

U.S. Stock Selection Model Performance Review

The most effective investment strategies in 2015

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Since the launch of the four S&P Capital IQ® U.S. stock selection models in January 2011, the performance of all four models [Growth Benchmark Model, Value Benchmark Model, Quality Model, and Price Momentum Model] has been positive each year. The models' key differentiators - a distinct formulation for large cap versus small cap stocks, incorporation of industry specific information for the financial sector, sector neutrality to target stock specific alpha, and factor diversity - enabled the models to outperform across disparate market environments. In this report, we assess the underlying drivers of each model's performance in 2015 and since inception (2011), and provide full model performance history from January 1987.

- All four models generated positive long-short quintile return spreads¹ ("spreads") and information coefficients [ICs]² during 2015 [Table 1] and over the 'live' performance period of 2011 – 2015 [Table 2]³. The models also had positive quintile 1 (Q1) excess returns⁴ over the same period.
- The Price Momentum and Value Benchmark models posted positive quintile return spreads and ICs in eight of the twelve months in 2015. We detail the models' monthly equal-weighted spreads and ICs for 2015 in Figures 1 & 2.
- For 2015, the Price Momentum Model delivered the strongest average monthly return spread [2.62%], Q1 excess return [1.08%] and IC [0.102]. The Quality Model was the weakest on return metrics [spread of 0.91% and Q1 excess return of 0.32%].
- For the 'live' period [Table 2], the Growth Benchmark Model had the best performance in terms of average monthly long-short spread [1.32%] and the Price Momentum Model generated the strongest Q1 average monthly excess return [0.41%].
- Momentum was a dominant strategy in the U.S. stock market during 2015. The price momentum component had superior performance in both Growth Benchmark and Value Benchmark Models – generating average monthly return spreads [ICs] of 1.43% [0.066] and 2.29% [0.082] respectively in 2015.
- All models posted robust performance after controlling for market cap and beta exposures.

¹ See "Explanation of Returns..." on page 3 for explanation of returns and terminology used in this report. Long-short quintile return spreads, "quintile spread", "return spread", or "spread", as used in this report, is the equal-weighted return to a top quintile portfolio minus the equal-weighted return of the bottom quintile portfolio.

² Information Coefficient, or "IC", as used in this report, is the correlation of monthly ranked model scores with monthly ranked forward returns of each stock in the universe.

³ The 'live' performance period (i.e., models in actual production) is January 2011 to the present.

⁴ Quintile 1 (Q1) excess return, or "Excess", is the average return to the top quintile equal-weighted portfolio minus the return of the equal-weighted benchmark.

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Table 1: 2015 Model Summary Performance – January 2015 to December 2015
 Russell 3000 Growth/Russell 3000 Value/Russell 3000

Model Name	Universe	Average 1-Month Quintile Spread	Average Q1 Monthly Excess Return	Average 1-Month IC
Growth Benchmark Model ("GBM")	Russell 3000 Growth	0.93%	0.41%	0.042
Value Benchmark ("VBM")	Russell 3000 Value	1.15%	0.39%	0.043
Quality ("QM")	Russell 3000	0.91%	0.32%	0.046
Price Momentum ("PMM")	Russell 3000	2.62%	1.08%	0.102

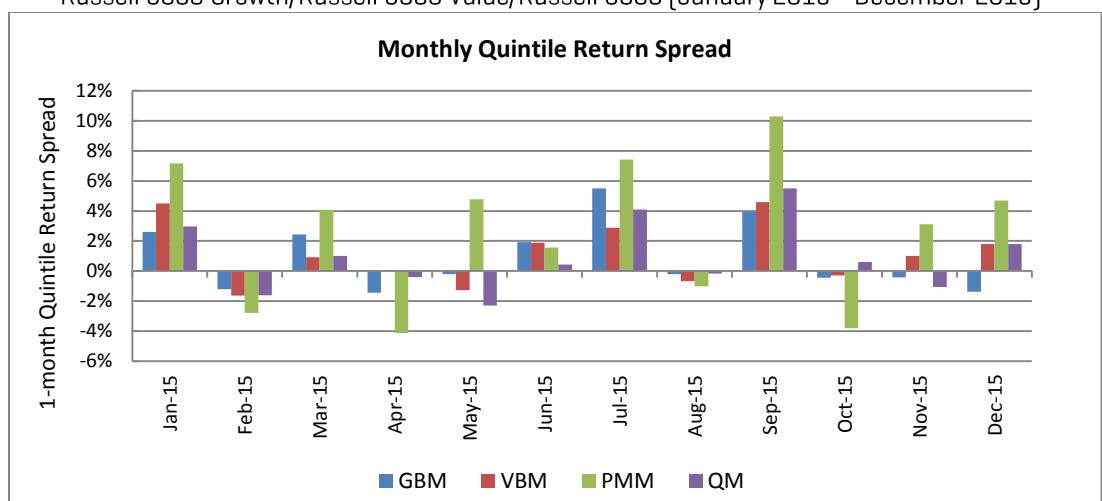
Source: S&P Capital IQ Quantamental Research. Results as of 12/31/2015⁵. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Table 2: Model Historical Summary Performance – Live Performance
 [January 2011 to December 2015]
 Russell 3000 Growth/Russell 3000 Value/Russell 3000

Model Name	Universe	Average 1-Month Quintile Spread	Average Q1 Monthly Excess Return	Average 1-Month IC
Growth Benchmark Model ("GBM")	Russell 3000 Growth	1.32%	0.36%	0.047
Value Benchmark Model ("VBM")	Russell 3000 Value	1.21%	0.34%	0.049
Quality Model ("QM")	Russell 3000	0.94%	0.37%	0.047
Price Momentum Model ("PMM")	Russell 3000	1.12%	0.41%	0.059

Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

Figure 1: Monthly Historical Equal-Weighted Quintile Return Spread
 Russell 3000 Growth/Russell 3000 Value/Russell 3000 [January 2015 - December 2015]



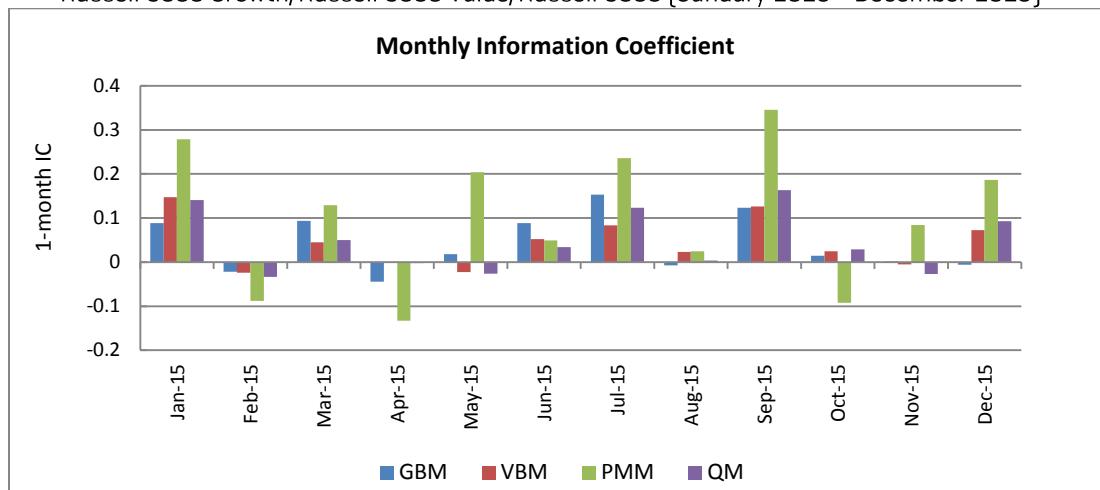
Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is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

⁵ The date for all exhibits in this report is as of 12/31/2015, unless otherwise indicated.

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Figure 2: Monthly Information Coefficient

Russell 3000 Growth/Russell 3000 Value/Russell 3000 [January 2015 - December 2015]



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

Explanation of Returns Presented in this Paper

This paper presents the returns of hypothetical portfolios formed based on the model scores. All returns are calculated based on actual historical returns of the underlying stocks, but do not represent actual trading results and they do not include payments of any sales charges, fees, or trading costs. Such costs would have lowered performance. It is not possible to invest directly in an index or the model portfolios on which the results presented here are based. Past performance is not a guarantee of future results.

“Spread” returns, also referred to as return spreads or long-short return spreads, are the returns of a screened portfolio of the top 20% of ranked stocks [quintile 1] minus the returns of the bottom 20% screened portfolio [quintile 5]. Stock returns within each portfolio are equally-weighted. The model portfolios are rebalanced at calendar month end.

“Excess” returns are returns of model portfolios formed from the top 20% of ranked stocks [referred to as “quintile 1” or “Q1”] minus the return of the equally-weighted universe. Where noted in tables, Q2, Q3, Q4, and Q5 present the returns of hypothetical portfolios of the lower-ranked quintiles, each containing a distinct 20% portion of the universe.

“Absolute” returns are the model return of the equally-weighted portfolio without subtracting benchmark returns.

“Information Coefficient”, or “IC” is the rank correlation of the model monthly scores with the forward 1-month returns of the underlying stocks. An IC score measures how closely related the model rankings [scores] are to the returns that follow. The closer the score/return relationship, the higher the IC.

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“Information Ratio” or “IR”, of a result is the average of monthly values over the period divided by the standard deviation of these values.

The return of the equally-weighted universe is the return of a portfolio containing the constituents of the reference index [such as the Russell 3000], with equal weighting and a monthly rebalance.

The models were released in January 2011 and were constructed with benefit of hindsight for returns prior to 2011. We refer to the historical period before 2011 as “back-test”. We refer to the performance of the model from 2011 and beyond as the “live” performance.

1 Growth Benchmark Model

The Growth Benchmark Model (“GBM”) was created to outperform a growth benchmark, defined as the Russell 3000 Growth Index. The model identifies companies with a consistent track record of earnings growth, as well as emerging growth candidates. The model scores are based on seven sub-components: Earnings Momentum, Historical Growth, Liquidity & Leverage, Price Momentum, Value, Quality, and Capital Efficiency. Table 3 shows the summary performance of the model from January 1987 to December 2015.

Table 3: Summary Historical Performance Statistics for Growth Benchmark Model
Russell 3000 Growth Universe [January 1987 – December 2015]

	Q1	Q2	Q3	Q4	Q5	Long-Short Quintile Return Spread
Average Monthly Absolute Return ⁶	1.62%***	1.18%***	0.93%	0.62%	-0.04%	1.66%***
Annualized Absolute Return	21.2%	15.1%	11.7%	7.7%	-0.5%	21.8%
Annualized Information Ratio ⁷	1.75	0.84	0.09	-1.18	-1.43	1.84

Information Coefficient Summary	
Average 1-Month IC	0.047***
1-Month IC Information Ratio	0.92
1-Month IC Hit Rate ⁸	84%***

*** 1% level of significance

Source: S&P Capital IQ Quantamental Research. Backtested returns do not represent the results of actual trading and were constructed with the benefit of hindsight. Returns do not include payment of any sales charges or fees. Inclusion of fees and expenses would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

1.1 Model Performance in 2015

Figure 3 displays the 1-month average quintile return spreads and 1 month ICs for the model in 2015. The GBM generated positive average return spread of 0.93% during 2015. Monthly ICs were positive in 8 out of the 12 months. In the four months of January, March, June and September, the model yielded positive return spreads ranging from 1.9% to 3.9% when the Russell 3000 Growth Index was in the negative territory. The model had the weakest performance in April in terms of both return spread [-1.45%] and IC [-0.045] as six out of the seven sub-components posted negative spreads.

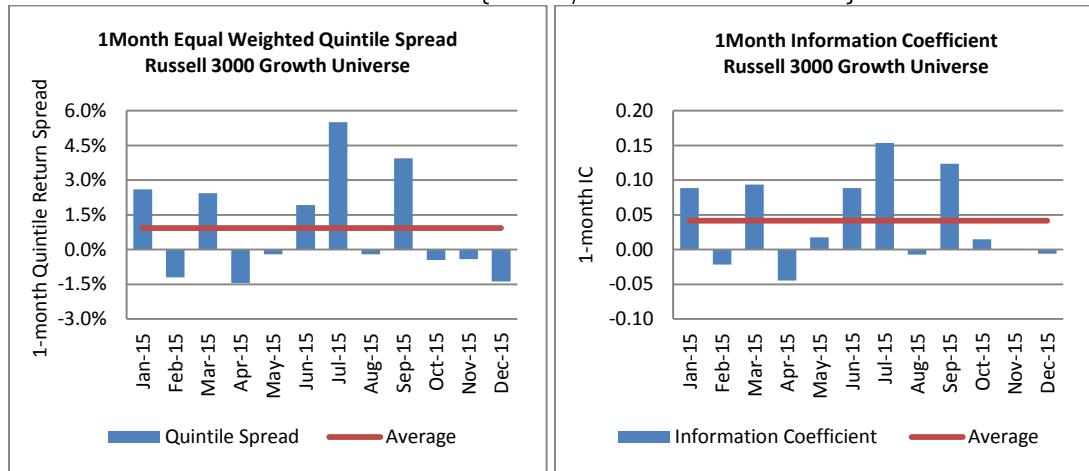
⁶ Average Monthly Returns are absolute returns based on a monthly rebalanced portfolio.

⁷ Information Ratio calculated on monthly excess returns relative to the equal-weighted benchmark.

⁸ IC Hit Rate is defined as the percentage of months where the IC is positive.

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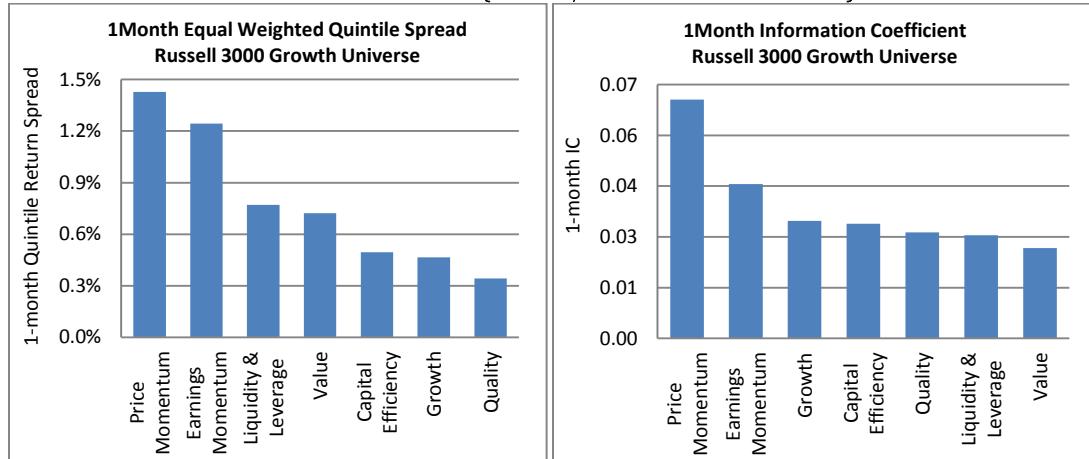
Figure 3: Growth Benchmark Model: Historical 1Month Equal Weighted Quintile Return Spread and Information Coefficient
 Russell 3000 Growth [January 2015 - December 2015]



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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

Figure 4 shows the average 1-month quintile return spread and IC for each sub-component of the Growth Model for 2015. All sub-components generated positive return spreads and ICs during the year. The Price Momentum and Earnings Momentum sub-components were the top themes in terms of both return spread and IC.

Figure 4: Growth Benchmark Model Sub-components:
Historical 1Month Equal Weighted Quintile Return Spread and Information Coefficient
 Russell 3000 Growth [January 2015 - December 2015]

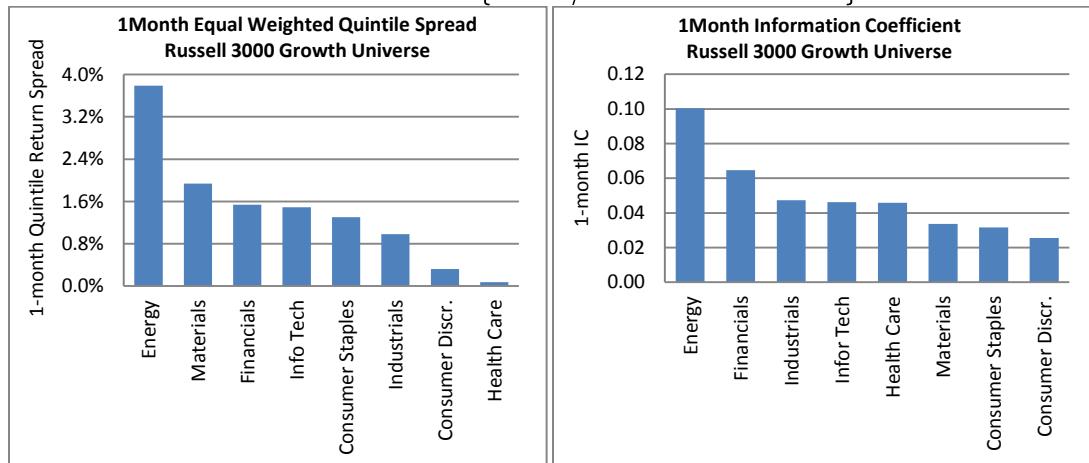


Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is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

1.2 Sector Performance in 2015

Figure 5 breaks out the historical quintile return spread and Information Coefficient of the model for eight of the 10 GICS®⁹ sectors. Telecommunications and Utilities are excluded because of limited coverage in the benchmark.

**Figure 5: Growth Benchmark Model Sector: 1Month Equal Weighted Historical Quintile Return Spread and IC
Russell 3000 Growth [January 2015 - December 2015]**



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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

The GBM showed positive 1-month average quintile spreads and ICs in all of the eight sectors, although health care and consumer discretionary posted minimal return spread of 0.07% and 0.32% per month, respectively. The energy sector, which was heavily hit by plunging oil prices, generated the highest 1-month spread [3.79%] and IC [0.10] among all the sectors.

1.3 Quintile Portfolio Characteristics and Portfolio Tilt Neutralization

Table 4 reports the median market capitalization and 60-month Capital Asset Pricing Model [CAPM] beta of the top and bottom quintile portfolios. The median market cap of the long portfolio [quintile 1] was \$1,865 million compared with \$1,258 million for the short portfolio, indicating that the model is tilted toward large cap names. The median beta of the long and short portfolios are similar [1.20 vs. 1.24]. This suggests that the Growth Benchmark Models was not largely driven by the performance of high vs. low beta stocks in 2015.

⁹ GICS®: The Global Industry Classification Standard. Please see detailed information in Appendix A.
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**Table 4: Growth Benchmark Model:
Median Market Cap and Median 60-Month CAPM Beta
Quintile 1 and Quintile 5 Portfolios - Russell 3000 Growth Universe
(January 2015 -December 2015)**

Median Measure	Quintile 1	Quintile 5
Market Cap (\$ Million)	1,865	1,258
60M CAPM Beta	1.20	1.24

Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

Large cap growth stocks [proxied by the Russell 1000 Growth Index] outperformed their small cap counterparts [proxied by the Russell 2000 Growth Index] by 5.6% in 2015. Therefore, it is possible that a portion of the outperformance of the GBM could be attributed to a large cap tilt. To account for this, we backtest the GBM after adjusting for size and beta exposures. The results are presented in Table 5.

Table 5: Growth Benchmark Model: Original and Size & Beta Neutralized Historical Results

Russell 3000 Growth Universe [January 2015 - December 2015]

Model	Average 1-Month Quintile Return Spread	Average 1-Month IC
Original GBM	0.93%	0.042
Size/Beta Neutral GBM	0.85%	0.039

Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

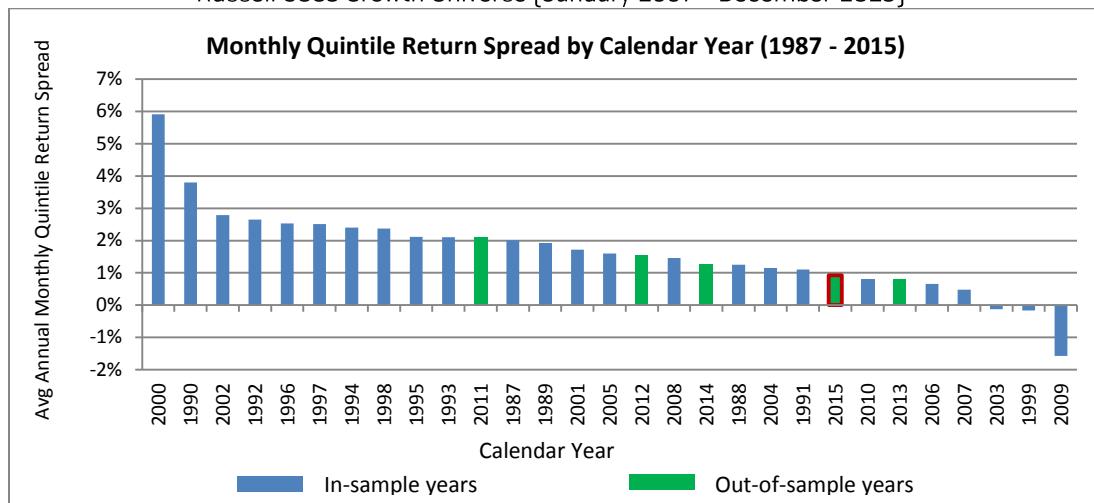
After neutralizing for size and beta, the performance of the GBM was slightly lower, with a reduction in average monthly quintile spread of 8 basis points [bps] to 0.85%, and a reduction in IC from 0.042 to 0.039. This signifies that the model benefitted marginally from the outperformance of large caps.

1.4 Historical Comparison

Figure 6 shows the calendar-year performance of the GBM since 1987. The average monthly quintile spread for 2015 [green bar with red border] was in the 25th percentile of all 29 calendar years. The return spread for the model in the 'live' period [green bars 2011-2015] was 1.32%, which compares well with the 'back-test' [blue bars 1987-2010, the model research period] performance of 1.73%. The worst performing year was 2009 (low price, high beta rally) at -1.57% average monthly spread. Other calendar years with a negative spread were 1999 ("tech bubble") and 2003 ("junk rally").

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Figure 6: Growth Benchmark Model: Historical Year Average Monthly Quintile Return Spread: Russell 3000 Growth Universe [January 1987 - December 2015]



Source: S&P Capital IQ Quantamental Research. Years sorted in descending order of performance. Back tested returns do not represent the results of actual trading and were constructed with the benefit of hindsight. Returns do not include payment of any sales charges or fees. Inclusion of fees and expenses would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

2 Value Benchmark Model

The Value Benchmark Model (“VBM”) identifies underpriced stocks with strong underlying fundamentals, using intrinsic and relative valuation measures. The model selects companies with low valuations, high earnings quality, stable growth rates, and increasing street sentiment. The Value Benchmark Model has six sub-components: Valuation, Earnings Quality, Financial Health, Growth Stability, Street Sentiment, and Price Momentum. Summary performance results from January 1987 to December 2015 are presented in Table 6.

Table 6: Summary Historical Performance Statistics for Value Benchmark Model
Russell 3000 Value Universe [January 1987 – December 2015]

	Q1	Q2	Q3	Q4	Q5	Long-Short Quintile Return Spread
Average Monthly Absolute Return	1.40%***	1.03%***	0.78%	0.44%	-0.36%	1.76%***
Annualized Absolute Return	18.1%	13.0%	9.7%	5.4%	-4.3%	23.3%
Annualized Information Ratio	1.41	0.22	-0.73	-2.53	-2.82	2.87

Information Coefficient Summary	
Average 1-month IC	0.058***
1-month IC Information Ratio	1.01
1-month IC Hit Rate	84%***

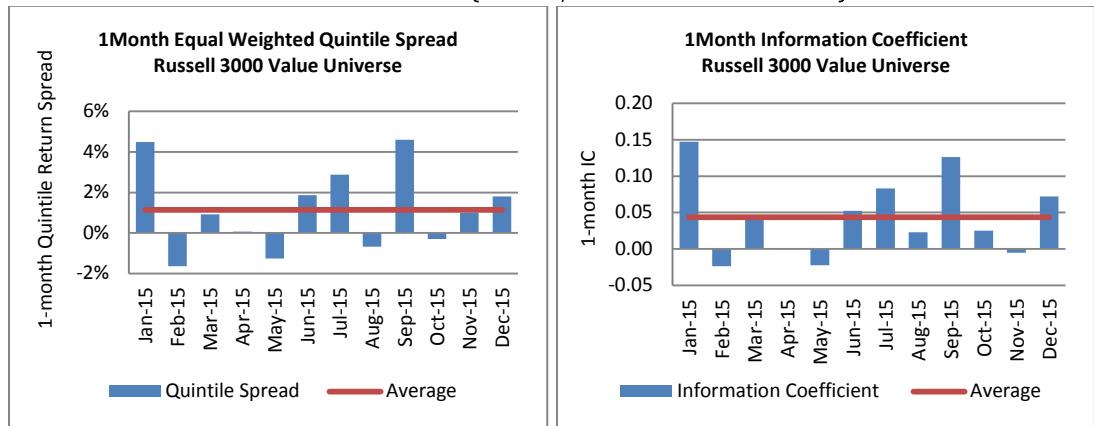
*** 1% level of significance

Source: S&P Capital IQ Quantamental Research. Backtested returns do not represent the results of actual trading and were constructed with the benefit of hindsight. Returns do not include payment of any sales charges or fees. Inclusion of fees and expenses would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

2.1 Model Performance in 2015

Figure 7 shows the monthly quintile return spreads and ICs for the VBM in the Russell 3000 Value Index for 2015. The average monthly return spread and IC were 1.15% and 0.043, respectively. The model generated a positive IC and return spreads in eight out of the 12 months. February and May were the worst months in terms of both return spread and IC for the VBM. The model delivered its best performance in January and September with positive spreads and ICs across all six sub-components.

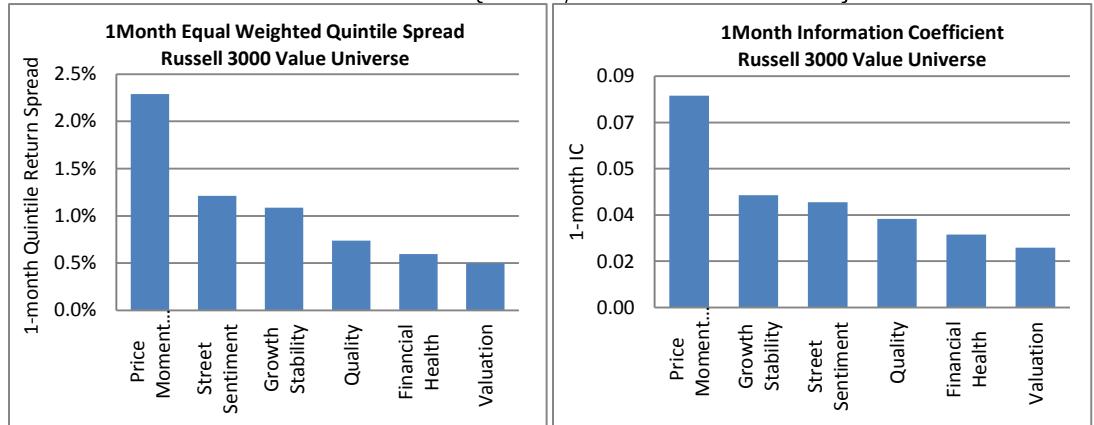
Figure 7: Value Benchmark Model: Historical 1Month Equal Weighted Quintile Spread and IC
Russell 3000 Value [January 2015 – December 2015]



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

Figure 8 shows the average 1-month quintile spread and average 1-month IC of each sub-component of the Value Benchmark Model over the Russell 3000 Value universe for 2015. All the six sub-components posted positive ICs and 1-month return spreads. Price Momentum was the best performing component in terms of average 1-month return spread and IC, while Quality, Financial Health and Valuation only delivered moderate performance based on the same metrics.

Figure 8: Value Benchmark Model Subcomponents:
Historical 1Month Equal Weighted Quintile Spread and IC
Russell 3000 Value [January 2015 – December 2015]



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

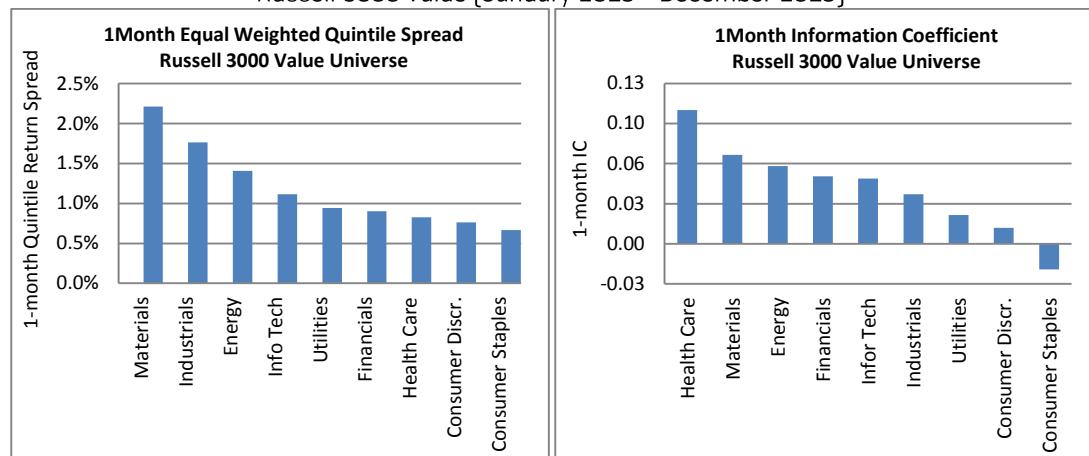
2.2 Sector Performance in 2015

The 1-month average quintile return spreads and ICs of the model within nine of the ten GICS sectors are shown in Figure 9. Telecom is excluded because of limited coverage.

Figure 9: Value Benchmark Model Sector: 1Month Equal Weighted

Historical Quintile Spread and IC

Russell 3000 Value (January 2015 - December 2015)



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

The Value Benchmark Model produced positive 1-month average return spreads in all nine sectors and positive 1-month ICs in 8 out of the 9 sectors. Materials and energy experienced strong performance in terms of both 1-month spread and 1-month IC, even though both sectors were hurt by the decline in commodity prices in 2015. The model performance was the weakest in consumer discretionary and consumer staples.

2.3 Quintile Portfolio Characteristics and Portfolio Tilt Neutralization

Table 7 details the median market capitalization and median 60-month CAPM beta of quintile 1 [long] and quintile 5 [short] portfolios.

Table 7: Value Benchmark Model: Median Market Cap and 60-Month CAPM Beta Quintile 1 and Quintile 5 – Russell 3000 Value Universe (January 2015–December 2015)

Median Measure	Quintile 1	Quintile 5
Market Cap (\$ Million)	1,866	663
60M CAPM Beta	1.16	1.26

Source: S&P Capital IQ Quantamental Research. Characteristics average of monthly model portfolios for 2014. For all exhibits, all returns and 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.

The median market cap of the long portfolio [Q1] was \$1.9 billion compared to \$663 million for the short portfolio [Q5], indicating a large cap tilt for the VBM's long portfolio. In addition, Q1 had a slightly lower 60-month CAPM beta [1.16] compared to Q5 [1.26]. Small cap value stocks [proxied by the Russell 2000 Value Index] trailed large cap values stocks [Russell 1000 Value] for the year. Therefore, the VBM likely benefited from its tilt toward large cap names. To account for this we show the performance of the VBM after we eliminate both beta and market biases in Table 8.

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**Table 8: Value Benchmark Model:
Original and Beta/Size Neutralized Historical Performance
Russell 3000 Value Universe [January 2015 – December 2015]**

Model	Average 1-Month Quintile Return Spread	Average 1-month IC
Original VBM	1.15%	0.043
Size/Beta Neutral VBM	1.01%	0.037

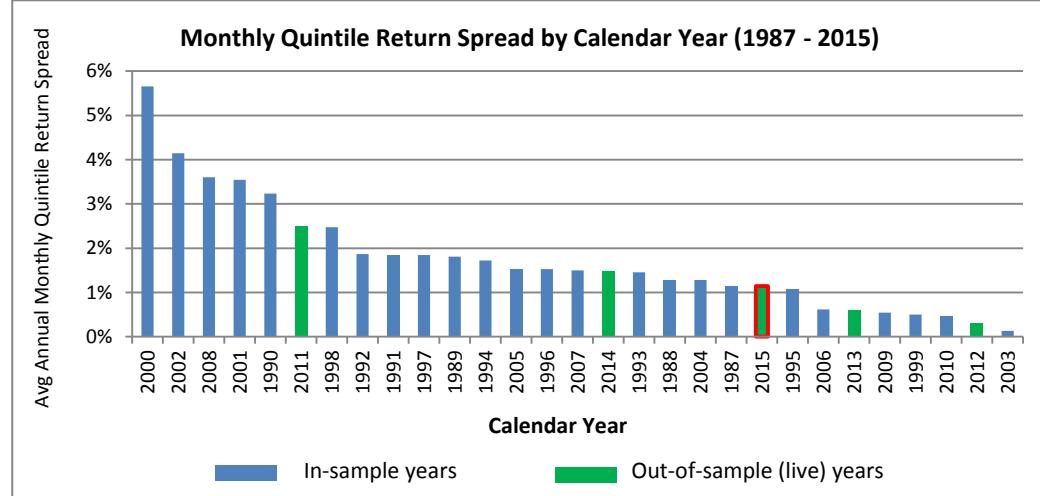
Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is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

The Value Benchmark Model delivered an average monthly quintile return spread of 1.01% after applying beta and size neutralizations, although the spread was slightly lower than that of the original model [by 0.14%]. We also observe deterioration in the average 1-month IC from 0.043 to 0.037.

2.4 Historical Comparison

The VBM's 'back-test' [1987-2010: shown in blue bars] and 'live' [2011-2015: shown in green bars] quintile return spreads are displayed in Figure 10. The model generated a positive return spread in every single year, even in 1999 [when value strategies struggled in the face of the tech bubble] and 2009 [a year where performance was driven by high beta and low price stocks]. The model's 2015 return spread [green bar with red border] was in the 28th percentile of all 29 calendar years. The worst performance was in 2003 ("junk rally") at 0.13%.

**Figure 10: Value Benchmark Model: Historical Year Average Monthly Quintile Return Spread:
Russell 3000 Value Universe [January 1987 – December 2015]**



Source: S&P Capital IQ Quantamental Research. Years sorted in descending order of performance. Backtested returns do not represent the results of actual trading and were constructed with the benefit of hindsight. Returns do not include payment of any sales charges or fees. Inclusion of fees and expenses would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

3 Quality Model

S&P Capital IQ's Quality Model ["QM"] seeks to extend the analysis of earnings quality beyond accruals and includes several measures of balance sheet efficiency/strength that have been

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shown to be good indicators of medium and long-term earnings quality. The Quality Model is comprised of five components: Growth Stability, Operating Efficiency, Complimentary Valuation, Financial Health and Earnings Quality. We detail the summary performance statistics for the model from January 1987 to December 2015 in Table 9.

Table 9: Summary Historical Performance Statistics for Quality Model
Russell 3000 [January 1987 – December 2015]

	Q1	Q2	Q3	Q4	Q5	Long-Short Quintile Return Spread
Average Monthly Absolute Return	1.34%***	1.07%***	0.76%	0.40%	-0.27%	1.61%***
Annualized Absolute Return	17.32%	13.69%	9.49%	4.86%	-3.18%	21.12%
Annualized Information Ratio	1.03	0.45	-0.89	-2.45	-2.33	2.15

Information Coefficient Summary	
Average 1-month IC	0.056***
1-month IC information Ratio	0.89
1-month IC Hit Rate	82%***

*** 1% level of significance

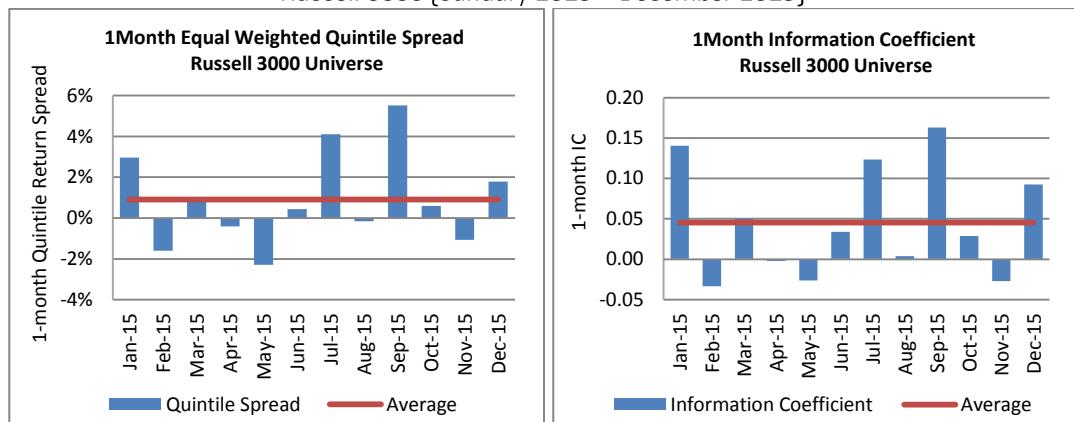
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3.1 Model Performance in 2015

The Quality Model delivered an average 1-month equal-weighted quintile return spread and 1-month IC of 0.91% and 0.046 respectively in 2015 [Figure 11]. Similar to VBM, the model experienced large draw downs in May [-2.29%] and February [-1.61%]; all five sub-components that make up the model had negative return spreads during those periods. September was the best performing month with return spread and IC of 5.51% and 0.163 respectively – the model posted positive spreads and ICs across all five sub-components. The Russell 3000 index was down by more than 3% during September.

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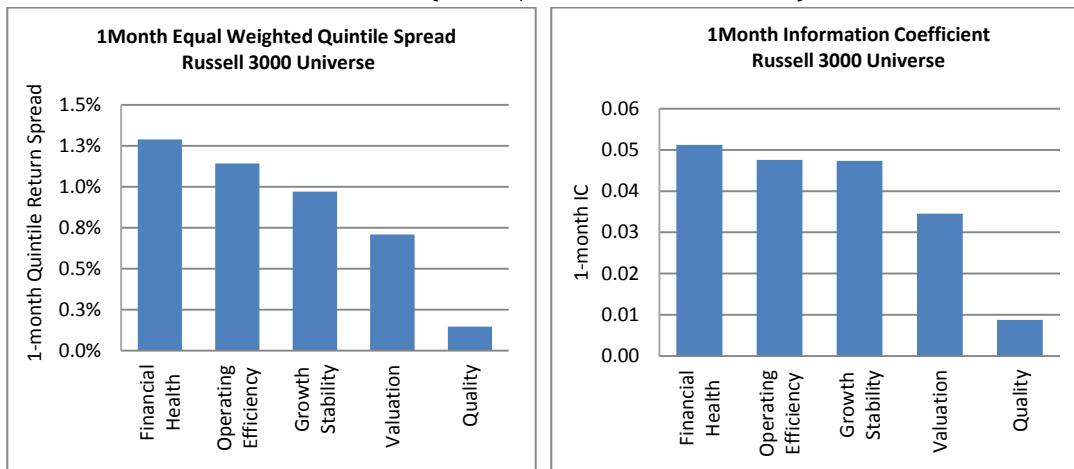
Figure 11: Quality Model: Historical 1Month Equal Weighted Quintile Return Spread & Information Coefficient Russell 3000 [January 2015 – December 2015]



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

Figure 12 shows the average 1-month quintile return spread and average IC for each subcomponent of the Quality model over the Russell 3000 universe for 2015. Financial Health and Operating Efficiency were the top two performing components based on these two metrics.

Figure 12: Quality Model: Historical 1Month Equal Weighted Quintile Return Spread & Information Coefficient Russell 3000 [January 2015 – December 2015]



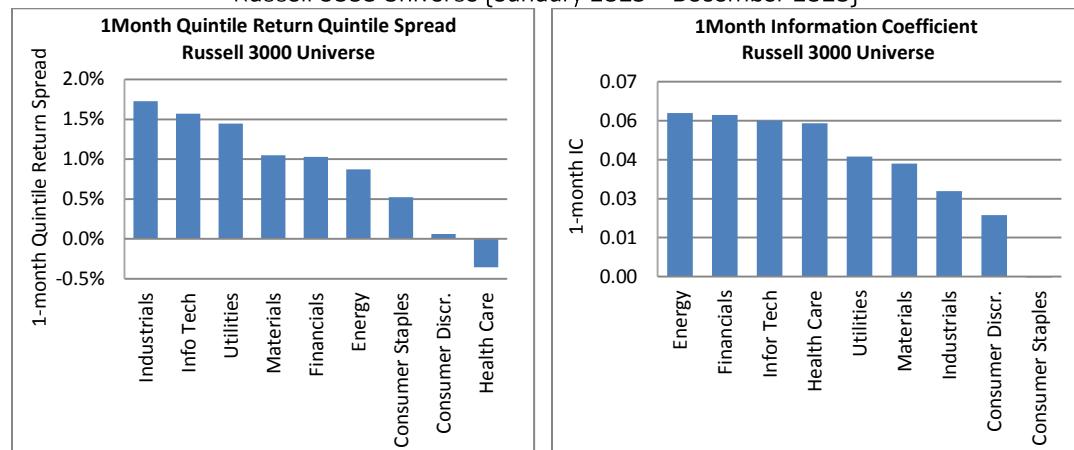
Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is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

3.2 Sector Performance in 2015

The average historical 1-month quintile return spread and IC of the Quality model for the nine GICS sectors is detailed in Figure 13. Telecommunication is excluded because of limited coverage in the benchmark. The QM posted positive 1-month ICs in all of the nine sectors and positive 1-month average return spreads in 8 out of 9 sectors. Industrials and information technology were the top two performing sectors based on return spreads, while health care was the weakest.

S&P CAPITAL IQ MODEL PERFORMANCE REVIEW FOR 2015

Figure 13: Quality Model: Historical Sector 1 Month Average Quintile Return Spread and IC
 Russell 3000 Universe [January 2015 – December 2015]



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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 Quintile Portfolio Characteristics and Portfolio Tilt Neutralization

The QM's median market capitalization and median 60-month CAPM beta of the top [quintile 1] and bottom [quintile 5] portfolios are shown in Table 10. As expected, the long portfolio [quintile 1] was tilted towards large cap names, as these names tend to provide more stable earnings and dividend streams compared to small cap stocks. We also observe that the Q1 portfolio had lower beta compared to Q5. Large cap stocks [proxied by the Russell 1000 index] outperformed small cap stocks [proxied by the Russell 2000 index] by about 5% in 2015, so it is reasonable to expect the Quality Model may have benefited from this positive large cap exposure.

Table 10: Quality Model: Median Market Cap and 60-Month CAPM Beta
 Quintile 1 and Quintile 5 – Russell 3000 Universe [January 2015 – December 2015]

Median Measure	Quintile 1	Quintile 5
Market Cap (\$Million)	2,208	801
60M CAPM Beta	1.14	1.25

Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

We show the performance of the model after we eliminate both beta and market cap biases in Table 11. The Quality Model still delivered an average historical monthly quintile spread of 0.77% after applying the beta and size neutralization, although the spread was 14bps lower than that of the original model [0.91%]. The average 1-month IC also dropped by 10% [from 0.046 to 0.041].

S&P CAPITAL IQ MODEL PERFORMANCE REVIEW FOR 2015

Table 11: Quality Model: Original and Beta/Size Neutralized Historical Performance
Russell 3000 Universe [January 2015 – December 2015]

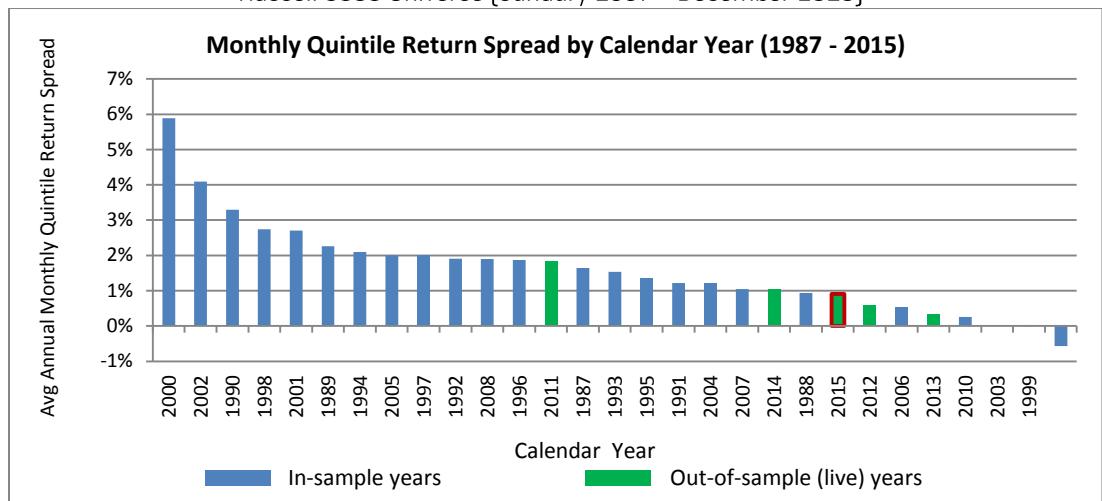
Model	Average 1-Month Quintile Return Spread	Average 1-Month IC
Original QM	0.91%	0.046
Size/Beta Neutral QM	0.77%	0.041

Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

3.4 Historical Comparison

We display the model's average 1-month quintile return spread by calendar year in Figure 14. 2015's long-short return spread ranks in the 25th percentile of calendar year since 1987. The best calendar long-short return spread was in 2000 [5.89%] when value and high quality stocks rallied after the collapse of the tech bubble. The worst return for QM was in 2009 [-0.57%] when high beta and low price stocks out-performed their counterparts.

Figure 14: Quality Model: Historical Year Average Monthly Quintile Return Spread
Russell 3000 Universe [January 1987 – December 2015]



Source: S&P Capital IQ Quantamental Research. Years sorted in descending order of performance. Backtested returns do not represent the results of actual trading and were constructed with the benefit of hindsight. Returns do not include payment of any sales charges or fees. Inclusion of fees and expenses would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

4 Price Momentum Model

The Price Momentum Model ("PMM") was constructed to model relative strength scores based on trailing price momentum and trading volume data. The model is made up of Short-Term and Long-Term components: the short term component uses a look-back window of 1 to 3 months for factor construction, while the longer term component is based on a window of 3 to 12 months. We detail the summary performance statistics for the model in Table 12.

S&P CAPITAL IQ MODEL PERFORMANCE REVIEW FOR 2015

Table 12: Summary Historical Performance Statistics for Price Momentum Model
Russell 3000 [January 1987 – December 2015]

	Q1	Q2	Q3	Q4	Q5	Long-Short Quintile Return Spread
Average Absolute Monthly Return	1.51%***	1.13%	0.75%	0.24%	-0.52%	2.03%***
Annualized Absolute Return	19.66%	14.40%	9.38%	2.92%	-6.06%	27.23%
Annualized Information Ratio	1.07	0.58	-1.04	-2.57	-2.65	2.34

Information Coefficient Summary	
Average 1-Month IC	0.070***
1-month IC information Ratio	0.80
1-month IC Hit Rate	83%***

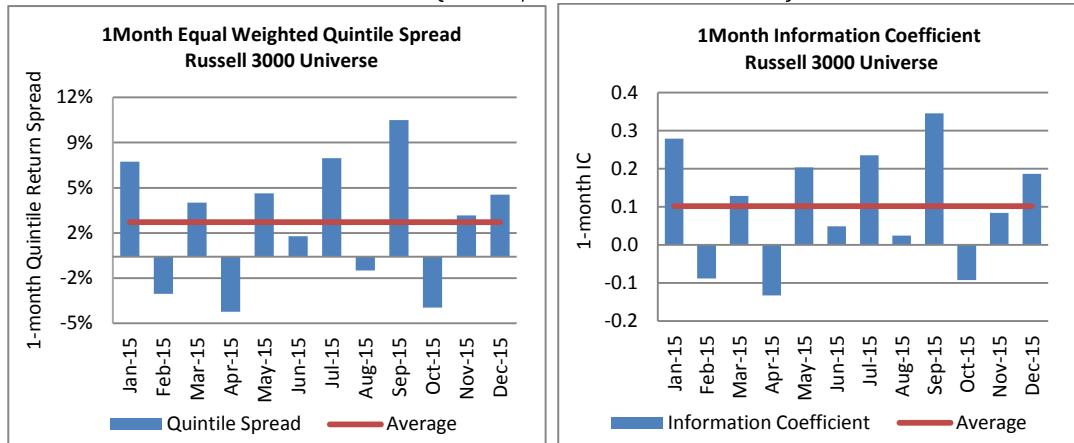
*** 1% level of significance

Source: S&P Capital IQ Quantamental Research. Backtested returns do not represent the results of actual trading and were constructed with the benefit of hindsight. Returns do not include payment of any sales charges or fees. Inclusion of fees and expenses would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

4.1 Model Performance in 2015

U.S. Price Momentum strategy had a very good year in 2015. Figure 15 shows the 1-month equal-weighted quintile return spread and IC for the Price Momentum model (Russell 3000 universe) in 2015. The average monthly spread and IC was 2.62% and 0.102 respectively for the year.

Figure 15: Price Momentum Model: Historical 1Month Equal Weighted Quintile Return Spread and IC
Russell 3000 [January 2015 – December 2015]



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

April and October were the weakest performing months – as they were poor months for strategies based on momentum in general. The model had the best performance in September – it yielded top and bottom quintile excess returns of 4.33% and -5.97%, respectively; while the Russell 3000 index was down by more than 3% during the same period.

S&P CAPITAL IQ MODEL PERFORMANCE REVIEW FOR 2015

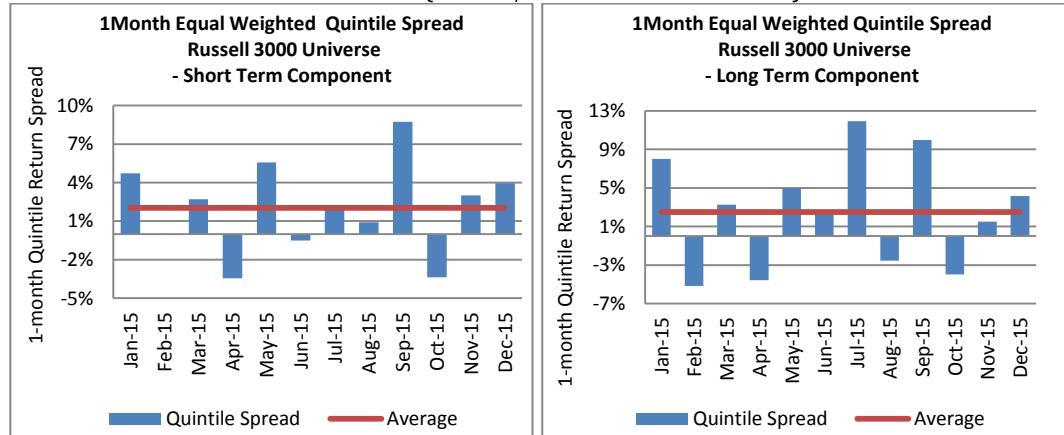
Table 13 and Figure 16 show the average 1-month quintile spread and IC for both the Short- and Long-Term components of the Price Momentum Model in the Russell 3000 for 2015. The performance of both components of the model was similar for the year.

Table 13: Summary Historical Performance Statistics for Price Momentum Model
Russell 3000 (January 2015 – December 2015)

Component	Average 1-Month Quintile Return Spread	Average 1-Month IC
Short-Term Component	2.03%	0.087
Long-Term Component	2.49%	0.096

Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

Figure 16: Price Momentum Model: Historical 1Month Equal Weighted Quintile Return Spread
Russell 3000 (January 2015 – December 2015)



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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.

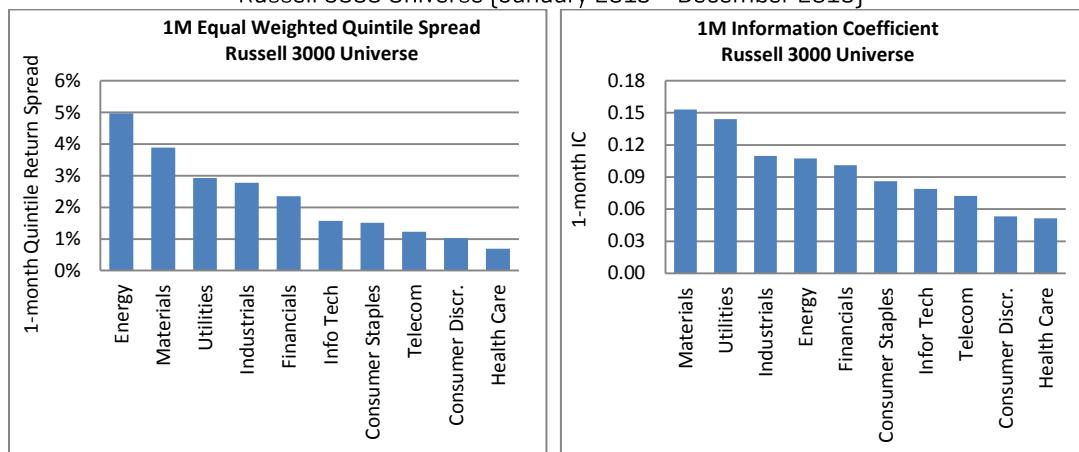
4.2 Sector Performance in 2015

Figure 17 breaks out the average monthly quintile return spread and Information Coefficient of the model for the ten GICS sectors. The Price Momentum Model showed positive 1-month average spreads and IC in all sectors. Health care was the worst performing sector in terms of both return spread and 1-month IC; energy was the best based on return spread.

Figure 17: Price Momentum Model: Sector Historical 1-M Average

Quintile Return Spread and IC

Russell 3000 Universe [January 2015 – December 2015]



Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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 Quintile Portfolio Characteristics and Portfolio Tilt Neutralization

Table 14 shows the median market capitalization and 60-month CAPM beta of the top and bottom quintile portfolios. Similar to the other models, the Price Momentum Model had a large cap bias. The median market cap of the long portfolio [quintile 1] was \$2,531 million compared with \$865 million for the short portfolio. The median beta of the long portfolio [1.02] was slightly lower compared to that of the short portfolios [1.27].

Table 14: Price Momentum Model: Median Market Cap and 60-Month CAPM Beta Quintile 1 and Quintile 5 – Russell 3000 Universe [January 2015 – December 2015]

Median Measure	Quintile 1	Quintile 5
Market Cap (\$ Million)	2,531	865
60M CAPM Beta	1.02	1.27

Source: S&P Capital IQ Quantamental Research. Characteristics average of monthly model portfolios for 2014. For all exhibits, all returns and 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.

Large cap stocks [proxied by the Russell 1000 Index] outperformed their small cap counterparts [proxied by the Russell 2000 Index] by about 5% in 2015, so it is reasonable to attribute some of the outperformance of the Price Momentum Model [PMM] to its large cap tilt. To account for this, we backtest the PMM after neutralizing for size and beta exposure. The performance is presented in Table 15.

S&P CAPITAL IQ MODEL PERFORMANCE REVIEW FOR 2015

Table 15: Price Momentum Model: Original and Beta/Size Neutralized Historical Performance
Russell 3000 Universe [January 2015 – December 2015]

Model	Average 1-Month Quintile Return Spread	Average 1-Month IC
Original PMM	2.62%	0.110
Size/Beta Neutral PMM	2.19%	0.083

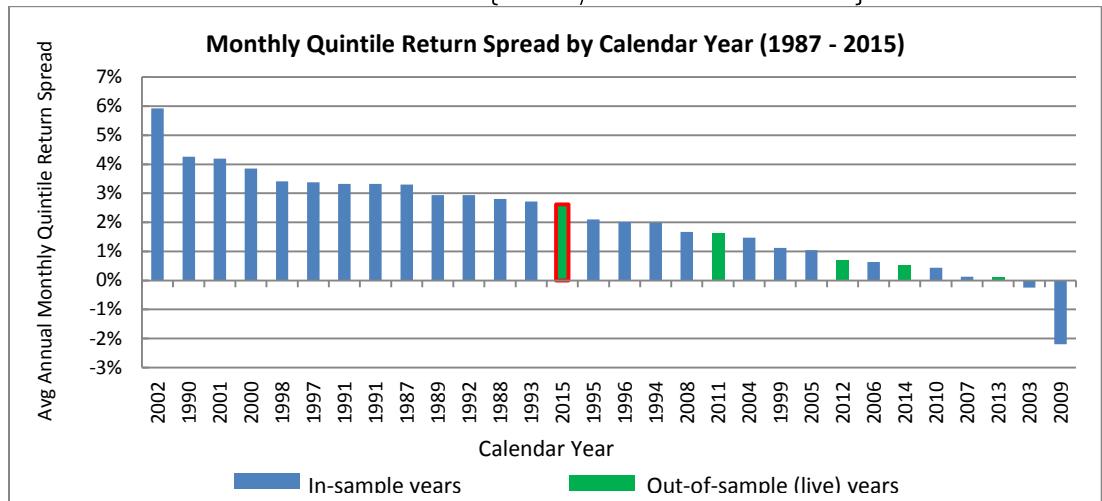
Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is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

After neutralizing for size and beta, the performance of the PMM was slightly lower, with a reduction in average monthly quintile spread of 43bps to 2.19% and a reduction in IC from 0.11 to 0.083. This signifies that the model benefitted marginally from the outperformance of large caps.

4.4 Historical Comparison

The model's 2015 monthly quintile return spread of 2.62% [green bar with red border] was higher relative to both its average return spread for the 'back-test' years [2.22%: blue bars 1987-2010] and 'live' years [1.12%: green bars 2011-2015] [Figure 18]. The worst performing years historically were 2003 and 2009 when momentum as a theme failed.

Figure 18: Price Momentum Mode: Historical Year Average Monthly Quintile Spread
Russell 3000 Universe [January 1987 – December 2015]



Source: S&P Capital IQ Quantamental Research. Years sorted in descending order of performance. Backtested returns do not represent the results of actual trading and were constructed with the benefit of hindsight. Returns do not include payment of any sales charges or fees. Inclusion of fees and expenses would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

5 Model Stability

We measure model stability in 2015 using the autocorrelation of monthly ranks, shown in Table 16. The correlation numbers are in line with what were observed during model backtests. The relatively high autocorrelation observed for GBM, VBM and QM suggests that there is limited turnover in the quintile portfolios formed based on these models. High autocorrelation is a favorable characteristic for the reduction of portfolio turnover and trading costs.

Table 16: Model 1-Month Rank Autocorrelation
[January 2015 – December 2015]

Model	1-month Rank Autocorrelation
Growth Benchmark Model	0.92
Value Benchmark Model	0.93
Quality Model	0.91
Price Momentum Model	0.61

Source: S&P Capital IQ Quantamental Research. For all exhibits, all returns and 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 Conclusions

In this report, we summarized the performance of S&P Capital IQ's four U.S. stock selection models [Value Benchmark, Growth Benchmark, Quality, and Price Momentum] for 2015. All four models delivered positive quintile return spreads and Q1 excess returns in 2015, with the Price Momentum Model posting the strongest results. Our analysis shows that the models generally had tilts toward large caps and low beta stocks in 2015. These exposures benefited the models' overall performance over that period. We also found that all four models post positive performance after we eliminate market cap and beta exposures.

Appendix A

The Global Industry Classification Standard [GICS®] was jointly developed by Standard & Poor's and MSCI Barra to meet the global financial community's need for one complete, consistent set of global sector and industry definitions. The GICS methodology has helped pave the way for sector-based investing by providing transparency and efficiency to the investment process. With GICS, sell-side research and reporting can be organized around industry data without geographic limitations.

The GICS methodology has been commonly accepted as an industry analysis framework for investment research, portfolio management and asset allocation. The GICS classification system currently consists of 10 sectors, 24 industry groups, 68 industries and 154 sub-industries. The GICS sectors are:

- Consumer Discretionary
- Consumer Staples
- Energy
- Financials
- Health Care
- Industrials
- Information Technology
- Materials
- Telecommunication Services
- Utilities

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Our Recent Research

January 2016: [What Does Earnings Guidance Tell Us? – Listen When Management Announces Good News](#)

This study examines stock price movements surrounding earnings per share [EPS] guidance announcements for U.S. companies between January 2003 and February 2015 using S&P Capital IQ's Estimates database. Companies that experienced positive guidance news, i.e. those that announced optimistic guidance [guidance that is higher than consensus estimates] or revised their guidance upward, yielded positive excess returns. We focus on guidance that is not issued concurrent with earnings releases in order to have a clear understanding of the market impact of guidance disclosures. We also explore practical ways in which investors may benefit from annual and quarterly guidance information.

December 2015: [Equity Market Pulse – Quarterly Equity Market Insights Issue 6](#)

With commodity prices plunging, global economic trends diverging, and market volatility rising, analyst estimates for 2016 have been revised sharply lower. Yet estimates remain strong in particular regions and sectors, and valuations have moderated. This issue of Equity Market Pulse uses bottom-up trends in estimates and global risk-return and investment strategy performance metrics to address these questions:

- Which global regions and economic sectors have the strongest 2016 growth expectations?
- Where have 12-month estimate revision trends held up the best and worst?
- With investors focusing on the new year, which regions offer the most value?
- How have global markets performed on a risk/return and investment strategy basis?

November 2015: [Late to File - The Costs of Delayed 10-Q and 10-K Company Filings](#)

The U.S. Securities & Exchange Commission ("SEC") requires companies to submit quarterly [10-Q] and annual [10-K] financial statements in a timely manner. Companies that cannot file within the statutory period are required to file form 12b-25 with the SEC. In this report we examine the relationship between late filings [form 12b-25s] and subsequent market returns, as well as whether late filings signal deeper fundamental problems within the company. Our results, within the Russell 3000 universe (February 1994 – June 2015), indicate that abnormal returns of late filers is negative prior to and post form 12b-25 filing. Late filers are also typically companies with poor fundamental characteristics relative to peers; investors may want to consider avoiding or short-selling these firms. This report is a continuation of our work in the area of event driven investing, a class of strategies that originate from company specific events.

October 2015: [Global Country Allocation Strategies](#)

In this report, we investigate the efficacy of fundamental, macroeconomic and sentiment-based strategies for country selection across global equity markets. Using point-in-time fundamental and macroeconomic data, we constructed signals at the country level, grouped into five themes: valuation, quality, sentiment, volatility and macro. We examined their performance between January 1999 and November 2014 for the developed and emerging markets in the S&P Global Broad Market Indices. Our major findings include:

- Valuation is a common driver of performance in both developed and emerging markets.
- In addition to valuation, we found macro and sentiment based indicators to be effective country selection signals in developed markets.
- We found currency depreciation to be important when emerging market countries were separated into exporting and importing nations.
- Valuation and profitability are low-turnover strategies while macro and sentiment indicators tend to result in more frequent rotation among countries.

S&P CAPITAL IQ MODEL PERFORMANCE REVIEW FOR 2015

September 2015: [Equity Market Pulse – Quarterly Equity Market Insights Issue 5](#)

The Q3 issue of Equity Market Pulse spotlights potential opportunities in Asia, attractive growth and valuations in developed Europe and Japan, and risks associated with rising volatility and elevated 2016 global EPS estimate levels.

September 2015: [Research Brief: Building Smart Beta Portfolios](#)

Why is smart beta important? We believe that smart beta is continuing to gain momentum among a variety of constituencies, including ETF providers, asset managers and asset owners. Many asset managers are making smart beta part of their investment processes. European and Canadian public pension funds have been increasingly relying on internalized smart beta, with the largest U.S. pension funds and endowments also adopting the approach. The purpose of this brief is to aid asset managers and owners in building their own “internal” smart beta processes with a focus on portfolio construction and optimization, including how to manage liquidity and turnover constraints and avoid unintended factor bets.

September 2015: [Research Brief – Airline Industry Factors](#)

This brief examines S&P Capital IQ's industry-specific factors for the global airline industry. The seven airline industry factors contained in S&P Capital IQ's Alpha Factor Library consist of ratios widely used by airline industry analysts. The factors address airline profitability in terms of growth, capacity utilization, and operating efficiency. By applying the factors to regime analysis, we find:

- During periods of low fuel price increases industry growth factors are most effective.
- During periods of high fuel price growth, efficiency factors stand out.
- During periods of high revenue passenger growth our studies show that both growth and fuel efficiency factors performed well.

August 2015: [Point-In-Time vs. Lagged Fundamentals – This time it's different?](#)

The common starting point for alpha discovery and risk analysis is the backtesting of historical company financials using a research database. Whether internally constructed or licensed, research databases can be distinguished by two primary formats – Point in Time and Non-Point in Time. This paper focuses on the major practical differences between Point in Time (PIT) and Non-Point in Time (Non PIT) data for both backtesting and historical research. PIT data is defined by its ability to answer two questions: When was the information known? and What information was known at the time?.

August 2015: [Introducing S&P Capital IQ Stock Selection Model for the Japanese Market](#)

Since the launch S&P Capital IQ's four U.S. stock selection models ("[US Stock Selection Models Introduction](#)") in January 2011, we released a suite of global stock selection models targeting both developed ("[Introducing S&P Capital IQ Global Stock Selection Models for Developed Markets](#)") and emerging markets ("[Obtaining an Edge in Emerging Markets](#)"). In this report, we introduce a stock selection model for the Japanese equity market that completes our global model offering.

July 2015: [Research Brief – Liquidity Fragility](#)

As liquidity in the bond market becomes increasingly constrained, there has been a growing chorus of concerns raised by Mohamed A. El-Erian, John Paulson, Jamie Dimon, Larry Summers and recently the Federal Reserve. As we learned in the Global Financial Crisis, when liquidity seizes in one market, margin calls are met by raising cash in one of the most liquid markets in the world: the US equity market. How should equity investors be thinking about liquidity in their market?

S&P CAPITAL IQ MODEL PERFORMANCE REVIEW FOR 2015

June 2015: Equity Market Pulse – Quarterly Equity Market Insights Issue 4

The Q2 issue of Equity Market Pulse features a spotlight on developed Europe, which has the highest estimated growth rates and most attractive valuations among developed markets.

May 2015: Investing in a World with Increasing Investor Activism

Investor activism has gained mainstream acceptance as activists with larger-than-life personas have waged a string of successful campaigns. Activist hedge funds' assets under management (AUM) have swelled to \$120 billion, an increase of \$30 billion in 2014 alone. It was among the best performing hedge fund strategies in 2014 as well as over the last three- and five-year periods. In this report, we explore an investment strategy that looks to ride the momentum surrounding the announcement of investor activism. We further explore what, if any, changes to targeted companies activists are able to influence.

April 2015: Drilling for Alpha in the Oil and Gas Industry – Insights from Industry Specific Data & Company Financials

During the recent slide in oil prices, clients frequently asked us which strategies have historically been effective in selecting stocks in declining energy markets. This report answers this question, along with its corollary: which strategies work in rising energy markets? We also explore the value of oil & gas reserve data used by fundamental analysts/investors, but not used in a majority of systematic investment strategies. The analysis in this report should help both fundamental and quantitatively-oriented investors determine how to best use industry-specific and generic¹ investment metrics when selecting securities from a pool of global oil & gas companies.

March 2015: Equity Market Pulse – Quarterly Equity Market Insights Issue 3

Driven by proprietary data and analytics from S&P Capital IQ™, 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 fundamentals, valuations and investment strategy effectiveness.

February 2015: U.S. Stock Selection Model Performance Review – The most effective investment strategies in 2014

Since the launch of the four S&P Capital IQ™ U.S. stock selection models in January 2011, the performance of all four models (Growth Benchmark Model, Value Benchmark Model, Quality Model, and Price Momentum Model) has been positive and 2014 was no exception. Our models' key differentiators – distinct formulation for large cap and small cap stocks, special treatment for the financial sector, sector neutrality to target stock specific alpha, and factor diversity – enabled the models to outperform across various market environments. In this report, we review the underlying drivers of each model's performance over the 12 months ended December 31, 2014, document performance from January 2011 when the models went live, and provide full model performance history from January 1987.

January 2015: Research Brief: Global Pension Plans – Are Fully Funded Plans a Relic of the Past?

With strong equity and bond market performances over the past few years, one might assume that pension shortfalls have declined sharply. Since our [last research brief \[September 2013\]](#), funding statuses have indeed improved in the U.S. and Asia, though not in Europe [Exhibit 1]. However, while the S&P 500 Index has been making higher highs [Exhibit 2, red line], the number of S&P 500 plans with a funding status of 90% or higher has been in a sharp decline [blue bars].

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January 2015: [Profitability: Growth-Like Strategy, Value-Like Returns Profiting from Companies with Large Economic Moats](#)

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. Our results from January 1996 to August 2014 show: 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.

- 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.
- 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.

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

S&P CAPITAL IQ MODEL PERFORMANCE REVIEW FOR 2015

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.

S&P CAPITAL IQ MODEL PERFORMANCE REVIEW FOR 2015

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.

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- October 2013: [Informative Insider Trading – The Hidden Profits in Corporate Insider Filings](#)
- September 2013: [Beggar Thy Neighbor – Research Brief: Exploring Pension Plans](#)
- August 2013: [Introducing S&P Capital IQ Global Stock Selection Models for Developed Markets: The Foundations of Outperformance](#)
- July 2013: [Inspirational Papers on Innovative Topics: Asset Allocation, Insider Trading & Event Studies](#)
- 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](#)
- January 2012: [S&P Capital IQ Stock Selection Model Review – Understanding the Drivers of Performance in 2011](#)
- January 2012: [Intelligent Estimates – A Superior Model of Earnings Surprise](#)

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- December 2011: [Factor Insight – Residual Reversal](#)
- November 2011: [Research Brief: Return Correlation and Dispersion – All or Nothing](#)
- October 2011: [The Banking Industry](#)
- September 2011: [Methods in Dynamic Weighting](#)
- September 2011: [Research Brief: Return Correlation and Dispersion](#)
- 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?](#)
- May 2011: [Introducing S&P Capital IQ's Global Fundamental Equity Risk Models](#)
- 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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