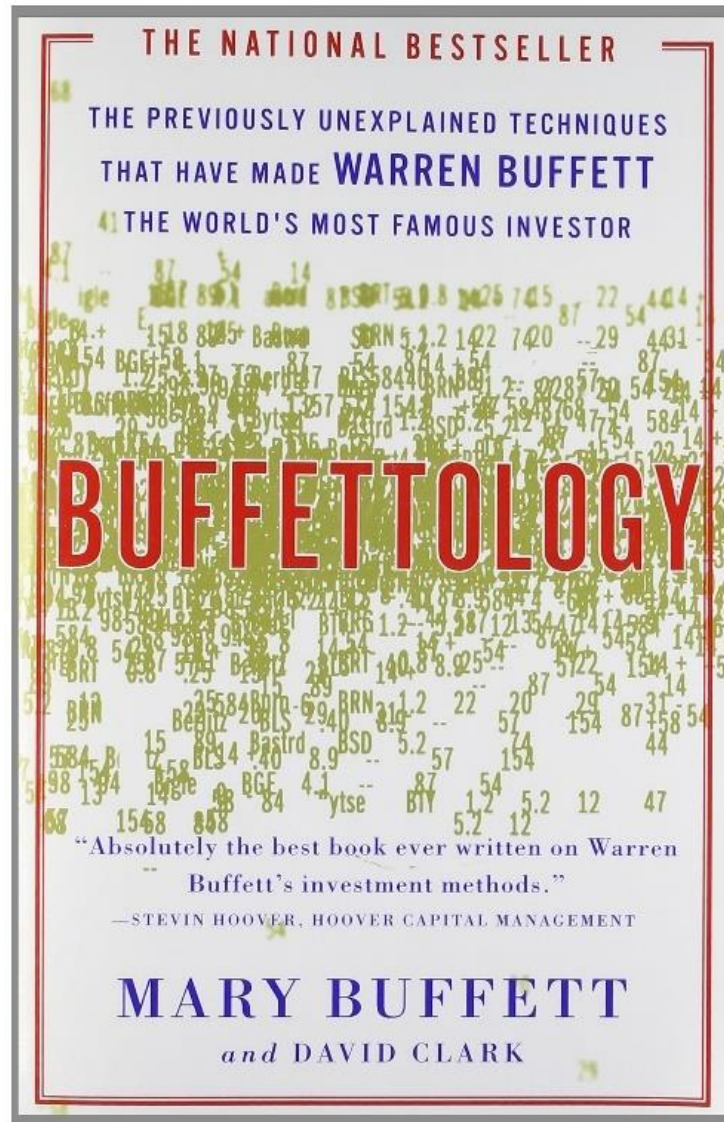
BUFFETTOLOGY: THE PREVIOUSLY UNEXPLAINED TECHNIQUES THAT HAVE MADE WARREN BUFFETT THE WORLD'S MOST FAMOUS INVESTOR

BY MARY BUFFETT & DAVID CLARK

Mary Buffett is Warren Buffett's former daughter-in-law and her book Buffettology provides a good introduction to Warren Buffett's investment approach. The book offers profiles and analysis of 54 "Buffett companies." One of my favorite investing books on the market.

"This is that rarity, a useful book."
—WARREN BUFFETT

The MOST IMPORTANT THING

HOWARD MARKS

Uncommon Sense for the Thoughtful Investor

Columbia Business School
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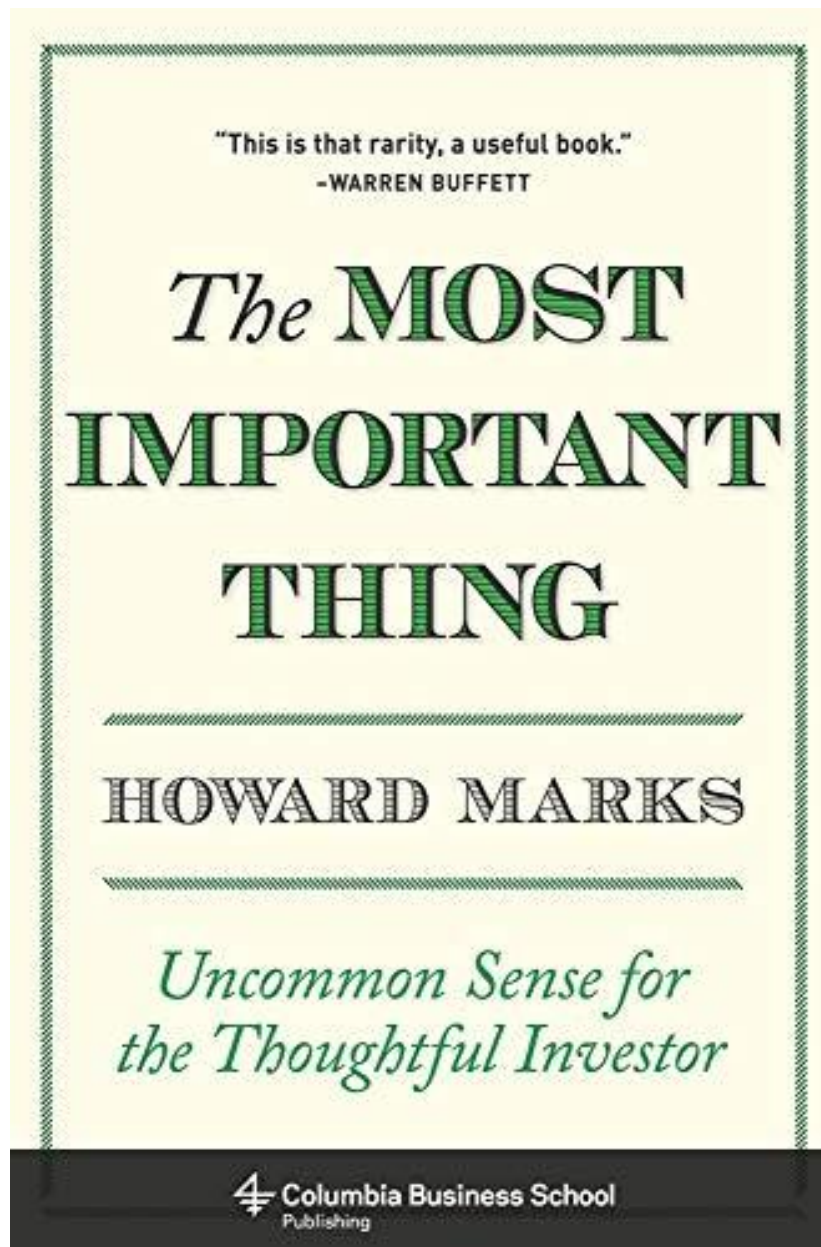
THE MOST IMPORTANT THING: UNCOMMON SENSE FOR THE THOUGHTFUL INVESTOR

BY HOWARD MARKS

Howard Marks, the chairman and cofounder of Oaktree Capital Management, is renowned for his insightful assessments of market opportunity and risk. Now for the first time, all readers can benefit from Marks's wisdom, concentrated into a single volume that speaks to both the amateur and seasoned investor.

COMPETITIVE STRATEGY: TECHNIQUES FOR ANALYZING INDUSTRIES AND COMPETITORS

BY MICHAEL PORTER

Studying Michael Porter is one of the first things you do in business school. Competitive Strategy by Michael Porter has transformed the theory, practice, and teaching of business strategy throughout the world. This book introduces Porter's 5 Forces to help investors analyze industry attractiveness, as well as the 3 forms of a company's strategy – low cost, differentiation, and focus.
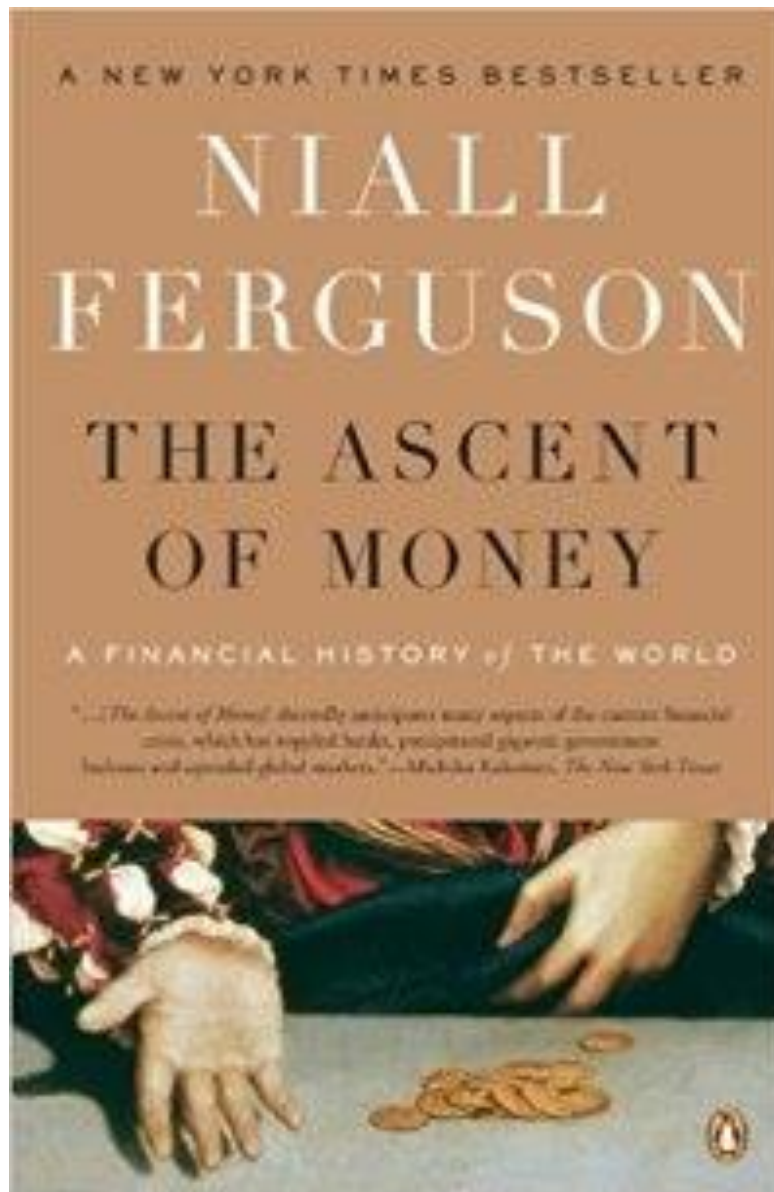
THE ASCENT OF MONEY: A FINANCIAL HISTORY OF THE WORLD

BY NIALL FERGUSON

Niall Ferguson follows the money to tell the human story behind the evolution of our financial system, from its genesis in ancient Mesopotamia to the latest upheavals on what he calls Planet Finance. What's more, Ferguson reveals financial history as the essential backstory behind all history, arguing that the evolution of credit and debt was as important as any technological innovation in the rise of civilization. This is a great overview of all things money and a nice introduction to the world of finance.
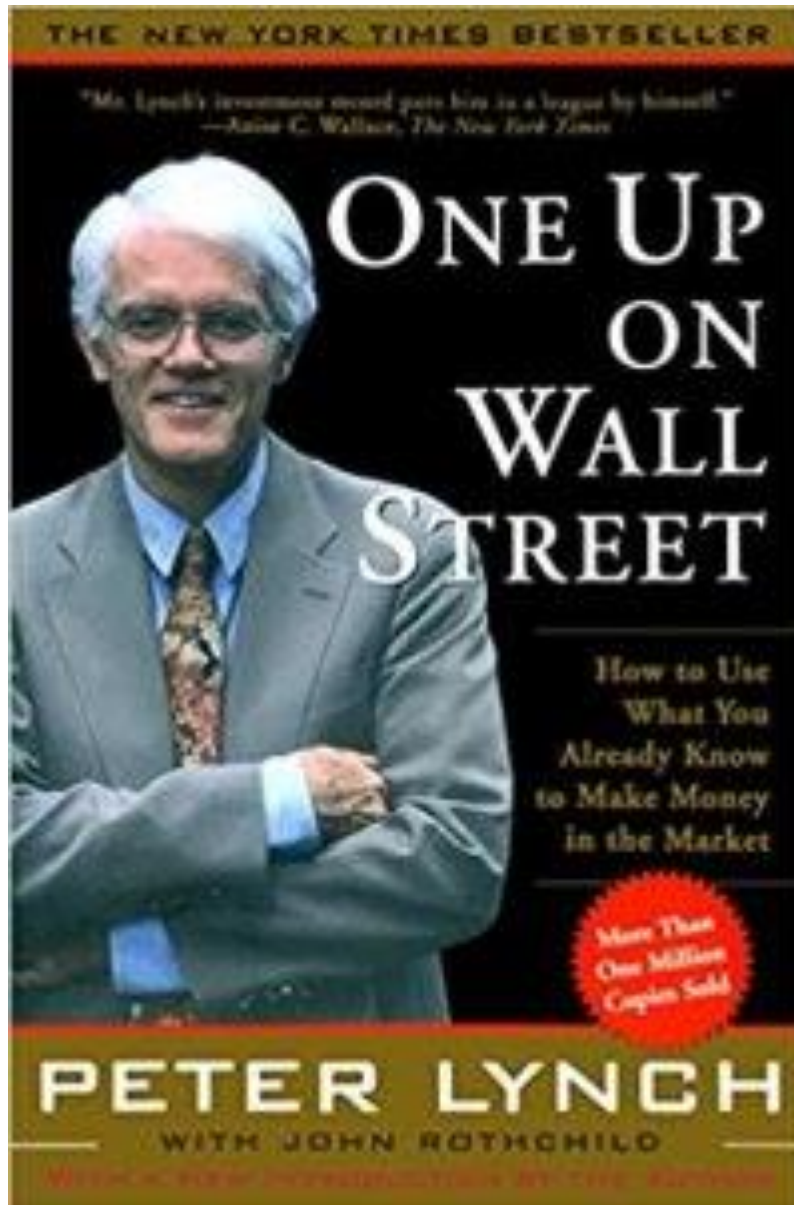
ONE UP ON WALL STREET: HOW TO USE WHAT YOU ALREADY KNOW TO MAKE MONEY IN THE MARKET

BY PETER LYNCH

Peter Lynch is one of the most successful investors ever – from 1997 to 1990, his Magellan Fund averaged a 29.2% compound annual return. In One Up on Wall Street, Peter Lynch explains how average investors can beat the pros by using what they know. According to Lynch, investment opportunities are everywhere: from the supermarket to the workplace, we encounter products and services all day long. By paying attention to the best ones, we can find companies in which to invest before the professional analysts discover them.

APPENDIX I:
THE SUPERINVESTORS OF
GRAHAM-AND-DODDSVILLE

"Superinvestor" Warren E. Buffett, who got an A+ from Ben Graham at Columbia in 1951, never stopped making the grade. He made his fortune using the principles of Graham and Dodd's Security Analysis. Here, in celebration of the 50th anniversary of that classic text, he tracks the records of investors who stick to the "value approach" and have gotten rich going by the book. COLUMBIA BUSINESS

Warren Buffett

May 17, 1984

Is the Graham and Dodd "look for values with a significant margin of safety relative to prices" approach to security analysis out of date? Many of the professors who write textbooks today say yes. They argue that the stock market is efficient; that is, that stock prices reflect everything that is known about a company's prospects and about the state of the economy.

There are no undervalued stocks, these theorists argue, because there are smart security analysts who utilize all available information to ensure unfailingly appropriate prices. Investors who seem to beat the market year after year are just lucky. "If prices fully reflect available information, this sort of investment adeptness is ruled out," writes one of today's textbook authors.

Well, maybe. But I want to present to you a group of investors who have, year in and year out, beaten the Standard & Poor's 500 stock index. The hypothesis that they do this by pure chance is at least worth examining. Crucial to this examination is the fact that these winners were all well known to me and pre-identified as superior investors, the most recent identification occurring over fifteen years ago.

Absent this condition - that is, if I had just recently searched among thousands of records to select a few names for you this morning — I would advise you to stop reading right here. I should add that all of these records have been audited. And I should further add that I have known many of those who have invested with these managers, and the checks received by those participants over the years have matched the stated records.

Before we begin this examination, I would like you to imagine a national coin-flipping contest. Let's assume we get 225 million Americans up tomorrow morning and we ask them all to wager a dollar. They go out in the morning at sunrise, and they all call the flip of a coin. If they call correctly, they win a dollar from those who called wrong. Each day the losers drop out, and on the subsequent day the stakes build as all previous winnings are put on the line.

After ten flips on ten mornings, there will be approximately 220,000 people in the United States who have correctly called ten flips in a row. They each will have won a little over $1,000.

Now this group will probably start getting a little puffed up about this, human nature being what it is. They may try to be modest, but at cocktail parties they will occasionally admit to attractive members of the opposite sex what their technique is, and what marvelous insights they bring to the field of flipping.

Assuming that the winners are getting the appropriate rewards from the losers, in another ten days we will have 215 people who have successfully called their coin flips 20 times in a row and who, by this exercise, each have turned one dollar into a little over $1 million. $225 million would have been lost, $225 million would have been won.

By then, this group will really lose their heads. They will probably write books on "How I Turned a Dollar into a Million in Twenty Days Working Thirty Seconds a Morning." Worse yet, they'll probably start jetting around the country attending seminars on efficient coin-flipping and tackling skeptical professors with, "If it can't be done, why are there 215 of us?"

By then some business school professor will probably be rude enough to bring up the fact that if 225 million orangutans had engaged in a similar exercise, the results would be much the same — 215 egotistical orangutans with 20 straight winning flips.

I would argue, however, that there are some important differences in the examples I am going to present. For one thing, if (a) you had taken 225 million orangutans distributed roughly as the U.S. population is; if (b) 215 winners were left after 20 days; and if (c) you found that 40 came from a particular zoo in Omaha, you would be pretty sure you were on to something. So you would probably go out and ask the zookeeper about what he's feeding them, whether they had special exercises, what books they read, and who knows what else. That is, if you found any really extraordinary concentrations of success, you might want to see if you could identify concentrations of unusual characteristics that might be causal factors.

Scientific inquiry naturally follows such a pattern. If you were trying to analyze possible causes of a rare type of cancer — with, say, 1,500 cases a year in the United States — and you found that 400 of them occurred in some little mining town in Montana, you would get very interested in the water there, or the occupation of those afflicted, or other variables. You know it's not random chance that 400 come from a small area. You would not necessarily know the causal factors, but you would know where to search.

I submit to you that there are ways of defining an origin other than geography. In addition to geographical origins, there can be what I call an intellectual origin. I think you will find that a disproportionate number of successful coin-flippers in the investment world came from a very small intellectual village that could be called Graham-and-Doddsville. A concentration of winners that simply cannot be explained by chance can be traced to this particular intellectual village.

Conditions could exist that would make even that concentration unimportant. Perhaps 100 people were simply imitating the coin-flipping call of some terribly persuasive personality. When he called heads, 100 followers automatically called that coin the same way. If the leader was part of the 215 left at the end, the fact that 100 came from the same intellectual origin would mean nothing.

You would simply be identifying one case as a hundred cases. Similarly, let's assume that you lived in a strongly patriarchal society and every family in the United States conveniently consisted of ten members. Further assume that the patriarchal culture was so strong that, when the 225 million people went out the first day, every member of the family identified with the father's call.

Now, at the end of the 20-day period, you would have 215 winners, and you would find that they came from only 21.5 families. Some naive types might say that this indicates an enormous hereditary factor as an explanation of successful coin-flipping. But, of course, it would have no significance at all because it would simply mean that you didn't have 215 individual winners, but rather 21.5 randomly distributed families who were winners.

In this group of successful investors that I want to consider, there has been a common intellectual patriarch, Ben Graham. But the children who left the house of this intellectual patriarch have called their "flips" in very different ways. They have gone to different places and bought and sold different stocks and companies, yet they have had a combined record that simply cannot be explained by random chance.

It certainly cannot be explained by the fact that they are all calling flips identically because a leader is signaling the calls for them to make. The patriarch has merely set forth the intellectual theory for making coin-calling decisions, but each student has decided on his own manner of applying the theory.

The common intellectual theme of the investors from Graham-and-Doddsville is this: they search for discrepancies between the value of a business and the price of small pieces of that business in the market. Essentially, they exploit those discrepancies without the efficient market theorist's concern as to whether the stocks are bought on Monday or Thursday, or whether it is January or July, etc.

Incidentally, when businessmen buy businesses, which is just what our Graham & Dodd investors are doing through the medium of marketable stocks — I doubt that many are cranking into their purchase decision the day of the week or the month in which the transaction is going to occur. If it doesn't make any difference whether all of a business is being bought on a Monday or a Friday, I am baffled why academicians invest extensive time and effort to see whether it makes a difference when buying small pieces of those same businesses.

Our Graham & Dodd investors, needless to say, do not discuss beta, the capital asset pricing model, or covariance in returns among securities. These are not subjects of any interest to them. In fact, most of them would have difficulty defining those terms. The investors simply focus on two variables: price and value.

I always find it extraordinary that so many studies are made of price and volume behavior, the stuff of chartists. Can you imagine buying an entire business simply because the price of the business had been marked up substantially last week and the week before? Of course, the reason a lot of studies are made of these price and volume variables is that now, in the age of computers, there are almost endless data available about them.

It isn't necessarily because such studies have any utility; it's simply that the data are there and academicians have worked hard to learn the mathematical skills needed to manipulate them. Once these skills are acquired, it seems sinful not to use them, even if the usage has no utility or negative utility. As a friend said, to a man with a hammer, everything looks like a nail.

I think the group that we have identified by a common intellectual home is worthy of study. Incidentally, despite all the academic studies of the influence of such variables as price, volume, seasonality, capitalization size, etc., upon stock performance, no interest has been evidenced in studying the methods of this unusual concentration of value-oriented winners.

I begin this study of results by going back to a group of four of us who worked at Graham-Newman Corporation from 1954 through 1956. There were only four — I have not selected these names from among thousands. I offered to go to work at Graham-Newman for nothing after I took Ben Graham's class, but he turned me down as overvalued. He took this value stuff very seriously! After much pestering he finally hired me.

There were three partners and four of us at the "peasant" level. All four left between 1955 and 1957 when the firm was wound up, and it's possible to trace the record of three.

The first example (see Table 1) is that of Walter Schloss. Walter never went to college, but took a course from Ben Graham at night at the New York Institute of Finance. Walter left Graham-Newman in 1955 and achieved the record shown here over 28 years. Here is what 'Adam Smith' — after I told him about Walter — wrote about him in *Supermoney* (1972):

He has no connections or access to useful information. Practically no one in Wall Street knows him and he is not fed any ideas. He looks up the numbers in the manuals and sends for the annual reports, and that's about it.

In introducing me to (Schloss) Warren had also, to my mind, described himself. 'He never forgets that he is handling other people's money, and this reinforces his normal strong aversion to loss.' He has total integrity and a realistic picture of himself. Money is real to him and stocks are real — and from this flows an attraction to the 'margin of safety' principle.

Walter has diversified enormously, owning well over 100 stocks currently. He knows how to identify securities that sell at considerably less than their value to a private owner. And that's all he does. He doesn't worry about whether it it's January, he doesn't worry about whether it's

Monday, he doesn't worry about whether it's an election year. He simply says, if a business is worth a dollar and I can buy it for 40 cents, something good may happen to me. And he does it over and over and over again. He owns many more stocks than I do — and is far less interested in the underlying nature of the business; I don't seem to have very much influence on Walter. That's one of his strengths; no one has much influence on him.

TABLE 1 - Walter J. Schloss

Year	S&P Overall Gain, Including Dividends (%)	WJS Partners Overall Gain per year (%)	WJS Partnership Overall Gain per year (%)
1956	7.5	5.1	6.8
1957	-10.5	-4.7	-4.7
1958	42.1	42.1	54.6
1959	12.7	17.5	23.3
1960	-1.6	7.0	9.3
1961	26.4	21.6	28.8
1962	-10.2	8.3	11.1
1963	23.3	15.1	20.1
1964	16.5	17.1	22.8
1965	13.1	26.8	35.7
1966	-10.4	0.5	0.7
1967	26.8	25.8	34.4
1968	10.6	26.6	35.5
1969	-7.5	-9.0	-9.0
1970	2.4	-8.2	-8.2
1971	14.9	25.5	28.3
1972	19.8	11.6	15.5
1973	-14.8	-8.0	-8.0
1974	-26.6	-6.2	-6.2
1975	36.9	42.7	52.2
1976	22.4	29.4	39.2
1977	-8.6	25.8	34.4
1978	7.0	36.6	48.8
1979	17.6	29.8	39.7
1980	32.1	23.3	31.1
1981	-6.7	18.4	24.5
1982	20.2	24.1	32.1
1983	22.8	38.4	51.2
1984 1st Qtr.	-2.3	0.8	1.1

Standard & Poor's 28¼ year compounded gain	887.2%
WJS Limited Partners 28¼ year compounded gain	6,678.8%
WJS Partnership 28¼ year compounded gain	23,104.7%
Standard & Poor's 28¼ year annual compounded rate	8.4%
WJS Limited Partners 28¼ year annual compounded rate	16.1%
WJS Partnership 28¼ year annual compounded rate	21.3%

During the history of the Partnership it has owned over 800 issues and, at most times, has had at least 100 positions. Present assets under management approximate $45 million. The difference between returns of the partnership and returns of the limited partners is due to allocations to the general partner for management.

The second case is Tom Knapp who also worked at Graham-Newman with me. Tom was a chemistry major at Princeton before the war; when he came back from the war, he was a beach bum. And then one day he read that Dave Dodd was giving a night course in investments at Columbia.

Tom took it on a noncredit basis, and he got so interested in the subject from taking that course that he came up and enrolled at Columbia Business School, where he got the MBA degree. He took Dodd's course again, and took Ben Graham's course.

Incidentally, 35 years later I called Tom to ascertain some of the facts involved here and I found him on the beach again. The only difference is that now he owns the beach!

In 1968, Tom Knapp and Ed Anderson, also a Graham disciple, along with one or two other fellows of similar persuasion, formed Tweedy, Browne Partners, and their investment results appear in Table 2.

Tweedy, Browne built that record with very wide diversification. They occasionally bought control of businesses, but the record of the passive investments is equal to the record of the control investments.

TABLE 2 - Tweedy, Browne Inc.

Year	Dow Jones* (%)	S&P 500* (%)	TBK Overall (%)	TBK Limited Partners (%)
Period Ended Sep 30, 1968 (9 mos.)	6.0	8.8	27.6	22.0
1969	-9.5	-6.2	12.7	10.0
1970	-2.5	-6.1	-1.3	-1.9
1971	20.7	20.4	20.9	16.1
1972	11.0	15.5	14.6	11.8
1973	2.9	1.0	8.3	7.5
1974	-31.8	-38.1	1.5	1.5
1975	36.9	37.8	28.8	22.0
1976	29.6	30.1	40.2	32.8
1977	-9.9	-4.0	23.4	18.7
1978	8.3	11.9	41.0	32.1
1979	7.9	12.7	25.5	20.5
1980	13.0	21.1	21.4	17.3
1981	-3.3	-2.7	14.4	11.6
1982	12.5	10.1	10.2	8.2
1983	44.5	44.3	35.0	28.2
Total Return 15 years	191.8%	238.5%	1,661.2%	936.4%

Standard & Poor's 15¾ year annual compounded rate	7.0%
TBK Limited Partners 15¾ year annual compounded rate	16.0%
TBK Overall 15¾ year annual compounded rate	20.0%

Includes dividends paid for both Standard & Poor's 500 Composite Index and Dow Jones Industrial Average.

Table 3 describes the third member of the group who formed Buffett Partnership in 1957. The best thing he did was to quit in 1969. Since then, in a sense, Berkshire Hathaway has been a continuation of the partnership in some respects. There is no single index I can give you that I would feel would be a fair test of investment management at Berkshire. But I think that any way you figure it, it has been satisfactory.

TABLE 3 - Buffett Partnership, Ltd.

Year	Overall Results from Dow (%)	Partnership Results (%)	Limited Partners' Results (%)
1957	-8.4	10.4	9.3
1958	38.5	40.9	32.2
1959	20.0	25.9	20.9
1960	-6.2	22.8	18.6
1961	22.4	45.9	35.9
1962	-7.6	13.9	11.9
1963	20.6	38.7	30.5
1964	18.7	27.8	22.3
1965	14.2	47.2	36.9
1966	-15.6	20.4	16.8
1967	19.0	35.9	28.4
1968	7.7	58.8	45.6
1969	-11.6	6.8	6.6

On a cumulative or compound basis, the results are:

Year	Overall Results from Dow (%)	Partnership Results (%)	Limited Partners' Results (%)
1957	-8.4	10.4	9.3
1957-58	26.9	55.6	44.5
1957-59	52.3	95.9	74.7
1957-60	42.9	140.6	107.2
1957-61	74.9	251.0	181.6
1957-62	61.6	299.8	215.1
1957-63	94.9	454.5	311.2
1957-64	131.3	608.7	402.9
1957-65	164.1	943.2	588.5
1957-66	122.9	1156.0	704.2
1957-67	165.3	1606.9	932.6
1957-68	185.7	2610.6	1403.5
1957-69	152.6	2794.9	1502.7
Annual Compounded Rate	7.4	29.5	23.8

Table 4 shows the record of the Sequoia Fund, which is managed by a man whom I met in 1951 in Ben Graham's class, Bill Ruane. After getting out of Harvard Business School, he went to Wall Street.

Then he realized that he needed to get a real business education so he came up to take Ben's course at Columbia, where we met in early 1951.

Bill's record from 1951 to 1970, working with relatively small sums, was far better than average. When I wound up Buffett Partnership, I asked Bill if he would set up a fund to handle all of our partners, so he set up the Sequoia Fund.

He set it up at a terrible time, just when I was quitting. He went right into the two-tier market and all the difficulties that made for comparative performance for value-oriented investors. I am happy to say that my partners, to an amazing degree, not only stayed with him but added money, with the happy result shown here.

TABLE 4 - Sequoia Fund, Inc.

Year	Annual Percentage Change**	
	Sequoia Fund (%)	S&P 500 Index* (%)
1970 (from July 15)	12.1	20.6
1971	13.5	14.3
1972	3.7	18.9
1973	-24.0	-14.8
1974	-15.7	-26.4
1975	60.5	37.2
1976	72.3	23.6
1977	19.9	-7.4
1978	23.9	6.4
1979	12.1	18.2
1980	12.6	32.3
1981	21.5	-5.0
1982	31.2	21.4
1983	27.3	22.4
1984 (first quarter)	-1.6	-2.4
Entire Period	775.3%	270.0%
Compound Annual Return	17.2%	10.0%
Plus 1% Management Fee	1.0%	–
Gross Investment Return	18.2%	10.0%

*Includes dividends (and capital gains distributions in the case of Sequoia Fund) treated as though reinvested.
** These figures differ slightly from the S&P figures in Table 1 because of a difference in calculation of reinvested dividends.

There's no hindsight involved here. Bill was the only person I recommended to my partners, and I said at the time that if he achieved a four point per annum advantage over the Standard & Poor's, that would be solid performance.

Bill has achieved well over that, working with progressively larger sums of money. That makes things much more difficult. Size is the anchor of performance. There is no question about it. It doesn't mean you can't do better than average when you get larger, but the margin shrinks. And

if you ever get so you're managing two trillion dollars, and that happens to be the amount of the total equity valuation in the economy, don't think that you'll do better than average!

I should add that, in the records we've looked at so far, throughout this whole period there was practically no duplication in these portfolios. These are men who select securities based on discrepancies between price and value, but they make their selections very differently.

Walter's largest holdings have been such stalwarts as Hudson Pulp & Paper and Jedd Highland Coal and New York Trap Rock Company and all those other names that come instantly to mind to even a casual reader of the business pages.

Tweedy Browne's selections have sunk even well below that level in terms of name recognition. On the other hand, Bill has worked with big companies. The overlap among these portfolios has been very, very low. These records do not reflect one guy calling the flip and fifty people yelling out the same thing after him.

Table 5 is the record of a friend of mine who is a Harvard Law graduate, who set up a major law firm. I ran into him in about 1960 and told him that law was fine as a hobby, but he could do better.

He set up a partnership quite the opposite of Walter's. His portfolio was concentrated in very few securities and therefore, his record was much more volatile, but it was based on the same discount from-value approach.

He was willing to accept greater peaks and valleys of performance, and he happens to be a fellow whose whole psyche goes toward concentration, with the results shown. Incidentally, this record belongs to Charlie Munger, my partner for a long time in the operation of Berkshire Hathaway. When he ran his partnership, however, his portfolio holdings were almost completely different from mine and the other fellows mentioned earlier.

TABLE 5 - Charles Munger

Year	Mass. Inv. Trust (%)	Investors Stock (%)	Lehman (%)	Tri-Cont. (%)	Dow (%)	Overall Partnership (%)	Limited Partners (%)
			Yearly Results (1)				
1962	-9.8	-13.4	-14.4	-12.2	-7.6	30.1	20.1
1963	20.0	16.5	23.8	20.3	20.6	71.1	47.8
1964	15.9	14.3	13.6	13.3	18.7	49.7	33.1
1965	10.2	98	19.0	10.7	14.2	8.4	6.0
1966	-7.7	-9.9	-2.6	-6.9	-15.7	12.4	8.3
1967	20.0	22.8	28.0	25.4	19.0	56.2	37.5
1968	10.3	8.1	6.7	6.8	7.7	40.4	27.0
1969	-4.8	-7.9	-1.9	0.1	-11.6	28.3	21.3
1970	0.6	-4.1	-7.2	-1.0	8.7	-0.1	-0.1
1971	9.0	16.8	26.6	22.4	9.8	25.4	20.6
1972	11.0	15.2	23.7	21.4	18.2	8.3	7.3
1973	-12.5	-17.6	-14.3	-21.3	-13.1	-31.9	-31.9
1974	-25.5	-25.6	-30.3	-27.6	-23.1	-31.5	-31.5
1975	32.9	33.3	30.8	35.4	44.4	73.2	73.2
			Compound Results (2)				
1962	-9.8	-13.4	-14.4	-12.2	-7.6	30.1	20.1
1962-3	8.2	0.9	6.0	5.6	11.5	123.4	77.5
1962-4	25.4	15.3	20.4	19.6	32.4	234.4	136.3
1962-5	38.2	26.6	43.3	32.4	51.2	262.5	150.5
1962-6	27.5	14.1	39.5	23.2	27.5	307.5	171.3
1962-7	53.0	40.1	78.5	54.5	51.8	536.5	273.0
1962-8	68.8	51.4	90.5	65.0	63.5	793.6	373.7
1962-9	60.7	39.4	86.9	65.2	44.5	1046.5	474.6
1962-70	61.7	33.7	73.4	63.5	57.1	1045.4	474.0
1962-71	76.3	56.2	119.5	100.1	72.5	1336.3	592.2
1962-72	95.7	79.9	171.5	142.9	103.9	1455.5	642.7
1962-73	71.2	48.2	132.7	91.2	77.2	959.3	405.8
1962-74	27.5	10.3	62.2	38.4	36.3	625.6	246.5
1962-75	69.4	47.0	112.2	87.4	96.8	1156.7	500.1
Average Annual Compounded Rate	3.8	2.8	5.5	4.6	5.0	19.8	13.7

Table 6 is the record of a fellow who was a pal of Charlie Munger's — another non-business school type — who was a math major at USC. He went to work for IBM after graduation and was an IBM salesman for a while.

After I got to Charlie, Charlie got to him. This happens to be the record of Rick Guerin. Rick, from 1965 to 1983, against a compounded gain of 316 percent for the S&P, came off with 22,200 percent, which probably because he lacks a business school education, he regards as statistically significant.

TABLE 6 - Pacific Partners, Ltd.

Year	S&P 500 Index (%)	Limited Partnership Results (%)	Overall Partnership Results (%)
1965	12.4	21.2	32.0
1966	-10.1	24.5	36.7
1967	23.9	120.1	180.1
1968	11.0	114.6	171.9
1969	-8.4	64.7	97.1
1970	3.9	-7.2	-7.2
1971	14.6	10.9	16.4
1972	18.9	12.8	17.1
1973	-14.8	-42.1	-42.1
1974	-26.4	-34.4	-34.4
1975	37.2	23.4	31.2
1976	23.6	127.8	127.8
1977	-7.4	20.3	27.1
1978	6.4	28.4	37.9
1979	18.2	36.1	48.2
1980	32.3	18.1	24.1
1981	-5.0	6.0	8.0
1982	21.4	24.0	32.0
1983	22.4	18.6	24.8

Standard & Poor's 19 year compounded gain	316.4%
Ltd. Partnership 19 year compounded gain	5,530.2%
Overall Partnership 19 year compounded gain	22,200.0%
Standard & Poor's 19 year compounded rate	7.8%
Ltd. Partnership 19 year annual compounded rate	23.6%
Overall Partnership 19 year annual compounded rate	32.9%

One sidelight here: it is extraordinary to me that the idea of buying dollar bills for 40 cents takes immediately to people or it doesn't take at all. It's like an inoculation. If it doesn't grab a person right away, I find that you can talk to him for years and show him records, and it doesn't make any difference.

They just don't seem able to grasp the concept, simple as it is. A fellow like Rick Guerin, who had no formal education in business, understands immediately the value approach to investing and he's applying it five minutes later. I

've never seen anyone who became a gradual convert over a ten-year period to this approach. It doesn't seem to be a matter of IQ or academic training. It's instant recognition, or it is nothing.

Table 7 is the record of Stan Perlmeter. Stan was a liberal arts major at the University of Michigan who was a partner in the advertising agency of Bozell & Jacobs.

TABLE 7 - Perlmeter Investments

Year	PIL Overall (%)	Limited Partner (%)
8/1-12/31/65	40.6	32.5
1966	6.4	5.1
1967	73.5	58.8
1968	65.0	52.0
1969	-13.8	-13.8
1970	-6.0	-6.0
1971	55.7	49.3
1972	23.6	18.9
1973	-28.1	-28.1
1974	-12.0	-12.0
1975	38.5	38.5
1/1-10/31/76	38.2	34.5
11/1/76-10/31/77	30.3	25.5
11/1/77-10/31/78	31.8	26.6
11/1/78-10/31/79	34.7	28.9
11/1/79-10/31/80	41.8	34.7
11/1/80-10/31/81	4.0	3.3
11/1/81-10/31/82	29.8	25.4
11/1/82-10/31/83	22.2	18.4

Total Partnership Percentage Gain 8/1/65 through 10/31/83	4277.2%
Limited Partners Percentage Gain 8/1/65 through 10/31/83	2309.5%
Annual Compound Rate of Gain Overall Partnership	23.0%
Annual Compound Rate of Gain Limited Partners	19.0%
Dow Jones Industrial Average 7/31/65 (Approximate)	882
Dow Jones Industrial Average 10/31/83 (Approximate)	1225
Approximate Compound Rate of Gain of DJI including dividends	7%

We happened to be in the same building in Omaha. In 1965 he figured out I had a better business than he did, so he left advertising. Again, it took five minutes for Stan to embrace the value approach.

Perimeter does not own what Walter Schloss owns. He does not own what Bill Ruane owns. These are records made independently. But every time Perimeter buys a stock it's because he's getting more for his money than he's paying.

That's the only thing he's thinking about. He's not looking at quarterly earnings projections, he's not looking at next year's earnings, he's not thinking about what day of the week it is, he doesn't care what investment research from any place says, he's not interested in price momentum, volume, or anything. He's simply asking: What is the business worth?

Table 8 and Table 9 are the records of two pension funds I've been involved in. They are not selected from dozens of pension funds with which I have had involvement; they are the only two I have influenced. In both cases I have steered them toward value-oriented managers. Very, very few pension funds are managed from a value standpoint.

Table 8 is the Washington Post Company's Pension Fund. It was with a large bank some years ago, and I suggested that they would do well to select managers who had a value orientation.

TABLE 8 - The Washington Post Company,
Master Trust, December 31, 1983

	Current Quarter		Year Ended		2 Years Ended*		3 Years Ended*		5 Years Ended*	
	% Ret.	Rank	% Ret.	Rank	% Ret.	Rank	% Ret.	Rank	% Ret.	Rank
All Investments										
Manager	4.1	2	22.5	10	20.6	40	18.0	10	20.2	3
Manager	3.2	4	34.1	1	33.0	1	28.2	1	22.6	1
Manager	5.4	1	22.2	11	28.4	3	24.5	1	-	-
Master Trust	3.9	1	28.1	1	28.2	1	24.3	1	21.8	1
Common Stock										
Manager	5.2	1	32.1	9	26.1	27	21.2	11	26.5	7
Manager	3.6	5	52.9	1	46.2	1	37.8	1	29.3	3
Manager	6.2	1	29.3	14	30.8	10	29.3	3	-	-
Master Trust	4.7	1	41.2	1	37.0	1	30.4	1	27.6	1
Bonds										
Manager	2.7	8	17.0	1	26.6	1	19.0	1	12.2	2
Manager	1.6	46	7.6	48	18.3	53	12.7	84	7.4	86
Manager	3.2	4	10.4	9	24.0	3	18.9	1	-	-
Master Trust	2.2	11	9.7	14	21.1	14	15.2	24	9.3	30
Bonds & Cash Equivalents										
Manager A	2.5	15	12.0	5	16.1	64	15.5	21	12.9	9
Manager B	2.1	28	9.2	29	17.1	47	14.7	41	10.8	44
Manager C	3.1	6	10.2	17	22.0	2	21.6	1	-	-
Master Trust (All Managers)	2.4	14	10.2	17	17.8	20	16.2	2	12.5	9

*Annualized
Rank indicates the fund's performance against the A.C. Becker universe.
Rank is stated as a percentile: 1 = best performance, 100 = worst.

As you can see, overall, they have been in the top percentile ever since they made the change. The Post told the managers to keep at least 25 percent of these funds in bonds, which would not have been necessarily the choice of these managers.

So, I've included the bond performance simply to illustrate that this group has no particular expertise about bonds. They wouldn't have said they did. Even with this drag of 25 percent of

their fund in an area that was not their game, they were in the top percentile of fund management. The Washington Post experience does not cover a terribly long period, but it does represent many investment decisions by three managers who were not identified retroactively.

Table 9 is the record of the FMC Corporation fund. I don't manage a dime of it myself, but I did, in 1974, influence their decision to select value-oriented managers. Prior to that time, they had selected managers much the same way as most larger companies.

They now rank number one in the Becker survey of pension funds for their size over the period of time subsequent to this "conversion" to the value approach.

Last year they had eight equity managers of any duration beyond a year. Seven of them had a cumulative record better than the S&P. All eight had a better record last year than the S&P. The net difference now between a median performance and the actual performance of the FMC fund over this period is $243 million.

FMC attributes this to the mindset given to them about the selection of managers. Those managers are not the managers I would necessarily select but they have the common denominators of selecting securities based on value.

TABLE 9 - FMC Corporation Pension Fund, Annual Rate of Return (Percent)

Period Ending	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years
				FMC					
1983	23.0								*17.1
1982	22.8	13.6	16.0	16.6	15.5	12.3	13.9	16.3	
1981	5.4	13.0	15.3	13.8	10.5	12.6	15.4		
1980	21.0	19.7	16.8	11.7	14.0	17.3			
1979	18.4	14.7	8.7	12.3	16.5				
1978	11.2	4.2	10.4	16.1					
1977	-2.3	9.8	17.8						
1976	23.8	29.3							
1975	35.0	*18.5 from equities only							
				Becker large plan median					
1983	15.6								12.6
1982	21.4	11.2	13.9	13.9	12.5	9.7	10.9	12.3	
1981	1.2	10.8	11.9	10.3	7.7	8.9	10.9		
1980	20.9	NA	NA	NA	10.8	NA			
1979	13.7	NA	NA	NA	11.1				
1978	6.5	NA	NA	NA					
1977	-3.3	NA	NA						
1976	17.0	NA							
1975	24.1								
				S&P 500					
1983	22.8								15.6
1982	21.5	7.3	15.1	16.0	14.0	10.2	12.0	14.9	
1981	-5.0	12.0	14.2	12.2	8.1	10.5	14.0		
1980	32.5	25.3	18.7	11.7	14.0	17.5			
1979	18.6	12.4	5.5	9.8	14.8				
1978	6.6	-0.8	6.8	13.7					
1977	-7.7	6.9	16.1						
1976	23.7	30.3							
1975	37.2								

So these are nine records of "coin-flippers" from Graham-and-Doddsville. I haven't selected them with hindsight from among thousands. It's not like I am reciting to you the names of a bunch of lottery winners — people I had never heard of before they won the lottery. I selected these men years ago based upon their framework for investment decision-making.

I knew what they had been taught and additionally I had some personal knowledge of their intellect, character, and temperament. It's very important to understand that this group has assumed far less risk than average; note their record in years when the general market was weak. While they differ greatly in style, these investors are, mentally, *always buying the business, not buying the stock.*

A few of them sometimes buy whole businesses far more often they simply buy small pieces of businesses. Their attitude, whether buying all or a tiny piece of a business, is the same. Some of them hold portfolios with dozens of stocks; others concentrate on a handful. But all exploit the difference between the market price of a business and its intrinsic value.

I'm convinced that there is much inefficiency in the market. These Graham-and-Doddsville investors have successfully exploited gaps between price and value. When the price of a stock can be influenced by a "herd" on Wall Street with prices set at the margin by the most emotional person, or the greediest person, or the most depressed person, it is hard to argue that the market always prices rationally. In fact, market prices are frequently nonsensical.

I would like to say one important thing about risk and reward. Sometimes risk and reward are correlated in a positive fashion. If someone were to say to me, "I have here a six-shooter and I have slipped one cartridge into it. Why don't you just spin it and pull it once? If you survive, I will give you $1 million." I would decline — perhaps stating that $1 million is not enough. Then he might offer me $5 million to pull the trigger twice — now that would be a positive correlation between risk and reward!

The exact opposite is true with value investing. If you buy a dollar bill for 60 cents, it's riskier than if you buy a dollar bill for 40 cents, but the expectation of reward is greater in the latter case. The greater the potential for reward in the value portfolio, the less risk there is.

One quick example: The Washington Post Company in 1973 was selling for $80 million in the market. At the time, that day, you could have sold the assets to any one of ten buyers for not less than $400 million, probably appreciably more. The company owned the Post, Newsweek, plus several television stations in major markets. Those same properties are worth $2 billion now, so the person who would have paid $400 million would not have been crazy.

Now, if the stock had declined even further to a price that made the valuation $40 million instead of $80 million, its beta would have been greater. And to people that think beta measures risk, the cheaper price would have made it look riskier. This is truly Alice in Wonderland. I have never

been able to figure out why it's riskier to buy $400 million worth of properties for $40 million than $80 million.

And, as a matter of fact, if you buy a group of such securities and you know anything at all about business valuation, there is essentially no risk in buying $400 million for $80 million, particularly if you do it by buying ten $40 million piles of $8 million each. Since you don't have your hands on the $400 million, you want to be sure you are in with honest and reasonably competent people, but that's not a difficult job.

You also have to have the knowledge to enable you to make a very general estimate about the value of the underlying businesses. But you do not cut it close. That is what Ben Graham meant by having a margin of safety. You don't try and buy businesses worth $83 million for $80 million. You leave yourself an enormous margin. When you build a bridge, you insist it can carry 30,000 pounds, but you only drive 10,000-pound trucks across it. And that same principle works in investing.

In conclusion, some of the more commercially minded among you may wonder why I am writing this article. Adding many converts to the value approach will perforce narrow the spreads between price and value. I can only tell you that the secret has been out for 50 years, ever since Ben Graham and Dave Dodd wrote Security Analysis, yet I have seen no trend toward value investing in the 35 years that I've practiced it.

There seems to be some perverse human characteristic that likes to make easy things difficult. The academic world, if anything, has actually backed away from the teaching of value investing over the last 30 years. It's likely to continue that way. Ships will sail around the world, but the Flat Earth Society will flourish. There will continue to be wide discrepancies between price and value in the marketplace, and those who read their Graham & Dodd will continue to prosper.

| APPENDIX II:
THE MAGIC OF COMPOUND
INTEREST

THE WISE MAN AND THE CHESSBOARD

Once upon a time in India, a poor but very wise man went to his king with a new invention: the game of chess.

The king loved this game of queens and knights so much that he brought the poor wise to his palace. "This is a wonderful game you've invented," the king said to the wise man. "What would you like in return? How about a year's supply of rice? Whatever you want, just name your reward!"

The wise man responded, "Your majesty, that is incredibly generous of you. But my wishes are very simple. Please give me just one grain of race today, representing the first square of the chessboard, and only two grains of rice tomorrow, representing the second square. On the third day, I would like just double the number of grains received on the second day, and so on until you have fairly compensated me for the 64 squares of the chessboard."

The king thought him a fool to pass up on a year's supply of rice in exchange for a few grains of rice over two months and immediately agreed to the wise man's proposition. The king looked on with sympathy as the poor wise man walked home to his family holding one grain of rice in his palm.

On the following day, the wise man returned to the king's palace and collected his two grains of rice for the second square of the chessboard. On the third day, the wise man collected four grains of rice – not nearly enough to feed his family. On the fourth day, he returned with eight grains of rice.

Meanwhile, the man's wife was becoming increasingly worried about their hungry children, and she pleaded with her husband to find a way to back out of the deal with the king. "Beg his majesty to forgive our foolishness," she said. "Maybe he will still give us half a year's supply." But the wise man refused to alter the deal, and on the fifth day he returned home with a measly sixteen grains of rice.

By the eighth day, the wise man had been paid off for one row of the chessboard. He brought home 128 grains of rice that night, still not enough to feed a family of four. Unbeknownst to him, however, his wife went to the king on the same day begging him to cancel the deal. But the king looked on with pity as he turned her away. "I'm sorry," the king said to the wife. "Your husband must honor his end of the bargain, just like I must honor mine. This is the code we live by." The wife returned home to her hungry family.

It took another week before the wise man had enough to feed his family, when he returned home with 32,768 grains of rice. Now his wife was smiling, as she had come to understand what was happening.

On the 24th day (the last square of the third row), the wise man came home with 8.4 million grains of rice.

By the halfway mark, the man owned all the rice in the kingdom.

And on the 64th day, the wise man was owed 9,223,372,036,854,780,000 grains of rice – more rice than the entire kingdom could produce in two thousand years.

Needless to say, the wise man's family was no longer hungry.

THE MAGIC OF COMPOUNDING

The moral of the story about the wise man and the chessboard is that humans are very much like the king and the wise man's wife: (a) we think linearly, not exponentially, and (b) we focus on the short-term to the detriment of the long-term.

It is important to note the role of the exponent n in our PV equation and the difference between simple and compounded interest. Simple interest is calculated only on the principal amount (Principal x n x i). If your buddy asks you to loan him some money you might say, "Sure, I'll loan you $1,000. Pay me back in 3 years plus $50 per year (a 5% simple interest rate). In three years, your friend would pay you $1,150 ($1000 x 3 x .05 = $150, plus principal of $1,000). Now let's suppose you told your friend, "Sure, I'll loan you $1,000. Pay me back in 3 years plus 5% interest per year (compounded interest)." Using our new FV formulas, FV = $1,000 x (1.05)^3 = $1,157.63. What?! How'd we get $7.63 more? Let's break out the formula by each year:

Year 0: FV = $1,000 x (1.05)^0 = $1,000

Year 1: FV = $1,000 x (1.05)^1 = $1,000 x (1.05) = $1,050

Year 2: FV = $1,000 x (1.05)^2 = $1,000 x (1.05) x (1.05) = $1,050 x (1.05) = $1,102.50

Year 3: FV = $1,000 x (1.05)^3 = $1,000 x (1.05) x (1.05) x (1.05) = $1,102.50 x (1.05) = $1,157.63

Or,

___

Year 0: PV = $1,000

Year 1: FV = $1,000 + $1,000 x (.05) = $1,000 + $50

 = $1,050

Year 2: FV = $1,000 + $50 + $1000 x (.05) + $50 x (.05) = $1,000 + $50 + $50 + $2.5

 = $1,102.50

Year 3: FV = $1,000 + $50 + $50 + $2.5 + $1,000 x (.05) + $50 x (.05) + $50 x (0.5) + $2.5 x (.05)
      = $1,000 + $50 + $50 + $2.5 + $50 + $2.5 + $2.5 + $0.13

 = $1,157.63

___

As you can see in the above calculations, your <u>interest is earning interest</u>, and such is the magic of compounding. In Year 1, you get $50 in interest on the original $1,000. But in Year 2, you earn $50 on the original $1,000 <u>plus</u> $2.50 in interest on the $50 of interest earned in Year 1. In Year 3, you also earn $0.125 on the $2.50 earned in Year 2 <u>plus</u> $2.50 in interest on the $50 of interest earned in Year 1 plus $50 on the original $1,000. And so on.

The effect of compounding is more pronounced at greater interest rates and for longer periods of time. For example, $1,000 at a 5% simple interest rate becomes $1,750 in 15 years; but at a 5% compounded interest rate it grows to be $2,078.93. At a 15% simple interest rate over 30 years, $1,000 grows into $5,500; but at a 15% compounded interest rate it explodes into an enormous $66,211.77!

This is the reason why Berkshire Hathaway's preferred holding period is forever. It allows Buffett's and Munger's investments to compound continuously. It is also the reason why saving for retirement when you're young almost always beats saving when you're older, even if the dollar amounts are less and the pay-in period is shorter.

APPENDIX III: MERGER ARBITRAGE

MERGER ARBITRAGE

Warren Buffett is famous for his long-term investment strategy. In fact, his favorite holding period is forever.

But what many people don't know is that Buffett often engaged in some very short-term investing, especially in his early partnership days.

He called this type of investing "workouts".

Workouts, also sometimes called "special situations," includes things such as merger arbitrage, spinoffs, carveouts, and reorganizations.

Here's what Warren Buffett had to say about workouts from his 1964 letter.

Workouts – *These are securities with a timetable. They arise from corporate activity – sell outs, mergers, reorganizations, spinoffs etc. In this category we are not talking about rumors or "inside information" pertaining to such developments, but to publicly announced activities of this sort. We wait until we can read it in the paper.*

The risk pertains not primarily to general market behavior (although that is sometimes tied in to a degree), but instead to something upsetting the applecart so that the expected development does not materialize. Such killjoys could include anti-trust or other negative government action, stockholder disapproval, withholding of tax rulings, etc.

The gross profits in many workouts appear quite small. It's a little like looking for parking meters with some time left on them. However, the predictability coupled with a short holding period produces quite decent average annual rates of return after allowance for the occasional substantial loss.

This category produces more steady absolute profits from year to year than generals do. In years of market decline it should usually pile up a big edge for us; during bull market it will probably be a drag on performance. On the long-term basis, I expect the workouts to achieve the same sort of margin over the Dow attained by generals.

Special situations are a staple of Seth Klarman's investing strategy. And Benjamin Graham also invested in workouts, and these types of investments were a big reason why both Benjamin Graham and Warren Buffett were so successful in their early days.

Let's zero in on merger arbitrage (also sometimes called risk arbitrage), which is an investment strategy that you can start using today.

WHAT IS A MERGER?

Before we talk about merger arbitrage, let me quickly explain what a merger is.

Technically, a merger occurs when two companies combine into one new company (Company A + Company B = Company C). An acquisition occurs when one company buys another company (Company A + Company B = Company A including B). But don't get hung up on the details here – merger arbitrage applies to both mergers and acquisitions.

Companies buy each other all the time. They do this to increase their scale, their profits, to improve their competitive positioning, or sometimes – in the case of bad corporate governance – just to feed the egos of executive management.

Note that these mergers can involve both public (i.e. listed on the NYSE, Nasdaq, or another stock exchange) or private companies. We can only use merger arbitrage when public companies are involved (you'll see why below). Let's continue.

THE MERGER ACQUISITION PROCESS

Here's an example of what happens during a typical acquisition:

> Public Company A makes an offer to acquire the shares of Public Company B for $65/share. Before the announcement, the shares of Company B were trading at $50/share. Upon the news release, Company B's shares immediately shoot up to $60/share.

But wait!

Why didn't Company B's shares shoot up to $65/share? After all, Company A said they'd buy them for $65/share, not $60/share.

Well, the announcement of a merger and the actual closing of a merger are two different things.

When a merger is announced, it only means that two companies have come to an agreement to combine and have signed a legally binding contract (the merger agreement) to this effect. However, similarly to when you sign the paperwork to buy a house and leave a deposit, the house is not actually yours until the transaction closes and legal ownership documents are established. Until that's the case, you can back out if you're willing to lose your deposit (and upset your realtor).

The same is true for a corporate transaction, except that even if the two companies do not change their minds, a few other things could go wrong and get in the way of a transaction.

For one, that both the companies' executives and Boards want to pursue the transaction does not mean that the shareholders do; and after all, they're the ones owning the businesses, so any transaction can be blocked by them if it doesn't get enough votes in support of it (usually 50% of the shares outstanding).

In addition, mergers can also fall apart if they are blocked by regulators due to antitrust (competition) concerns, or if one of the companies gets pulled in another transaction by a third-party.

The spread between the agreed upon acquisition price and the price that the target's stock shoots up to is the market's assessment of the risk that the merger won't actually close.

This is when merger arbitrage comes into play.

WHAT IS ARBITRAGE?

Arbitrage is the practice of taking advantage of a price difference between two or more markets and striking a combination of matching deals that capitalize upon the imbalance, with the profit being the difference between the market prices.

For example, say you can buy an iPad in the U.S. for $500. However, if you go to Japan, iPad's are selling for $600 (ignore currency translations here). If shipping from the U.S. to Japan only costs $50, then you can buy an iPad in the U.S. for $500, pay $50 for shipping, and then sell it in Japan for $600. You would have paid $550 in total and received $600. Your profit is a risk-free $50!

If you were rational you would do this as much as you can – you would mortgage your house and sell your kids – and keep doing this arbitrage until the prices even out (because you're buying so many iPads, you will increase the demand for iPads in the U.S. which would cause the price to increase from $500; and because you're selling so many iPads, you would increase the supply of iPad's in Japan which would cause the $600 to decrease).

Of course, this is just an academic example but you get the idea.

We can do the same thing with mergers.

So going back to our previous example, if we've done our analysis and we believe with very high probability that the acquisition will indeed close, then we can buy Company B's shares for $60 right now, and then Company A will buy them from us for $65 when the acquisition closes. Our profit will be $5. The only risk is that the deal falls through and that Company B's shares fall back to $50 (what they were trading at before the merger announcement). In that case, we would lose $10.

TYPES OF MERGERS

Acquisitions aren't always paid for the same way. What I'm talking about here is called the "consideration," which is what the buyers use to pay and what the sellers get paid with.

Here are the three possibilities, followed by an example of how each works:

CASH DEALS

An acquiring company offers to buy the target's shares from its shareholders for a cash consideration. If the transaction is approved by shareholders and regulators, the transaction closes, the target's shares are de-listed and its shareholders receive the full purchase price in their brokerage account in cash. Note that the cash can be financed with debt, but if the acquiring company is paying with cash then it's still a cash deal.

Public Company A makes an offer to acquire the shares of Public Company B for $65/share in cash. Before the announcement, the shares of Company B were trading at $50/share. Upon the news release, Company B's shares immediately shoot up to $60/share.

Investors who believe the deal will close simply buy Company B's shares at $60/share, and wait for the transaction to close to pocket the $5/share delta.

So, upon announcement of the merger:

- Purchase Company B share for $60 and wait for the merger to close.

- Now you own 1 share of Company B. □ Cash flow = -$60.

Once the merger closes:

- Company B's shares are de-listed and Company A pays all Company B shareholders $65 per share.

- Now you don't own any Company B shares (which no longer exist).

- Cash flow = +$65.

- Final profit = +$5.

ALL-STOCK DEALS

An acquiring company offers to buy the target's shares from its shareholders in exchange of its own stock (this is done via an exchange of shares according to the exchange ratio negotiated by the companies and present in the merger agreement). If the transaction is approved by shareholders and regulators, the transaction closes, the target's shares are de-listed and its shareholders receive the corresponding shares of the acquirer (or combined entity) in their brokerage account.

Public Company A makes an offer to acquire the shares of Public Company B, with shareholders receiving 0.50 share of Company A for each share of Company B they hold. Before the announcement, the shares of Company A were trading at $130/share (which values Company B at $65/share) and the shares of Company B were trading at $50/share. Upon the news release, Company B's shares immediately shoot up to $60/share.

Investors who believe the deal will close can buy Company B's shares at $60/share, and sell short 0.5 share of Company A for each share of Company B they've bought, pocketing $5 of merger spread per share of Company B.

Remember, when an investor short sells Company's A shares (i.e. borrows shares of A he doesn't own to sell them in the market), he receives the money for them upfront. Therefore, each share of Company B purchased is an outflow of $60, and the associated short sale of 0.5 share of Company A is an inflow of $65 ($130*0.5), netting the investor $5 in the process. When the transaction closes, the investor will receive 0.5 share of Company A for each Company B's share he owns, which will be used to cancel out the short selling of Company's A shares.

Upon announcement of the merger:

- Purchase Company B share for $60, sell short 0.5 share of Company A for $65.

- Now you own 1 share of Company B and you owe 0.5 share of Company A because you sold it short.

- Cash flow = +$5.

Once the merger closes:

- Company B's shares are de-listed and Company A gives all Company B shareholders 0.5 Company A stock for each Company B share. So you get 0.5 share Company A stock and your Company B stock gets cancelled.

- You now can return the Company A stock to the original owner because you had sold it short. Now you don't own any Company A shares or any Company B shares (which no longer exist).

- Cash flow = $0.

- Final profit = +$5.

- Note that it doesn't matter what price Company A's shares are when the merger closes! Company A's stock can double or drop by 50%. It doesn't matter because you don't need to buy or sell Company A stock once the merger closes – you just have to return the stock back to the original owner.

CASH / STOCK MIX

Lastly, an acquiring company offers to buy the target's shares from its shareholders in exchange of its own stock <u>and</u> a cash consideration. If the transaction is approved by shareholders and regulators, the transaction closes, the target's shares are de-listed and its shareholders receive the corresponding shares of the acquirer (or combined entity) and the cash portion in their brokerage account.

Public Company A makes an offer to acquire the shares of Public Company B, with shareholders receiving 0.30 share of Company A and $26 for each share of Company B they hold. Before the announcement, the shares of Company A were trading at $130/share (which values Company B at $65/share) and the shares of Company B were trading at $50/share. Upon the news release, Company B's shares immediately shoot up to $60/share.

Similarly, to the previous example, investors who believe the transaction will close will need to short sell shares of Company A in the same proportion of the exchange ratio (0.30 share of Company A per share of Company B purchased).

Because of the cash component, the investor won't pocket the spread right away, but upon closing. The logic is a mix of the two previous examples.

Upon announcement of the merger:

- Purchase Company B share for $60, sell short 0.3 share of Company A for $39.

- Now you own 1 share of Company B and you owe 0.3 shares of Company A because you sold it short.

- Cash flow = -$21.

Once the merger closes:

- Company B's shares are de-listed and Company A gives all Company B shareholders 0.3 Company A stock plus $26 for each Company B share. So you get 0.3 share Company A stock, $26, and your Company B stock gets cancelled.

- You now can return the Company A stock to the original owner because you had sold it short. Now you don't own any Company A shares or any Company B shares (which no longer exist).

- Cash flow = +$26.

- Final profit = +$5.

- Note again that it doesn't matter what price Company A's shares are when the merger closes.

TAKING ADVANTAGE OF MERGER ARBITRAGE IN YOUR PORTFOLIO

Now that we know what merger arbitrage is, let's take a closer look once more at what Warren Buffett wrote about the topic back in 1969:

We are not talking about rumors or "inside information" pertaining to such developments, but to publicly announced activities of this sort. We wait until we can read it in the paper.

This is investing – not speculation. This means you shouldn't be investing in the stock of a company because you think it would be "a good acquisition target" for a larger company. For example, merger arbitrage would not mean investing in Twitter stock because you think Google or Facebook should buy it. You would only invest once Google or Facebook had signed a legal contract saying that they will definitely buy the Twitter for a predetermined price, just as long as the below doesn't happen….

The risk pertains not primarily to general market behavior (although that is sometimes tied in to a degree), but instead to something upsetting the applecart so that the expected development does not materialize. Such killjoys could include anti-trust or other negative government action, stockholder disapproval, withholding of tax rulings, etc.

The risk with merger arbitrage doesn't really have to do with changes in stock prices (we've already seen in our examples that stock prices can move and have no effect on the ultimate profit of a merger arbitrage.

The risk comes from things like anti-trust issues (e.g. the government doesn't approve the merger because it thinks the combined company would be a too powerful monopoly), the target's shareholders don't approve the merger, or that the merger becomes delayed or postponed. Warren says that general market behavior is only "tied in to a degree," because a market crash could cause companies to walk away from a merger, even if it was already agreed upon.

The gross profits in many workouts appear quite small… However, the predictability coupled with a short holding period produces quite decent average annual rates of return after allowance for the occasional substantial loss.

The absolute return from merger arbitrage doesn't look like much. For example in our all-cash consideration example, a $5 profit on an initial investment of $60 equals an 8.33% absolute return. But if it only takes 3 months for the acquisition to close, that $5 profit translates into an annualized return of 37.74%!

If you do these throughout the year, you can see just how attractive a strategy merger arbitrage really is. You could even employ this strategy instead of holding cash because it's essentially a pretty liquid investment.

This category produces more steady absolute profits from year to year than generals do. In years of market decline it should usually pile up a big edge for us; during bull market it will probably be a drag on performance. On the long-term basis, I expect the workouts to achieve the same sort of margin over the Dow attained by generals.

Merger arbitrage can produce a steady stream of profits for you. In bull markets, it could be a drag on performance. But in market declines, it's a hedge against declining stock prices.

THE BENJAMIN GRAHAM MERGER ARBITRAGE FORMULA

In the above section, I said that the $5 profit translates into an annualized return of 37.74%.

This is a great return, but there is also of course the risk that the merger won't close.

This is why Benjamin Graham came up with the following equation, which he included in his book Security Analysis (one of the best books on investing of all time and often considered the value investor's bible). His equation takes into account the probability that the merger won't close:

Indicated annual return = [GC – L(100% – C)] / YP

Where:

G be the expected gain in the event of success;

L be the expected loss in the event of failure;

C be the expected chance of success, expressed as a percentage; Y be the expected time of holding, in years; P be the current price of the security.

So in our cash deal example (assuming we think the deal has a 90% chance of closing and that it will close in 3 months:

Indicated annual return = [($5*90% – ($60 – $50)(100% – 90%)] /(.25*$60)

= 23.33%

Of course, if the merger does close then you're realized return will still be 37.74%, as I said earlier. But Ben Graham's formula is a good way to assess different merger arbitrage opportunities before you invest in them, especially when they have different probabilities of success.

| **APPENDIX IV:**
WARREN BUFFETT'S INVESTMENTS:
THE GREAT, THE GOOD, AND THE GRUESOME

BUSINESSES – THE GREAT, THE GOOD, AND THE GRUESOME

In the 2007 Berkshire Hathaway Annual Report, Warren Buffett discussed the difference between great businesses, good businesses, and gruesome businesses.

Buffett summarizes it like this:

"Think of three types of 'savings accounts."

"The great one pays an extraordinarily high interest rate that will rise as the years pass."

"The good one pays an attractive rate of interest that will be earned also on deposits that are added."

"Finally, the gruesome account both pays an inadequate interest rate and requires you to keep adding money at those disappointing returns."

Let's break down Warren's definition and identify these types of businesses. But first, let's talk about Buffett's favorite businesses to buy.

Buffett's Four Investing Principles

Throughout his long career, Buffett has repeatedly stated the types of companies he loves. Here are Warren Buffett's investing principles that he follows when buying businesses:

- A business we understand

- Favorable long-term economics

- Able and trustworthy management

- A sensible price tag

Warren prefers to buy entire businesses, or a rather large stake in them. If that option is not available, then he still views buying a small portion of a great business via the stock market.

Pretty simple right? Buffett only has four qualifying principles, so wouldn't there be a lot of contestants? Not exactly.

Economic Moats

Buffet believes a truly great business must have an enduring "moat" that protects the business's "castle"

Moat

This economic moat can be defined simply as a competitive advantage that a company has in its business practice. That competitive advantage protects the business from assaults from other companies trying to assert their dominance in the industry.

There are several types of moats businesses can have, but here are a few examples:

- A low-cost producer (GEICO)

- Possessing a strong world-wide brand (Coca-Cola)

- High switching costs (Wells Fargo)

- Network effect (Visa & BNSF)

- Intangible assets (Moodys Corp)

These are just a few examples of some economic moats. Buffett prefers these moats to be large and enduring for generations. Note that Warren either entirely or significantly owns large portions of the example companies I used here.

Business Castle

Naturally, the moat is protecting the castle within, with the castle being the business itself. While the moat can protect the castle from outside invaders, it is virtually worthless at keeping the inside of the castle defended.

But why worry about the inside? Surely, all is fine on the interior as long as the moat remains intact, right?

Management

In order for a castle to thrive, it must have a worthy king and a round table of knights who are able to keep order within the castle. This is the exact same in business. A responsible CEO and an intelligent board of directors are key to ensuring the business does not implode from the inside.

Now, just because a company doesn't have a Jamie Dimon or Mark Zuckerberg as CEO, doesn't mean that it isn't a good one. There are hundreds of companies with "no-name" CEOs that compound returns year after year. In fact, sometimes a no-name CEO is better than a known one.

With that out of the way, let us get into the examples of the great, good, and gruesome businesses of Buffett's portfolio.

The Great: See's Candy

When Buffett first purchased See's Candy in 1972, it was unexciting business. It was profitable, but very slow growing. However, Warren noticed that the company was functioning with a strong moat. See's Candy was managed with a strong brand operated in a part of the country where they dominated the market and accounted for nearly half of the entire industry's earnings.

Buffett eventually integrated the company under the Berkshire Hathaway umbrella, and paid a cool $25 million for See's. While that may sound like a lot of cash, Warren got an incredible deal. At the time of sale, See's was generating about $4 million in earnings a year. If you do the simple math, Warren was able to scoop up this wonderful little company for just over 6 times earnings!

Warren has stated many times that the See's acquisition was one of his best. Not only was he able to snap up a stellar deal, but due to See's limited capital expenditures, he was able to turn it into a compounding machine for Berkshire. Check out what he said regarding the acquisition:

"There aren't many See's in Corporate America. Typically, companies that increase their earnings from $5 million to $82 million require, say, $400 million or so of capital investment to finance their growth."

"That's because growing businesses have both working capital needs that increase in proportion to sales growth and significant requirements for fixed asset investments… It's far better to have an ever-increasing stream of earnings with virtually no major capital requirements. Ask Microsoft or Google."

The Good: FlightSafety

Let's move on to another one of Buffett's "good" businesses, FlightSaftey. FlightSafety is a provider of aviation training for pilots with the use of simulators and software. Warren saw the potential to soar with this company and Berkshire Hathaway acquired FlightSafety in 1996 for a cash and stock deal that was worth around $1.5 billon.

So, was it a good deal? Well, it was far from a bad one. FlightSafety had some things going for it that Warren really liked. FlightSafety had (and still does) the top tier simulators and curriculum, which gave them quite the economic moat. You would not want your airline pilot fumbling his landing, now would you?

Buffett was able to get a decent deal out of the acquisition. With pre-tax earnings of $111 million, Buffett paid just about 15 times earnings. However, most of FlightSafety's worth was held in its simulators (over 270), which cost over $12 million apiece! Therein lies the biggest problem with the business of FlightSafety: capital expenditures. New software and simulator models are constantly being introduced, and these upgrades eat a lot of money.

Despite this, FlightSafety is still a good business for Buffett that continues to compound each year, albeit a little slower than he would probably like. In 11 years, Berkshire was able to grow FlightSafety's earnings from $111 million to $270 million, and its assets from $570 million, to over $1 billion.

These numbers don't hold a candle to See's Candy, but at least it wasn't gruesome…

The Gruesome: USAir

Now let's move to the gruesome. Yes, even the most famous investor in the world has made mistakes. In 1989, USAir seemed a promising airline company, that was poised for growth. Buffett moved in with a purchased of over $350 million in preferred stock with a 9.25% dividend yield.

You might think, "Wow, a stock with sure growth and over a 9% yield? Sign me up!", but like Warren, you'd be wrong. As quick as he signed the check, the company began having financial troubles, and Buffet's stake took a turn for the worse. USAir had suddenly become a turnaround situation, which is not a position most investors want to be in.

The reason for USAir's woes is (just like every other airline) it needed massive amounts of capital to continue its operations. Planes constantly have to be maintained, fueled, inspected, and manned. Airlines also run a commodity type business that has to compete with many others to obtain customers for the cheapest prices available. Unproperly managed, this can hurt the company's bottom line.

Years after the acquisition, Buffett continued to share his disdain for the airline industry.

"The worst sort of business is one that grows rapidly, requires significant capital to engender the growth, and then earns little or no money. Think airlines. Here a durable competitive advantage has proven elusive ever since the days of the Wright Brothers.

Indeed, if a farsighted capitalist had been present at Kitty Hawk, he would have done his successors a huge favor by shooting Orville down."

Sounds like Warren got a little burnt from this deal. Luckily, he actually managed to escape the deal without losing any money, but there was a catch: he had to wait nine years to sell. With Buffett's normally stellar track record, the biggest loss was his opportunity cost. He could have used that cash he invested in USAir to compound in a great (See's Candy), or even good company (FlightSafety), with much higher returns.

Three Types of Savings Accounts

To sum it up, these are all examples of Buffett's three types of businesses, or "savings accounts." The great one pays an extraordinarily high interest rate that will rise as the years pass. The good one pays an attractive rate of interest that will be earned also on deposits that are added. Finally, the gruesome account both pays an inadequate interest rate and requires you to keep adding money at those disappointing returns.

While we always prefer the great investments, sometimes they don't always work out as expected. The best thing we can do is follow Buffett's investing principles and stay the course.