

## Executive Summary—The Earnings Mirage: Why Corporate Profits are Overstated and What It Means for Investors

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This is a summary of findings from a recent long-form research piece by Jesse Livermore\*, “[The Earnings Mirage](#)”.

The conceptual problems with [book value](#) as an accounting tool are well-known. But one problem that often gets missed is the [problem of inflation](#). Book values are not adjusted for inflation over time, and therefore they tend to underestimate the true value of corporate net assets. We recently developed a new technique for calculating book value, called “integrated equity,” that corrects this distortion. Our original research piece, “The Earnings Mirage,” carefully explains this technique and uses it to generate data for sectors, countries, periods of history, and even factors.

Here are a few highlights of our findings from the piece:

1. Inflation doesn't just distort book values—it also distorts earnings. It causes depreciation to be understated in current price terms, which causes earnings to be overstated. We believe this to be one of the main reasons why inflation has historically been associated with low valuations, i.e., low P/E multiples. During periods of high inflation, the market detects the fact that earnings are overstated, and correctly assigns lower multiples to them.
2. When measuring valuation and profitability in individual stocks, the risk of depreciation-related earnings overstatement highlights the importance of using free cash flow as a metric in the investment process. Free cash flow is the only fundamental metric that empirically tracks depreciation-related expenses. Unsurprisingly, when tested out as a factor, it outperforms other fundamental metrics.
3. Historically, high buyback firms have had high returns on equity, further bolstering our confidence in the factor.
4. The integrated equity methodology can be used to build a valuation measure for the overall stock market. When compared to other measures such as the Shiller CAPE, it shows a noticeably stronger correlation with long-term future equity returns.

We say more about these findings below:

### [Book Value, Earnings, and Free Cash Flow](#)

Book-value-based measures such as price-to-book and return on equity compare terms that have been expressed in different price units, leading to lopsided, distorted results.

When a company reports its book value, the assets are reported at the original cost paid, net of depreciation (“historical cost”), rather than at today’s real replacement value. Because there’s no adjustment for inflation, book values tend to become understated over time.

Integrated equity fixes the problem by treating each year of a company’s retained earnings as a unique set of investments. It adjusts each year’s earnings for inflation and then integrates the numbers back together to produce a cleaner measurement of book value.

\* Pseudonym

While our focus in the past has been on book value as a flawed metric in need of adjusting, we've spent less time on earnings. Our new research indicates that the problems with book value cause earnings to be overstated. This happens because depreciation (which reduces earnings) is calculated relative to assets that are themselves understated on the balance sheet. As a result, depreciation becomes understated, which causes earnings to be overstated.

The tendency of earnings to be overstated suggests that free cash flow would be a better standalone measure of operating performance. We see that in the data. For example, in large cap stocks, free cash flow measures rise to the top of the pecking order when evaluated against other value factors for predicting future returns. Price-to-book, measured in the traditional fashion, comes in last. In the piece, we show that this conclusion holds true across different equity samples. Here's the data for large cap stocks in the U.S.:

U.S. LARGE (1963 - 2018)	Avg Excess TR	Hit / Miss				Statistics			
		Hit Rate	Avg Gain	Miss Rate	Avg Loss	eff N	SD	t	p
MKT: LARGE	0.00%	46.5%	24.8%	53.5%	-21.6%	20,250	33.9%	-	-
VALUE: EV/FCF	3.70%	51.0%	26.7%	49.0%	-20.2%	4,070	33.2%	6.947	0.000
VALUE: P/FCF	3.49%	51.0%	26.2%	49.0%	-20.2%	4,071	32.6%	6.561	0.000
VALUE: P/OCF	2.46%	50.1%	25.0%	49.9%	-20.2%	4,070	31.1%	4.624	0.000
VALUE: EV/EBITDA	2.34%	50.1%	24.8%	49.9%	-20.3%	4,071	30.8%	4.391	0.000
VALUE: P/E	2.28%	50.5%	24.0%	49.5%	-19.9%	4,070	29.9%	4.291	0.000
VALUE: P/EBITDA	1.70%	49.5%	24.5%	50.5%	-20.7%	4,070	30.9%	3.196	0.002
VALUE: P/S	1.60%	48.7%	25.4%	51.3%	-21.0%	4,070	31.7%	3.002	0.004
VALUE: P/B	0.98%	48.2%	24.8%	51.8%	-21.1%	4,070	31.4%	1.841	0.073

Free cash flow is effective not only in value metrics, but also in profitability metrics. As factors, return on equity and return on invested capital deliver higher returns when free cash flow is substituted in the place of earnings:

U.S. LARGE (1963 - 2018)	Avg Excess TR	Hit / Miss				Statistics			
		Hit Rate	Avg Gain	Miss Rate	Avg Loss	eff N	SD	t	p
MKT: LARGE	0.00%	46.8%	23.4%	53.2%	-20.5%	18,352	31.8%	-	-
PROF: FCF/B	3.31%	51.3%	24.5%	48.7%	-19.1%	3,688	31.4%	6.330	0.000
PROF: FCF/IC	2.77%	49.6%	27.1%	50.4%	-21.1%	3,688	35.9%	5.293	0.000
PROF: ROIC (E/IC)	1.29%	47.1%	28.3%	52.9%	-22.7%	3,688	38.0%	2.458	0.019
PROF: ROE (E/B)	0.68%	47.3%	25.5%	52.7%	-21.6%	3,688	33.6%	1.291	0.173

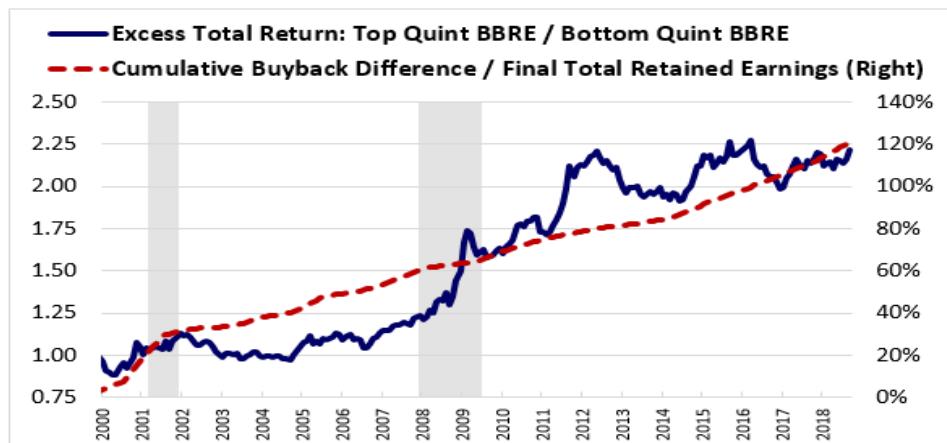
The evidence still suggests that a “composite” approach which blends many similar metrics together is the best way to implement a theme like value or profitability. But these findings are consistent with our long-standing practice of using free cash flow in our valuation methods. They've also prompted us to conduct additional research into how the use of free cash flow alongside earnings might fortify other factor techniques that we employ.

### Share Buybacks

Buybacks are a capital allocation decision like any other. They can be good for shareholders or bad for shareholders, depending on the price the company pays. To further investigate buybacks and the firms that conduct them, we used the integrated equity methodology to study the profitability levels of high buyback firms relative to other firms. We found that high buyback companies exhibited higher levels of profitability, consistent with our prior research on the topic. The evidence continues to run counter to the narrative that buybacks are bad for shareholders, or are performed purely for the benefit of management<sup>1</sup>.

U.S. LARGE: BBRE (1999 - 2018) (Inflation-Adjusted)	Return (on Equity)	Cost (of Equity)	DIFF	Avg Payout Ratio	Fundamental Return (ex ΔVal)	Total Return (w/ ΔVal)
	Avg ROIE	Avg E-Yield				
<b>U.S. LARGE CAPS TRADING SINCE 1999</b>						
TOP QUINT	10.40%	5.30%	5.10%	36%	9.74%	7.93%
UNIVERSE	8.87%	5.20%	3.67%	50%	7.19%	5.22%
BOTTOM QUINT	2.39%	4.31%	-1.93%	63%	4.42%	3.39%
<b>EX FINANCIALS &amp; TECHNOLOGY</b>						
TOP QUINT	12.41%	5.22%	7.19%	41%	10.49%	7.97%
UNIVERSE	10.96%	5.29%	5.67%	51%	7.55%	5.81%
BOTTOM QUINT	2.27%	4.45%	-2.18%	62%	4.54%	3.67%

Granted, this is a single cohort of stocks and isn't meant to be convincing evidence in favor of high buyback stocks on its own, but in this cohort, the trend is smooth and steady. The chart below shows the cumulative excess return (relative to low buyback stocks) of a cohort of high buyback firms between 1999 and 2018. The excess return (blue line) is steady through time, and tracks the difference in buyback amount (red line) between high and low buyback firms.



<sup>1</sup> If interested, read the detailed section on buybacks in Appendix E, which lays out the caveats to this argument

Buybacks continue to be an underappreciated, complimentary, and extremely useful signal in quantitative stock selection processes.

### Stock Market Valuation: The P/IE Ratio

Perhaps the most interesting application of the integrated equity concept is in overall stock market valuation. When measuring the market's valuation, non-cyclical measures such as Robert Shiller's CAPE ratio are frequently used to set future return expectations.

We tested the P/IE ratio, which is also a non-cyclical measure, against the CAPE and other popular metrics and found that it outperforms all of them, across a diverse collection of time periods:

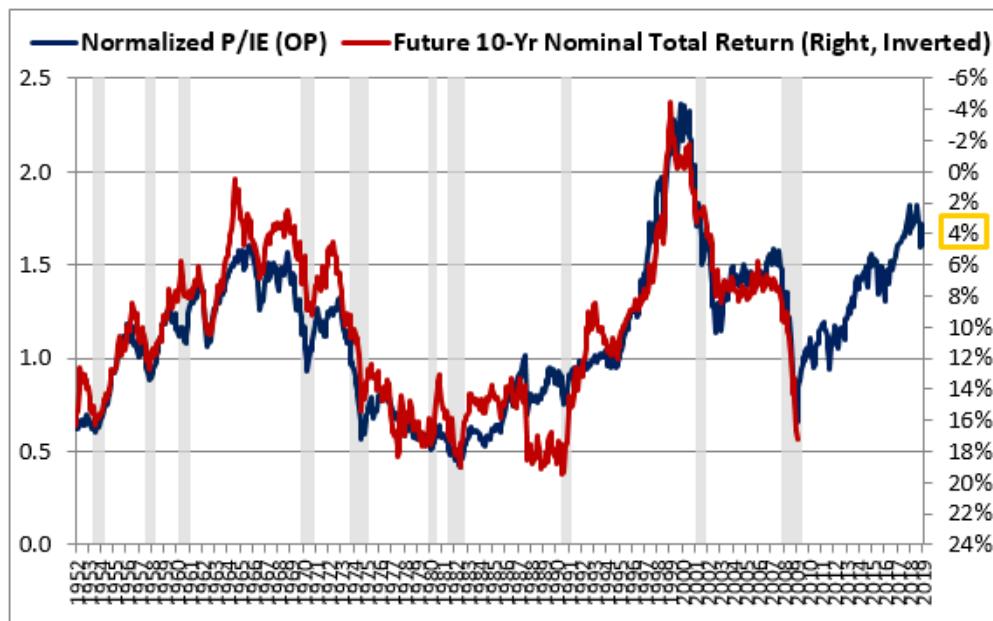
1881 - 2019	ttm P/E	CAPE	TR CAPE	P/IE
<b>10 Yr Returns: <u>Real</u></b>	-0.365	-0.553	-0.578	<b>-0.692</b>
<b>10 Yr Returns: <u>Nominal</u></b>	-0.400	-0.578	-0.608	<b>-0.671</b>

1945 - 2019	ttm P/E	CAPE	TR CAPE	P/IE
<b>10 Yr Returns: <u>Real</u></b>	-0.435	-0.657	-0.670	<b>-0.804</b>
<b>10 Yr Returns: <u>Nominal</u></b>	-0.561	-0.831	-0.841	<b>-0.924</b>

1952 - 2018	Q	P/IE
<b>10 Yr Returns: <u>Real</u></b>	-0.688	<b>-0.763</b>
<b>10 Yr Returns: <u>Nominal</u></b>	-0.842	<b>-0.912</b>

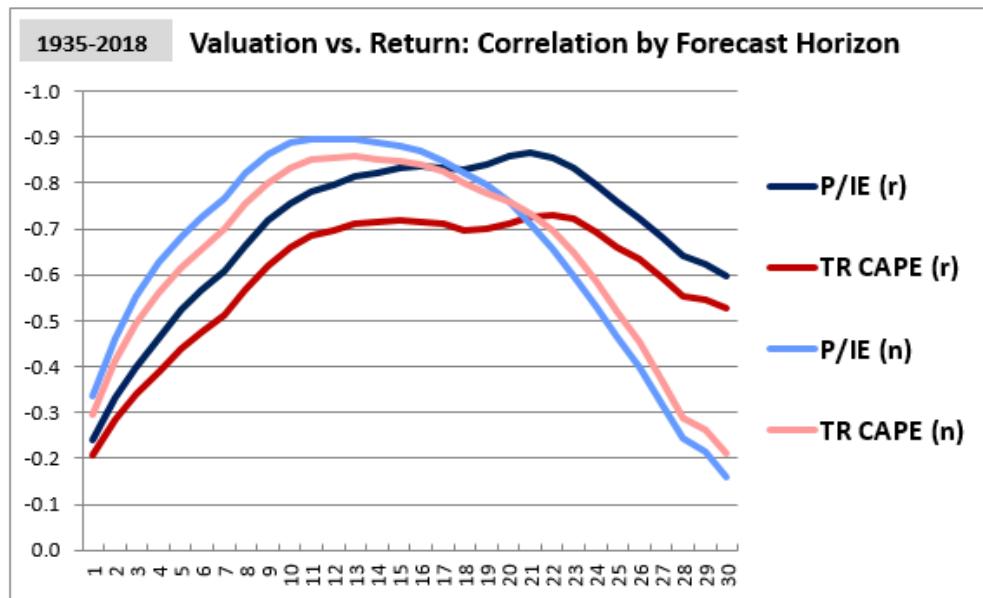
U.S. Large: 1974 - 2018	P/EBITDA	P/B	P/S	P/IE
<b>10 Yr Returns: <u>Real</u></b>	-0.733	-0.740	-0.776	<b>-0.802</b>
<b>10 Yr Returns: <u>Nominal</u></b>	-0.864	-0.868	-0.904	<b>-0.913</b>

Using the P/IE ratio, we can set long term strategic expectation for future U.S. equity returns:



As of June 2019, the estimate comes out to roughly 3-4% annualized—significantly lower than trailing 10-year returns and also lower than the long-term historical average.

We need to acknowledge the limitations of such ratios. Their historical predictive power is only significant over long holding periods. The correlations between value and forward returns are high for forward periods between 10- and 20-years, but very low for shorter periods:



## Conclusion

In working through the implications of the integrated equity method, we've fortified a number of our prior insights and have identified ways that we might be able to further strengthen our investment processes.

Above all, this project has demonstrated to me the importance of true cognitive diversity in our field. The work on this piece was primarily conducted by our partner, "Jesse Livermore," who does not work full time in finance or investing, but instead brings a highly unique set of skills and perspectives to common investing topics. The fact that the project yielded so much fruit is evidence of the power of fresh eyes. If you are interested in joining our research partners program, or if you know a good candidate, [please let us know](#).

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