

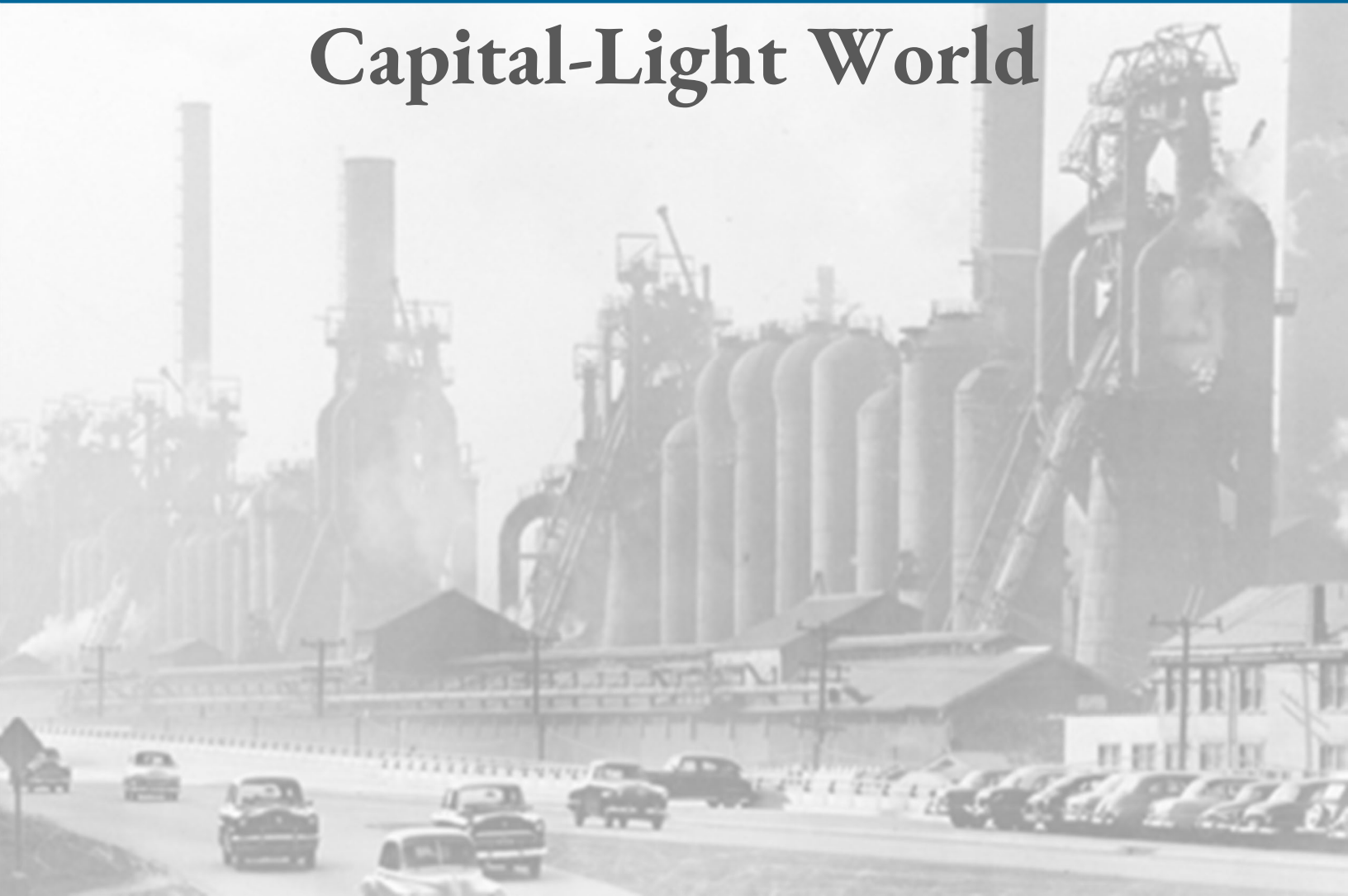


DISTILLATE CAPITAL

RATIONAL INDEX DESIGN



Value Investing in a Capital-Light World



Summary

We believe that because of behavioral biases value investing works. But due to the evolution from physical to intellectual investment and related accounting distortions, traditional measures of value have lost meaning and efficacy and need to be updated and rationally redefined in an asset light economy.

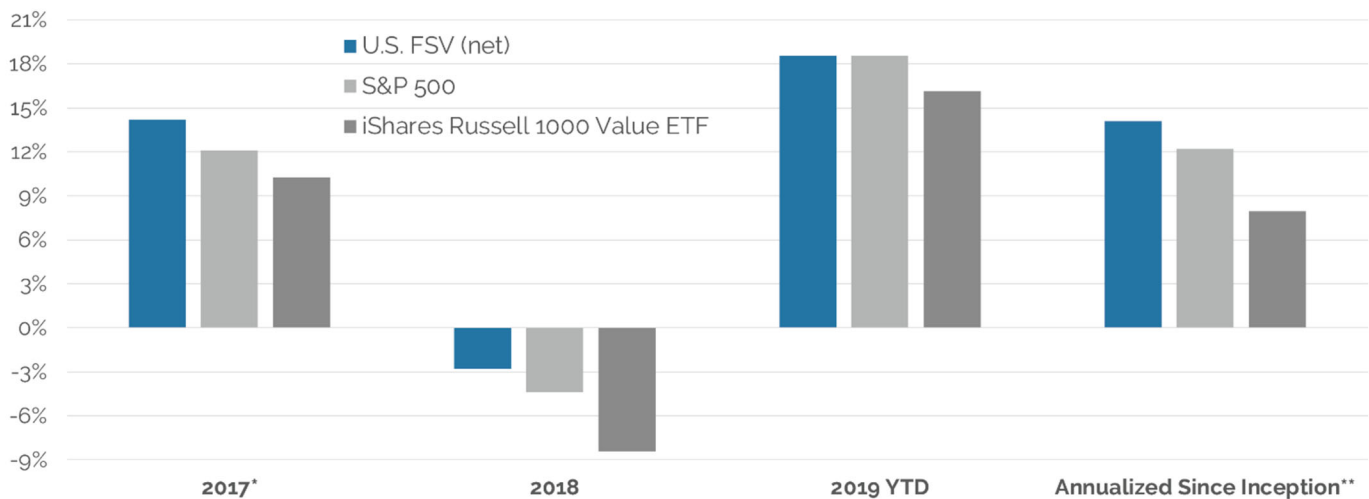
Backdrop:

- Over the past several decades, companies in the developed world have shifted their investment spending from physical assets like manufacturing plants to more intangible ones like software, branding, customer networks, etc.
- Accounting practices that were developed for an industrial economy have struggled with this economic evolution and the transparency and comparability of financial reporting has suffered significantly as a result.
- Traditional measures of valuation like price-to-book (P/B) or price-to-earnings (P/E) that are based on these accounting practices are now less meaningful than in the past and alternative approaches in stock selection are needed.

Solution:

- We drew on our long-tenured experience as fundamental analysts to develop a free-cash-flow based measure of value that is designed to circumvent these distortions and allow for meaningful comparisons between companies regardless of whether they derive their value from physical or intangible assets.
- Using this measure of value and combining it with a focus on fundamental stability to further minimize risk, our U.S. Fundamental Stability and Value strategy has outperformed both the iShares Russell 1000 Value ETF and the S&P 500 Index at a time that many are saying value investing isn't working (*See Figure 1*).

Figure 1: Strategy Performance Since Inception (through 6/30/19):



* Strategy inception of 5/31/2017 through 12/31/2017

** Strategy inception of 5/31/2017 through 6/30/2019

Please see important performance disclosures at the end of this document.

The Economic Evolution from Tangible to Intangible Investment

Over the past several decades, the economy has undergone a significant transformation. As the world globalized and it became harder for companies to compete by having the lowest cost of production (as they had done during the industrial revolution), companies began to shift up the value curve into activities that focused more on innovation and design. Companies also sought to outsource production to others where possible. As this occurred, investment spending migrated from physical to intellectual assets.

This evolution is clear in a comparison of the top ten largest companies in 1960 versus 2019 (See Table 1).

The composition of the stock market has shifted from companies with tangible assets to those that rely more on intangible assets like software, scientific knowledge and patents, branding, customer networks, etc.

Table 1: Largest Ten Stocks by Market Capitalization	
1960:	2019*:
AT&T	Microsoft
General Motors	Amazon
DuPont	Apple
Standard Oil	Alphabet
General Electric	Facebook
IBM	Berkshire Hathaway
Texaco	Johnson & Johnson
Union Carbide	JPMorgan Chase
Eastman Kodak	Exxon Mobil
Sears Roebuck	Walmart

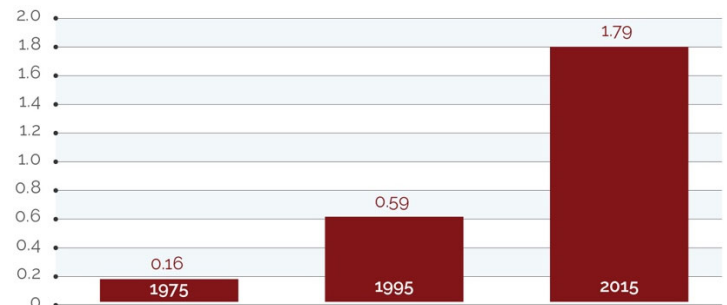
*as of 6/30/2019

The 1960 list is comprised of companies that engaged in activities necessitating large manufacturing footprints and investments in physical infrastructure to build cars, extract and refine oil, or produce chemicals or steel. Very simply, these companies required tangible investments to produce tangible products.

The 2019 list, by contrast, consists largely of companies that provide services or products that are differentiated by their design and innovation and are backed by significant research and development and intellectual property. Very few of these companies derive their value from large physical manufacturing plants like the 1960s companies. Instead, their value and ability to generate free cash flow mostly results from their prior and ongoing investments in research and development (R&D) to support software, scientific knowledge and patents, branding, customer networks, supply chains, or other largely intangible activities.

Public U.S. companies now spend significantly more on R&D than capex compared to just \$0.59 on R&D for each \$1 on Capex in 1995.

Figure 2: Ratio of Combined R&D Spending to Capex Spending for U.S. Listed Public Companies



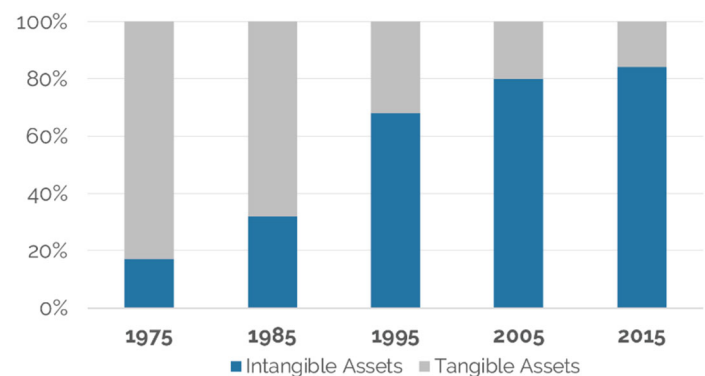
Source: "Is the U.S. Publication Corporation in Trouble?" Kahle & Stulz 2016

The change has been extraordinary. Figure 2 depicts the total R&D spending among U.S. public companies in relation to capital expenditures (capex). In 1975, U.S. public companies spent just 16 cents on R&D for every \$1 of capex. By 1995, this figure had grown to 59 cents. But from 1995 to 2015, the picture flipped and R&D spending substantially exceeded capex outlays such that U.S. public companies were investing \$1.79 of R&D per \$1 of capex. Gross domestic product (GDP) data that show the activity of the entire U.S. economy corroborate this story. It similarly shows an enormous increase in intangible investments relative to spending on physical assets like plants and equipment.

The impact of this shift is evident in the intangible vs. the tangible share of S&P 500 Market value, per Ocean Tomo's study of Intangible Asset Market Value (See Figure 3.) The change from 1975 to 2015 is entirely consistent with the shift in capital expenditures versus R&D spending seen above. But even though intangible assets are the main driver of market value today, they are poorly measured by standard accounting rules and traditional valuation metrics have struggled as a result.

As companies shifted toward more R&D spending, intangible assets became the main driver of overall market value.

Figure 3: Tangible vs. Intangible Components of S&P 500 Market Value



Source: Elsten & Hill "Intangible Asset Market Value Study" Ocean Tomo

Accounting Was Complex Even Before the Rise of Intangibles

Before discussing the issues surrounding the accounting for intangible investments and implications for traditional valuation measures, it is useful to look at the history of our financial accounting system and some of the other changes that have made many standard valuation metrics less comparable and meaningful over time.

As a brief background, accounting rules (standards) in the United States are referred to as Generally Accepted Accounting Principles (GAAP). The standards are used by public companies regulated by the Securities and Exchange Commission (SEC) and are set by the Financial Accounting Standards Board (FASB), a non-profit organization whose purpose is to serve the public interest by establishing and improving accounting principles in the United States.

A fundamental tenant of GAAP is to employ an accrual-based accounting system which records revenues and expenses over time and not necessarily in the period when cash is spent or received. The goal of this system is to provide a better picture of a company's ongoing financial performance. For example, instead of recording the entire cost of a new plant at once and causing net income to be severely impacted in that period, accrual accounting allows for depreciation of the expense over a set timeframe—attempting to match the life of the assets put in place. The intended goal of this accounting system is to smooth out the impact of the investment to provide a better sense of the company's true ongoing profitability.

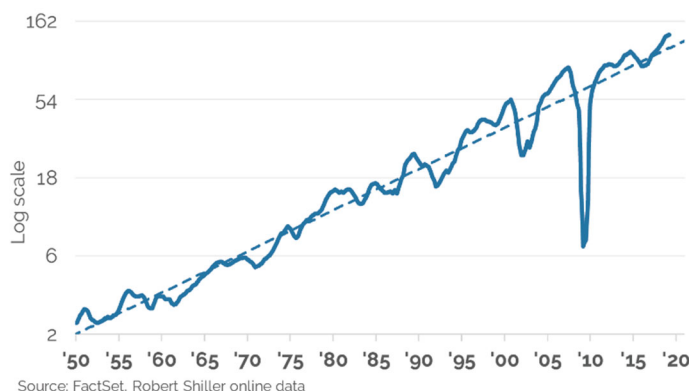
But despite this straightforward goal, GAAP accounting is very complex and financial analysts going back to Ben Graham have long recognized the need to be aware of potential accounting distortions. The subject of accounting is therefore a meaningful part of the Chartered Financial Analyst (CFA) course of study. At a minimum, given the complexity and the constant state of change, an enormous effort is required to understand how new rules and rule changes will impact historical, cross-company and cross-industry comparability. It is also good to be mindful of the fact that that FASB, along with other regulators, is lobbied by industry to create and modify rules to show the activities of management teams in the best light.¹ As a result of rule changes over time and increased complexity, many would argue the system that was supposed to provide a clearer picture of ongoing corporate profitability is now in many cases adding confusion.

As an example, even something as seemingly straightforward as the recognition of revenue is now governed by a set of rules that extends over 700 pages.² Reporting of expenses and profits underneath the revenue line are significantly more complicated. As noted financial economist Robert Novy-Marx quipped in a 2012 paper, “The farther down the income statement one goes, the more polluted profitability measures become, and the less related they are to true economic profitability.”³

One notable change in the past several decades has been the shift to fair value accounting which measures assets and liabilities at current values instead of historical costs. This change and related follow-on rules have been very controversial.⁴ At the very least, it means that current statements of income are less comparable with those from the past. A recent Financial Analyst Journal article by Jeremy Siegel highlighted some of these rules as a key reason that reported earnings are now more volatile and less comparable to figures prior to these changes. This is evident in a long-term chart of S&P 500 reported earnings per share (EPS) which shows much more variability after these changes occurred in the early 2000s even accounting for the severity of the most recent recession (See Figure 4).⁵

Changes in accounting rules have caused reported earnings to become more volatile in the last two decades compared to history.

Figure 4: S&P 500 Reported Earnings Per Share



Warren Buffet has also been a vocal critic of several new GAAP rules. In his 2017 Berkshire Hathaway annual letter, Buffet complained that new accounting rules relating to the treatment of realized and unrealized gains and losses would render Berkshire Hathaway's net income and EPS figures “useless.”⁶ It is incredibly noteworthy for an investor as wise and revered as Buffett to make this criticism of the most widely followed measure of corporate profitability.

¹ Ramana, “Why ‘Fair Value’ is the Rule” Harvard Business Review, March 2013

² Lev “The End of Accounting” 2016 highlights FASB’s “Revenue From Contracts With Customers” topic 606 from May of 2014

³ Novy-Marx, “The Other Side of Value: The Gross Profitability Premium” 2012

⁴ Ford & Marriage “The Big Flaw: Auditing in Crisis” The Financial Times, July 31 2018

⁵ Siegel “The Shiller CAPE Ratio: A New Look” Financial Analysts Journal 2016

⁶ 2017 Berkshire Hathaway Annual Letter

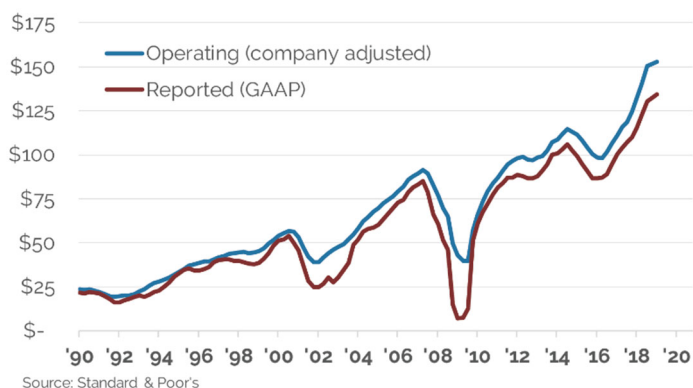
Stemming from these complications, and not yet even considering the issues coming from the structural shift in capital spending where we began this conversation, companies saw the confusion and began to report their own alternate versions of net income and other key metrics. Thus was born “Non-GAAP” accounting in which companies use their own set of rules to report “operating earnings.” Being able to calculate their own version of earnings quickly caught on and over 70% of companies in the S&P 500 Index now utilize their own versions of non-GAAP earnings per share (EPS).⁷ Not surprisingly, company reported non-GAAP earnings are overwhelmingly favorable compared to GAAP earnings and one analysis in 2014 showed that overall net income for the S&P 500 was around 22% higher as a result of over 1,300 non-GAAP adjustments.⁸ So, instead of using operating earnings to smooth out one-off charges, as is theoretically the intention, many companies simply abuse the system to improve their numbers. A comparison of operating versus GAAP earnings going back to 1990, when S&P began tracking the latter, shows exactly this. Operating earnings are less volatile, but also structurally higher than reported earnings (See Figure 5).

As if this weren’t complicated enough, some companies have even resorted to reporting multiple versions of adjusted earnings. In the third quarter of 2017, GE notably offered four different measures of EPS.

The key result of all of this is that reported and operating earnings are less comparable across companies and their use in standard metrics to evaluate stocks may be misleading, if not useless as Buffett suggests.

Operating earnings are less volatile than reported GAAP earnings per share, but also structurally higher.

Figure 5: S&P 500 Reported vs. Operating EPS



The Growth of Intangible Assets Further Blurs the Picture

While the complexities in standard GAAP accounting and the use of self-defined measures of profitability are already making financial reports less comparable, the economic shift towards intangible investment added a significant additional complication.

In the mid-1970s, FASB addressed the issue of R&D spending with the Statement of Financial Accounting Standard No. 2 (FAS 2). Instead of recognizing the potential long-term value of R&D spending and allowing it to be capitalized and depreciated over time as is done with outlays on physical infrastructure, SFAS 2 requires the immediate expensing of R&D spending. The logic behind this decision is that the long-term benefit of R&D investment is highly uncertain, as is the lifespan over which it might provide an economic benefit. By contrast, an investment in a physical asset, like a new steel plant, was thought to have a more obvious long-term economic benefit and estimable lifespan. As an aside, there are of course a litany of examples where physical investments were quickly found to be worth less than their cost.

The FASB’s decision is logical as investments in intangible assets like R&D are highly variable and their lifespans are very much unknowable. Some intangible investments become worthless almost as soon as the money is spent while others can see their value increase rather than decrease over time. Trying to account for such a wide range of possible values for intangible investments and setting standards for their useful lives and depreciation periods is therefore a dizzying proposition.

This likely explains FASB’s decision to avoid such issues and simply require that spending on R&D be expensed as incurred.⁹ But while the choice to expense intangible investments is therefore understandable, there are enormous ramifications of doing so in an economy that is rapidly shifting toward this type of investment.

An incremental complication in the accounting treatment of intangible investments like R&D spending is that while spending done internally cannot be capitalized as an accounting asset, this spending *can* be deemed an accounting asset when it is acquired from another company. For example, if a pharmaceutical company invests in its own R&D and patents, that spending is expensed as incurred and not counted as an asset

⁷ Audit Analytics.

⁸ Ciesielski & Henry “Accounting’s Tower of Babel: Key Considerations in Assessing Non-GAAP Earnings” 2017

⁹ Damodaran “Research and Development Expenses: Implications for Profitability Measurement and Valuation” Stern School of Business, 1999

on the balance sheet. If a separate company then buys those patents and pays a price that substantially exceeds the GAAP accounting-based value, the acquirer writes up the excess amount paid as a new intangible asset, labeled Goodwill. The goodwill in that case is effectively the creation of value that came from R&D or advertising or other brand building that was never capitalized on the acquired company's books.

To make matters even more complicated, certain intangible assets created at the time of an acquisition are amortized and expensed over time, while others remain on the balance sheet at the acquired value and are subject to an annual test of their ongoing worth. As we suggested earlier, nothing in accounting is simple.

The logic of capitalizing acquired intangible investments seems sound. While it is difficult to establish a value created as the result of internal research, once an outside entity is willing to purchase it, the value becomes more clear.¹⁰ Nonetheless, for the purposes of comparing companies, the result is an inconsistency that makes the financials of a company that invests in its own R&D or software look very different from those of a company that accumulates intangible assets through acquisition even if the two companies are in the same industry and otherwise identical.

If there is the need to compare domestic companies with those domiciled outside the United States, there is yet another wrinkle. Internationally, the treatment of intangible assets is slightly different. In 1978, the International Accounting Standards Committee (IASC) issued International Accounting Standard (IAS) No. 9 which requires the expensing of research costs. This rule differs from the U.S. version in that it allows for the capitalization of development expenses once commercial feasibility has been established.¹¹ The result is that international companies sometimes show line items for the amortization of intangibles in their income statements that an identical U.S. company would not.

Again, the key result of all of this is that financial statements are much less comparable in an economy with greater intangible investment. This challenge is prevalent not just in comparing stocks in different countries or sectors of the economy, but even within them. Importantly, as companies continue to favor investment in intellectual rather than physical assets and capitalism becomes increasingly capital-light, this distortion is only likely to get worse.

An Example of How Accounting Metrics Work in the Real World

To see the impact of the differing treatment of R&D and capex it is useful to look at an example. **Table 2** shows a basic summary of trailing twelve-month financials for Royal Caribbean Cruises (RCL), a capital-intensive company that owns and operates cruise ships, and F5 Networks (FFIV), a research-intensive software company with relatively few physical assets. The table starts with sales and then shows R&D expenses, all other accrual-based expenses, and then net income. Cash flow from operations is derived by adding non-cash charges for depreciation and amortization (D&A) and working capital and all other non-cash adjustments to net income. Capex is then subtracted from operating cash flow to arrive at the final figure of free cash flow. The furthest two columns in the table show all of the same figures expressed as a percentage of sales to make comparisons between them easier.

Accounting rules can make companies that are more focused on capital investment or research and development look very different.

Table 2

Summary Financials for RCL vs. FFIV¹²

	Millions		As a Percent of Sales	
	RCL	FFIV	RCL	FFIV
Sales	\$9,906	\$2,194	100.0%	100.0%
R&D Expense	\$0	-\$377	0.0%	-17.27%
Other Expenses	-\$8,064	-\$1,313	-81.4%	-59.9%
Net Income	\$1,842	\$503	18.6%	22.9%
Depreciation	\$1,073	\$59	10.8%	2.7%
Working Capital etc.	\$564	\$199	5.7%	9.1%
Operating Cash Flow	\$3,479	\$761	35.1%	34.7%
Capex	-\$2,410	-\$53	-24.3%	-2.4%
Free Cash Flow	\$1.069	\$708	10.8%	32.3%
Market Cap	\$24,015	\$8,747		
Enterprise Value (EV)	\$34,567	\$7,482		
P/E	13.0	17.4		
P/B	2.1	6.0		
Free Cash/EV	3.1%	9.5%		

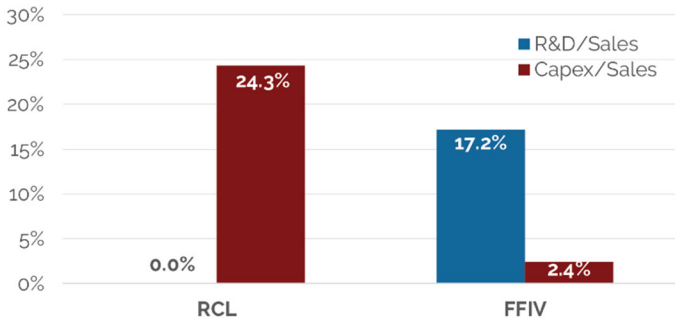
¹⁰ Lev & Gu "The End of Accounting", Wiley, 2016

¹¹ Damodaran "Research and Development Expenses: Implications for Profitability Measurement and Valuation" Stern School of Business, 1999

¹² All data as of July 2019 and sourced from FactSet.

Royal Caribbean spends significantly more on capex, while F5 Networks spends dramatically more on research and development.

Figure 6: R&D vs. Capex to Sales



Source: FactSet, trailing twelve month data as of 7/2019

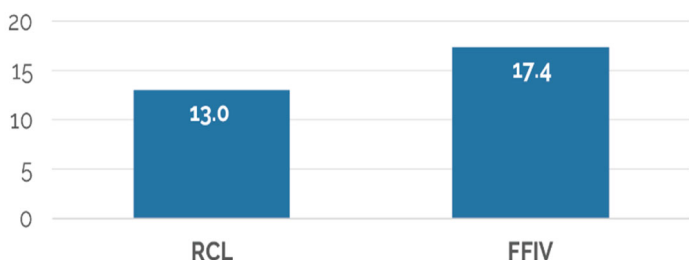
The difference in the R&D and capex intensity of each company is evident in a comparison of each company's spending in these areas as a percentage of sales. As would be expected, the tangible asset-heavy cruise ship operator spends dramatically more on capex and very little on R&D while the software company does the reverse (See Figure 6).

Most importantly, while both companies have similar net income margins of around 20% and operating cash flow margins of around 35%, they have vastly different free cash flow margins. RCL's free cash flow is far less than its income, at 11% of sales while FFIV's free cash flow significantly exceeds net income, at 32% of sales. This highlights the risk of looking only at the accrual accounting-based net income figure in assessing each company's profitability. Logic would also demand that a thorough analysis examine multiple time periods to assess whether each company's cash flows were indeed representative of the ongoing business model.

Given the differences noted, popular valuation metrics based on net income, like price to earnings (P/E), should not be viewed as comparable. On the P/E metric, FFIV looks significantly more expensive, trading at 17 times earnings versus only 13 times for RCL (See Figure 7). But these P/E ratios tell little about the true price one is paying relative to the underlying economics accruing to shareholders.

Royal Caribbean is cheaper than F5 Networks on the basis of price-to-earnings (P/E)

Figure 7: Price to Earnings (P/E) of RCL vs. FFIV



Source: FactSet, trailing twelve month data as of 7/2019

In addition to impacting earnings-based valuation metrics, recording capex as an asset and R&D as an expense also significantly impacts valuation metrics that include measures of assets and owner's equity. Price to book (P/B) is among the most common valuation metrics used across Wall Street and looks at the price of a stock relative to its net equity, or total assets less liabilities, per share. In this example, because FFIV has very few accounting assets due to its R&D focus, it again looks much more dearly valued at a P/B of 6.0 versus RCL's 2.1 (See Figure 8). Again, this metric tells little about the market price of each company's underlying cash generation.

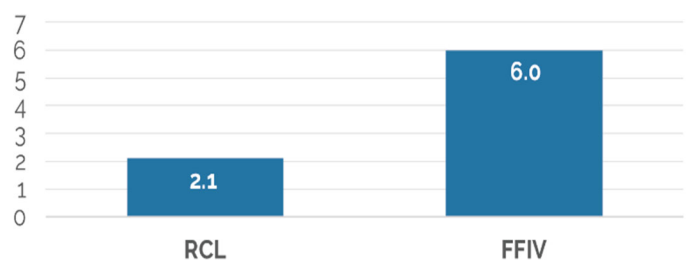
In addition, P/E and P/B ratios can fail to highlight important differences in leverage, which can be very meaningful in assessing both the value and risk of an investment.

Measures of quality or financial soundness that rely on balance sheet data will likewise be compromised in a comparative sense. Standard metrics used to assess quality suffer both in the calculation of income (typically used in the numerator) and in the calculation of the asset or equity values (typically used in the denominator). Since the asset impact is usually larger than the net income distortion, returns-based quality metrics will typically flatter R&D intensive companies. For example, FFIV's return on assets (ROA) or return on equity (ROE) will each look very high given the company's low level of assets even though its net income is negatively impacted by the expensing of R&D. Traditionally, a high ROE meant that if a company retained a dollar of net income, it could expect to achieve a rate of return similar to its ROE on those retained earnings. A company with a high ROE was thus thought to be able to grow faster and be of higher quality. But this is not the case if a high ROE is due to an equity level that does not accurately reflect the true investment in the business that was required to produce current returns.

Overall, this example highlights how traditional valuation and quality metrics have become less comparable across companies and have lost meaning as intangible investment has increased as a portion of our economy.

Royal Caribbean is cheaper than F5 Networks on the basis of price-to-book (P/B).

Figure 8: Price to Book (P/B) of RCL vs. FFIV



Source: FactSet, trailing twelve month data as of 7/2019

The Impact on Traditional Measures of Value

Why does all this matter? There has been a common refrain among many investors and commentators that “value isn’t working.” And in fact, many traditional value managers have been struggling to beat the market. As well, the major index providers (Standard & Poor’s, Russell, and MSCI) offer “value” versions of their main indices, which have likewise underperformed the headline indexes fairly significantly over the past decade. All of this has been used as evidence by pundits to claim that value investing isn’t working, or at least is “out of favor”. While the numbers cannot be refuted, the question of why value is not working is rarely addressed.

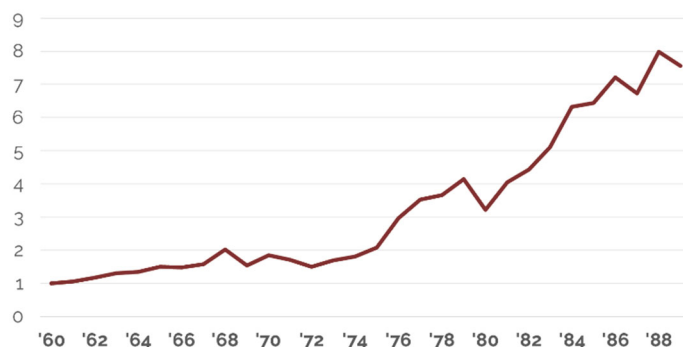
What is notable when considering the performance of these value indexes is that each relies on price to book value (P/B) as either the main or one of the primary determinants of the constituent selection. As we have discussed now at some length, book value is determined solely by traditional accrual accounting measures which we think make it an outdated measure of value. **We think the concept of value remains intact, but rather it is the standard definitions of value that are flawed and explain the style’s underperformance.**

The data corroborates this story. The longer-term performance data on P/B provided by Kenneth French, noted Professor of Finance at the Tuck School, is consistent with our expectations. This data allows for a comparison of the performance of the cheapest 20% of stocks ranked on P/B to the most expensive 20% over time. From 1960 to 1989, the cheapest 20% of stocks on P/B significantly outperformed the most expensive 20% (See Figure 9). A theoretical portfolio that was long the inexpensive quintile and short the expensive quintile would have grown from \$1 to nearly \$8 in the span of 29 years. Given the strength of the results and the intuitive appeal of buying “undervalued” shares, many investors and the index providers thus gravitated to P/B as an indicator of value. But in the 28 years from 1990 through 2018, the relative performance of the cheapest P/B stocks was much more muted, and the same theoretical long/short portfolio would have risen from \$1 to just \$1.3 (See Figure 10).

This shows that P/B worked well in the period that was still largely dominated by companies with physical assets and thus more meaningful book values. It then ceased to be as effective when the economy shifted toward intangible investments that are not captured with currently used accrual accounting standards. We think that rather than value investing not working, it may simply be that the most often used measure of value has become less relevant in a changed world.

From 1960 to 1989, stocks that were cheaper on P/B outperformed more expensive ones.

Figure 9: Relative Performance of Cheapest Quintile of P/B vs. Highest (1960 to 1989)



Source: Dartmouth Tuck Ken French Data Library; Market capitalization weighted data

But from 1990 to 2017, stocks that were cheaper on P/B did not significantly outperform more expensive ones.

Figure 10: Relative Performance of Cheapest Quintile of P/B vs. Highest (1990 to 2018)

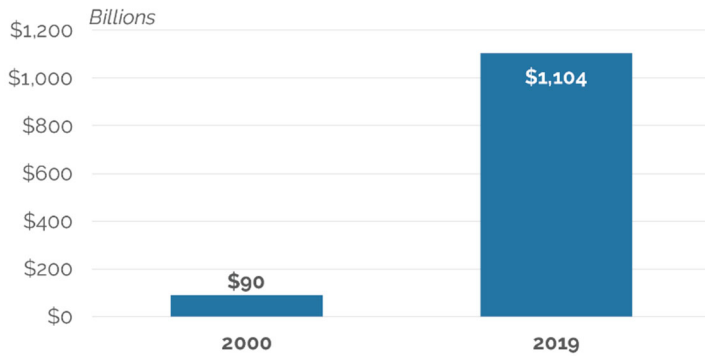


Source: Dartmouth Tuck Ken French Data Library; Market capitalization weighted data

Another supporting argument around the predictive nature of P/B relates to the sheer number and market value of companies in existence today with negative book values. Negative book values can result from a variety of factors including accounting rules requiring write-downs and the impact of stock buybacks where the share price exceeds book value per share. As share buybacks have steadily supplanted dividends as the dominant means of returning excess capital to shareholders, this distortion has increased. Even as recently as 2000, very few of the largest 500 companies had negative book values and collectively were worth only around \$90 billion or roughly 0.5% of the total index value. As of May of 2019, companies with negative book values in the S&P 500 Index were worth over \$1.1 trillion and made up nearly 5% of the overall index. (See Figure 11). That there is over \$1 trillion worth of companies in the United States with negative book value suggests by itself that book value has become significantly less meaningful as a measure of value.

In 2018, companies with negative book values were worth nearly \$1 trillion, compared to just \$90 billion ~20 years ago.

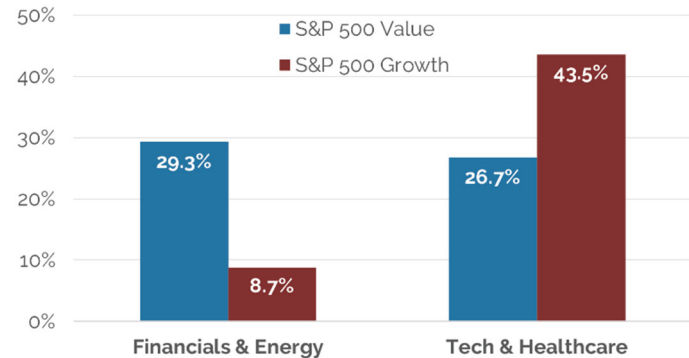
Figure 11: Market Value of Negative Book Value U.S. Companies in the S&P 500 Index



Source: FactSet, 2019 data as of end of Q2

The S&P 500 Value Index has significantly more weight in the financials and energy sectors, and comparatively less in technology and healthcare.

Figure 12: Sector Weight Differences Between the S&P 500 Value and Growth Indexes



Source: S&P Global, data as of August 2018

It is the issue of comparability that we think is key. While book value or other accrual-based accounting measures may still be useful in comparing companies engaged in physical activities, they are less meaningful for the increasing number of companies engaged in intangible activities. Trying to use such metrics as a filter across an entire market where there is a mix of physical asset-based and intangible asset-based companies is therefore problematic and should not be expected to function as it did in the past when companies were more homogeneously focused on tangible activities.

The sector composition of value indexes that rely on P/B for their construction highlight this problem. Because P/B favors companies with large amounts of physical accounting assets and not necessarily companies that are truly less expensive and more likely to outperform the overall market (which was the initial objective), P/B-based value indexes may simply be chronically overweighting companies that are more likely to have physical or other accounting-based assets. For example, compared to the

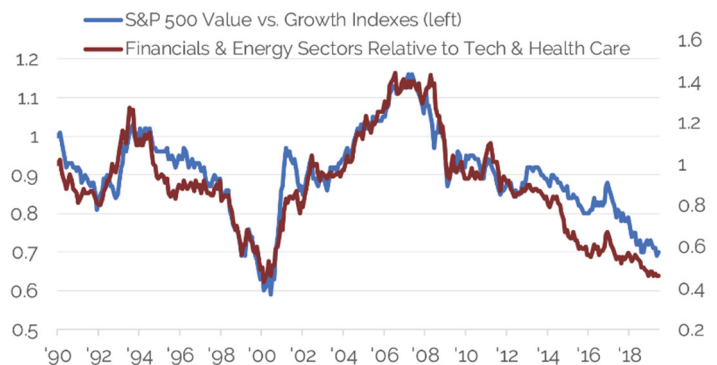
S&P 500 Growth Index, the S&P 500 Value Index is heavily weighted towards the financial and energy sectors with around 30% of the total index in these sectors compared to under 10% for the S&P 500 Growth Index. Conversely, it has around 25% of its weight in the technology and health care sectors compared to almost 45% for the S&P 500 Growth Index (See Figure 12). Importantly, this is not a recent phenomenon but rather a persistent difference in sector weights over time. As a consequence of this chronic sector bias, the value index has closely matched the performance of those sectors. As seen in Figure 13, since the end of the 1990s, the performance of the S&P 500 Value Index relative to the Growth Index has been closely correlated to the relative performance of an equally weighted index of the financial and energy sectors versus the health care and technology sectors. Investing in certain traditionally-defined value indexes, in this context, looks like little more than a sector bet as opposed to an investment in truly undervalued securities.

Lastly, it is interesting that arguments that “value isn’t working” do not generally offer any explanation for the sudden change in a strategy that for so long had been successful. There are myriad behavioral explanations for why value investing works and the body of work helping to explain the psychology behind this behavior has become richer and richer. This research also suggests that the persistence of human irrationality is strong and witnessed across the globe. Since the human behavioral biases that give rise to the opportunity to invest in undervalued securities have not changed, it is not apparent why value investing should suddenly cease to be effective.

Overall, instead of claiming that value investing no longer works and failing to offer any explanation as to why, we hold the alternative view that value investing is indeed still working, but that traditional accrual accounting-based definitions of value simply are not.

Because of the chronic overweighting in the financial and energy sectors for accounting reasons, the relative performance of the S&P 500 Value Index tends to follow the performance of these sectors.

Figure 13: S&P 500 Value vs. Growth Compared to Sector Performance



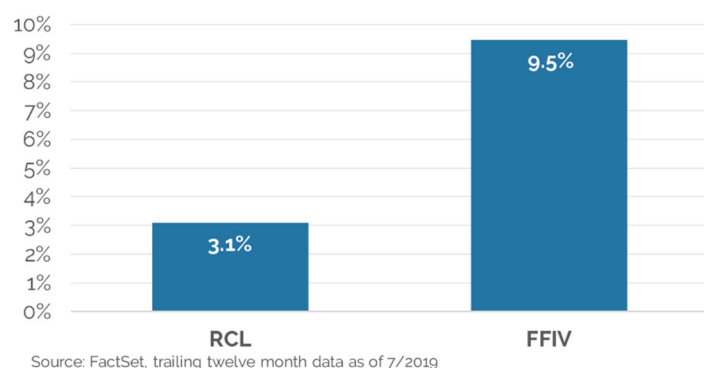
Source: FactSet

A Measure of Value That Makes Sense in an Asset Light Economy

Because cash flow is less distorted by accrual-based accounting rules, measures of free cash generation are likely to provide a truer valuation comparison between firms. Returning to the example of RCL and FFIV and comparing them on the basis of the free cash they generate produces a very different result than the accrual-accounting based metrics. In this case we compare free cash flow to the value of the entire enterprise (EV) which adds net debt to the market capitalization. We use EV because it incorporates leverage and thus other potential calls on a company's free cash flow. On this basis, FFIV's 9.5% free cash flow to enterprise value yield looks significantly more attractive than RCL's 3.1% yield (See Figure 14).

Despite being cheaper on P/E and P/B, Royal Caribbean is significantly more expensive than F5 Networks on measures of free cash flow.

Figure 14: FCF/EV for RCL & FFIV

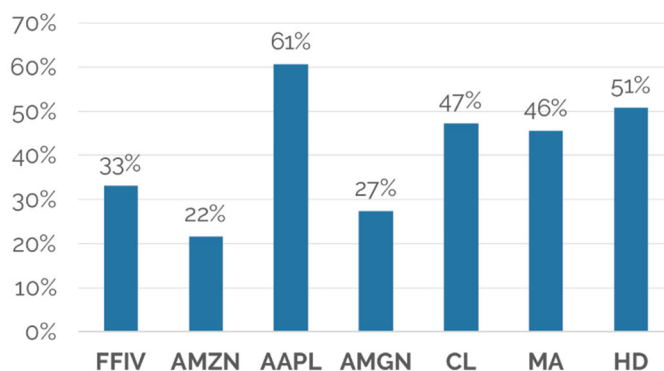


It is also interesting to examine where FFIV would need to trade on a free cash basis in order to look cheap on P/B, the favored metric in value indexes. To trade at the average 2.28x P/B of the S&P 500 Value index, FFIV would need to be priced such that its FCF/EV yield was around 33%. Said differently, for FFIV to look like an average value on P/B, it would need to be so cheap on a free cash basis that it could use that free cash flow to retire all of its debt and buyback all of its shares at the current price in the span of only 3 years.

Extending this same analysis beyond FFIV shows that for Apple and Amazon to trade at a P/B in line with the S&P 500 Value Index, they would need to be priced at FCF/EV yields of 22% and 61%. This distortion is not limited to the tech sector as Amgen would need to trade at a roughly 30% yield and Mastercard, Colgate, and Home Depot would need to trade at FCF/EV yields of around 50% (See Figure 15). These are not valuations we would realistically expect, but instead highlight the enormous disconnect between free-cash-flow based valuations and certain traditional metrics like P/B.

In order to trade at a P/B multiple in line with the average of the S&P 500 Value Index, these more asset light companies would have to trade at outrageously cheap free cash to enterprise value yields.

Figure 15: FCF/EV Yield if Stocks Traded at the P/B Average to the S&P Value Index



Source: FactSet, as of July 2019; S&P 500 P/B 2.28. Free cash is based on FY1 estimate.

While looking at free cash flow in relation to enterprise value puts companies on more equal footing and presents a more comparable picture of valuation, it is still far from perfect. Capex and working capital swings can be volatile and distortive to free cash flow metrics. Additionally, looking only at historical results may fail to reflect fundamental changes occurring in the marketplace and might therefore misrepresent a company's ability to generate free cash going forward. For example, the trailing free cash flow for energy companies would not give an accurate sense of ongoing profitability if the underlying commodities (oil and gas) have moved sharply in price. But while forward-looking measures of cash flow utilizing company guidance and Wall Street estimates may be better, they can also be impacted by outlier estimates or an overly optimistic picture painted by company management teams. Even the calculation of enterprise value is not straightforward. An accurate representation of EV needs to include any off-balance sheet debt that may be excluded in the financial statements and should exclude cash that is operational in nature and not available to the owners (shareholders) of the company.

In order to circumvent these and a host of other issues, we drew on our experience as fundamental analysts to create a customized measure of free cash flow that normalizes capex and working capital swings and makes a variety of adjustments to avoid the distortions listed previously. Combining our measures of normalized free cash flow and enterprise value, we calculate a proprietary Distillate Capital Distilled Cash Yield (DCY) metric. We believe this metric is more indicative of true relative value and is more comparable across the entire market.

After rationally designing this valuation methodology by drawing on our knowledge of accounting and long-term experience as analysts and portfolio managers, we sought to test its efficacy.

Encouragingly, while P/B and other traditional accrual accounting based valuation metrics have struggled to identify stocks more likely to outperform the broad market, our methodology has worked very well. The cheapest 20% of the largest 500 U.S. stocks on our Distilled Cash Yield measure has significantly outperformed the bottom 20% going back to 2000 (See Figure 16). This is also evident in looking at a ratio that directly compares the two and shows more clearly how the cheap stocks have done relative to the expensive ones over time (See Figure 17). We believe this provides an indication that value remains a fundamentally sound strategy as long as it is measured in a rational way.

Distillate's Distilled Cash Yield measure has performed well over the period that traditional measures of value have struggled.

Figure 16: U.S. Large Cap Hypothetical Top vs. Bottom Quintile of Distilled Cash Yield

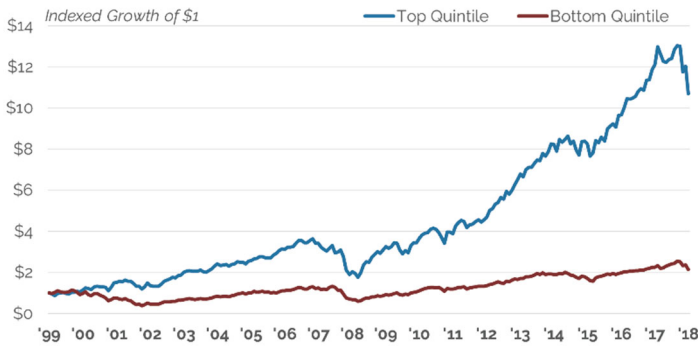
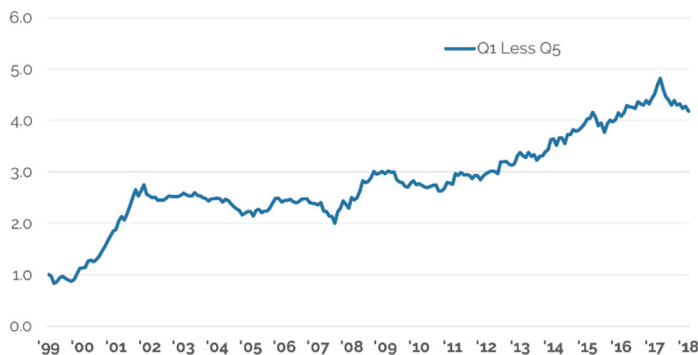


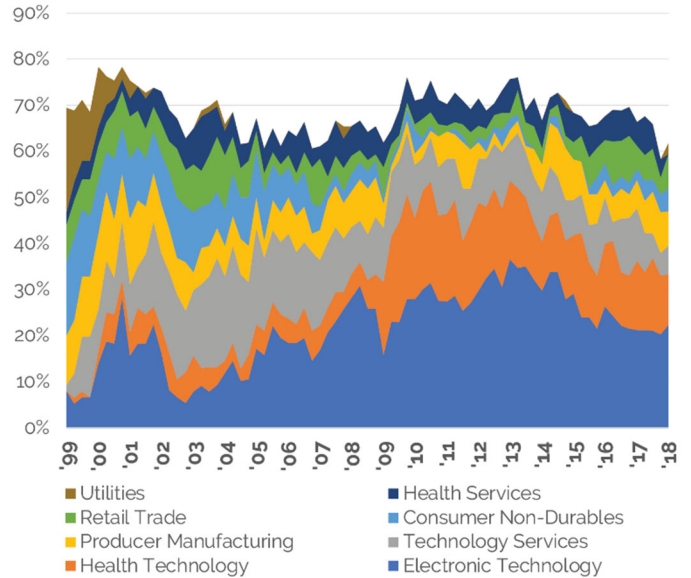
Figure 17: Ratio of Hypothetical U.S. Large Cap Top vs. Bottom Quintile of Distilled Cash Yield



The data contained in the nearby chart(s) contain hypothetical results of Distillate's proprietary stock selection criteria, and not actual fund performance. These data are intended for illustrative purposes, and do not reflect management fees or transaction costs, which would reduce returns. Past performance is not indicative of future results.

The sector composition of the cheapest 20% of the market based on Distillate's distilled cash yield valuation measure has been diverse.

Figure 18: Select Sector Weights of U.S. Large Cap Top Quintile of Distilled Cash Yield



Source: FactSet

It is also important to consider the environments encompassed over this period to question whether the methodology is durable in different market and economic conditions. In this regard, the period from 2000 to 2018 not only saw dramatically increased intangible investment, but also a wide variety of economic and market experiences that included two recessions, two bear markets, the bursting of two investment bubbles, a significant move in oil and other commodity prices, the near-collapse of the EU, and a significant recovery since the financial crisis. Despite this range of market settings, the cheapest 20% of stocks on our valuation methodology fairly consistently outperformed the most expensive 20%.

Another logical question is if the methodology produced a sector bias similar to P/B-based indexes and whether this explains performance. This does not appear to be the case either given that sector composition of the top quintile of value on our Distilled Cash Yield methodology has been fairly diverse over time. Based on FactSet sector definitions and only including the top 10 sectors by average weight, sector weights have been well balanced and have shifted over time in ways that make intuitive sense (See Figure 18).

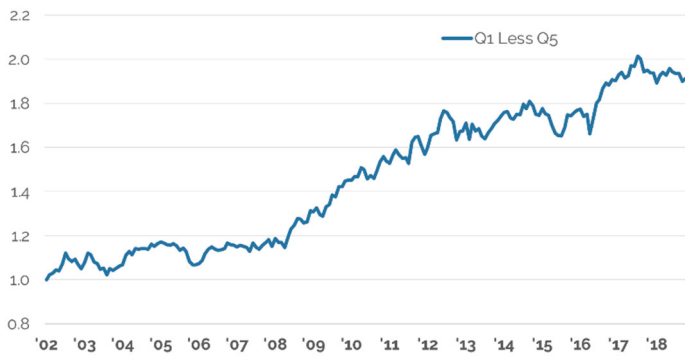
As another check, the efficacy of our valuation methodology is not limited to certain geographies or size categories. Accounting distortions and behavioral biases that explain the opportunities to purchase stocks at attractive prices are not contained to U.S. large cap stocks, so the efficacy of our methodology should not be either. In this regard, our Distilled Cash Yield measure of value has been effective in both the large and small market

capitalization categories as well as in different geographies (See Figures 19 & 20).

Lastly, and most importantly, this measure of value has performed well in live results. We have been running a strategy that combines our Distilled Cash Yield with a focus on fundamental stability and leverage to further minimize risk. Since launching our U.S. Fundamental Stability & Value strategy in 2017, it has outperformed the S&P 500 by almost 2 percentage points per year after fees and the Russell 1000 Value index by around 6 percentage points per year after fees. These results are highlighted in Figure 1 at the beginning of the paper. To us, this suggests that value investing is not dead, but that that rational measures of value need to be used to avoid accounting distortions in an increasingly capital-light economy.

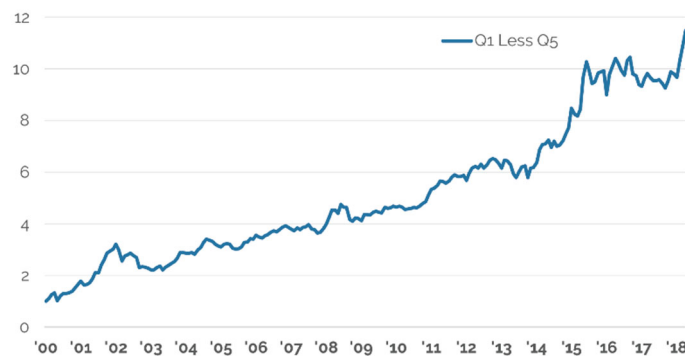
The cheapest stocks based on distilled cash yield measure have outperformed more expensive ones outside the United States.

Figure 19: MSCI EAFE Hypothetical Top Quintile of Distilled Cash Yield Relative to Bottom Quintile



The cheapest stocks based on our distilled cash yield measure have outperformed more expensive ones in the small cap space.

Figure 20: Russell 2000 Index Hypothetical Top Quintile of Distilled Cash Yield Relative to Bottom Quintile



The data contained in the nearby chart(s) contain hypothetical results of Distillate's proprietary stock selection criteria, and not actual fund performance. These data are intended for illustrative purposes, and do not reflect management fees or transaction costs, which would reduce returns. Past performance is not indicative of future results.

Final Word

Our use of normalized cash yields is rooted in the most basic principle of investing—the value of an asset is the present value of the future cash flows that asset will generate. We start with this bedrock concept and work through the complications that GAAP accounting has created to find a solution that allows for true valuation comparability in security prices.

Nothing in our work was fit to a historical price series to mine a solution. Our methodology is based purely on our observations as fundamental analysts and portfolio managers across a variety of sectors and over a long time horizon. It is rooted in the idea that because of behavioral biases, value investing works, but due to the challenge of accounting complexities and the shift to increased intangible investment, traditional measures of value need to be updated and redefined.

The basis of the model and each adjustment is rational and reasoned based on the desire to restore comparability and measure true value. The methodology we created is the only one we have tested. Our goal is not to maximize theoretical past performance, but to establish a rational process that we think will continue to do well in the future. This analysis and the development of our investment process is intended not as an academic exercise, but as a practical one that is designed to produce real and not hypothetical returns.

Distillate Capital Partners, LLC ("Distillate"), is a registered investment adviser with United States Securities and Exchange Commission in accordance with the Investment Advisers Act of 1940. The firm's list of composite descriptions is available upon request.

Distillate claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Distillate has been independently verified for the periods June 1, 2017 through November 30, 2018. The verification report is available upon request. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation.

To receive a GIPS compliance presentation and/or our firm's list of composite descriptions please email your request to info@distillatecapital.com.

The U.S. Dollar is the currency used to express performance. Returns are presented net of management fees and include the reinvestment of all income. For non-fee-paying accounts, net of fee performance was calculated using a model management fee of 0.39%, which is the highest investment management fee that may be charged for this composite. For accounts calculated with a per share, net-of fee NAV, gross performance was calculated by adding back the unitary fee associated with that fund. Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

The investment management fee schedule for the composite is 0.39%; however, actual investment advisory fees incurred by clients may vary.

The U.S. Fundamental Stability & Value composite seeks to distill a starting universe of large cap U.S. equities into only the stocks where quality and value overlap using Distillate's proprietary definitions. Its goal is to achieve superior compounded long-term returns by limiting downside in periods of market stress, while still providing strong performance in up markets. This composite was created in May 2017.

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***Book Value** refers to the balance sheet value of a company's assets, less its liabilities.*

***Price to Book Value** is a traditional valuation measure that compares a company's market price to its balance sheet book value. For example, this can be calculated by dividing a company's stock price by its book value per share.*

***Free Cash Flow to Enterprise Value (FCF/EV) Yield** is a valuation measure that compares the free cash flow produced by a company to its enterprise value (the sum value of its market capitalization and its net debt).*

***Distilled Cash Yield** refers to the firm's proprietary valuation measure that looks at estimated, adjusted free cash flow relative to a company's adjusted enterprise value. References to historical stocks that ranked well using this methodology (such as Figure 3 above) refer only to these stocks' historical valuation and not their inclusion in any actual or hypothetical strategies/accounts managed by Distillate Capital Partners LLC.*

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