

IN FOCUS



# THE VIRUS PLAGUING VALUE



# THE NBA SMALL-BALL REVOLUTION

In the 2005 NBA Finals, the San Antonio Spurs defeated the Detroit Pistons 4 games to 3. Spurs Center Tim Duncan was named finals MVP, averaging over 20 PPG and 14 rebounds per game. In the prime of his career, Tim Duncan was a prototypical “back to the basket” big man, scoring over smaller defenders, out rebounding them, or dishing the ball out to open teammates as defenses collapsed on him.

Basketball is a possession-efficiency game. Statistically speaking, a winning basketball team scores more points on average per possession than its opponent. For decades, the route to per-possession efficiency was having a dominant center. Prior to the 2005 finals, 75% of NBA champions since the dawn of the league were led by a dominant big man holding the court down near the basket. The route to a championship was clear – find a dominant center who played well with his back to the basket and control rebounds – and your possession efficiency rises to a championship level.

However, since 2005, not a single NBA finals MVP has been a traditional center. League MVPs have been smaller players located further from the basket, like Steph Curry, Steve Nash, Kobe Bryant, James Harden, and LeBron James. LeBron is not exactly small, but he doesn't play with his back to the basket very much.

So What happened?

The answer is a subtle but significant rule change. If you guessed the institution of the 3 point line, you're wrong. That happened in 1979. The change was a modification of a defensive rule called “hand checking”. Hand checking is where a defensive player puts his hand on an offensive player's body, whether or not they have the ball. This allowed larger and stronger players to channel smaller players and obstruct their movement around the court. The rule was changed in 2004 to disallow this tactic.

The result was not immediate but turned into revolution – smaller and more athletic players, now much freer in their movement around the court, could exploit their athleticism and skill. Scoring exploded, with average points per game up 19 points compared to before the hand-checking rule. NBA basketball is now a perimeter game. The keys to success are a squadron of perimeter shooters that can spread the floor, good passing around the perimeter, and long/quick defensive wings that can guard these guys. As for the traditional center? They still exist but are far from the focus of the game.

## EVOLUTION OF THE NBA MVP

A paradigm shift has occurred in what a prototypical Most Valuable Player looks like in today's NBA

### BEFORE 2005

6' 8"

- Dominant rebounder
- Tall and physical
- “Back to the basket” player
- Scores closer to the basket



### AFTER 2005

6' 5"

- Versatile - Two-way player
- Smaller and quicker
- Guards and hybrid forwards
- Scores further from basket



# VALUE PARADIGM STUMBLES

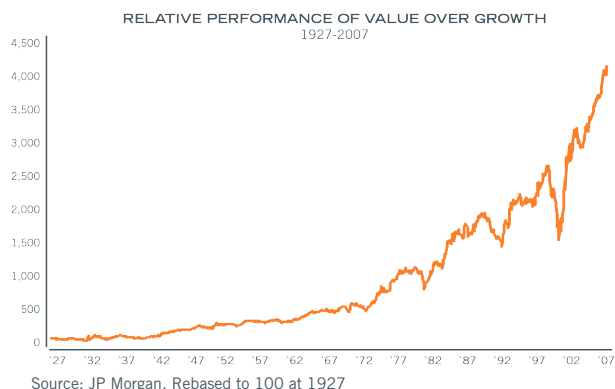
Our company has been in business for almost half a century. We manage equity strategies in the U.S., internationally, and globally, up and down the capitalization spectrum. All our strategies employ a value philosophy to uncover opportunity, manage risk, and defend against the inevitable unknowns.

This means we have a serious issue on our hands.

It's certainly just a coincidence, but the success of value investing ebbed right around the same time as the era of NBA big men, in 2006. Up to the year 2006, value investing superiority over growth and other investing "styles" was unchallenged—kind of like the embedded wisdom of building a basketball team around a dominant big man.

The philosophy behind value investing is not dissimilar to that of building a basketball team around a dominant center. Value investors believe that the price paid for a stock is a major determinant of its potential upside, and that by buying stocks very cheaply in comparison to their intrinsic value, value investors embed a "margin of safety" relative to the price paid. Low downside, high upside. It's the investment equivalent of per-possession efficiency.

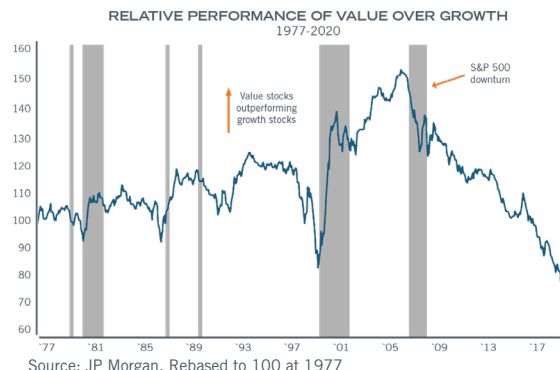
For most of the 20th century and the first part of the 21st, Value investing enjoyed a gold plated philosophical and quantitative edge over other approaches to stock picking. Value... worked better.



But starting a bit before the 2008 financial crisis, value started not working so well.

Through the crash of the financial system and the economy, value stocks underperformed noticeably.

And since the market lows in 2009, value indexes have continued to lag.



In fact it's now been 14 years of steadily weaker returns than comparable growth indices. With the world economy thrown into deep recession and uncertainty due to the Covid 19 virus and Great Lockdown, value stocks entered the 100th percentile of valuation relative to growth stocks. They have literally never been cheaper, relatively speaking.

The long dark winter of value means that statistics like this don't scream of opportunity any more to the financial press. They bring questions and sarcasm.

Last Fall, Forbes magazine ran a piece titled "Has Value Investing Stopped Working?", while Institutional Investor magazine ran a piece around the same time with the catchy title "Why Value Investing Sucks". In 2020, the world's most renowned value investor, Warren Buffett, has been lampooned for inaction in the depths of the Coronavirus selloff and deep losses on major portfolio positions.

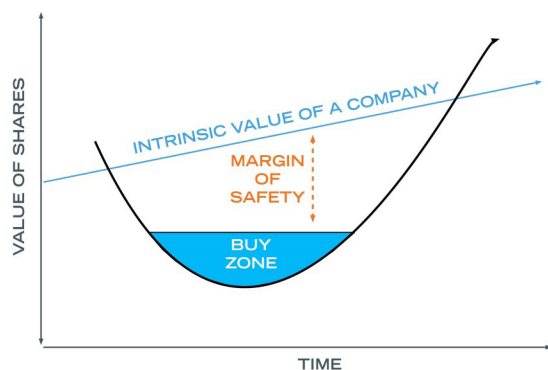
It's getting tough out there.

In this 'In Focus' piece, I want to share with you my journey into this issue. It hasn't been easy. But after looking at lot of different forms of data, from macroeconomic to accounting to specific industry structures and evolution, there are emerging and investible conclusions.

# VALUE BASICS: MARGIN OF SAFETY, PRICE DISCIPLINE

Let's start by understanding the philosophical basis of value investing. A value investor believes in two things very deeply: that a margin of safety is sought in all investment purchase decisions and that the price paid is very important in determining this, as well as the upside potential in an investment.

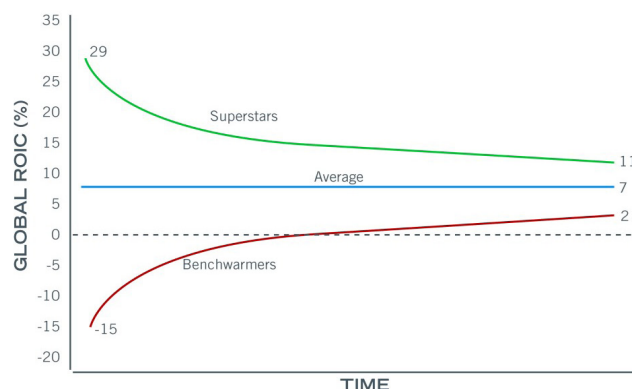
That's it. Philosophically speaking it's really simple. But execution requires a very zen-like mental tranquility and fortitude. To obtain this margin of safety, a value portfolio manager will seek stocks trading at a substantial discount to their "intrinsic value", which we will dig into in a minute. If the discount is large enough and seems to be caused by either irrational or transitory factors, this triggers buying interest. At that point, the sound-proof headphones go on, and disciplined value investors block out noise such as near term news, politics, and economic sentiment and patiently wait out the eventual reward. Price is the signal that dictates portfolio actions. This may lead to eventually selling a position that reaches intrinsic value or holding positions for a very long time if the underlying business is able to grow internally, leading to an expanding intrinsic value.



For illustration purpose

There are two other basic financial concepts that feed into the value mindset.

**Fading Returns** - The first is the concept of fading corporate returns to a long term average. If a company is enjoying superior profitability because it sells a new and hot product, it is a mistake to extrapolate this superior profitability out more than a few years. In a highly competitive economy, it's reasonable to expect that this exceptional



For illustration purpose

profitability will attract competition, who will compete on the basis of price, product innovation, or other factors, leading to lower future profit margins. Alternatively, for companies earning deficient returns on capital in a particular industry, it's reasonable to expect these conditions to lead to business rationalization, bankruptcies, industry consolidation, or other management coping skills to improve profitability.

Eventually, both higher capital return and lower capital return businesses are expected to fade to some long term corporate average. Value investing tends to be particularly tuned to this concept. You don't want to overpay for profitability that is not sustainable, and alternatively, there may be opportunities in weaker return companies that can improve themselves.

**DCF** - The second concept is the Discounted cash flow model (DCF) of valuing a company. This is absolute financial bedrock: companies are worth their future cash flows, discounted back to the present by an appropriate discount rate, with a terminal value assigned to cash flows further out in the future. Value investors look to buy stocks when they are trading at a meaningful discount to the fair value price this DCF

## DISCOUNTED CASH FLOW FORMULA

$$\text{Value} = \frac{CF_1}{(1+i)^1} + \frac{CF_2}{(1+i)^2} + \dots + \frac{CF_\infty}{(1+i)^\infty} = \sum_{n=1}^{\infty} \frac{CF_n}{(1+i)^n}$$

where

$CF$  = cash flow  
 $i$  = discount rate  
 $n$  = time periods from one to infinity

(2) Fair Market Value Estimate

$$\text{Value} = \sum_{n=1}^t \frac{CF_n}{(1+i)^n} + \frac{TV_t}{(1+i)^t}$$

where

$CF$  = cash flow  
 $i$  = discount rate  
 $n$  = time periods, time = 1 to  $t$   
 $TV$  = terminal value.



model spits out. A normal DCF for a company in a competitive industry will incorporate some fade factor to the estimates of long term profitability, particularly if it is high, to be conservative.

## TROUBLE WITH THE DCF

There is one huge problem with DCFs – we know none of the critical variables that are used with any certainty. We might want to believe that we do, but forecasting errors in the financial world can be massive. We don't know future cash flows, and these become more uncertain further out in the future. Think of how much the cash flow expectations for companies impacted by the Coronavirus changed in the year 2020, as one powerful example.

We also don't know with precision what the *correct discount rate* is that we can use, as this moves around frequently as macroeconomic and industry-specific events occur.

Last, we don't know the *correct terminal value* for businesses either. Many companies with dominant brands or market positions that seem very durable can suddenly see these falter due to new forms of competition and technology. There is a similar problem with the fade concept. It does have academic validity, but the rate and time at which a companies' profitability may actually fade up or down towards long term averages is not truly knowable in advance. Some businesses fade slowly and others rapidly.

## WHAT ABOUT LOWER INTEREST RATES?

Many pundits have speculated that the massive decline in interest rates following the 2008 Global Financial Crisis (GFC) explains the predominance of growth investing over value investing. The out-years of the DCF, and especially the terminal value, become more valuable in the calculation if interest rates are extremely low. In a normal 5 year DCF, the terminal value accounts for about 60-70% of the total value of the calculation, but with interest rates far lower today, it can be as much as 80%.

Mathematically, that's just what comes out, but forecasting error becomes very large as you move out

in time for all kinds of businesses. This is especially true in rapidly evolving digital businesses. Do you really think you can forecast Netflix's cash flow in 5 years with precision? Do you really think you can forecast Uber's cash flow in 5 years? How about Zoom or Tesla? It's all very subjective; that's the point. There are other factors at play. The secular decline in interest rates since 2007 correlates very closely with a secular decline in asset-based business returns, such as financials. We are not saying the interest rate decline doesn't matter, but in our view it is not nearly sufficient to account for the scope of the value/growth divide.

## DCF WORKAROUNDS AND THE “VALUE FACTOR”

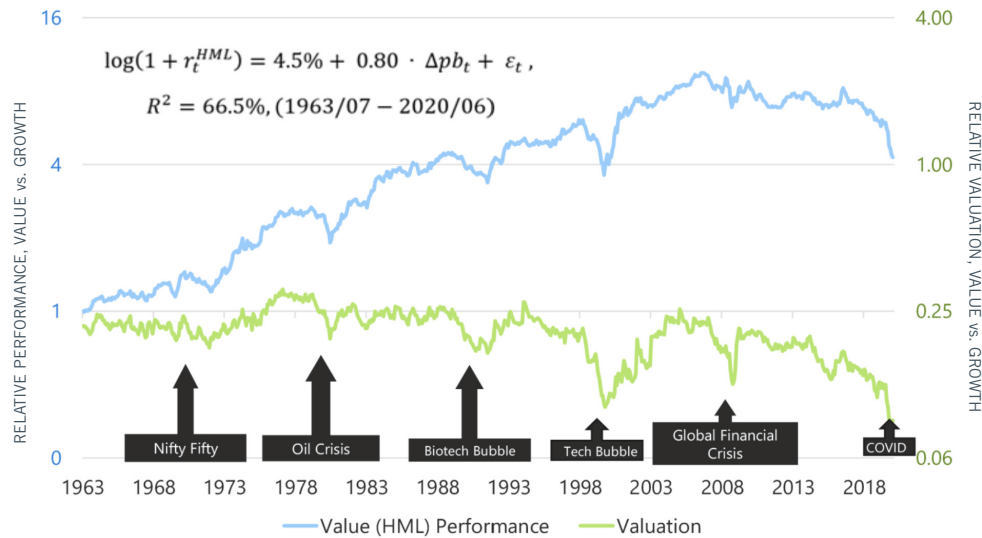
Because of this basic challenge of forecasting, investors over the years developed a variety of approximation methods to speed up the calculation and get around these basic limitations. Some common approaches over history:

- Graham Numbers
- Implied Discount Rate/Embedded IRR%
- Valuation Regression Analysis

One of the most famous people to do this was Professor Benjamin Graham, the father of value investing, coming out of the Great Depression. Graham deserves a lot of credit – he was not a typical academic type, he was very practically-minded and wanted to find simple equations that would tell him whether or not a stock was a good value, decades before computer spreadsheets existed. He came up with the concept of Graham numbers, where depending on earnings per share, book value, and the growth rate of a company, an investor could quickly calculate relative financial attractiveness. Another quick and dirty concept is the implied discount rate approach, where investors use the current stock price and future cash flow estimates to back out the implied discount rate of a stock. If this is unreasonably high, then the stock is probably a good value. A third approach is a regression type analysis, where investors may chart long term multiples of earnings, book value, cash flow, or revenue to identify when stocks reach relative extremes within a sensible range. Cambiar Investors has commonly used this approach over the years; it is one flavor of 'Relative Value'.

## HML VALUE FACTOR PERFORMANCE & RELATIVE VALUATIONS

United States July 1963 - March 2020



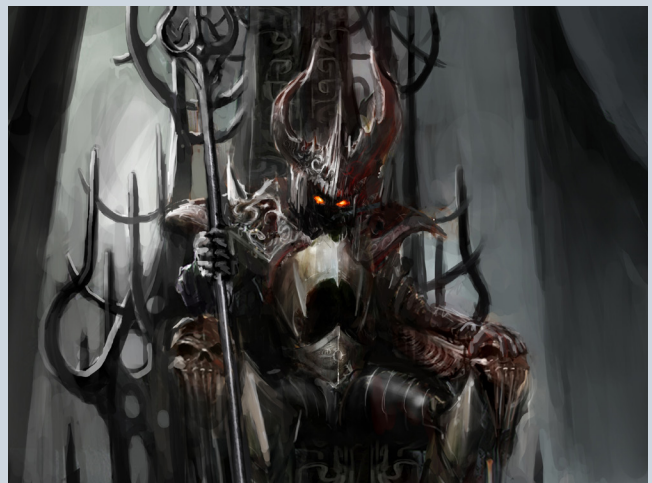
Source: Research Affiliates, LLC, using data from CRSP/Compustat.

In 1992, Professors Eugene Fama and Ken French identified their own speedy and practical technique, called the “Value Factor”. They concluded, through rigorous academic work, that over the history of the stock market, companies trading at below-average price to book multiples outperformed those trading at higher multiples. The higher book value multiple stocks embedded inflated profitability expectations, while the lower book value multiple stocks did not. Eventually, elevated profitability and elevated expectations around elevated profitability would come up against the inevitable reality of competition and the fade rate. Buying the less demandingly valued cohorts of the stock market steered investors away from these behavioral finance mistakes.

Fama and French’s work was widely embraced at the time. From the dawn of modern record-keeping in 1960 until 2006, the low book to market value factor enjoyed a nearly 15-fold cumulative excess return.

Soon thereafter, a low price to book multiple became the primary manner by which value investment indexes are constructed. Of all the financial variables that one could incorporate, low price to book receives the heaviest weight by far. The Fama French value factor managed to encapsulate the vagaries of the DCF model and the corporate fade rate in one tidy package.

One discreet and knowable financial variable to rule them all.



The Fama-French value factor, ironically, was codified into index construction in the early 1990s just a couple of years before the first internet browser and websites came into being. The digital economy was just about to be born.

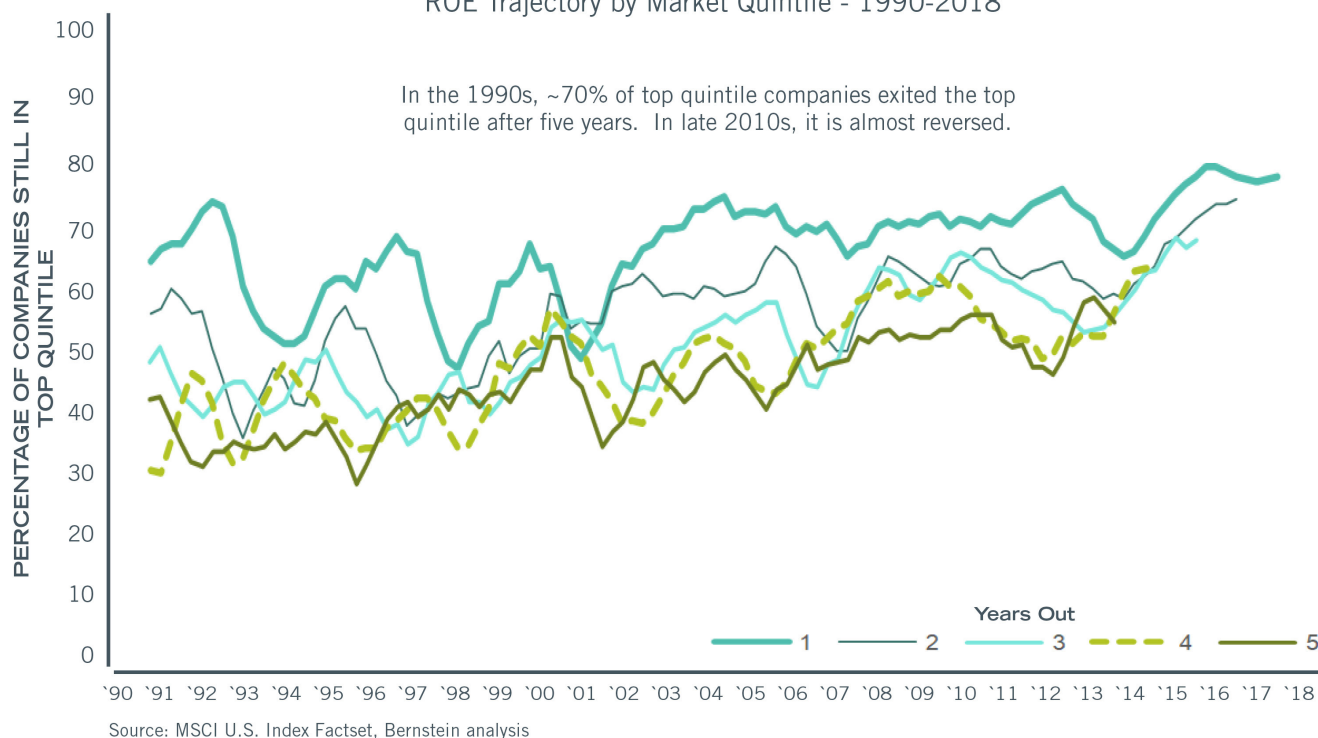
# FADING THE FADE

This is a slide that I first saw a couple of years ago which shook my foundations as an investor. Let me explain what you are looking at. It's a chart produced by a quantitative finance group at Sanford Bernstein. What it shows are the future ROE's of companies that are in the highest quintile of the overall stock market 1, 2, 3, 4, and 5 years after they first appear in the top quintile. As you can see, back in the 1990s, about half of the top quintile companies were still in the top quintile 3 years later, while after 4 or 5 years, 60-70% of top quintile companies were no longer in the quintile. In other words, the fade concept was working very reliably. Now squint a little at this chart, and you will see that sometime in the mid-2000s, the slope of these lines starts to turn up. By 2015, more than 60% of the top quintile companies are still earning superior Returns on Equity 4 or 5 years later. In other words, the best companies' returns are not fading at anywhere near the rate that they used to in the 1990s or the early 2000s.

Your typical value investor has a behavioral bias to look selectively at laggards and not overestimate the sustainability of high profit margins. But given the data that makes up these charts, that bias is wrong. Apparently, with increasing force in the 21st century, the top companies in the stock market are able to continue compounding returns on capital at above normal rates, and competition does not seem to be making much of an impact. The whole concept of fading the extremes, and therefore book value as the most important variable, is thrown on its head. Moreover, a behavioral bias towards looking at "cheap" companies that have lagged the market by varying degrees, and embed lower return expectations, is counterproductive.

So why is this happening, and why did it start happening in the mid-2000s? Was there a rule change like in basketball that initiated a variety of unforeseeable consequences?

## THE STAYING POWER OF THE BEST ROE Trajectory by Market Quintile - 1990-2018



# WHAT IS PLAGUING VALUE?

## TWO WORDS: DIGITAL AGE

What is the virus plaguing value? Why are low book value multiple stocks continuing to lag? Why are corporate returns not fading? Why is contrarianism not working? Why are “value stocks” in the 100th percentile of valuation versus growth?

The virus plaguing value isn't really a virus; it's that we are advancing out of the Industrial Age and into the Digital Age. Low book to market worked in the Industrial Age and was still the relevant paradigm to describe most businesses in the 1990s. In the Digital Age, we are gradually replacing the physical with the digital, from communications to consumption, to industrial design to finance. In our view, this has specifically been catalyzed by broad penetration of connected and highly functional digital devices like smartphones. This reached critical mass not in the year 2000 but a few years after around 2006.

This means consumers and businesses have an astonishing amount of information available to them about prices, products, and availability. Products are designed digitally, and supply chains are tightly tuned to end demand based on precise information transmitted digitally. Tight digital linkages have enabled successful companies to “de-verticalize” themselves, focusing on product design and marketing, while leaving the more capital and labor-intensive manufacturing of key components and final assembly to others. Customer engagement is not limited to store hours or even normal times of the day, and clever entrepreneurs are continuing to find ways to create digital interfaces for everyday necessities and services.

As we have entered the Digital Age and gone deeper into it with more and more advanced digital devices, physical assets have become less important to business success. It's software and systems that are needed to make physical devices work and connect. And increasingly, digital devices can be substituted for physical assets. The general store and the shopping mall is increasingly a screen. In 2020, we discovered that much of the office experience can be a screen also.

The electrons on screen as you are viewing this piece don't have any replacement cost associated with them. This general tendency towards digitization erodes the “physical replacement cost” definition of

value considerably.

Hopefully, this all makes intuitive sense. Because the next part of this discussion doesn't.





# THE GREAT ACCOUNTING DISTORTION

Because of these Digital Age fundamentals, intangible assets on companies' balance sheets, such as brands, patents, and cumulative R&D, impact business success to a larger extent than in the Industrial Age. And yet, these don't show up in book value, at least not appreciably, due to some fundamental accounting limitations and very curious conventions.

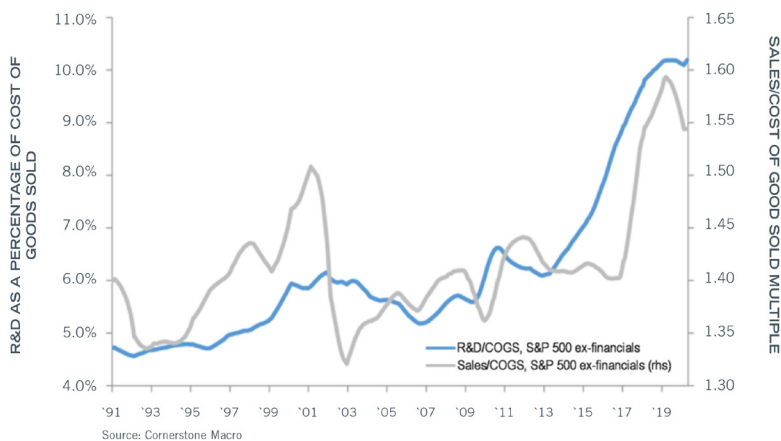
It's well known that intangible assets are important

to business success. These take the form of brands, patents, and other forms of technical know-how. Over the last three decades, business investment in intangibles has grown substantially, with R&D more than doubling since the early 1990s.

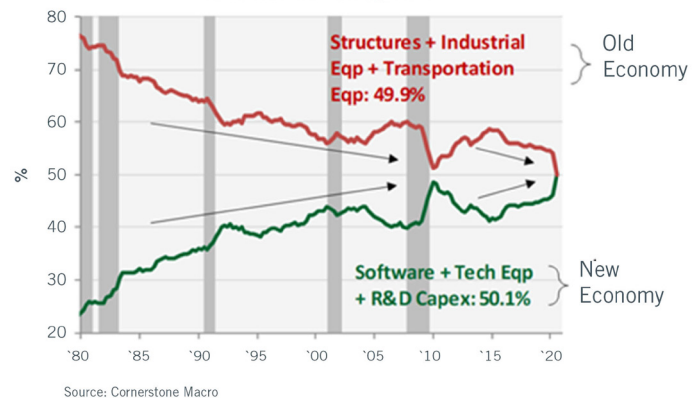
And the largest companies nowadays are built on a foundation of intangibles.

The accounting profession tries its best to account for the value of assets accurately. In industrial businesses, this is a straightforward process. For a factory, or a truck, or an assembly line, these are valued at cost minus depreciation over their useful lives. It is reasonable to assume that over time, these

THE IMPACT OF R&D



CAPEX COMPONENTS  
% TOTAL CAPEX 2Q 2020



## TANGIBLE ASSETS VS INTANGIBLE ASSETS S&P 500 COMPANIES (1975 - 2018)

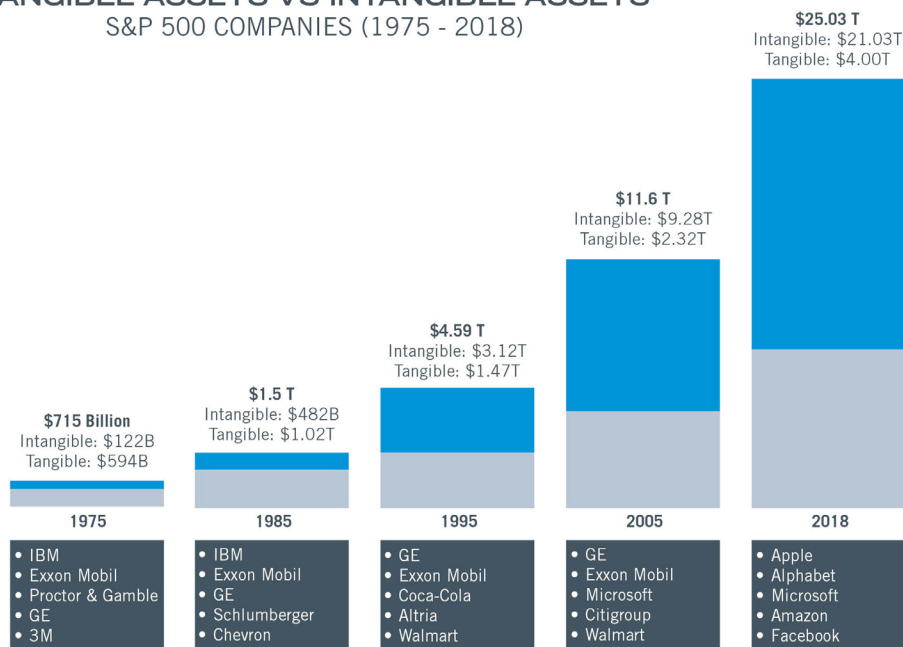
**Tangible Assets**

- Easy to value
- Thick & efficient secondary market
- Insurable

**Intangible Assets**

- Difficult to value
- Thin & inefficient secondary market
- Difficult to insure

### 5 Largest Global Companies by Market Cap



Source: IP CloseUp

assets will wear down and become obsolete. However, when a company does research and development for new product design, or to discover some new technology, it's hard to say exactly how long this design or technology will last. It could be obsolete in a year. Or ten years. Nobody really knows. And because nobody really knows how long the useful life of this research is, the accounting profession has decided to throw its hands up in the air and not value R&D at all! R&D is expensed as a cost through the income statement and does not show up as an asset on the balance sheet. It's as though it isn't even there. Because it's a cost, it reduces reported income, which means shareholders' equity does not grow. But that's ridiculous. How can a company that spends millions or billions on research derive no value for all this spending? Admittedly, there's plenty of corporate research that never turns into anything valuable, and it's hard to really know what research will prove valuable. But GAAP accounting says none of it is worth anything.

It gets more ridiculous. If a company buys another company for more than its book value, which happens all the time, the premium over book is embedded in an accounting item called Goodwill, which is added to shareholder's equity. So if a company does a lot of R&D and presumably is successful with this, there is no intangible asset recorded, and book value is low. If a company writes a big check to buy a company that happens to have done a lot of valuable R&D, then it retains this premium in its book value. And unlike physical assets, the intangible premium is never depreciated! It just sits there unless there is some kind of negative event that forces the acquiring company to write it off.



In Millions of USD except Per Share	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
12 Months Ending	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019
Revenue	31,204.0	44,077.0	61,000.0	74,452.0	103,986.0	107,004.0	126,187.0	177,866.0	232,867.0	280,222.0
Gross Profit	7,643.0	10,789.0	15,122.0	20,271.0	26,406.0	35,355.0	47,722.0	65,932.0	93,731.0	114,986.0
- Operating Expenses	6,237.0	9,927.0	14,371.0	19,514.0	26,098.0	33,122.0	43,530.0	61,926.0	81,310.0	100,445.0
+ Selling, General & Admin	1,499.0	2,238.0	3,304.0	4,282.0	5,894.0	7,001.0	9,065.0	13,743.0	19,150.0	24,081.0
+ Research & Development	1,734.0	2,509.0	4,004.0	6,005.0	9,215.0	12,540.0	16,085.0	22,620.0	38,837.0	55,931.0
+ Other Operating Expense	3,004.0	4,730.0	6,053.0	8,087.0	10,899.0	13,581.0	17,785.0	25,453.0	34,323.0	40,433.0
Operating Income (Loss)	1,406.0	862.0	751.0	757.0	348.0	2,233.0	4,186.0	14,066.0	12,421.0	14,541.0
Pretax Income (Loss), Adjusted	1,496.0	930.0	779.0	617.0	56.0	1,573.0	3,900.0	3,912.0	11,268.0	13,972.0
Net Income, GAAP	1,152.0	631.0	-39.0	274.0	-241.0	956.0	2,371.0	3,033.0	10,073.0	11,586.0
- Preferred Dividends	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
- Other Adjustments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Income Avail to Common, GAAP	1,152.0	631.0	-39.0	274.0	-241.0	956.0	2,371.0	3,033.0	10,073.0	11,586.0
Net Income Avail to Common, Adj	1,151.4	628.4	173.3	285.4	-132.5	993.3	2,376.2	2,247.9	10,078.5	11,584.8
Total Equity	6,864.0	7,797.0	8,192.0	9,746.0	10,741.0	13,364.0	19,285.0	27,709.0	45,548.0	62,060.0
Basic Weighted Avg Shares	447.0	453.0	453.0	457.0	462.0	467.0	474.0	480.0	487.0	494.0
Basic EPS, GAAP	2.58	1.39	(0.09)	0.60	(0.52)	1.28	5.01	6.32	20.68	23.46
BVPS	15.36	17.12	18.08	21.33	23.25	28.66	40.69	57.73	89.42	125.53
Adj BVPS for R&D Expensing	19.23	27.37	38.41	55.94	77.46	109.15	153.92	216.67	305.29	411.17
Book, Adjusted for R&D Expensing	8,596	12,400	17,399	25,518	35,788	50,971	72,957	104,001	148,478	209,120
Cumulating R&D	1,734	4,648	9,207	15,772	25,047	37,587	53,672	76,292	105,129	141,060
Earnings, Adjusted for R&D Expensing	2,885	3,537	4,737	6,850	9,143	13,139	18,461	24,868	38,915	47,516
ROE	16.8%	8.1%	2.1%	2.9%	-1.2%	4.5%	12.3%	8.1%	23.2%	18.7%
Adjusted ROE	33.6%	28.5%	27.3%	26.8%	25.5%	25.8%	25.3%	23.9%	26.2%	23.4%

Source: Amazon, Berkshire Hathaway

This accounting distortion happens in the very biggest of companies that you can imagine. You can see some basic financials for Amazon, one of the world's largest technology companies. Amazon has become a collection of Digital Age technology businesses, to the point where it is essentially a well-integrated conglomerate. Amazon had the highest R&D expense of any company in the world last year, at \$36 bn. Over the last ten years, Amazon has cumulatively spent \$141 bn on R&D. It is all expensed, depressing reported profits, and does not add to book value. If somehow accounting standards were modified, and R&D was kept as a balance sheet asset, Amazon's book value would be 250% higher. It is of course very possible that this would still greatly understate the commercial value of this R&D, or Amazon probably would not have a \$ trillion valuation. We calculate that at a minimum, adjusting Amazon's book value upwards for accumulated R&D and increasing its earnings by not expensing R&D, Amazon's earnings would be 300% higher, and its ROE actually a very consistent mid 20% figure over the last decade.

Warren Buffet's Berkshire Hathaway is an Industrial Age conglomerate and is the largest component of the Russell Value index. Mr. Buffett regularly encourages his shareholders to focus on book value growth as a way of measuring success. The comparison with Digital Age conglomerate Amazon is stark. Berkshire conducts no R&D, so there is no expense from this. However, Berkshire is very acquisitive and has grown intangible assets by almost \$60 bn in the last few years through acquisitions. These are added to total equity, inflating book value. When you actually expense the growth in intangibles as though it was some form of R&D, you actually see



In Millions of USD except Per Share	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
12 Months Ending	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019
Revenue	133,830	144,516	159,036	175,477	190,610	200,594	215,114	239,933	247,837	264,616
Gross Profit	29,881	30,116	33,425	38,206	41,024	43,545	48,557	45,602	64,609	66,198
- Operating Expenses	10,618	11,308	11,870	13,282	13,721	15,309	20,562	22,420	18,306	23,324
+ Selling, General & Admin	7,704	8,070	11,870	13,282	13,721	15,309	20,562	22,420	22,133	23,324
+ Research & Development	0	0	0	0	0	0	0	0	0	0
+ Other Operating Expense	2,914	2,638	0	0	0	0	0	0	-3,827	0
Operating Income (Loss)	19,263	18,808	21,555	24,924	27,303	28,236	27,995	23,082	36,303	32,874
Pretax Income (Loss), Adjusted	16,705	16,144	18,811	22,123	24,024	24,699	25,363	21,710	30,283	30,089
- Abnormal Losses (Gains)	-2,346	830	-3,425	-6,073	-1,081	-10,347	-3,304	-2,128	26,282	-72,007
+ Abnormal Derivatives	—	—	-1,963	-2,608	-506	-974	-751	-716	300	-1,484
+ Impairment of Intangibles	—	—	—	—	—	—	—	—	3,827	—
+ Sale of Investments	-2,346	830	-1,452	-4,065	-3,575	-9,373	-7,553	-1,410	22,155	-71,123
Pretax Income (Loss), GAAP	19,051	15,314	22,238	28,796	28,106	34,946	33,667	23,838	4,001	102,696
Net Income Avail to Common, Adj	11,093	10,775	12,597	15,139	16,551	17,358	17,577	14,457	24,781	23,972
Net Abnormal Losses (Gains)	-1,874	521	-2,227	-4,337	-3,321	-6,725	-6,447	-30,483	20,760	-57,445
Basic Weighted Avg Shares	1,630	1,650	1,651	1,644	1,644	1,643	1,644	1,645	1,644	1,634
Basic EPS, GAAP	7,928	6,216	8,977	11,860	12,092	14,556	14,545	27,326	2,446	49,828
Basic EPS from Cont Ops	7,928	6,215	8,977	11,850	12,092	14,556	14,545	27,326	2,446	49,828
Basic EPS from Cont Ops, Adjusted	6,782	6,531	7,629	9,211	10,071	10,564	10,683	8,791	15,075	14,671
Earnings expensing intangibles		3,310	11,456	13,461	12,125	15,473	-23,490	13,589	26,048	23,616
Book Value Per Share	99.611	102.407	116.023	136.581	147.872	157.392	173.639	214.006	214.442	262.295
Tangible BVPS	66.430	63.995	76.953	96.307	104.902	113.268	104.548	144.421	145.594	192.812
ROE	6.8%	6.4%	6.6%	6.7%	6.8%	6.7%	6.2%	4.1%	7.0%	5.6%
ROTE	10.4%	10.2%	9.9%	9.8%	9.6%	9.3%	10.2%	6.1%	10.4%	7.5%
ROTE Expensing Intangibles		3.1%	9.0%	8.5%	7.0%	8.3%	-13.7%	6.7%	10.9%	7.5%
Total Equity	162,934	168,961	191,588	224,485	243,027	258,627	286,428	351,954	352,500	428,663
+ Total Intangible Assets	55,910	63,375	64,516	66,194	70,620	72,505	113,572	114,440	113,173	113,526
+ Goodwill	49,006	53,213	54,523	57,011	60,714	62,708	79,488	81,258	81,025	81,882
+ Other Intangible Assets	6,904	10,162	9,993	9,783	9,906	9,797	34,086	33,192	32,149	31,648



fairly unimpressive numbers for Berkshire's return on common equity. This is not intended to criticize Mr. Buffett or the collection of assets that comprise Berkshire. It just shows how large this inconsistent treatment of R&D and intangibles looms in the calculation of book value.

## EXTERNALITIES

### MARKET STRUCTURE & INTEROPERABILITY

In 1979, Harvard Professor Michael Porter first published his Five Forces Framework to assess the competitive intensity and, therefore, the attractiveness of an industry. This landmark academic piece has become part of a standard business school curriculum. The five forces are frequently used to measure competition intensity, attractiveness, and profitability of an industry or market. In Porter's analysis, an "unattractive" industry is one in which the effect of these five forces reduces overall profitability. The most unattractive industry would be one approaching "pure competition", in which available profits for all firms are driven to minimal levels, while more attractive industries have barriers to competition and, therefore, lower "pure competition".

#### PORTER'S FIVE FORCES



Source: Michael Porter

Porter's five forces include three forces of 'horizontal' competition: the threat of substitute products or services, the competition level between established rivals, and the threat of new entrants, and two forms of 'vertical' competition: the bargaining power of suppliers and the bargaining power of customers.

Obviously, this analysis was developed well before

the onset of the Digital Age. In a pre-Digital Age world, businesses like airlines, restaurants, and consumer electronics were competitively speaking "bad" businesses because competitive entry is too easy, products are not well differentiated, and buyers are heavily motivated by price. Concentrated businesses like soft drinks and business equipment, or highly challenging products to make, such as aircraft and medical devices, were relatively "good" businesses in this analysis. Looking at these through a value-investor lens, these competitively advantaged businesses offer a margin of safety if you could buy them at a fair price, while the bad businesses don't seem to possess a margin of safety at almost any price.

Our view is that the five forces analysis remains a relevant way of thinking about business characteristics. But some of these forces look a little different in their digital manifestation.

We would propose Cambiar's Digital Age version of Porter's Five Forces:

#### CAMBIAR'S FIVE FORCES

##### DIGITAL AGE VERSION



Source: Cambiar Investors. For illustration purposes.

In our assessment, there are some unique and distinctive elements to the 5 forces framework that make the relevance of "book value" that much more dubious.

We have already talked about the importance of intangibles, such as intellectual property and brands. These were relevant before the Digital Age. In the Digital Age, the importance of technology is obvious. Two concepts are less obvious: interoperability and liquidity-driven marketplaces.



# INTEROPERABILITY AND THE LOCK-IN

Interoperability means that you need to use product X in order to use product Y, and you just might need both products X and Y to use product Z. Replacing the variables, you may need an iPhone to use Opentable. You might need both a P.C. and an Oracle database to look up customer information. Importantly, unless a business decides to rip out its customer database, which is very disruptive, this will always be the case. The customer information may itself only work through customer management software such as Salesforce.com, creating another layer of interoperability.

In terms of Porter's 5 forces, once this kind of interoperability and dependence emerges, buyers and suppliers have very little bargaining power or propensity to choose an alternative. In technology analyst terms, this is called the "lock-in" effect. It may show up in terms of high pricing power and returns on capital, but this is unlikely to be a tangible balance sheet asset.

Interoperability isn't new to the Digital Age. The old "razors and blades" business model is a form of interoperability and lock-in. It just goes to a whole new dimension when you have this layering and lock-in effect on digital platforms.

## LIQUIDITY-DRIVEN MARKETPLACES

Liquidity driven marketplaces are an old concept. The New York Stock Exchange became important because this is where buyers could expect to find sellers, and sellers could expect to find buyers. The Chicago Mercantile Exchange benefits from this same effect for commodity and interest rate futures. The dominance of the U.S. dollar in global trade is also a liquidity-driven phenomenon.

But the liquidity-driven effect becomes much larger in the digital world. We are no longer bound by location, the time of the day, or other physical constraints. Shopping, searching, socializing, and communication have become standardized on the platforms where there is the greatest liquidity between buyers and sellers. The liquidity-driven effect explains the success and scalability of entertainment services such as Netflix or transportation platforms such as Uber. It keeps erupting in new places, with indoor fitness

equipment the latest. The important point from a competitive analysis perspective is that once liquidity becomes established at a certain venue, it becomes very difficult to compete with it. This leads to the "winner take all, winner take most" phenomenon which is commonplace in internet businesses.

Relating this back to the 5 Forces Analysis, when a liquidity-driven market effect takes hold, it's important for investors to understand that competitive entry and dislocation becomes very difficult – the threat of new entrants fades sharply. In fact, it seems that once the liquidity-driven effect kicks in, the only thing that tends to dislodge it is a paradigm shift, which is probably going to come from new technological development. Want some proof of that? Shopping malls are a liquidity-driven concept – merchants and consumers could expect to find each other in a mall. Except that is being disintermediated by e-commerce. Newspapers once benefited from the liquidity effect for local classified ads. That too has given way to internet-based forms of news.

## ADDING IT ALL UP

Let's go back to my big question – why has the fade rate for business returns on capital changed, and why has that happened so decisively since 2006?

You probably know the answer if you have made it this far. The importance of intangibles, the barriers to competition that these create, the amount of interoperability that is a feature of the Digital Age, and the liquidity-driven effect – when successful businesses are able to capture these, their success compounds and competitive pressure fades. The ubiquitous nature of digital and connected devices opened this floodgate wide. The value investor's behavioral bias to fade outsized success and identify laggards is much less likely to be productive.

And as for the low book to market value factor, that looks hopelessly antiquated as a predictor of future returns, as antiquated as shopping malls and newspapers. And NBA big men.

# WHAT DOES THIS MEAN FOR VALUE INVESTING?

## IS THERE A PREFERRED METRIC TO REPLACE P/B?

## STYLE BOX & ASSET ALLOCATION IMPLICATIONS?

With that, there is one giant question looming. Is the value paradigm still relevant?

We think it is. Let's remember, the philosophy was always simple. Buy businesses for less than intrinsic value, to create a margin of safety, and that means be careful as to price. That approach isn't what's misfiring. What's misfiring is the measurement of that intrinsic value through book. We believe it's dated, distorted, and increasingly disconnected from durable drivers of value. We are not giving enough weight to intangibles, to market structure, or to interdependencies that can thicken over time. We need to start doing that.

Like in basketball, the path to playing winning ball is per possession efficiency. The value mindset needs to focus more on these intangible and external to the balance sheet drivers of business success.

## IS THERE A NEW PREFERRED METRIC, THAT COULD TAKE OVER FOR LOW PRICE TO BOOK?

We are not sure about that. Maybe, possibly. If you are looking for a metric that tends to encapsulate these digital economy forces of interoperability, liquidity, lock-in, and intangibles, it tends to show up in profitability per unit of assets, so either gross margins or gross profits divided by net assets. If the accounting profession could get its act together, maybe we would account for R&D differently, which would lead to different calculations of profit and business assets. For now, we will just have to wait.

# THE STYLE BOX AND INSTITUTIONAL ASSET ALLOCATION

Here comes the uppercut. If the low book to market definition of value is antiquated and out of date, what does this mean for institutional asset allocation? Let's understand just how heavily low book to market as a proxy for value is baked into index construction:

From FTSE Russell:

*"For each base index (the Russell 1000 and Russell 2000, and the smallest 1,000 in Russell Microcap), stocks are ranked by their book-to-price ratio (B/P), their I/B/E/S forecast medium-term growth (2 year) and sales per share historical growth (5 year). These rankings are converted to standardized units, where the value variable represents 50% of the score, and the two growth variables represent the remaining 50%. They are then combined to produce a composite value score (CVS)."*

The entire value side of index calculation is based on low book to market. It's as though the Digital Age has never happened – the style box still clings to a very early 1990s academic framework. The growth side is measured more by changes in the top and bottom line, and essentially the absence of top or bottom-line growth becomes a value factor.

If our insight is correct, that durable business characteristics come from intangibles, interoperability, market structure, etc, and show up in high gross profit per unit of net assets, then the low book to market gauge embeds some out of date biases. These devalue digital age determinants of business success and overweight capital intensity. This seems wrong on several fronts.

## CAPITAL DISCIPLINE

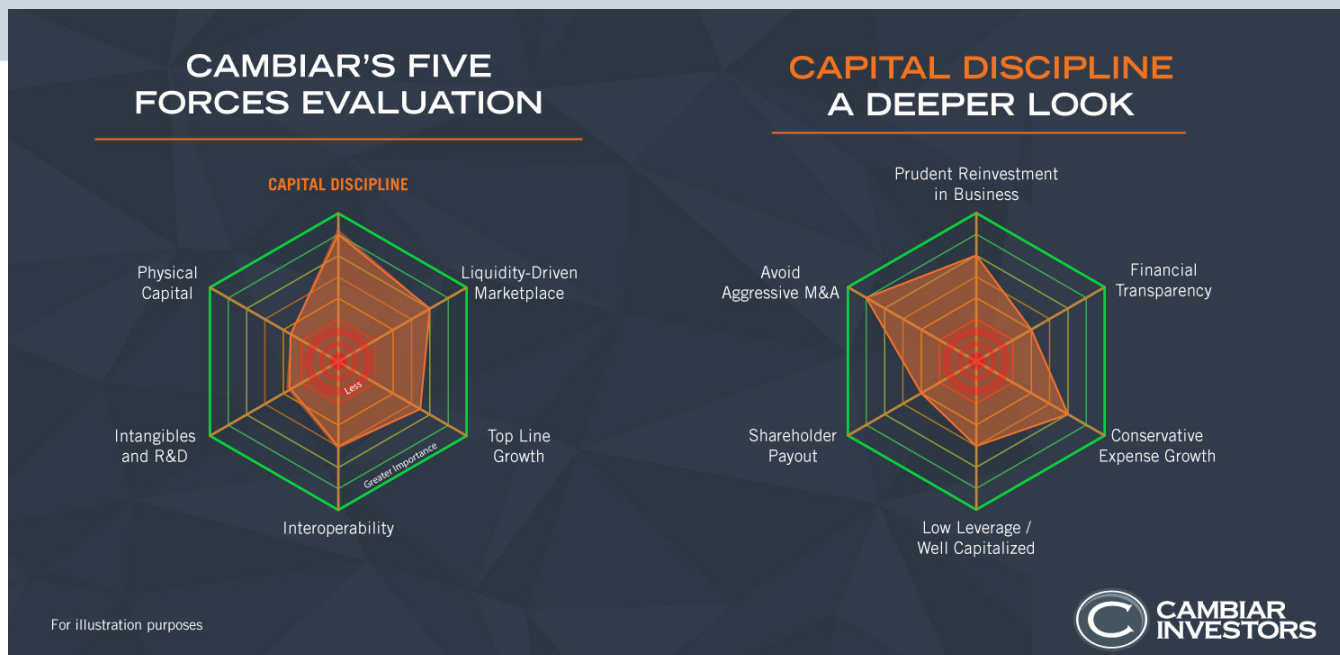
Without a single and simple variable to focus on, at Cambiar, we have elected to give much greater emphasis to profitability, to market structure, and to these Digital Age dynamics. We still care a great deal about price, and so should investors. But in a different way. The different way is best described as capital discipline. Companies with good capital discipline have several consistent tendencies:

- tend to reinvest prudently in their businesses (in terms of capex and R&D),
- tend to have transparent accounting,
- tend to grow expenses conservatively,
- tend to have low leverage/be well-capitalized
- tend to avoid aggressive M&A
- tend to have a shareholder payout of dividends, buybacks, or both

The list goes on, and it is difficult to say which of these tendencies are most important. It's a form of good governance; it's a form of sustainable business practice. Most importantly, it is a powerful determinant of long-term success that tends to cut

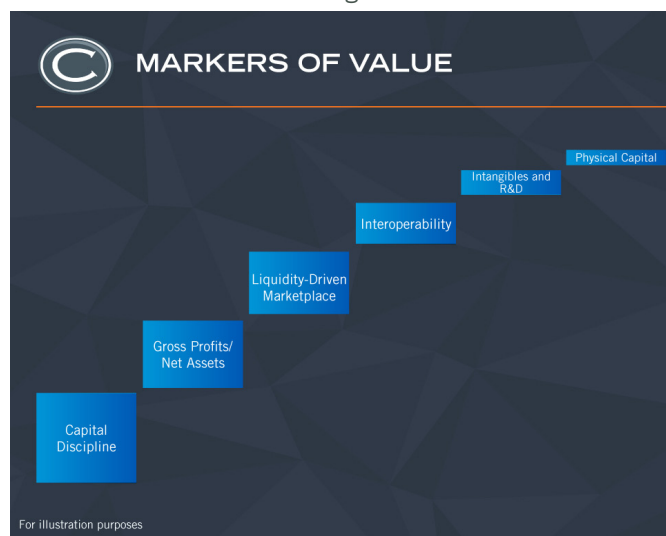
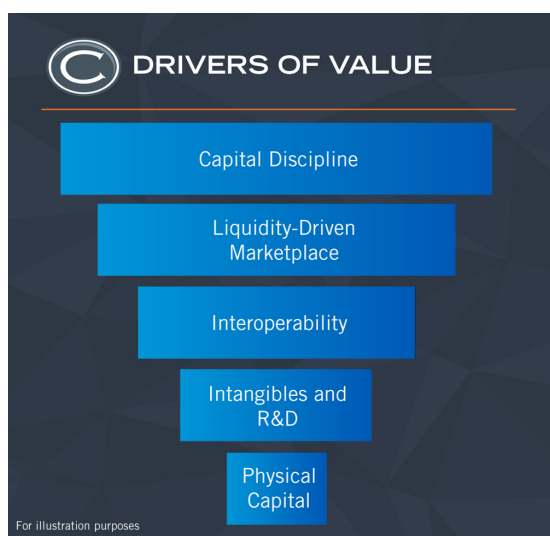
through the growth value, and business cycle divides.

Since we cannot in good faith pin down one variable to rule them all, the right answer may be to weigh several variables, and stack what you as an investor deem most important. Perhaps in that hierarchy, we might see a ring of concentric circles, like a target or a radar chart, with the "least desirable" form of capital discipline near the bullseye, and more desirable forms moving further from the center along several possible spines.



Possibly a funnel...

or a sum of different attributes. The point is that there are many variables that go into this calculation. Some of them may duplicate each other. This is where academics need to go to work.





Perhaps the venerable style box needs to give way to different foundational attributes. We would recommend two that are measurable:

- Gross Profits/Net Assets, and
- A Capital Discipline score

The “value factor” for index inclusion should take cues from these.



## ABOUT THE AUTHOR

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Brian the President and Chief Investment Officer at Cambiar Investors and is responsible for the oversight of all investment functions at the firm. Mr. Barish has over 30 years of investment experience.

## CAMBIAR 2020S: FOCUSED ON PROFITABILITY & CAPITAL DISCIPLINE

Markets have largely spoken what they think, which is to value things other than book capital quite decisively. As value managers in 2020, you should think of Cambiar as being very focused on these variables and not on a thoroughly discredited one, in the form of statutory book.

The year 2020 will be the most non-normal year in the preponderance of our lives. It's fairly obvious that speculative forces have taken hold, and that a great many stocks are being bought and sold not

on the basis of what their visible earnings power is, but on very vivid imagination of what it could be. Unbounded by 2020's sheer strangeness, the technology-heavy Nasdaq has traded above 60x trailing earnings, a level not seen since the great tech stock bubble of 1999. In 1999, the Digital Age had yet to arrive, even though the market was very breathlessly anticipating it. Unlike 1999, Digital Age business models have arrived, they are powerful in many cases and also durable. All that said, at multiples this high, you still have to question the margin of safety embedded in these, and our capacity to predict the future after the pandemic ends. The disruptors have a habit of eventually being disrupted themselves.

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Additional Resource: <https://www.valuwalk.com/2016/04/capital-discipline-there-is-a-fourth-great-stock-market-anomaly/>

