Standing on the Shoulders of Giants: The Quality, Growth, and Valuation Factor Scorecard

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For generations, investors and academics have tried to find quantifiable ways to consistently outperform the stock market.

First introduced in Security Analysis, Columbia Business School professors Benjamin Graham and David Dodd identified the "value premium" as early as 1934.

William Sharpe brought the investing world the Capital Asset Pricing Model (CAPM) in 1964.

Award-winning MIT professor Stephen A. Ross brought us *The Arbitrage Theory of Capital Asset Pricing* in 1976. A wordy title for the work that may have set the foundation for the age of factor investing.

Just a few years later, Northwestern University professor Rolf Banz wrote of the "size premium".

And in 1993, University of Chicago professors Eugene Fama and Kenneth French became synonymous with "factors".

For nearly one hundred years, investors have tried to identify different ways to analyze financial data in order to both define stock market returns, and more importantly, outperform the market.

In the 30 years since Fama and French wrote *Common risk factors in the returns on stocks and bonds*, factor investing has entered the common lexicon. Top hedge funds such as Renaissance Technologies and AQR Capital Management have become investing powerhouses by focusing on systematic, factor-based investing. New ETFs have launched regularly, offering exposure to factors ranging from value, to growth, to momentum, to quality, and anything else that can be quantified.

In their 2014 paper, A Five-Factor Asset Pricing Model, Fama and French again made waves in the factor investing world, updating their world-renowned research by officially adding two more variables to the factor model they defined 20 years earlier.

In their updated paper, they defined these five factors as:

- Market Risk (Beta)
- Size
- Value
- Profitability/Quality
- Investment

To some degree, all of these are already offered across different investment vehicles. One can buy a small cap ETF, or a value fund, or a

quality basket. The beauty of traditional factor investing is that it has worked. The issue with these factors is that they're built off of poor data.

The issue with as-reported financials…

Traditional factor research, including that of Fama and French, has been built off of Generally Accepted Accounting Principles (GAAP) (or an international equivalent), the standard adopted by the Securities and Exchange Commission (SEC) and required to file as a public company in the United States.

This brings up major problems for solid financial analysis as GAAP and its international cousin, IFRS, are wrought with shortcomings.

Important elements of as-reported corporate financial statements including as-reported assets, investments, debts, earnings, equity accounts, and even revenue have become unreliable representations of the reality of the reported balances and activities. The problem stems from significant inconsistencies in the rules and application of those rules in financial statements as-reported today.

The global financial reporting problem rests squarely with the rule-making process of the governing accounting bodies over time.

The financial reporting authorities have established a set of standards that have been argued, debated, and then re-established over decades and decades. The result is a set of accounting rules with inconsistent policies that reflect a mixture of differing objectives for the financial statements.

Because of these issues, basic measures such as net income, used in determining "Value" and "Profitability" factors can fluctuate wildly year-over-year, often impacted by line items that have nothing to do with the daily operations of a company. This makes it incredibly difficult to accurately compare different companies in any given period, let alone over a long time series.

A simple example is the FIFO/LIFO accounting policy that management teams choose for reporting cost of goods sold and inventory levels.

It is perfectly acceptable for one company to use the Last-In-First-Out method for reporting the cost of goods sold. Meanwhile, a peer company could choose the First-In-First-Out method.

Both companies have elected a perfectly legal and acceptable accounting method under Generally Acceptable Accounting Principles. However, each of these firms now has incomparable profits, costs, and balance sheets… and as such many key financial performance indicators will also be victim to this simple choice.

No wonder many of the best investors throughout history, including Warren Buffet, Seth Klarman, Shelby Davis, and others, have lamented the reliability of as-reported metrics.

Even the members of the governing accounting bodies themselves, such as FASB and IASB, have publicly called out many of the issues.

And in 1998 the chairman of the SEC, Arthur Levitt, commented "...we are witnessing an erosion in the quality of earnings, and therefore, the quality of financial reporting."

It has only gotten worse since those remarks.

As the complexity of accounting has grown, with issues around stock options, intangibles, and mark-to-market accounting to name a few, growing more material each year, the reliability of GAAP has gotten worse.

Once consisting of just a few pages or maybe a few dozen pages, annual reports can now resemble full-fledged novels, with recent submissions by the likes of GE and AIG and large banks regularly exceeding 300 pages.

Over time, as the SEC and investors identified issues with existing financials, accounting standards boards just proposed patchwork solutions, adding layers of complexity to an already flawed system.

With all this "accounting noise" blurring the true underlying fundamentals of companies, it's a wonder Fama and French were able to derive any insights at all using GAAP data.

Uniform Adjusted Financial Reporting Standards - The Uniform Solution

Luckily, these as-reported accounting distortions are not irreconcilable.

The solution lies in UAFRS-based Accounting, or Uniform Accounting, for short.

UAFRS, an acronym for Uniform Adjusted Financial Reporting Standards, is an alternative set of standards for reviewing and analyzing financial statements aimed at creating more reliable and comparable reports of corporate financial activity.

The UAFRS Council, a consortium of thought leaders, including investors, accountants, consultants, management members and other users of financial statements, has identified more than 130 inconsistencies in GAAP and IFRS accounting policies. These issues are highlighted by the extensive research and documentation of the inconsistencies, misclassifications of categories and terminology, and lack of reliability of as-reported financial statements under GAAP and IFRS.

Uniform Accounting adjusts the reported financial statements to create as consistent a report of financial activity as possible, free of distortions from changing or inconsistent financial reporting policies from year to year or across firms.

This is achieved by first disassembling as-reported financial statements and then re-building based on a consistent set of accounting rules. Thankfully, many

adjustments to the reporting standards can be done on an automated basis, allowing for analysis of a broad universe of companies

By applying the more than 130 necessary adjustments to as-reported accounting policies, Uniform Accounting removes accounting distortions and provides the uniformity that is essential in producing better financial analysis.

And as a result, we are provided with an improved data set to work off of.

So if we are to take the brilliant work of Fama and French, and the factor investing pioneers before them, and utilize a better set of data, we are well-positioned to improve upon their insights and enhance the outsized returns that they identified.

Simply put, by utilizing better data, we can generate greater alpha.

Setting the bar - Fama French in the 21st Century

To evaluate the power of Uniform Accounting, we first need to determine the benchmark set by the work of Fama and French, using the same as-reported financials they used.

Fama and French's extended five factor model focused on the following factors:

1. "Market Risk" - as measured by the excess return on the market to the risk-free rate
2. "Small Minus Big" or "Size" - as measured by the excess return of small cap stocks to large cap stocks
3. "High Minus Low" or "Value" - as measured by the excess return of low book to market ratio (value) stocks to high book to market ratio (growth) stocks
4. "Robust Minus Weak" or "Profitability" - as measured by the excess returns of robust operating profitability stocks to weak profitability stocks
5. "Conservative Minus Aggressive" or "Investment"- as measured by the excess returns of conservatively investing verse aggressively investing companies

Given Uniform Accounting adds value by adjusting traditional accounting statements, both the "Market Risk" and "Size" factors these professors used would look the same under each framework. As a result, we will instead focus on the financials-based "Profitability", "Investment", and "Value" factors, or as we call them: **the Quality, Growth, and Valuation factors**.

Through their iterative research, Fama and French already proved the value of these variables in determining stock performance. In the interest of comparability, we made slight changes to their definitions. For the "Quality" factor, we will be looking at return on assets (ROA) as a proxy for operating profitability. For the "Growth" factor, we will be looking at the growth in total assets as a

proxy for investment in assets. And lastly, for the "Value" factor, we will be looking at Earnings Yield, an alternative to P/E (calculated as the inverse of Enterprise Value/Earnings) instead of book to market ratios.

For the purposes of this evaluation, we have examined the S&P 500 universe since 1998 versus the top and bottom quintiles of companies based on these metrics in the US universe.

The following charts highlight the performance of cap-weighted portfolios made up of the top and bottom quintile of each factor, rebalanced and reconstituted each year on June 30th, in line with the original Fama and French portfolios, compared to the S&P 500 over the same timeframe:

High quality, measured by ROA, outperforms (fig. 1).

Cheap stocks, measured by earnings yield, outperform (fig. 3).

However, high growth, measured by asset growth, underperforms (fig. 2).

This is exactly as Fama and French wrote. Even when changing the calculation slightly, the data still support their findings.

Fig. 1

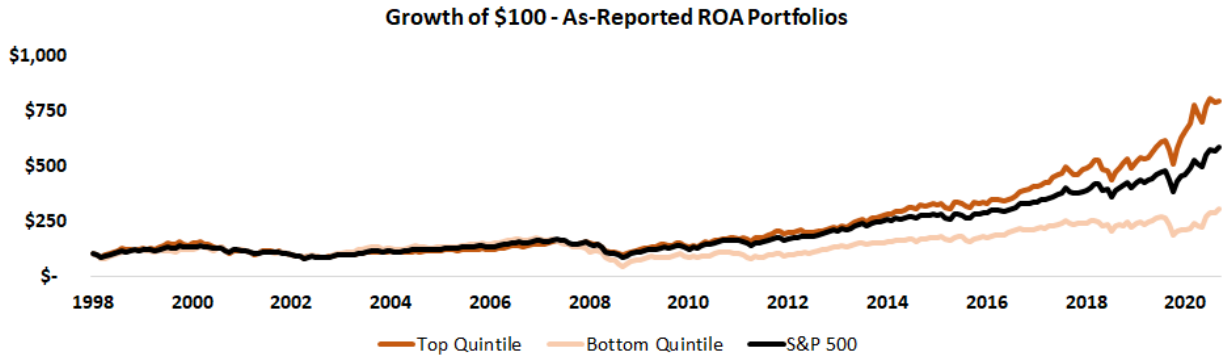


Fig. 2

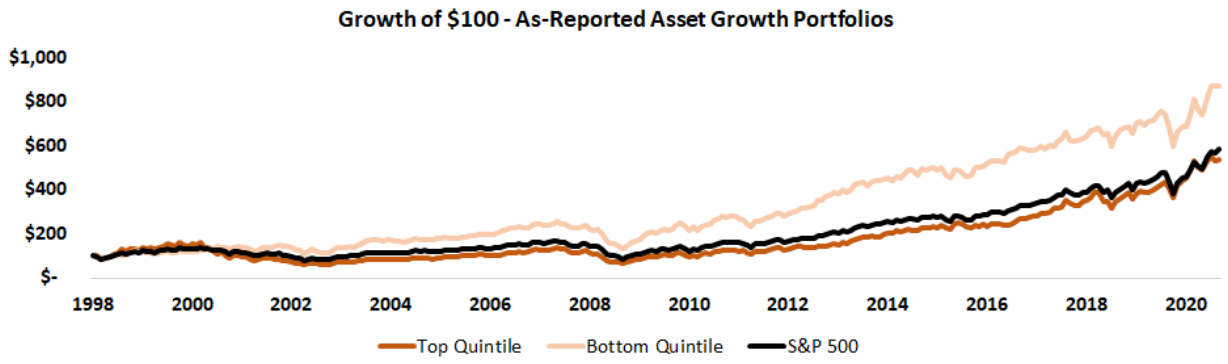
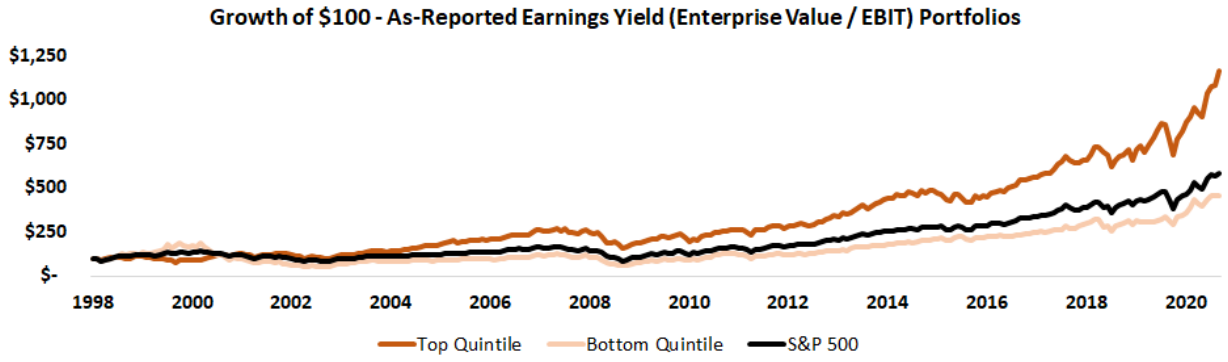


Fig. 3



Not all growth is good - how to find the "right" growth to invest in

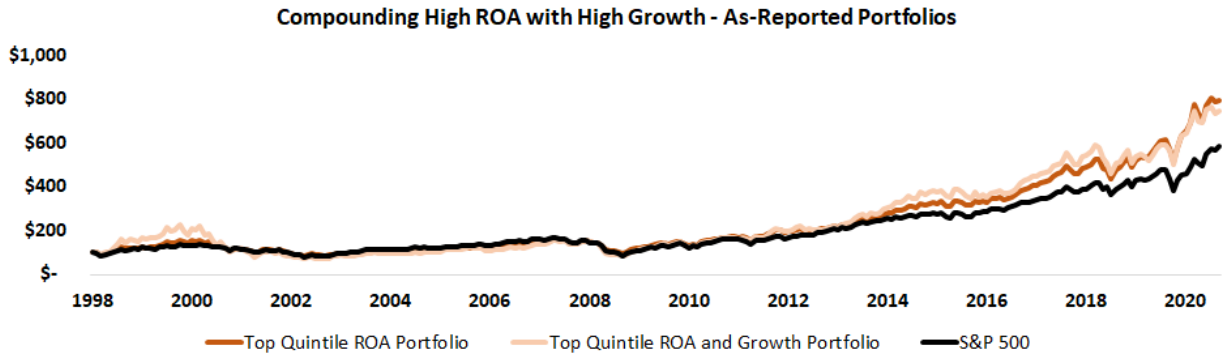
Cheap and high-quality names outperforming makes intuitive sense.

However, "high growth" underperforming doesn't quite pass the sniff test...as growth is often considered key to a firm's long-term survival. Management consultants would likely tell companies with a great business model to try to take as much of their market as possible. Growing a bad business might be negative, but could growing a good business truly be unfavorable for investors?

To answer this, growth needs to be considered contextually. If a bad company is growing, that is likely negative for future returns. But what about high quality companies? One wouldn't ask Facebook or Amazon to "stop growing". In fact, those names have been investing in high return businesses for years, and have impressive stock performance to show for it.

Even when isolating high growth to top-quintile ROA names only, those businesses tend to perform roughly the same as the average top-quintile ROA name (fig. 4).

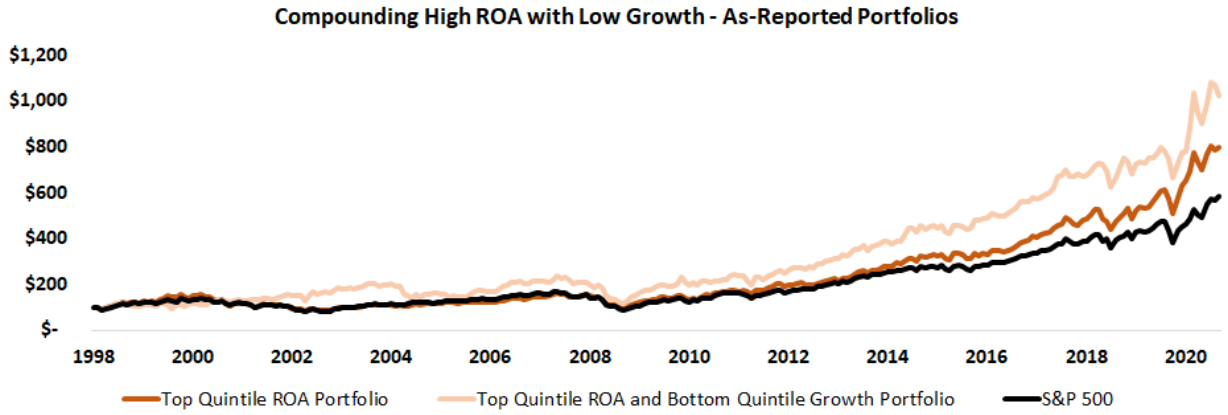
Fig. 4



Using as-reported data, by buying names in both the top quintile of growth and the top quintile of ROA, we seem to add no value to just buying high-quality names. This would seem to disagree with business intuition... and most strategy classes taken by your average MBA student.

In addition, if you were to take the lowest quintile of growth and highest quintile of ROA (high quality names that are shrinking their business on an as-reported basis), you'd get significantly higher returns (fig. 5).

Fig. 5



These results would suggest shrinking is always better than growing, even if you have a high-quality firm.

If that were truly a valuable proposition, investors would never buy growth, companies would never invest in themselves, and the economy as we know it might exist under an entirely different set of rules.

So, are we thinking about growth wrong? Are the sample sizes too small? Is this a unique period in the history of the world where growth really is always bad?

Why would intuition and financial metrics deviate so significantly?

Because the financial metrics used for the above analysis are significantly flawed.

As-reported financials don't provide the right metrics to measure growth (or quality or valuation for that matter). This is because they consider assets and earnings that have nothing to do with the actual operations of a company.

For instance, under GAAP, a company that grows by leasing office space will see different reported growth than a company that buys office space - even if they both use the same space for the exact same purpose.

Meanwhile, companies that invest in R&D will see their income statements shrink and balance sheets stay the same, while a company that chooses to instead buy the rights to the same research could see a massive spike in its assets. The stated R&D accounting treatment blatantly violates the matching principle, which says revenues and expenses must be recognized in the same period.

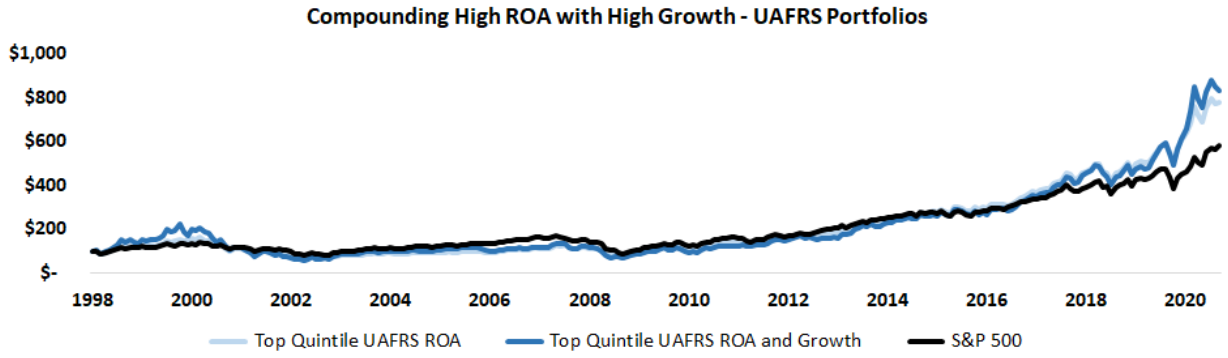
And finally, as-reported assets include goodwill, suggesting that overpaying for an acquisition is the same as growing through internal investment.

Of course growth would be bad if you consider buying an asset always different from leasing, investing in research to be worse than buying it, and overpaying for an asset to be the same as organic growth.

Especially, in the current economy, where investments are often focused on intangibles rather than just physical assets, R&D is one of the biggest line items, and massive acquisitions seem to happen every day, a solution that handles them all properly is needed.

As a result, when you correctly adjust to look at growth in operating assets - or the real assets used in a firm's day-to-day operations, under Uniform Accounting, suddenly things start to make more sense (fig. 6).

Fig. 6



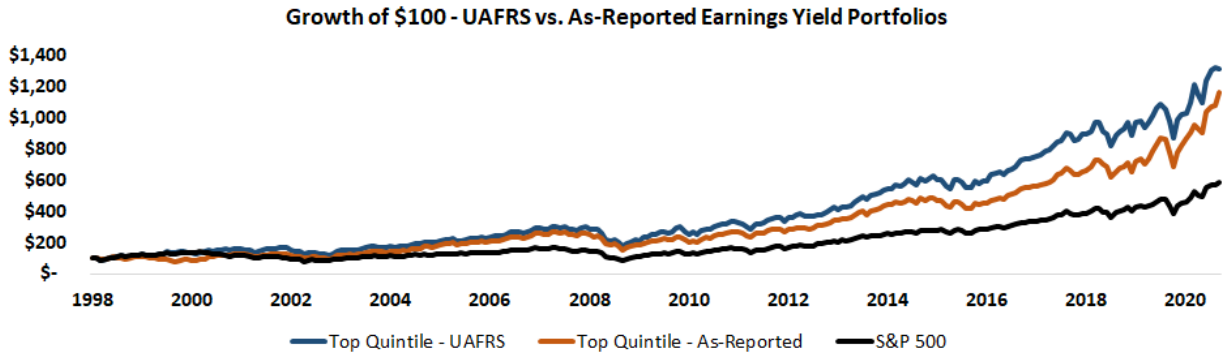
After underperforming slightly following the dot-com bubble, in the last decade-plus, combining Uniform asset growth with high quality names has created a high-performing portfolio.

Add value on top, and the results speak for themselves

Finally, with a better measure of earnings, we can get a better measure of just how expensive some companies really are...or aren't.

The following performance (fig. 7) highlights that when buying the top quintile of "cheap" names under UAFRS, investors would have comfortably outperformed a similar strategy utilizing as-reported numbers, and would have more than doubled the performance of the S&P 500.

Fig. 7



Introducing the Quality, Growth, and Valuation portfolio…

If we can combine high quality businesses that are growing, with valuations that suggest the market might not recognize it yet, we can generate significant alpha.

In this strategy, rather than buying the top quintile of each, we rank each company traded in the US on each metric, add up those ranks, then sort the universe on that cumulative QGV "score".

Under this method, buying the top 50 companies each year using as-reported financials would have netted investors a sizeable return over the last 20+ years, comfortably outperforming the S&P 500 (fig. 8).

And if investors had been using Uniform Accounting data instead, those returns would have been magnified significantly (fig. 9).

Fig. 8

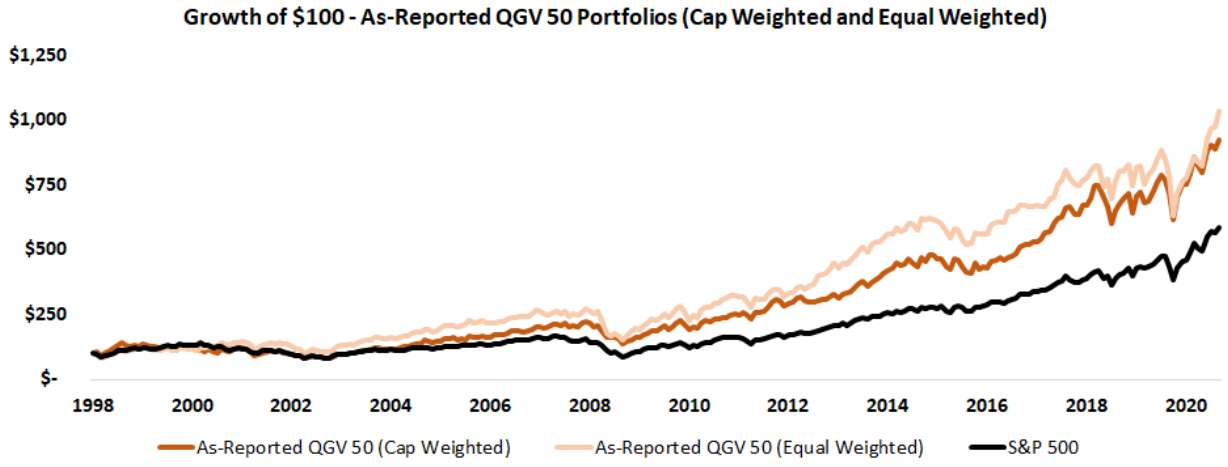
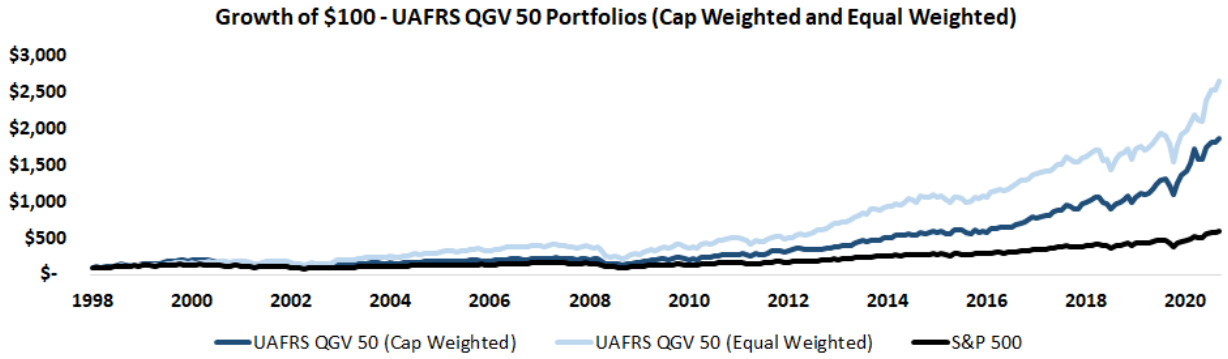


Fig. 9

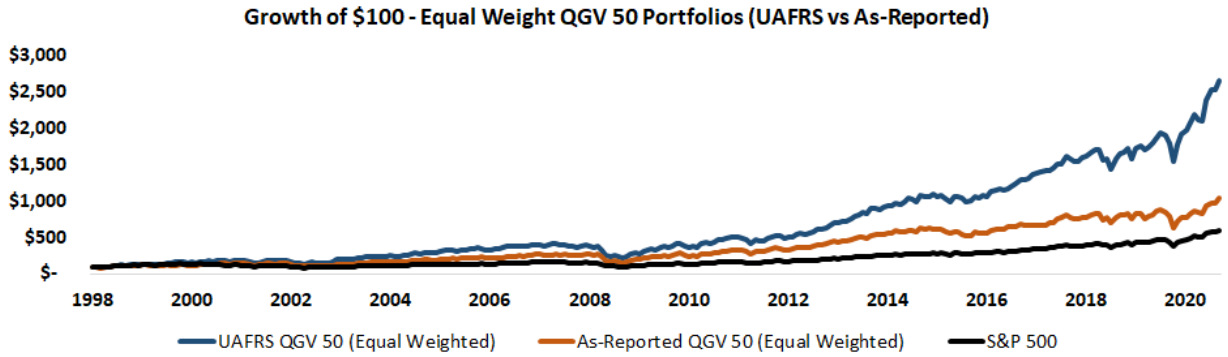


And finally, after magnifying the returns of the quality, growth, and valuation factors identified by Fama and French with UAFRS-based data, we can continue to augment returns by using an equal-weighted portfolio instead of a capitalization-weighted portfolio.

By doing so, we're able to gain exposure to the "Size" factor or "small cap bias" identified by the Fama-French research, whereby smaller firms typically outperform larger ones in the long-run.

The below chart highlights the outcome of applying this framework to the S&P 500 universe in one simple graphic (fig. 10).

Fig. 10



For over 20 years, the UAFRS version of this portfolio has returned north of 15% annually, compared to just an 11% return for the as-reported alternative, and an even weaker 8% return for the broader S&P 500 index.

Using Fama and French's own data to prove alpha

Using available data sets from Fama and French, we can then determine whether this portfolio is really adding value, or if it is just amplifying investor exposure to factors we already know exist.

The following tables show the results of regressing monthly returns against the traditional 5-factor model.

Fig. 11

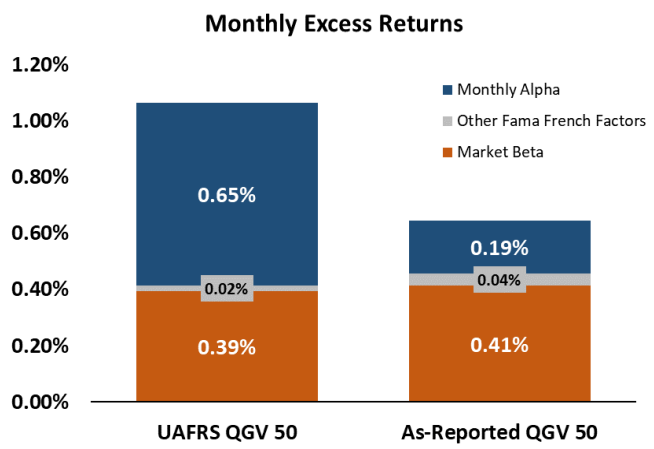
As-Reported Regression Output	Regression Beta	Average Risk Premium	Return Contribution
Alpha	0.19		0.19%
Market Beta	0.67	0.61%	0.41%
SMB Beta	0.07	0.28%	0.02%
HML Beta	0.00	-0.03%	0.00%
RMW Beta	0.10	0.27%	0.03%
CMA Beta	-0.01	0.20%	0.00%

Fig. 12

UAFRS Regression Output	Regression Beta	Average Risk Premium	Return Contribution
Alpha	0.65		0.65%
Market Beta	0.64	0.61%	0.39%
SMB Beta	0.06	0.28%	0.02%
HML Beta	0.00	-0.03%	0.00%
RMW Beta	0.00	0.27%	0.00%
CMA Beta	0.01	0.20%	0.00%

Fig. 13

The Quality, Growth, and Valuation Scorecard



As constructed, the two portfolios generate similar returns related to market beta and exposure to the traditional factors.

Where the similarities end, though, is the amount of unexplained alpha. The UAFRS portfolio generates nearly 8% in annualized returns not explained by traditional factors, while the as-reported portfolio constructed in the same fashion generates alpha of just over 2% annually (fig. 13).

That gap isn't "unexplained" as the regression suggests though. There is an economic rationale behind that result.

It's the data.