

Profitability: Growth-Like Strategy, Value-Like Returns

Profiting from Companies with Large Economic Moats

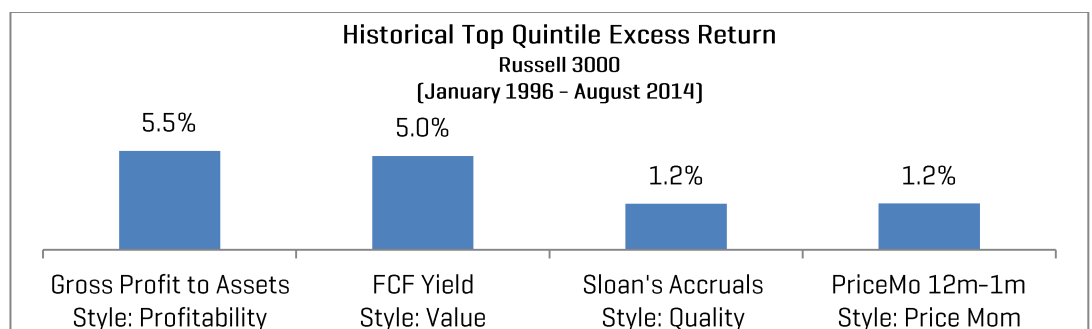
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Value-based strategies have been the favorite weapons in many investors' arsenals, historically yielding large returns and consistently outperforming. Most value investors focus on the price side of the equation – i.e., buying assets that are priced below their intrinsic values. Yet, there's another dimension to the value equation that has been complementary to value and just as critical in generating excess returns. Enter profitability. Profitability has historically worked as an investment strategy because instead of focusing on the cheapness of an asset it focuses on the productiveness of an asset – i.e., its ability to generate earnings for the investor.

In this paper, inspired by Novy-Marx's [2013] seminal work on gross profitability, we examine historically whether investors could systematically have identified and profited from holding a portfolio of highly profitable firms. We also examine whether value- and profitability-based strategies have historically been two independent and complementary investment styles. Our results from January 1996 to August 2014 show:

- **Profitability-based strategies have historically produced excess returns on par with those generated by value-based strategies** and have historically produced higher excess returns than those generated by quality and price momentum strategies [see chart below].
- Profitability-based strategies **have historically produced excess returns even after controlling for quality-, value- and price momentum-based strategies.**
- Profitability-based strategies have historically consistently produced excess returns across different regions, time periods, and market capitalization categories.
- **Highly profitable firms have historically consistently shown above average growth** with two-year top- and bottom-line growth rates that are 10% and 31% higher, respectively, than those for least profitable firms.
- **Profitability measures that are cleaner [i.e., higher up in the income statement such as gross profit] have historically shown higher excess returns and lower volatility** than measures that are lower in the income statement [e.g., net profit]
- **Gross profitability ratio has historically been 2.07x, 2.22x and 3.12x times more persistent than quality, value and momentum, respectively, after 5 years.**



(i) Returns above are capitalization-weighted and annualized from monthly numbers

(ii) Returns are controlled for market, size, value and price momentum (iii) Excluded All Financials with GICS Level I = 40
Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

1 Introduction: Novy-Marx's Gross Profitability

Novy-Marx's [2013] paper focuses on a measure of gross profitability defined as the ratio of gross profits divided by assets. His findings are that gross profitability have demonstrated efficacy in stock selection in the US market, even after controlling for common drivers of equity returns, including size, value, momentum. Gross-profit-to-assets ratio is negatively correlated to value, using book-to-market capitalization ratio as a proxy. The ratio has produced excess returns across different regions, time periods, and market capitalization categories. See Exhibit 1 and 2 for historical performance.

Exhibit 1: Economic Significance – Historical Excess Returns

Gross Profitability [January 1996 – August 2014]

	Backtested No Risk Adjustment Quintile Return Spread	Backtested Market-Adjusted Top Quintile Return	Backtested Fama-French Adjusted ¹ Quintile Return Spread
Russell 3000	7.0% ***	7.1% ***	7.9% ***
S&P BMI Dev. Europe	5.1% ***	9.8% ***	7.3% ***
S&P BMI Dev. Asia x-Japan	9.6% ***	6.7% ***	12.9% ***
Japan	2.8%	4.7% ***	5.36% **

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively

Exhibit 2: Risk-Reward Tradeoff – Historical Information Ratio

Gross Profitability [January 1996 – August 2014]

	Backtested No Risk Adjustment Quintile Return Spread	Backtested Market-Adjusted Top Quintile Return	Backtested Fama-French Adjusted Quintile Return Spread
Russell 3000	0.69	1.14	0.82
S&P BMI Dev. Europe	0.63	1.56	1.10
S&P BMI Dev. Asia x-Japan	0.72	0.67	1.15
Japan	0.26	0.61	0.60

[i] Information ratios above are annualized from monthly numbers with financials excluded

Source: S&P Capital IQ Quantamental Research. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

2 Profitability Signals & Methodology

2.1 Profitability Signals

In this paper, we examine four profitability ratios: [i] gross profit to assets [ii] EBITDA to assets [iii] EBIT to assets and [iv] net income from continuing operations to book value of equity. Gross profit, EBITDA and EBIT are scaled by assets because these metrics are pre-interest and are meaningful

¹ Returns are controlled for market, size, value and price momentum

to both debt and equity stakeholders. Net income from continuing operations is scaled by book value of equity because it's a post-interest metric and is meaningful to equity stakeholders.

We selected four different metrics from the income statement to progressively capture the impact of management's discretionary decisions on signal efficacy. As one goes down the income statement from gross profit to net income, profitability measures increasingly reflect management's decisions on items such as what to spend on sales and administration, research and development, and how to account for depreciation and amortization and taxes. Therefore, we view profitability metrics closer to the top of the income statement [e.g., gross profit] as more reflective of underlying business fundamentals and those nearer to the bottom [e.g., net profit] as more reflective of management discretion and accounting decisions.

2.2 Methodology

Results in the remainder of the paper exclude financial companies (GICS sector code of '40') because assets of financial companies include loans, cash, and other items used in their day-to-day operations. All of the profitability signals are industry neutral at GICS industry level [e.g. '451030', software] as certain industries are consistently less profitable than others, due to structural and/or regulatory reasons. We show top quintile [long-only], market-capitalization weighted, excess returns and associated information ratios².

3 Does Profitability Work?

In this section, we examine historical efficacy of standalone profitability signals globally. We use time-series average of top quintile excess returns to assess the economic significance of the profitability ratios. We use information ratio [IR] on top quintile excess returns to assess risk-reward tradeoff of the profitability signals.

3.1 Standalone: Economic Significance and Risk-Reward Tradeoff

Our results suggest that profitability ratios have historically shown outperformance with statistical significance at 5% level in all regions globally, even in Japan. See Exhibit 3 for historical economic significance and Exhibit 4 for historical risk-reward tradeoff.

Exhibit 3: Economic Significance – Historical Excess Returns

Backtested Market-Adjusted Top Quintile [Long-Only] Excess Return [Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	6.70% ***	5.24% ***	5.32% ***	4.50% ***
S&P BMI Dev. Europe	8.29% ***	8.64% ***	8.95% ***	7.25% ***
S&P BMI Dev. Asia x-Japan	7.38% ***	9.77% ***	6.35% ***	4.73% **
Japan	3.26% **	4.11% ***	5.09% ***	5.09% ***

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively

[ii] Returns above are capitalization-weighted and annualized from monthly numbers

² Annualized Information Ratio is the annualized top-quintile excess return divided by its annualized volatility.

Exhibit 4: Risk-Reward Tradeoff – Historical Information Ratio
 Information Ratio of Backtested Market-Adjusted Top Quintile (Long-Only) Excess Return
 [Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	1.17	0.90	0.87	1.06
S&P BMI Dev. Europe	1.37	1.46	1.52	1.31
S&P BMI Dev. Asia x-Japan	0.65	0.82	0.64	0.47
Japan	0.54	0.61	0.66	0.77

[i] Information ratios above are annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

3.2 Economic Significance and Risk-Reward Tradeoff after Risk-Adjustment

In this section, we examine efficacy of the profitability ratios after controlling for market, size, value and price momentum, common drivers of expected equity returns, in each region utilizing the Fama-French-Carhart Four-Factor Model framework. We use a time-series average of market-cap adjusted, top quintile returns to assess performance of the profitability ratios, and information ratio [IR] on market-adjusted top quintile returns to assess risk-reward tradeoff of the profitability ratios.

Our results suggest that profitability ratios have historically shown outperformance in all regions globally, even in Japan with statistical significance at 5% level. See Exhibit 5 for historical economic significance and Exhibit 6 for historical risk-reward tradeoff. Both the magnitude of the returns and the IRs improved substantially. Compared to the standalone numbers, the substantial improvement of the risk-adjusted profitability strategies comes from the fact that a portfolio of highly profitable firms has below average (<1) market beta and is negative correlated with value. It's another illustration of the benefit of diversification. Moreover, the improvement also comes from lower volatility of the strategies after controlling for market, size, value, and price momentum. See Exhibit 6 for historical results.

Exhibit 5: Economic Significance – Historical Excess Returns
 Bactested Fama-French Adjusted Top Quintile (Long-Only) Excess Return
 [Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	5.56% ***	4.39% ***	4.29% ***	3.25% ***
S&P BMI Dev. Europe	7.25% ***	7.20% ***	7.45% ***	6.41% ***
S&P BMI Dev. Asia x-Japan	7.56% ***	9.67% ***	6.43% **	3.84% *
Japan	1.47%	2.61% *	3.38% **	3.78% ***

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively; Newey-West t-statistic

[ii] Returns above are capitalization-weighted and annualized from monthly numbers

Exhibit 6: Risk-Reward Tradeoff – Historical Information RatioInformation Ratio of Backtested Fama-French Adjusted Top Quintile (Long-Only) Return
(Jan. 1996 – Aug. 2014)

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	1.14	1.26	1.03	1.08
S&P BMI Dev. Europe	1.28	1.59	1.55	1.48
S&P BMI Dev. Asia x-Japan	0.72	0.76	0.59	0.39
Japan	0.27	0.40	0.51	0.65

(i) Information ratios above are annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

3.3 Section Summary

Takeaways from this section are:

- Examined profitability ratios whether standalone or risk-adjusted have historically shown efficacy globally.
- Risk-adjusted profitability ratios have historically shown larger top quintile excess returns and higher IRs than standalone ones because the examined profitability strategies are negatively correlated with value-based strategies.

4 Are Profitability Signals Subsumed by Other Factors?

On the cover page, we show historical economic significance of a representative factor from each of the following four stock selection styles in the Russell 3000 index: gross-profit-to-assets to represent profitability; FCF yield to represent value; Sloan's accruals for quality; and 12 month price momentum for price momentum. In Exhibits 7 and 8, we extend our analysis of profitability versus other style factors and provide historical risk-adjusted economic significance and IRs of quintile return spreads (top minus bottom) in each of the four examined regions in this paper.

Our risk-adjusted results suggest that the efficacy of gross-profit-to-assets historically has been similar to that of free cash flow (FCF) yield, but significantly higher than that of accruals and price momentum globally. For example, gross-profit-to-assets has yielded an annualized gross 671 basis points (bps) from January 1996 to August 2014 in the Russell 3000 index whereas FCF yield, accruals and price momentum have yielded an annualized gross 821 bps, 313 bps and 225 bps, respectively. Our results also suggest that gross-profit-to-assets has historically shown efficacy in all four regions whereas FCF yield and accruals haven't worked in Japan and price momentum hasn't worked (not surprising since it had a very large drawdown in 2009) in any of the regions. See historical results encircled in red in Exhibit 7. The next logical questions are whether profitability is disguised as quality, value or price momentum and whether it is subsumed by them.

Exhibit 7: Economic Significance – Historical Excess Returns
 Backtested Fama-French Adjusted Quintile Return Spread (Long-Short)
 [Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets Style: Profitability	Industry-Neutral Free Cash Flow Yield Style: Value	Industry-Neutral Sloan's Accruals Style: Quality	Industry-Neutral PriceMo 12M-1M Style: Price Momentum
Russell 3000	6.71% ***	8.21% ***	3.13% **	2.25%
S&P BMI Dev. Europe	4.38% ***	3.91% **	4.94% ***	-2.04%
S&P BMI Dev. Asia x-Japan	10.3% **	14.2% **	9.92% **	6.68%
Japan	3.32% **	2.51%	-0.98%	0.89%

(i) ***, **, * denote 1%, 5%, 10% significance levels respectively; Newey-West t-statistic

(ii) Returns above are capitalization-weighted and annualized from monthly numbers

Exhibit 8: Risk-Reward Tradeoff – Historical Information Ratio
 Backtested Fama-French Adjusted Quintile Return Spread (Long-Short)
 [Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets Style: Profitability	Industry-Neutral Free Cash Flow Yield Style: Value	Industry-Neutral Sloan's Accruals Style: Quality	Industry-Neutral PriceMo 12M-1M Style: Price Momentum
Russell 3000	0.91	1.40	0.46	0.26
S&P BMI Dev. Europe	0.60	0.54	0.67	-0.20
S&P BMI Dev. Asia x-Japan	0.59	0.45	0.60	0.28
Japan	0.53	0.26	-0.10	0.09

(i) Information ratios above are annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

4.1 Correlations

In this section, we explore historical correlations of cross-sectional ranks and capitalization-weighted quintile return spreads among the four representative factors in profitability, value, quality, and price momentum styles.

With the exception of the return spread correlation in S&P BMI Developed Asia ex-Japan, results from the rank correlation matrix show historically that gross-profit-to-assets has low rank correlations [< 0.5] with the other three factors. This suggests that there have historically been potential diversification benefits to be had by including profitability with other styles in the cross-section. Results from return spread correlation matrix also show historically that gross-profit-to-assets has had low correlations with the other three factors in the time-series. Hence, there were potential diversification benefits to be had by including profitability with other styles across time. See Exhibit 9.

Exhibit 9: Historical Rank and Quintile Return Spread Correlations

Correlations between Gross-Profit-to-Assets and FCF Yield, Accruals and Price Momentum
[Jan. 1996 – Aug. 2014]

	Industry-Neutral Rank Correlations			Risk-Adjusted Return Spread Correlations		
	FCF Yield	Accruals	PriceMo	FCF Yield	Accruals	PriceMo
Russell 3000	0.15***	0.01	0.10**	0.31***	-0.10	0.10
S&P BMI Dev. Europe	0.12**	0.09	0.06	0.12*	0.12*	-0.12*
S&P BMI Dev. Asia x-Japan	0.20*	0.07	0.11	0.55***	-0.05	0.06
Japan	0.11	-0.02	0.06	0.03	-0.05	0.27 ***

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

4.2 Is Profitability Subsumed by Quality, Value or Price Momentum?

In this section, we examine whether profitability has historically been subsumed by quality, value or price momentum.

The methodology that we use is a two-way dependent sort. First, we sort stocks into quintile bins using the control variable [e.g. quality factor] in question. Then, within each quintile bin, we do a quintile sort using the profitability signal in question. Then, we go long [short] the five hypothetical portfolios that have the highest [lowest] profitability signal to form our quintile return spread [long-short] hypothetical portfolios.

4.2.1 Is Profitability Subsumed by Quality?

In this section, we examine whether profitability has historically been subsumed by quality using Sloan's accruals signal as a proxy. After controlling for accruals, we see historical positive excess returns and IRs globally with statistical significance at the 5% level. The results suggest that profitability signals haven't been subsumed by quality globally, albeit the case in Japan historically is less clear. See Exhibit 10.

Exhibit 10: Economic Significance – Historical Excess Returns

Backtested Fama-French Adjusted Quintile Return Spread
Conditioned on Accruals [Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	6.4% ***	7.8% ***	7.1% ***	5.0% **
S&P BMI Dev. Europe	3.4% **	3.1% **	3.8% **	8.8% ***
S&P BMI Dev. Asia x-Japan	7.2% ***	13.0% ***	13.8% ***	14.3% ***
Japan	2.9%	1.2%	-0.2%	4.6% *

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively

[ii] Returns above are capitalization-weighted and annualized from monthly numbers

Exhibit 11: Risk-Reward Tradeoff – Historical Information Ratio
 Information Ratio of Backtested Fama-French Adjusted Quintile Return Spread
 Conditioned on Accruals
 [Jan. 1996 – Aug. 2014]

	Gross Profit to Assets Style: Profitability	Free Cash Flow Yield Style: Value	Sloan’s Accruals Style: Quality	PriceMo 12M-1M Style: Price Momentum
Russell 3000	1.04	1.13	1.01	0.58
S&P BMI Dev. Europe	0.55	0.47	0.50	1.17
S&P BMI Dev. Asia x-Japan	0.74	1.26	1.30	1.06
Japan	0.32	0.12	{0.02}	0.40

[i] Information ratios above are annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

4.2.2 Is Profitability Subsumed by Value?

In this section, we examine whether profitability has historically been subsumed by value using FCF yield as a proxy. After controlling for FCF yield, we see historical positive excess returns and IRs globally. The results suggest that profitability signals weren’t subsumed by value globally, albeit the case is less clear historically in Japan. See Exhibits 12 and 13.

Exhibit 12: Economic Significance – Historical Excess Returns
 Backtested Fama-French Adjusted Quintile Return Spread Conditioned on FCF Yield
 [Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	5.2% ***	6.1% ***	5.6% ***	4.9% ***
S&P BMI Dev. Europe	4.1% ***	4.7% ***	3.0% *	6.8% ***
S&P BMI Dev. Asia x-Japan	8.0% ***	12.5% ***	10.9% ***	12.0% ***
Japan	3.4%	-0.4%	0.6%	4.9% *

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively

[ii] Returns above are capitalization-weighted and annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Exhibit 13: Risk-Reward Tradeoff – Historical Information Ratio
 Backtested Fama-French Adjusted Quintile Return Spread Conditioned on FCF Yield
 [Jan. 1996 – Aug. 2014]

	Gross Profit to Assets Style: Profitability	Free Cash Flow Yield Style: Value	Sloan's Accruals Style: Quality	12M-1M PriceMo Style: Price Momentum
Russell 3000	0.86	0.82	0.74	0.60
S&P BMI Dev. Europe	0.68	0.70	0.40	0.85
S&P BMI Dev. Asia x-Japan	0.70	1.20	0.89	0.83
Japan	0.35	[0.04]	0.06	0.40

[i] Information ratios above are annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

4.2.3 Is Profitability Subsumed by Price Momentum?

In this section, we examine whether the profitability signals have historically been subsumed by price momentum, defined as total returns from the past 12 months until the most recent month. After controlling for price momentum, we see historical positive excess returns and IRs globally, albeit the case is less clear historically in Japan. See Exhibit 14.

Exhibit 14: Economic Significance – Historical Excess Returns
 Historical Fama-French Adjusted Quintile Return Spread
 Conditioned on Price Momentum
 [Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	6.4% ***	7.5% ***	8.6% ***	6.5% **
S&P BMI Dev. Europe	4.1% ***	6.8% ***	6.7% ***	9.1% ***
S&P BMI Dev. Asia x-Japan	8.4% ***	10.1% ***	8.3% ***	15.7% ***
Japan	2.0%	1.1%	1.1%	6.5% ***

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively

[ii] Returns above are capitalization-weighted and annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Exhibit 15: Risk-Reward Tradeoff – Historical Information Ratio

Backtested Fama-French Adjusted Quintile Return Spread Conditioned on Price Momentum
[Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	1.04	1.07	1.08	0.81
S&P BMI Dev. Europe	0.63	0.99	0.93	1.30
S&P BMI Dev. Asia x-Japan	0.83	0.97	0.71	1.16
Japan	0.28	0.13	0.13	0.72

(i) Information ratios above are annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

4.3 Section Summary

Takeaways from this section are:

- Due to historically low correlations both in the cross-section and in time-series, our results have shown that there are potential diversification benefits to be had from adding profitability to quality, value and price momentum styles.
- Profitability signals historically haven't been subsumed by quality, value or price momentum.

5 Why Profitability Works?

The next logical question is why profitability has historically worked and whether it might continue to work. Our ex-ante belief is that highly profitable companies have historically remained highly profitable because they are able to erect large economic moats around their profits – i.e., because they have a sustainable competitive advantage. We test our hypothesis using historical data in the following two ways: [i] the likelihood that highly profitable companies have historically remained highly profitable in subsequent periods, and [ii] whether highly profitable companies have historically consistently exceeded their expected top- and bottom-line estimates due to higher than average growth. We use gross-profit-to-assets as our measure of profitability. We bucket companies into five bins using gross-profit-to-assets as the sorting signal. Highly profitable [unprofitable] companies are defined as the top [bottom] 20% of companies in a given universe with the highest [lowest] industry-neutral gross-profit-to-assets signal. We define a company to be persistently highly profitable if it remained in the top quintile of profitability in every rebalancing monthly period.

5.1 Do Highly Profitable Firms Historically Maintain Their High Profitability?

In this section, we examine whether historically highly profitable firms could maintain their high profitability in subsequent periods. We use persistence of gross-profit-to-assets as a proxy for companies' ability to protect their profits, because the ability to maintain profitability over time could indicate a competitive advantage, for example.

In both the US and globally, our results suggest that highly profitable firms historically remained highly profitable even after 5 years. We see historically 51%, 30% and 23% of the highly profitable companies remained in the top quintile of profitability after 1, 3 and 5 years. If this persistence is due to randomness, we would expect to see about 20% [or less due to data attrition] of the highly profitable companies remain highly profitable after one year [as an illustration assuming new financial data comes in on an annual basis], 4% $[0.2^2]$ after two rebalancing periods and so forth, yet we see historically 51%, 30% and 23% after 1, 3 and 5 years.

Compared to FCF Yield, accruals and price momentum, gross-profit-to-assets has historically been 2.07x, 2.22x and 3.12x times more persistent after 5 years. See results historically in the encircled box in Exhibit 16. In fact, gross-profit-to-assets has historically shown to be more persistent for all horizons and for all regions globally. Another implication here is that gross-profit-to-assets historically has been a low turnover signal, in fact its signal decay is even slower than value's. See US and global results historically in Exhibit 16 and 17.

Exhibit 16: Percentage of Stocks in Russell 3000 That Remain in the Top Quintile

Industry-Neutral Ratios
[Jan. 1996 – Aug. 2014]

	After 1 Year	After 3 Years	After 5 Years
Gross profit to assets	50%	30%	23%
Free cash flow yield	22%	14%	11%
Sloan's Accruals	18%	13%	10%
Price Momentum 12m-1m	11%	9%	7%

[i] Monthly rebalancing

Exhibit 17: Percentage of Stocks Globally That Remain in the Top Quintile

Industry-Neutral Ratios
[Jan. 1996 – Aug. 2014]

	After 1 Year	After 3 Years	After 5 Years
Gross profit to assets	50%	30%	22%
Free cash flow yield	18%	11%	8%
Sloan's Accruals	15%	10%	8%
Price Momentum 12m-1m	11%	8%	7%

[i] Monthly rebalancing

[ii] Numbers above are averages from S&P BMI Developed Europe, S&P BMI Developed Asia and S&P BMI Japan

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

5.2 Why Highly Profitable Firms Have Remained Highly Profitable Over Time?

Next, we examine why highly profitable companies have historically remained highly profitable in subsequent periods. Our results indicate that they have historically consistently exceeded their expected top- and bottom-line estimates due to higher than average growth. Two-year top- and

bottom-line growths for the most profitable firms are historically 10.4% and 30.9% larger than the least profitable firms. Compared to the least profitable firms, the most profitable companies historically have exceeded their FY2 top- and bottom-line estimates by 5.8% and 22.7%.

Our ex-ante is that if we empirically see a monotonic relationship going from positive surprises [i.e. actual > estimate] to negative surprises as we go from highly profitable firms to highly unprofitable firms, then one plausible explanation of why highly profitable firms have historically remained highly profitable is that they have been more adept at protecting their profits. The reasoning is that economic theory tells us that over time abnormal profits aren't sustainable due to competition. Knowing their coverage companies intimately well, sell-side analysts provide the best available estimates of companies' future profitability and their estimates reflect expectations of the market. Yet, if highly profitable [unprofitable] companies historically consistently surprise to the upside [downside], then the positive [negative] surprises have less to do with managing sell-side analysts' expectations [big bath]. Moreover, if highly profitable firms historically consistently beat sell-side analysts' estimates due to higher than average growth, then this suggests that highly profitable companies have historically remained highly profitable in subsequent periods because they have not only protected their profits but have grown them faster than market's expectations.

We examine historically the difference in percentage between actuals and their corresponding FY1 and FY2 estimates of Revenue, EBITDA, EBIT and Net Income [GAAP] with the benefit of perfect foresight for companies with different gross-profit-to-assets ratio. For example, we compare historically the FY1 actual and its corresponding forecasted revenue in terms of percentage change for companies in the Russell 3000 index bucketed into five bins using gross-profit-to-assets as the sorting signal.

Our results suggest that there has historically been a monotonic relationship going from positive surprises [i.e. actual > estimate] to negative ones as we go from highly profitable firms to highly unprofitable firms. In other words, the most [least] profitable companies historically have consistently exceeded [underperform] their top- and bottom-line expectations. We historically see this in the US and globally. See Exhibit 18 for US and appendix A.4 for x-US results.

Exhibit 18: Difference Between Actuals and Their Corresponding FY1 and FY2 Estimates [%]
Russell 3000 [Jan. 1996 – Aug. 2014]

	Difference Between Actuals and Corresponding FY1 Estimates [%]					
	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	1.0%	0.1%	0.2%	0.1%	-0.1%	-0.9%
EBITDA	3.7%	1.1%	0.9%	0.4%	-0.6%	-2.6%
EBIT	5.0%	1.5%	1.0%	0.3%	-0.6%	-3.5%
Net Income	8.5%	3.1%	1.5%	0.0%	-3.1%	-5.4%

[i] Pct changes are demeaned in the cross-section to account for cyclicity from economic cycles [ii] where data available

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Difference Between Actuals and Corresponding FY2 Estimates [%]

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	5.8%	1.0%	1.2%	0.8%	-0.1%	-4.8%
EBITDA	9.7%	2.6%	3.1%	1.4%	-0.9%	-7.1%
EBIT	13.4%	4.7%	3.8%	0.8%	-1.9%	-8.7%
Net Income	22.7%	8.9%	4.9%	0.0%	-5.4%	-13.8%

(i) Pct changes are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Next, we ask why do highly profitable firms historically consistently beat their top- and bottom-line estimates. We examine their historical 1- and 2-year top- and bottom-line growth rates and also see a historical monotonic relationship here as well with the most [least] profitable firms having the largest [smallest] 1- and 2-year top- and bottom-line growth. In other words, the most [least] profitable companies historically consistently have higher [lower] than average 1- and 2-year top- and bottom-line growth rates. We see this historically in the US and globally. See Exhibit 19 for US and appendix A.5 for x-US results.

Exhibit 19: One- and Two-Year Top- and Bottom-Line Change

Russell 3000 (Jan. 1996 – Aug. 2014)

1-Year Change in Actuals

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	3.2%	1.5%	1.1%	0.5%	-0.6%	-1.7%
Net Income	14.7%	5.2%	3.2%	0.6%	-1.9%	-9.5%

(i) Growth rates are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

2-Year Change in Actuals

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	10.4%	2.8%	2.5%	1.6%	-0.7%	-7.6%
Net Income	30.9%	10.9%	6.6%	2.4%	-4.0%	-20.0%

(i) Growth rates are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

5.3 Section Summary

The takeaway from this section is that highly profitable firms historically have remained persistently highly profitable due to above average growth historically.

6 Robustness Checks

In this section, we examine the recent performance of the profitability signals as well as the performance of the profitability signals among large-caps. We evenly divide the entire period into two sub-periods: Jan. 1996 – Aug. 2004 and Jan. 2005 – Aug. 2014. We specifically examine

whether profitability works historically in large-caps because they are more efficiently priced, and, therefore, these results are a higher bar.

6.1 Recent Performance

In both sub-periods, the profitability signals still have shown positive excess returns with statistical significance at the 5% level and positive IRs. In fact, the magnitude of the excess returns was higher in the first sub-period than those in the second sub-period. This makes sense because financial markets become more efficient over time. See Exhibits 20 – 23.

Exhibit 20: Economic Significance – Historical Excess Returns
 Historical Fama-French Adjusted Top Quintile (Long-Only) Excess Return
 [Jan. 1996 – Dec. 2004]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	8.18% ***	6.92% ***	7.53% ***	5.09% ***
S&P BMI Dev. Europe	9.11% ***	10.3% ***	10.5% ***	7.74% ***
S&P BMI Dev. Asia x-Japan	8.83% *	15.9% ***	10.4% **	4.65%
Japan	2.67%	3.39%	4.74% *	5.76% ***

(i) ***, **, * denote 1%, 5%, 10% significance levels respectively; Newey-West t-statistic

(ii) Returns above are capitalization-weighted and annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Exhibit 21: Risk-Reward Tradeoff – Historical Information Ratio
 Information Ratio of Historical Fama-French Adjusted Top Quintile (Long-Only) Return
 [Jan. 1996 – Dec. 2004]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	1.50	1.85	1.66	1.66
S&P BMI Dev. Europe	1.48	1.90	2.02	1.20
S&P BMI Dev. Asia x-Japan	0.62	0.94	0.73	0.37
Japan	0.45	0.49	0.63	1.19

(i) Information ratios above are annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Exhibit 22: Economic Significance – Historical Excess Returns
 Fama-French Adjusted Top Quintile [Long-Only] Excess Return
 [Jan. 2005 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	3.39% ***	2.22% **	1.56% *	1.67% **
S&P BMI Dev. Europe	5.12% ***	4.85% ***	5.12% ***	5.06% ***
S&P BMI Dev. Asia x-Japan	6.40% ***	4.39% **	2.39%	2.23%
Japan	0.75%	1.90%	2.02%	1.65%

(i) ***, **, * denote 1%, 5%, 10% significance levels respectively; Newey-West t-statistic

(ii) Returns above are capitalization-weighted and annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Exhibit 23: Risk-Reward Tradeoff

Information Ratio of Fama-French Adjusted Top Quintile [Long-Only] Excess Return
 [Jan. 2005 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	0.84	0.81	0.54	0.75
S&P BMI Dev. Europe	1.04	1.34	1.47	1.93
S&P BMI Dev. Asia x-Japan	1.04	0.73	0.44	0.36
Japan	0.20	0.33	0.40	0.29

(i) Information ratios above are annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

6.2 Performance in Large-Caps

In this section, we examine historically the efficacy of profitability in large-capitalizations. Profitability signals have historically shown positive excess returns and IRs among large-caps. See Exhibit 24. We are only showing large-caps because relative to smaller-caps they are more efficiently priced and, therefore, they are a higher bar. See appendix A.3 for historical efficacy of profitability within small-caps.

Exhibit 24: Economic Significance – Historical Returns of Top 20% Firms by Market-Cap
 Historical Fama-French Adjusted Top Quintile [Long-Only] Excess Return
 [Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	5.05%***	5.45%***	5.68%***	5.14%***
S&P BMI Dev. Europe	6.65%***	6.84%***	7.75%***	6.58%***
S&P BMI Dev. Asia x-Japan	9.38%***	10.66%***	7.71%***	4.19%
Japan	2.97%**	3.92%**	3.86%**	4.45%***

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively; Newey-West t-statistic

[ii] Returns above are capitalization-weighted and annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Exhibit 25: Risk-Reward Tradeoff – IRs of Historical Returns of Top 20% Firms by Market-Cap
 Information Ratio of Historical Fama-French Adjusted Top Quintile [Long-Only] Excess Return
 [Jan. 1996 – Aug. 2014]

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	0.97	1.05	1.09	1.16
S&P BMI Dev. Europe	1.19	1.25	1.38	1.29
S&P BMI Dev. Asia x-Japan	0.67	0.66	0.60	0.31
Japan	0.48	0.52	0.48	0.62

[i] Information ratios above are annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

6.3 Section Summary

Our results suggest that profitability signals have historically shown efficacy in recent periods and among large-caps.

7 Clean Measures of Profitability & Deflator Choice

7.1 Clean Measure of Profitability

Novy-Marx [2013] explains that gross profitability has higher efficacy than other profitability signals such as ROE because gross profit is the cleanest measure of profitability. Yet, one of the conclusions from Ball et. al. [2014] is that the choice of the denominator makes a meaningful impact on profitability signals. They found that the ratio of gross profit normalized by assets has

the same efficacy as the ratio of net income deflated by assets [ROA]. This result led them to suggest that Novy-Marx's gross profitability results might be spurious.


Our results, however, suggest that the profitability signals that are cleaner [i.e higher up in the income statement such as gross profit] have historically shown higher efficacy in general independent of the chosen deflator. We define cleaner profitability measures as profitability metrics that are higher in the income statement such as Gross Profit and EBITDA. In other words, their values are least impacted by managements' and accounting decisions. Out of the four measures examined in this paper, we group Gross Profit and EBITDA as the cleaner measures and EBIT and Net Income from Continuing Operations as less clean measures.

Our results suggest that both standalone and risk-adjusted economic significance and IRs of cleaner [less clean] profitability ratios that use profitability metrics that are higher up [lower] in the income statement are historically larger. See Exhibit 26.

Exhibit 26: Historical Comparison of Clean vs. Less Clean Profitability Ratios

Historical Information Ratio Based on Quintile Return Spread

[Jan. 1996 – Aug. 2014]




	All Stocks	Large-Capitalization Stocks
	Backtested Fama-French Adjusted Avg IR [Quintile Return Spread]	Backtested Fama-French Adjusted Avg IR [Quintile Return Spread]
Industry-Neutral Gross Profit to Assets	0.74	0.59
Industry-Neutral EBITDA to Assets	0.73	0.61
Industry-Neutral EBIT to Assets	0.50	0.43
Industry-Neutral NI to Book Equity	0.39	0.32

(i) Information ratios are averages of annualized information ratios from US, Europe, Asia x-Japan and Japan

(ii) Returns above are capitalization-weighted and annualized from monthly numbers

Historical Information Ratio Based on Fama-MacBeth Estimates

[Jan. 1996 – Aug. 2014]



	All Stocks	Large-Capitalization Stocks
	Backtested Fama-French Adjusted Avg IR [Quintile Return Spread]	Backtested Fama-French Adjusted Avg IR [Quintile Return Spread]
Industry-Neutral Gross Profit to Assets	1.18	0.47
Industry-Neutral EBITDA to Assets	1.08	0.50
Industry-Neutral EBIT to Assets	0.96	0.41
Industry-Neutral NI to Book Equity	0.78	0.22

(i) Information ratios are averages of annualized information ratios from US, Europe, Asia x-Japan and Japan

(ii) IRs of returns above are capitalization-weighted and annualized from monthly numbers

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

7.2 Choice of Deflator

Another finding of Ball et. al. [2014] is that the choice of deflator has a meaningful impact on the efficacy of profitability signals. Our findings, however, suggest that the choice of deflator does not matter as much historically. Our results also suggest that profitability signals divided by total assets do not always have the highest efficacy historically. The differences in the results may be attributable to the fact that we form signals using the most recent financial and market data from S&P Capital IQ's Global Point-In-Time data sets with a monthly rebalancing frequency whereas Ball et. al. [2014] uses an annual rebalancing frequency.³ See the encircled red box in Exhibit 27 for historical average IRs of profitability ratios using various denominators: assets, market value of equity or book value of equity.

Exhibit 27: Comparison of Using Different Deflators

Information Ratio of Historical Risk-Adjusted Quintile Return Spread (Jan. 1996 – Aug. 2014)

	Deflator	Gross Profit To Assets	EBITDA to Assets	EBIT to Assets	Net Income to Assets	Avg (IR)
Russell 3000	Assets	1.07	1.03	0.97	0.97	1.01
	MV[Equity]	0.76	1.10	1.03	0.79	0.92
	BV[Equity]	0.91	0.75	0.83	0.69	0.79
S&P BMI Dev. Europe	Assets	0.67	0.63	0.49	0.31	0.52
	MV[Equity]	1.20	1.31	1.12	1.10	1.18
	BV[Equity]	0.51	0.66	0.30	0.32	0.45
S&P BMI Dev. Asia x-Japan	Assets	0.75	1.19	0.25	-0.08	0.53
	MV[Equity]	0.97	0.83	0.81	0.50	0.78
	BV[Equity]	0.83	0.94	0.64	0.03	0.61
Japan	Assets	0.48	0.07	0.28	0.42	0.31
	MV[Equity]	0.37	1.15	1.03	0.64	0.80
	BV[Equity]	-0.13	0.31	0.30	0.51	0.24

(i) Information ratios above are annualized from monthly numbers and return spreads are capitalization-weighted

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

8 Data and Methodologies

Results

All of the results in this paper are based on back-testing of historical data with the benefit of hindsight.

Excluding Financials

Results throughout the paper exclude financial companies (GICS Level 1 of 40) because the concept of total assets, for instance, is very different for financials vs. non-financial companies.

³ The reasoning is analogous to the one that's used in The Devil in HML's Details – Asness and Frazzini 2013. There are additional information embedded in the most recent data.

Inferences from our results don't change when we do include financials. See Table A.1 in the appendix. Although S&P Capital IQ does have industry-specific profitability data points for financials, we exclude the financial companies to make the results more intuitive for interpretation.

Industry-Neutral Signals

Next, all of the profitability signals are industry neutral at GICS level 3 [e.g. 451030, software]. Different industries are consistently more or less profitable than others due to various factors such as regulation, for instance. When we calculate industry neutral signals, a small subset of industries at GICS Level 3 has less than five constituents. In these select cases, the signals are industry-group neutral [GICS Level 2] instead. Inferences from our results don't change when we use the raw signals. See Table A.2 in the appendix.

Capitalization-Weighted Return Calculations

Results throughout the paper use value-weighted [i.e. cap-weighted] calculations because it is a higher-bar and a more conservative empirical assessment. Like a majority, if not all, of other signals, profitability signals in general show lower [higher] efficacy when the results are based on value-weighted [equal-weighted] returns. We have included select equal-weighted results in the appendix. See Table A.3. The quantile sorts that are used throughout the paper are sorted in the direction that is consistent with findings from literature. For instance, the top [bottom] quantile of free cash flow yield [FCF yield] has companies that have the highest [lowest] FCF yield ratio.

Universe and Data

The study covers both the U.S. and the international markets. The Russell 3000 index is used as a representative of the U.S. market. S&P BMI Developed Markets Europe, which contains developed European countries, is used as a proxy for the European market. The countries in this index include Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom. S&P BMI Developed Markets Asia Pacific, which contains developed Asian countries, represents the Asian markets. The countries in this index include Australia, Hong Kong, Japan, New Zealand, Singapore, and South Korea. The sample data time period goes from January 1996 to August 2014. The financial data are from S&P Capital IQ's Point-In-Time global data. The total returns data are from S&P Capital IQ's market data package. Financial and market data are trimmed and then winsorized at the 99% level.

9 Conclusion

Our results suggest that profitability signals whether standalone or risk-adjusted have historically shown strong efficacy in stock selection globally. Our back-tested results suggest that profitability has potentially historically been an underappreciated source of risk-adjusted alpha with low correlations to value, quality and price momentum. Historically, it's highly persistent and decays slowly. One plausible explanation why profitability has worked historically and it may continue to work is that highly profitable firms have historically remained highly profitable in subsequent periods because they had above average growth and greater economic efficiency.

Appendix

**A.1: Historical Annualized Fama-French-Adjusted
Capitalization-Weighted Quintile Return Spread**

Industry-Neutral Signals with Financials Included

Jan. 1996 – Aug. 2014

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	5.96% ***	6.94% ***	7.10% ***	5.66% ***
S&P BMI Dev. Europe	4.18% ***	4.01% ***	2.74%	2.52%
S&P BMI Dev. Asia x-Japan	11.25% ***	13.02% ***	4.44%	0.58%
S&P BMI Japan	3.03%	0.85%	2.00%	4.55% **

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively

**A.2: Historical Annualized Fama-French-Adjusted
Capitalization-Weighted Quintile Return Spread**

Signals without Industry-Neutralization with Financials Excluded

Jan. 1996 – Aug. 2014

	Gross Profit to Assets	EBITDA to Assets	EBIT to Assets	NI to Book Equity
Russell 3000	8.0% ***	7.1% ***	7.6% ***	2.5%
S&P BMI Dev. Europe	7.3% ***	6.4% ***	4.8% ***	0.7%
S&P BMI Dev. Asia x-Japan	12.9% ***	17.9% ***	14.6% ***	4.2%
S&P BMI Japan	5.4% ***	6.6% ***	6.1% ***	6.0% ***

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively

**A.3: Historical Annualized Fama-French-Adjusted
Equal-Weighted Quintile Return Spread**

Industry-Neutral Signals with Financials Excluded

Jan. 1996 – Aug. 2014

	Industry-Neutral Gross Profit to Assets	Industry-Neutral EBITDA to Assets	Industry-Neutral EBIT to Assets	Industry-Neutral NI to Book Equity
Russell 3000	6.8% ***	8.8% ***	9.2% ***	8.2% ***
S&P BMI Dev. Europe	6.3% ***	8.0% ***	9.2% ***	8.2% ***
S&P BMI Dev. Asia x-Japan	9.5% ***	14.1% ***	10.7% ***	8.3% ***
S&P BMI Japan	2.5% ***	4.2% ***	2.8%	2.6%

[i] ***, **, * denote 1%, 5%, 10% significance levels respectively

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

A.4: One- and Two-Year Growth Pct Change for Top- and Bottom-Line

S&P BMI Dev. Europe

[Jan. 1996 – Aug. 2014]

1-Year Change in Actuals

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	1.9%	1.0%	0.1%	-0.3%	0.2%	-0.9%
Net Income	10.6%	3.5%	3.5%	1.5%	-2.4%	-7.1%

Growth rates are demeaned in the cross-section to account for cyclicity from economic cycles

2-Year Change in Actuals

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	2.8%	1.4%	-0.3%	-0.6%	0.9%	-1.4%
Net Income	24.9%	9.5%	6.3%	1.7%	-5.8%	-15.4%

Growth rates are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

S&P BMI Dev. Asia x-Japan

[Jan. 1996 – Aug. 2014]

1-Year Change in Actuals

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	6.0%	1.8%	2.0%	0.5%	-0.6%	-4.2%
Net Income	15.9%	6.7%	4.3%	0.6%	-2.7%	-9.2%

Growth rates are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

2-Year Change in Actuals

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	13.5%	4.2%	3.4%	1.5%	-0.6%	-9.3%
Net Income	40.1%	13.7%	7.8%	1.6%	-6.4%	-27.4%

Growth rates are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

S&P BMI Japan

[Jan. 1996 – Aug. 2014]

1-Year Change in Actuals

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	4.1%	1.9%	0.8%	0.1%	-0.7%	-2.2%
Net Income	13.5%	3.5%	2.2%	2.5%	0.3%	-10.0%

Growth rates are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

2-Year Change in Actuals

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	9.5%	4.8%	1.5%	0.0%	-1.4%	-4.7%
Net Income	26.6%	7.8%	5.9%	7.2%	-0.6%	-18.8%

Growth rates are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

A.5: Percentage Change between Actuals and Their Corresponding FY1 and FY2 Estimates**S&P BMI Dev. Europe**

[Jan. 1996 – Aug. 2014]

Percentage Change Between Actual and FY1 Estimates

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	1.0%	0.3%	0.1%	0.1%	0.1%	-0.7%
EBITDA	3.5%	1.1%	0.4%	0.6%	-0.2%	-2.4%
EBIT	4.7%	1.6%	0.4%	0.4%	-0.2%	-3.1%
Net Income	10.5%	3.3%	1.5%	0.1%	-2.1%	-7.2%

Pct changes are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

Percentage Change Between Actual and FY2 Estimates

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	2.7%	0.8%	-0.1%	0.4%	0.3%	-1.9%
EBITDA	8.5%	2.8%	0.7%	1.3%	-0.2%	-5.7%
EBIT	12.6%	4.3%	1.1%	1.4%	-0.3%	-8.3%
Net Income	16.8%	5.3%	2.8%	0.7%	-3.2%	-11.5%

Pct changes are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

S&P BMI Dev. Asia x-Japan

[Jan. 1996 – Aug. 2014]

Percentage Change Between Actual and FY1 Estimates

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	3.6%	1.1%	0.6%	0.2%	0.4%	-2.5%
EBITDA	12.4%	3.5%	1.3%	0.1%	-1.1%	-8.9%
EBIT	17.4%	4.4%	1.5%	0.2%	-1.8%	-13.0%
Net Income	26.3%	5.4%	2.7%	-0.1%	-1.8%	-20.9%

Pct changes are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

Percentage Change Between Actual and FY2 Estimates

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	10.3%	3.3%	2.2%	0.5%	0.6%	-7.0%
EBITDA	24.7%	7.6%	4.5%	0.6%	-2.8%	-17.1%
EBIT	35.1%	10.0%	5.2%	1.3%	-4.0%	-25.1%
Net Income	42.2%	9.9%	4.9%	1.0%	-2.7%	-32.3%

Pct changes are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

S&P BMI Japan

[Jan. 1996 – Aug. 2014]

Percentage Change between Actual and FY1 Estimates

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	0.2%	1.0%	0.3%	-0.7%	-1.5%	0.8%
EBITDA	1.6%	0.5%	0.4%	-0.7%	0.3%	-1.1%
EBIT	5.2%	3.8%	1.3%	-1.9%	-3.3%	-1.4%
Net Income	13.0%	4.8%	2.0%	-0.2%	-4.0%	-8.2%

Pct changes are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

Percentage Change Between Actual and FY2 Estimates

	Top GP – Bot GP	Top GP	2	3	4	Bot GP
Revenue	3.2%	2.6%	0.8%	-0.7%	-1.8%	-0.6%
EBITDA	9.1%	3.5%	2.9%	-0.5%	-1.2%	-5.6%
EBIT	16.4%	9.2%	3.9%	-1.3%	-5.3%	-7.2%
Net Income	27.4%	10.6%	5.9%	1.4%	-6.2%	-16.8%

Pct changes are demeaned in the cross-section to account for cyclicity from economic cycles (ii) where data available

Source: S&P Capital IQ Quantamental Research. For the above exhibit, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such payments would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

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Our Recent Research

November 2014: [Equity Market Pulse – Quarterly Equity Market Insights Issue 2](#)

Driven by S&P Capital IQ's™ proprietary data and analytics, **Equity Market Pulse** provides professional investors with insights into global equity market fundamentals and performance at a glance. Spanning developed and emerging markets in the Americas, Europe, and Asia, it provides perspective on valuations, operating efficiency, and investment strategy effectiveness.

- **The S&P 500® continues to be the preeminent regional performer** in terms of both financial results and price appreciation Risk and Return: Tracks the dynamics of equity market returns and volatility.
- **Investor preference for developed markets continues**, as developed markets show rising P/E multiples versus the emerging markets on much stronger financial performance.
- **Emerging markets appear cheap** on a valuation-to-projected-growth basis, with forward P/E to earnings growth (PEG) ratios of less than half those of the developed market average.

October 2014: [Lenders Lead, Owners Follow – The Relationship between Credit Indicators and Equity Returns](#)

This paper demonstrates a strong link exists between credit events and equity returns, suggesting a potential investment strategy. Whereas previous academic work focused on ratings changes within the U.S., this analysis takes a global perspective and includes the post-financial crisis period. Shareholders should note that even in a benign credit environment Standard & Poor's Ratings Services ["S&P Ratings Services"] downgraded 68 U.S. speculative grade companies in the second quarter of 2014, and forecasts the rate of speculative grade defaults to increase next year to 2.2% from 1.6% in 2014. Year to date, there have been 303 instances where credit default swap spreads have widened by more than 50 basis points.

August 2014: [Equity Market Pulse – Quarterly Equity Market Insights Issue 1](#)

Equity Market Pulse provides professional investors with insights into global equity market fundamentals and performance at a glance. Spanning developed and emerging markets in the Americas, Europe, and Asia, it provides perspective on valuations, operating efficiency, and investment strategy effectiveness. The content of the Equity Market Pulse is driven by S&P Capital IQ's fundamental data and analytics including S&P Capital IQ Estimates, Global Point-in-Time Fundamentals, and the Alpha Factor Library. The analysis is broken into four themes:

- **Valuation:** Analysis of valuation multiples coupled with consensus outlook for earnings and revenue growth.
- **Operating Performance:** Trends in operating performance with return on equity deconstructed into: net profit margins, asset turnover, and leverage
- **Risk and Return:** Tracks the dynamics of equity market returns and volatility.

July 2014: [Factor Insight: Reducing the Downside of a Trend Following Strategy](#)

In this report, we review an approach that reduces the downside risk of a trend following strategy. This new signal first separates a stock's return into its systematic and stock-specific components, and then picks stocks solely on the latter. We compare the performance of this new signal [alpha momentum] to a typical trend following strategy [total momentum] and report the following:

- Globally, alpha momentum produces higher risk-adjusted returns in five developed market countries and a global universe. In the Russell 3000, alpha momentum's annualized long-short information ratio is twice that of total momentum [Jan 1988 – April 2014].

May 2014: [Introducing S&P Capital IQ's Fundamental China A-Share Equity Risk Model](#)

Factor risk models play an important role in equity portfolio management. Portfolio managers depend upon factor risk models to obtain portfolio risk prediction and risk attribution against a group of largely orthogonal factors each with meaningful econometric explanations. S&P Capital IQ is dedicated to providing a broad set of high-quality models and products to the global asset management community. Since 2010, we have released a series of single country risk models as well as global and regional equity risk models. We are now releasing single country risk model covering China A-Shares equities,

April 2014: [Riding the Coattails of Activist Investors Yields Short and Long Term Outperformance](#)

On August 13, 2013, Apple's stock price rose 4.75% on high volume after Carl Icahn, a renowned activist investor, tweeted that his firm had accumulated a large position in the company. In the ensuing 6 months, the stock rose an additional 9.33% as Icahn demanded that the company add another \$50 billion to its existing stock buyback plan. Icahn backed off from this demand on February 10, 2014, but not before Apple's stock price had risen to \$528.99 from \$461.88 where it was before he embarked on the campaign. By then, the company had already aggressively repurchased its stock, including \$14 billion in a two-week stretch. As high-profiled campaigns have occurred with greater frequency and resulted in more successes, the AUM for investor activist funds has tripled to \$95 billion in 2013, 3 times the amount in 2008.

March 2014: [Insights from Academic Literature: Corporate Character, Trading Insights, & New Data Sources](#)

As part of our research process, we make a concerted effort to stay abreast of interesting white papers. Academic research papers are a rich source for new ideas and fine tuning of areas for future work. Often they provide a launch pad for debate and exploration for our team. Our readers agree, as we regularly receive positive feedback on our academic research highlights.

In this piece we have assembled a number of interesting articles that we believe will be of broad interest to our clients, and all investment professionals – Corporate Character, Trading Insights & New Data Sources. For each article we provide a link to the article, the abstract, and a brief discussion of the article highlights and how it will be useful to fellow practitioners. It is our hope that these papers help you generate differentiated thinking, and to better serve your clients.

February 2014: [Obtaining an Edge in Emerging Markets](#)

Following the introduction of our global stock selection models for developed markets [DM] in August 2013, we launch our stock selection model for emerging markets [EM] and report the following:

- The Model generated a top quintile average monthly excess return of 0.90% within the S&P BMI Emerging Market Index [Jan 2002 – Sept 2013].
- The Model's performance is robust across regions and sectors.

- We do not observe performance degradation within mid to large cap stocks.
- Model's top quintile average monthly excess return is identical in growth and value environments [0.80%], and positive in periods of elevated volatility [0.53%].
- A simulated portfolio generated an annualized excess return of 10.5% after accounting for transactions costs.

February 2014: [U.S Stock Selection Model Performance Review](#)

The performance of S&P Capital IQ's four U.S. stock selection models since their launch in January 2011 has been strong, and 2013 was no exception. Key differentiators, such as distinct formulations for large and small cap stocks, bank-specific factors, sector-neutrality to target stock-specific alpha, and the combination of sub-components representing different investment themes have enabled the models to outperform across disparate market environment

January 2014: [Buying Outperformance: Do share repurchase announcements lead to higher returns?](#)

We examine the returns surrounding buyback announcements to test whether, and when, buyback programs signal subsequent outperformance and shareholder value. We find:

- Buyback announcements precede excess returns in the US. Stocks on average outperformed the equally weighted Russell 3000 by 0.60% over one month, and by 1.38% over one year periods following buyback announcements.
- Outperformance is greatest among small caps or larger magnitude buybacks as a % of shares outstanding.
- Reported insider trading and buyback announcement signals are complementary.
- In Europe, some post-buyback outperformance over 12 months, but no significant excess return after one month.

October 2013: [Informative Insider Trading - The Hidden Profits in Corporate Insider Filings](#)

In this report, we investigate the impact of the public disclosure of insider trading on equity prices, using both an event study framework and a portfolio formation approach. Leveraging S&P Capital IQ's Ownership database, we explore several practical methods of identifying "informative" insider trades, and how to construct a portfolio of stocks using recent "informed" insider transactions. We document the following results:

- Consistent with existing literature, insider trades are predictive of future stock returns.
- Outside investors can earn economically significant excess returns by trading on "informative" insider trading signals.
- Mimicking the net purchase actions of CEOs yielded an excess return of 1.27% over the next one week.
- A trading strategy based on the three characteristics: opportunistic, intensive and directional change, yielded 0.36% weekly excess returns after transaction costs.

September 2013: [Beggar Thy Neighbor - Research Brief: Exploring Pension Plans](#)

Pension underfunding is a worldwide problem. There has been an unending wave of news stories about cities and states across the United States suffering from defined benefit pension funding shortfalls, but these issues extend far beyond the public sector and beyond the United States as well.

In this brief we leverage S&P Capital IQ datasets to examine:

- Companies with the strongest and weakest pension funding status globally.
- Companies with the most optimistic return and discount rate assumptions globally.
- The relationship between projected and realized pension portfolio returns.
- The historical global trends in funding status, portfolio returns, and discount rates.

August 2013: [Introducing S&P Capital IQ Global Stock Selection Models for Developed Markets: The Foundations of Outperformance](#)

In this report, we explore the efficacy of different stock selection strategies globally and use this information to develop a suite of robust global stock selection models targeting Canada and the developed markets of Europe and Asia Pacific. Our global models were developed using S&P Capital IQ's industry leading Global Point-in-Time data, as well as the Alpha Factor Library, our web-based global factor research platform. We find that each of our Global Stock Selection Models for Developed Markets yield significant long-short spread returns and information coefficients at the 1% level. This performance is also robust providing similar statistical significance after controlling for Market Cap and Beta exposures.

July 2013: [Inspirational Papers on Innovative Topics: Asset Allocation, Insider Trading & Event Studies](#)

Inspiration drives innovation. The writings of Plutarch inspired Shakespeare, Galapagos finches inspired Darwin, and the German Autobahn inspired Eisenhower, but what inspires investment researchers to develop the next innovations for investors? When we get a new investment idea, we seek out literature on that topic to inspire us to bring the idea to fruition. This literature can help to further develop our own thoughts, polish up and expand on our priors, and avoid the pitfalls experienced by earlier researchers. Inspiration from academia enhances our ability to provide innovative solutions for our clients.

June 2013: [Supply Chain Interactions Part 2: Companies – Connected Company Returns Examined as Event Signals](#)

June 2013: [Behind the Asset Growth Anomaly – Over-promising but Under-delivering](#)

April 2013: [Complicated Firms Made Easy – Using Industry Pure-Plays to Forecast Conglomerate Returns.](#)

March 2013: [Risk Models That Work When You Need Them – Short Term Risk Model Enhancements](#)

March 2013: [Follow the Smart Money – Riding the Coattails of Activist Investors](#)

February 2013: [Stock Selection Model Performance Review: Assessing the Drivers of Performance in 2012](#)

January 2013: [Research Brief: Exploiting the January Effect Examining Variations in Trend Following Strategies](#)

December 2012: [Do CEO and CFO Departures Matter? – The Signal Content of CEO and CFO Turnover](#)

November 2012: [11 Industries, 70 Alpha Signals –The Value of Industry-Specific Metrics](#)

October 2012: [Introducing S&P Capital IQ's Fundamental Canada Equity Risk Models](#)

September 2012: [Factor Insight: Earnings Announcement Return – Is A Return Based Surprise Superior to an Earnings Based Surprise?](#)

August 2012: [Supply Chain Interactions Part 1: Industries Profiting from Lead-Lag Industry Relationships](#)

July 2012: [Releasing S&P Capital IQ's Regional and Updated Global & US Equity Risk Models](#)

June 2012: [Riding Industry Momentum – Enhancing the Residual Reversal Factor](#)

May 2012: [The Oil & Gas Industry – Drilling for Alpha Using Global Point-in-Time Industry Data](#)

May 2012: [Case Study: S&P Capital IQ – The Platform for Investment Decisions](#)

March 2012: [Exploring Alpha from the Securities Lending Market – New Alpha Stemming from Improved Data](#)

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November 2011: [Research Brief: Return Correlation and Dispersion – All or Nothing](#)

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July 2011: [Research Brief – A Topical Digest of Investment Strategy Insights](#)

June 2011: [A Retail Industry Strategy: Does Industry Specific Data tell a different story?](#)

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May 2011: [Topical Papers That Caught Our Interest](#)

April 2011: [Can Dividend Policy Changes Yield Alpha?](#)

April 2011: [CQA Spring 2011 Conference Notes](#)

March 2011: [How Much Alpha is in Preliminary Data?](#)

February 2011: [Industry Insights – Biotechnology: FDA Approval Catalyst Strategy](#)

January 2011: [US Stock Selection Models Introduction](#)

January 2011: [Variations on Minimum Variance](#)

January 2011: [Interesting and Influential Papers We Read in 2010](#)

November 2010: [Is your Bank Under Stress? Introducing our Dynamic Bank Model](#)

October 2010: [Getting the Most from Point-in-Time Data](#)

October 2010: [Another Brick in the Wall: The Historic Failure of Price Momentum](#)

July 2010: [Introducing S&P Capital IQ's Fundamental US Equity Risk Model](#)

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