

U.S. Stock Selection Model Performance Review

The most effective investment strategies in 2013

Authors

Ryan Forsythe
Quantamental Research
312-233-7153
rforsythe@spcapitaliq.com

Vivian Ning
Quantamental Research
212-233-7148
vning@spcapitaliq.com

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 environments. In this report, we review the performance of S&P Capital IQ's four U.S. stock selection models in 2013, and since their inception in January 2011. In assessing the underlying drivers of each model's performance over the 12 months ended December 31, 2013, we find that:

- **All four models generated positive return spreads and information coefficients during 2013.** Table 1 gives the summary performance of all four models in 2013 and in the out-of-sample period of 2011-2013.
- **The Growth Benchmark Model has provided the strongest long-short return¹, top quintile [Q1] excess return and information coefficient [IC]² both in 2013 and in the entire out-of-sample period, while the Price Momentum Model was the weakest on all three measures in both periods.**
- **Valuation was the driver of performance in the Growth, Value, and Quality Models, generating average monthly return spreads [ICs] of 0.53% [0.04], 0.53% [0.04], and 0.61% [0.04] respectively in 2013.**
- **The models' large cap and low beta tilts did not benefit performance in a year when small cap stocks generally outperformed large caps.**

**Table 1: Model Summary Performance Results:
January 2013 – December 2013**

Model Name	Universe	Avg 1-Month Spread	Avg Q1 Monthly Excess Return	Avg 1-Month IC
Growth Benchmark Model ("GBM")	Russell 3000 Growth	0.79%	0.29%	0.04
Value Benchmark Model ("VBM")	Russell 3000 Value	0.65%	0.29%	0.04
Price Momentum Model ("PMM")	Russell 3000	0.12%	0.11%	0.03
Quality Model ("QM")	Russell 3000	0.34%	0.21%	0.03

January 2011 – December 2013

Model Name	Avg 1-Month Spread	Avg 1-Month IC
Growth Benchmark Model ("GBM")	1.48%	0.05
Value Benchmark Model ("VBM")	1.15%	0.05
Price Momentum Model ("PMM")	0.82%	0.05
Quality Model ("QM")	0.92%	0.04

Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results. Returns are simulated and are a result of an out of sample backtest

¹ Long-short return, as used in this report, is the return to a top quintile portfolio minus the return of the bottom quintile portfolio

² Q1 excess return is the average return to the top quintile minus the return of the equal-weighted benchmark. IC is the rank correlation of alpha forecasts to forward stock return

In the 2013 calendar year, the U.S. market experienced its best performance since 1997, with the S&P 500 returning 32.39%. We explore how the models' performance in 2013 compares to previous years of strong market performance. The years since 1987 are divided into three regimes based on S&P 500 annual returns – up market return years [S&P 500 annual return is greater than 20%], weak market return years [S&P 500 annual return is less than 2%, a relatively low return rate], and moderate market return years [all other years]. This results in 10 up years, 7 weak years, and 10 moderate years between 1987 and 2013. Table 2 shows the return spreads of each of our models during these regimes.

Table 2: Model Summary Performance Results - Weak, Moderate, & Up Market Years: January 1987 – December 2013

	Weak Years	Moderate Years	Up Years
Model Name	Avg 1-Month Spread	Avg 1-Month Spread	Avg 1-Month Spread
Growth Benchmark Model	2.89%***	1.42%***	1.15%***
Value Benchmark Model	3.49%***	1.16%***	1.25%***
Price Momentum Model	3.36%***	1.62%***	1.60%***
Quality Model	3.12%***	1.17%***	1.15%***

*** Significant at 1% level

Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results. Returns are simulated and are a result of an out of sample backtest.

While the models generated significant positive return spreads in all three regimes, there is a distinct difference between the average 1-month return spreads for all of the models in weak years compared to both moderate and up years. All four models had a significantly higher return spread in weak years relative to moderate or up years [significant at the 1% level except for Price Momentum Model in weak vs. up years, which is significant at the 5% level³]. This demonstrates that while all the models generally outperformed the market in all three regimes, they were especially effective at limiting losses when the market was struggling [i.e. years like 2000-2002, 2008].

In the following sections, we will undertake a review of the underlying drivers of each model's performance in 2013 and also review the quintile portfolio characteristics of each model and the effect of neutralizing some of these exposures on model 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 rewards companies that have established a consistent track record of earnings growth and also identifies emerging growth candidates. The Growth Benchmark Model was formulated to outperform whether "growth" is in or out of favor. The model is composed of seven sub-components – Earnings Momentum, Historical Growth, Liquidity &

³ See Appendix A for Difference in Means t-statistics

Leverage, Price Momentum, Value, Quality and Capital Efficiency. Table 3 shows the summary performance of the model from January 1987 to December 2013.

Table 3: Summary Performance Statistics for Growth Benchmark Model – Russell 3000 Growth (January 1987 – December 2013)

Return Summary						
	Q1	Q2	Q3	Q4	Q5	Long-Short Return
Average Monthly Equal Weighted Return	1.70%	1.23%	0.98%	0.64%	0.00%	1.70%***
Annualized Return	22.42%	15.80%	12.42%	7.96%	0.00%	22.42%***
Annualized Info. Ratio	1.09	0.77	0.57	0.35	0.00	1.85*

Information Coefficient Summary	
Avg 1-Month IC	0.06***
1-Month IC Info Ratio	0.94
1-Month IC Hit rate	85%***

*** Significant at 1% level, * Significant at 10% level

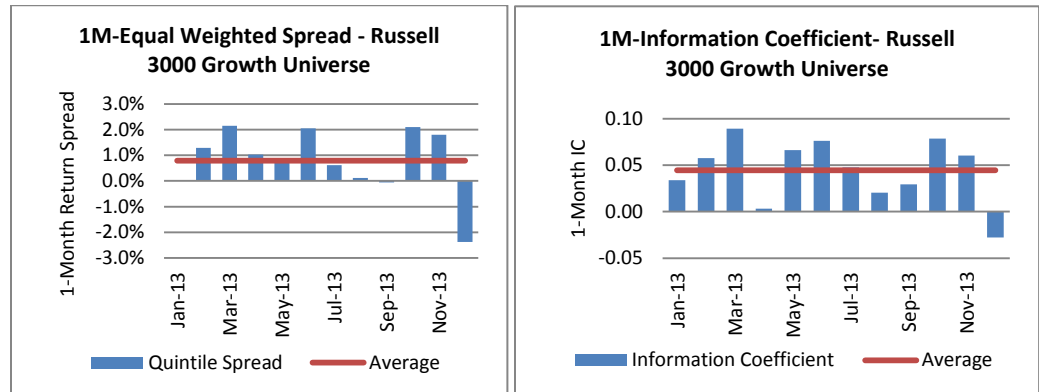
Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results. Returns are simulated and are a result of an out of sample backtest

The model generated a monthly average equal-weighted return spread and IC of 1.70% and 0.06 respectively, both statistically significant at the 1% level. The annualized information ratio of the top quintile is 1.09, while the IC hit rate, [percent of times the IC is positive] is 85%, which is also statistically significant at the 1% level.

1.1 Model Performance in 2013

The 1-month equal-weighted quintile return spread and 1-month information coefficient time series results for the Russell 3000 Growth Index in 2013 are displayed in Figure 1. The average monthly spread and IC (red line in both graphs) were 0.79% and 0.04 respectively. The model was constructed with a holistic view of Growth, including both traditional measures of earnings growth potential as well as complimentary aspects of Quality and Valuation. The model performed well throughout the year but finished with a poor December [-2.38%]. Six of the seven subcomponents that make up the model had negative returns in December, with only the Earnings Momentum theme posting a positive return spread. Prior to December, the Growth Model delivered positive spreads and ICs for 11 consecutive months. March was the best month with a spread return and IC of 2.15% and 0.09 respectively.

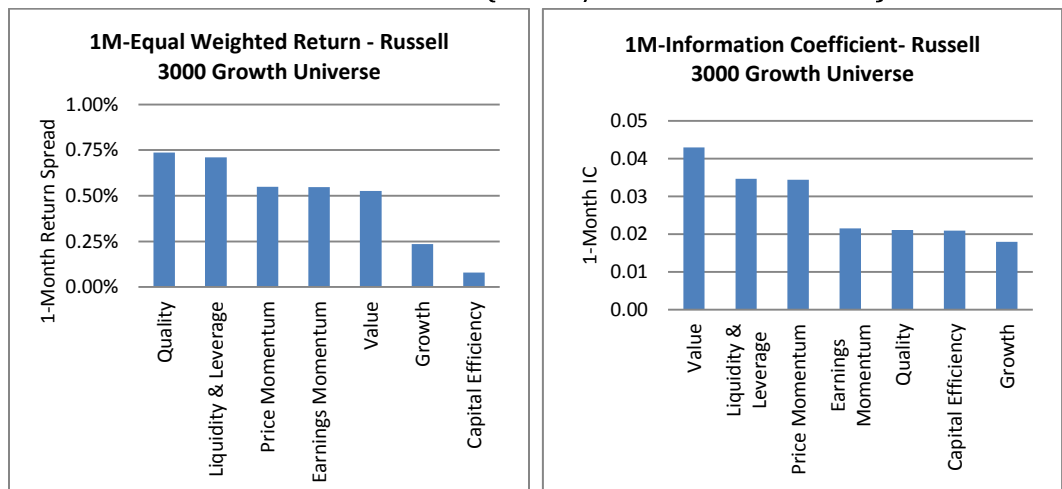
Figure 1: 1M-Equal Weighted Spread and Information Coefficient – Russell 3000 Growth January 2013 – December 2013



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

Figure 2 shows the average 1-month spread and average IC for each sub-component of the Growth Model over the Russell 3000 Growth universe for 2013. All sub-components generated positive return spreads and ICs in 2013. The Quality sub-component was the top theme based on average 1-month return spread while Value had the highest 1-month IC. Growth and Capital Efficiency were the weakest based on the same metrics. Not only did Valuation do well in 2013, it has been the top performing sub-component in the entire out-of-sample period of 2011-2013 both in terms of return spread and IC.

Figure 2: Growth Benchmark Model: 1M-Equal Weighted Spread and Information Coefficient – Russell 3000 Growth [January 2013 – December 2013]

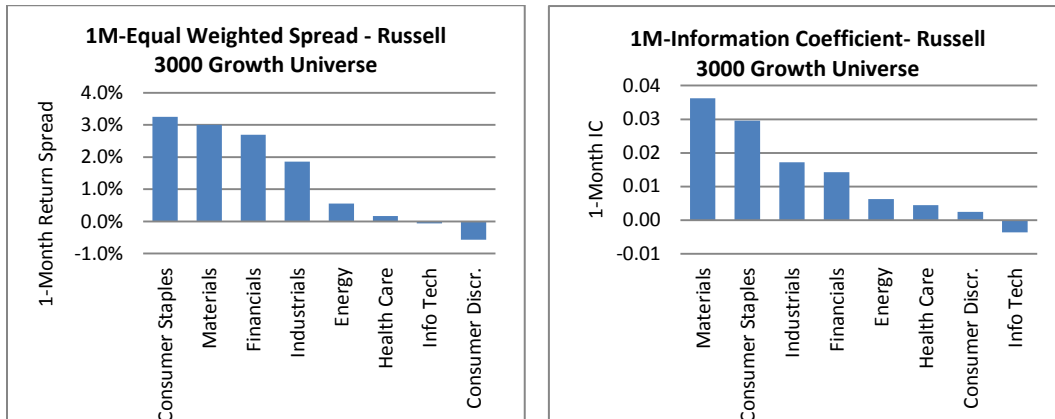


Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

1.2 Sector Performance

The return spread and IC of the model within eight of the ten GICS sectors is detailed in Figure 3. Telecom and utilities are excluded because of limited coverage [twenty-nine and nine securities on average respectively].

Figure 3: Growth Benchmark Model: Sector 1-Month Average Return and 1-Month Average Information Coefficient – Russell 3000 Growth Universe [January 2013 – December 2013]



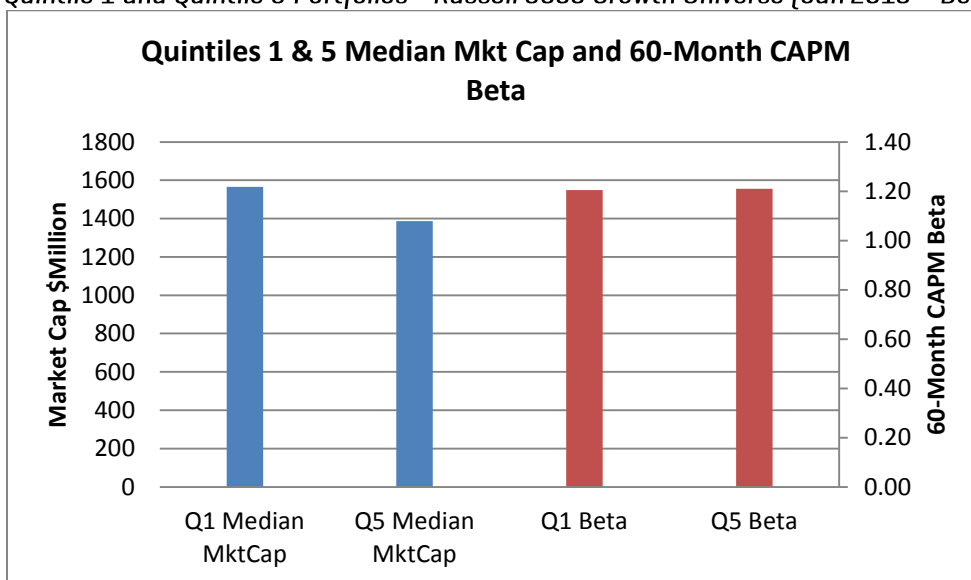
Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

The Growth Model produced positive 1-month average spreads and 1-month average ICs in seven of eight sectors. Consumer Staples and Materials were the top two sectors while Info Tech and Consumer Discretionary were the worst two sectors in terms of both average return spread and IC.

1.3 Quintile Portfolio Characteristics / Portfolio Tilt Neutralization

Figure 4 shows the median market capitalization (left axis) and median 60-month CAPM beta (right axis) of quintile 1 and quintile 5 portfolios. The median market cap of the long portfolio (Q1) was \$1.57 billion compared with \$1.39 billion for the short portfolio (Q5), indicating that the long portfolio was moderately tilted towards large cap names. The 60-CAPM beta of the long portfolio is similar to the short portfolio beta (1.20 vs 1.21). The similarities of these betas suggest that the Growth Benchmark Model's performance was not driven by the outperformance of high beta stocks (over low beta securities) in 2013. Large cap growth stocks (proxied by the Russell 1000 Growth Index) underperformed their small cap counterparts (proxied by the Russell 2000 Growth Index) by 95bps in 2013, so it is reasonable to expect that the Growth Benchmark Model may have slightly suffered from this positive large cap exposure. The performance of the model after controlling for the market cap bias is in Table 4.

Figure 4: Growth Benchmark Model: Median Market Cap and Median 60-Month CAPM Beta for Quintile 1 and Quintile 5 Portfolios – Russell 3000 Growth Universe [Jan 2013 – Dec 2013]



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

By neutralizing for size,⁴ the Growth Benchmark Model improved to an average month spread of 1.21% due to the reduction of the large cap exposure [Table 4]. This spread is 42bps higher than that of the original model [0.79%]. There is also a slight improvement in average 1-month IC from 0.04 to 0.05. This is a reversal from 2011 and 2012 when the large cap tilt of the Growth Benchmark Model benefitted its performance as large cap stocks generally outperformed small cap stocks.

Table 4: Growth Benchmark Model: Original and Size Neutralized Results – Russell 3000 Growth Universe [January 2013 – December 2013]

Model	Average 1-Month Spread	Average 1-Month IC
GBM	0.79%	0.04
Size/Beta Neutral GBM	1.21%	0.05

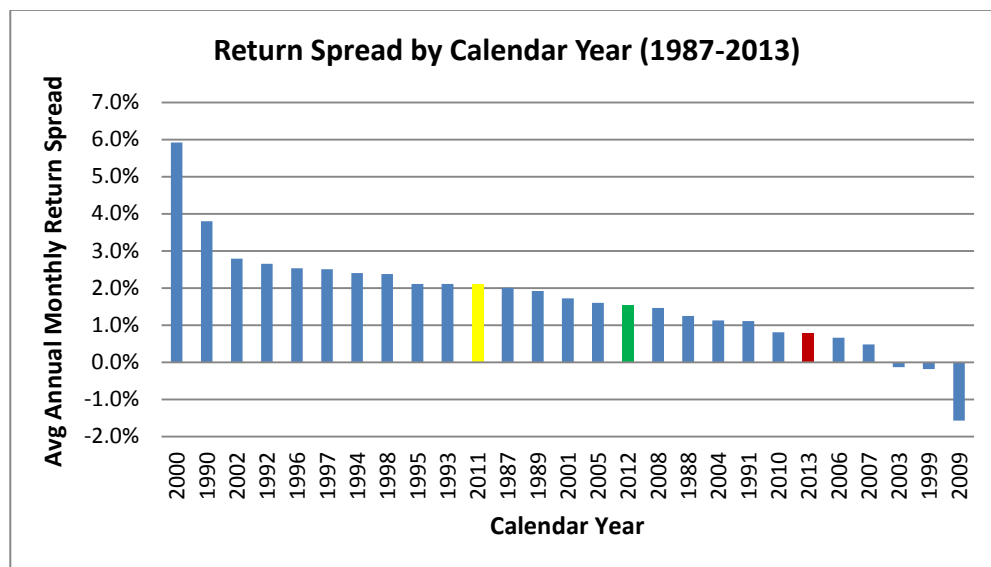
Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

1.4 Historical Comparison

The model's 2013 return spread [red bar] was on par with the past in-sample [1987-2010] and out-of-sample [2011-2013] performance [Figure 5]. The model's out-of-sample return spread compares well with the in-sample spread [1.48% and 1.73% respectively]. The worst performance was in 2009 [low price, high beta rally] at -1.57%; other calendar years with negative monthly spreads are 1999 [tech bubble] and 2003 [junk rally] with spreads of -0.18% and -0.13% respectively.

⁴ Median market cap of top and bottom quintiles was approx \$1.6billion after the size neutralization

Figure 5: Growth Benchmark Model: Calendar Year Average Monthly Quintile Spread: - Russell 3000 Growth Universe [January 1987 to December 2013]



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results. Returns are simulated and are a result of an out of sample backtest

2 Value Benchmark Model

The Value Benchmark Model identifies under-priced stocks with strong underlying fundamentals, using intrinsic and relative valuation measures. The model selects companies with high earnings quality, stable growth rates and increasing street sentiment. The Value Benchmark Model has six sub-components – Earnings Quality, Financial Health, Growth Stability, Price Momentum, Street Sentiment, and Valuation. Summary performance results from January 1987 to December 2013 are presented in Table 5.

Table 5: Summary Performance Statistics for Value Benchmark Model – Russell 3000 Value [January 1987 – December 2013]

Return Summary						
	Q1	Q2	Q3	Q4	Q5	Long-Short Return
Average Monthly Equal Weighted Return	1.47%	1.09%	0.82%	0.48%	-0.33%	1.80%***
Annualized Return	19.14%	13.89%	10.30%	5.91%	-3.89%	23.87%***
Annualized Info. Ratio	1.08	0.79	0.58	0.32	-0.18	2.90***

Information Coefficient Summary	
Avg 1-Month IC	0.06***
1-Month IC Info Ratio	1.02
1-Month IC Hit rate	85%***

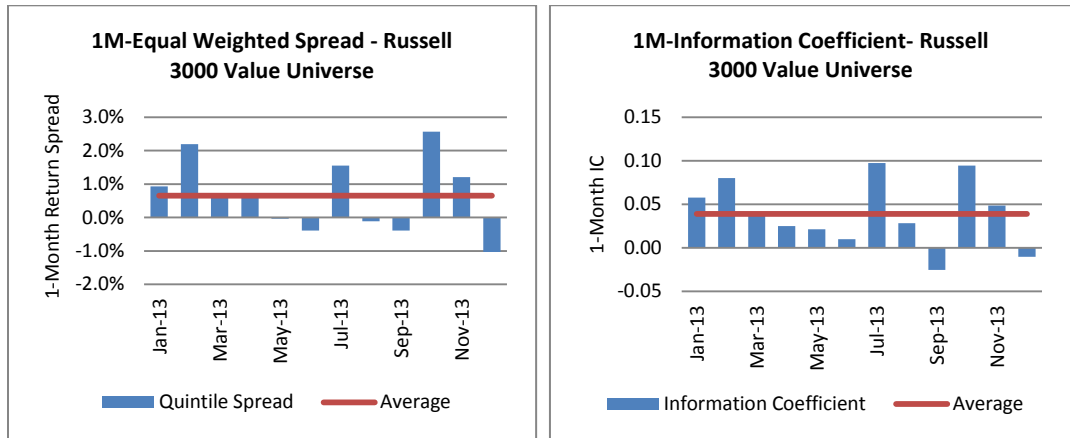
*** 1% level of significance

Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results. Returns are simulated and are a result of an out of sample backtest

2.1 Model Performance in 2013

The average monthly spread and IC for the model in the Russell 3000 Value Index for 2013 were 0.65% and 0.04 respectively. Similar to the Growth Benchmark Model, the Value Benchmark Model had a positive IC in nearly every month. September and December were the worst months (both return spread and IC), while the model recorded its best performance in February, July, and October.

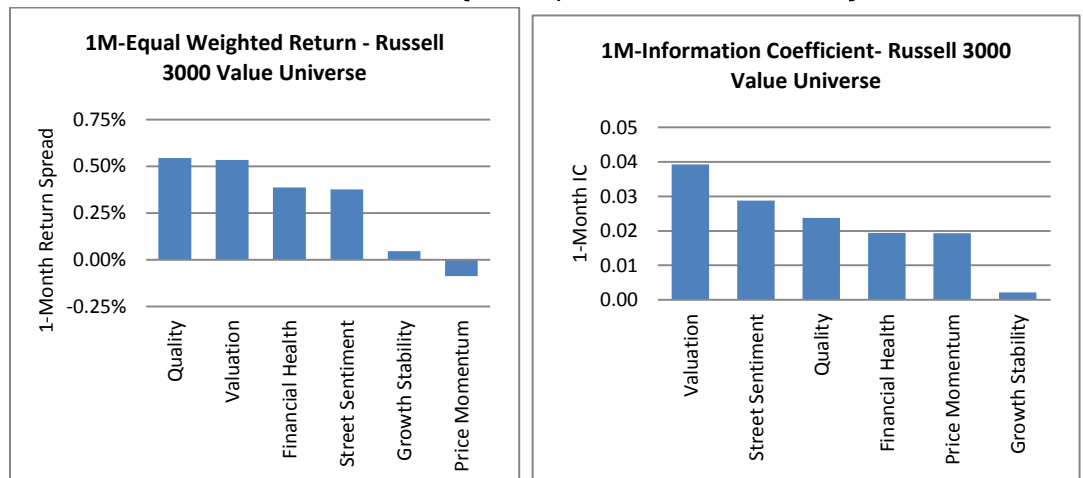
Figure 6: Value Benchmark Model: 1M-Equal Weighted Spread and Information Coefficient – Russell 3000 Value (January 2013 – December 2013)



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

The average 1-month return spread and IC of each sub-component is shown in Figure 7. All sub-components had positive ICs, and like the Growth Benchmark Model, Valuation and Quality were among the top performing sub-components overall, while Growth Stability was among the weakest. This is consistent with our in-sample and out-of-sample results, in both of which the Valuation subcomponent has been a top performer, while Growth Stability has been the weakest of the six sub-components.

Figure 7: Value Benchmark Model: 1M-Equal Weighted Spread and Information Coefficient – Russell 3000 Value (January 2013 – December 2013)

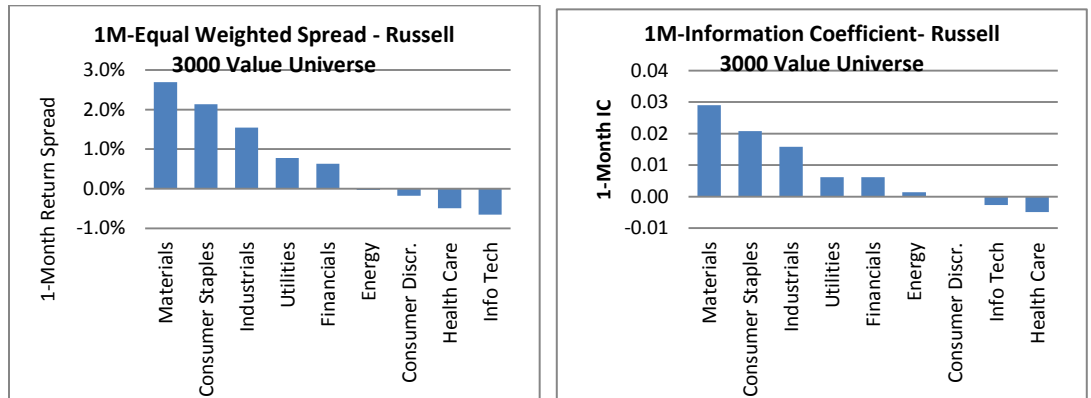


Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

2.2 Sector Performance

The average 1-month return spread and IC of the model within nine of the ten GICS sectors is detailed in Figure 8 [excluding telecom because of limited coverage]. Five [seven] of the sectors generated positive 1-month average spreads [1-month average ICs] in 2013. Like the Growth Benchmark Model, the average 1-month spread return was strongest in Materials and Consumer Staples, and weakest in Consumer Discretionary, Health Care, and Info Tech.

Figure 8: Value Benchmark Model: Sector 1-Month Average Return and 1-Month Average Information Coefficient – Russell 3000 Value Universe (January 2013 – December 2013)

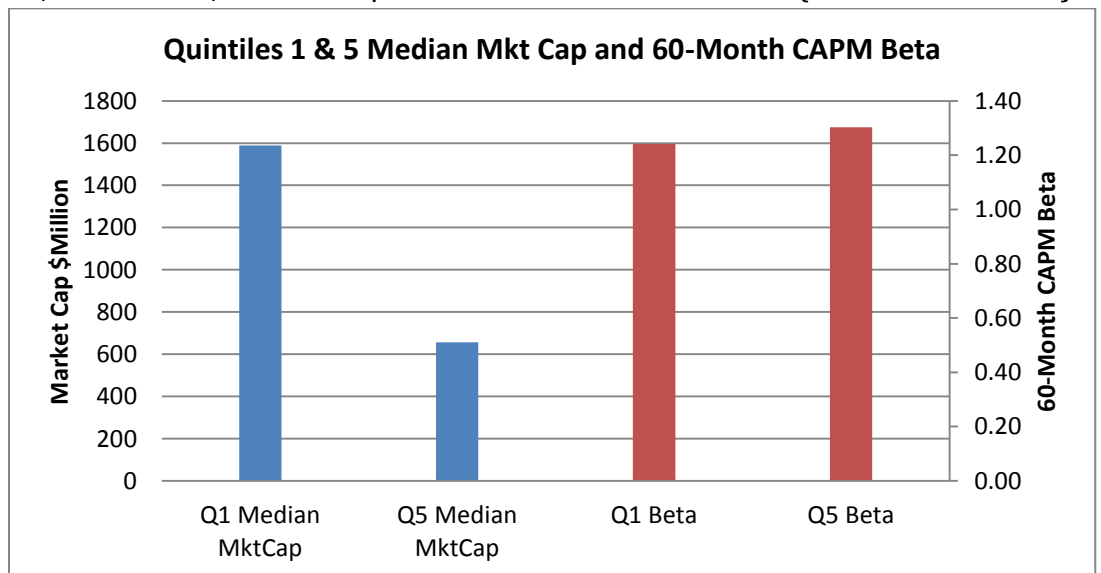


Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

2.3 Quintile Portfolio Characteristics / Portfolio Tilt Neutralization

The Value Benchmark Model’s median market capitalization [left axis] and median 60-month CAPM beta [right axis] of quintile 1 and quintile 5 portfolios are displayed in Figure 9.

Figure 9: Value Benchmark Model: Median Market Cap and Median 60-Month CAPM Beta for Quintile 1 and Quintile 5 Portfolios – Russell 3000 Value Universe (Jan 2013 – Dec 2013)



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

The median market cap of the long portfolio [Q1] was \$1.59 billion compared to \$0.66 billion for the short portfolio [Q5], indicating a large cap tilt for the Value Benchmark Model's long portfolio. In addition, Q1 had a slightly lower 60-month CAPM beta [1.24] compared to Q5 [1.30]. The performance of the model after eliminating the top quintile's size and beta biases⁵ is shown in Table 6. When controlling for size and beta, the model's average 1-month spread return rose from 0.65% to 1.04%, while average 1-month IC improved from 0.04 to 0.05. The model's top quintile was negatively impacted by its large size exposure, and this is reflected in both the higher return spread and IC we report for Size/Beta Neutral Model in Table 6.

Table 6: Value Benchmark Model: Original and Beta/Size Neutralized Results – Russell 3000 Value Universe (January 2013 – December 2013)

Model	Average 1-Month Spread	Average 1-Month IC
VBM	0.65%	0.04
Size/Beta Neutral VBM	1.04%	0.05

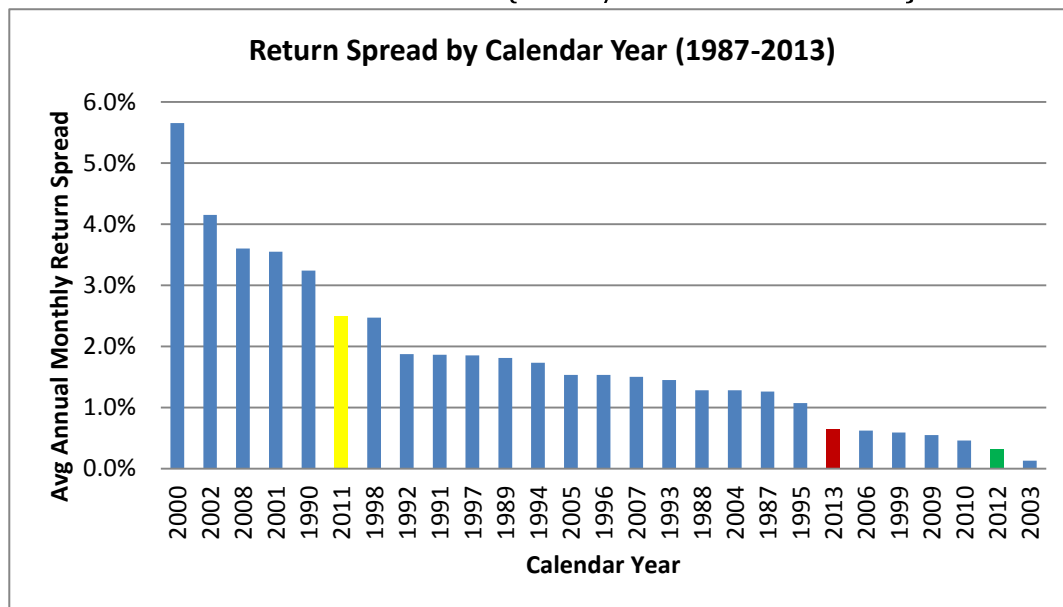
Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

2.4 Historical Comparison

The model's average 1-month return spread by calendar year is displayed in Figure 10. 2013's return spread [red bar] was solid, and the out-of sample return from 2011 to 2013 is in line with the in sample performance [1.15% and 1.88% respectively]. It is noteworthy to point out that the Value Benchmark Model has generated a positive spread in every single year, even in 1999 [when value type strategies struggled in the face of the tech boom] and 2009 [a year where performance was driven by high beta and low price stocks]. The distinction between the model performance in weak vs. up market return years is clear here as the top five years for the VBM correspond with the five years with the lowest market returns in the 27 year period. This shouldn't be surprising. Valuation as a style has done better than other styles in down markets [it is the top performing style in S&P Capital IQ's Alpha Factor Library in down market regimes in the Russell 3000 since 1987]. When investor sentiment turns bearish, stock with rich valuation multiples usually suffer a larger market price correction compared to securities with attractive valuation metrics.

⁵ Q1 and Q5 both had average market cap and beta of \$0.97B and 1.3 respectively after we adjusted the model for size and beta exposures.

Figure 10: Value Benchmark Model: Calendar Year Average Monthly Quintile Spread:
Russell 3000 Value Universe [January 1987 to December 2013]



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.
Returns are simulated and are a result of an out of sample backtest

3 Quality Model

S&P Capital IQ's Quality Model seeks to extend the analysis of earnings quality beyond accruals and includes several measures of balance sheet efficiency/strength that have been 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 Quality. Similar to our Growth and Value Models, specific treatments were applied for banks and non-bank financials. Table 7 shows the summary performance statistics for the model from January 1987 to December 2013.

Table 7: Summary Performance Statistics for Quality Model
Russell 3000 [January 1987 – December 2013]

Return Summary						
	Q1	Q2	Q3	Q4	Q5	Long-Short Return
Average Monthly Equal Weighted Return	1.39%	1.10%	0.78%	0.41%	-0.28%	1.67%***
Annualized Return	18.02%	14.03%	9.77%	5.03%	-3.31%	21.99%***
Annualized Info. Ratio	1.02	0.77	0.51	0.25	-0.14	2.22**

Information Coefficient Summary	
Avg 1-Month IC	0.06***
1-Month IC Info Ratio	0.91
1-Month IC Hit rate	82%***

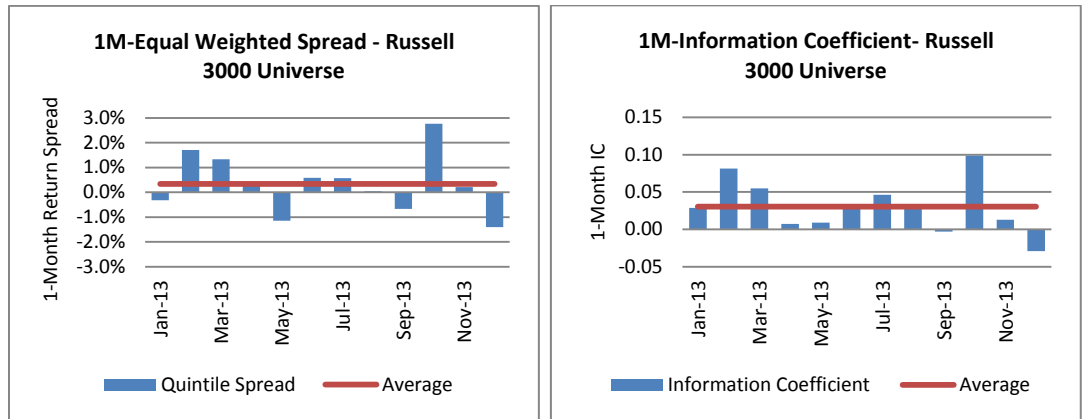
*** 1% level of significance

Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.
Returns are simulated and are a result of an out of sample backtest

3.1 Model Performance in 2013

The Quality Model performed well in 2013 [Figure 11] with an average 1-month equal-weighted spread and information coefficient of 0.34% and 0.03 respectively. Every month but December had positive ICs. All of the model’s four draw downs occurred in months when volatility was especially high considering that the model prefers high quality names, which tend to have lower volatility compared to low quality issues, it may underperform in periods when risk appetite is high.

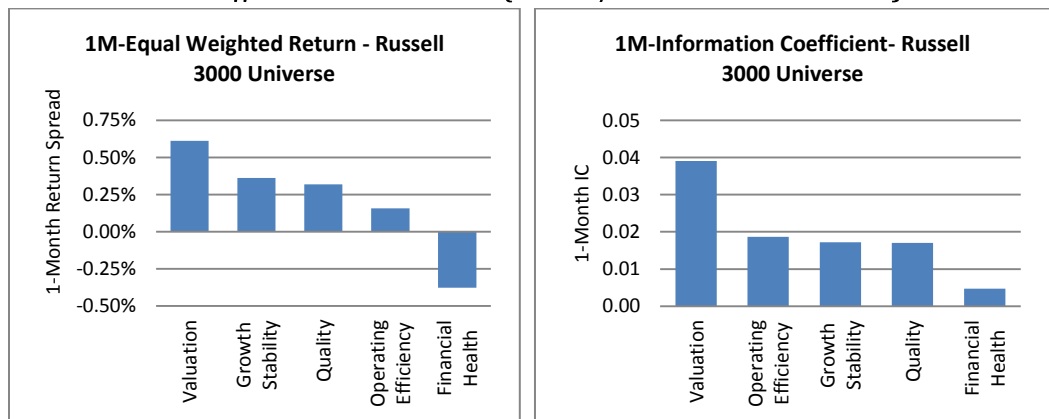
Figure 11: Quality Model: 1M-Equal Weighted Spread and Information Coefficient – Russell 3000 [January 2013 – December 2013]



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

Four of five sub-components had positive average 1-month return spreads, and all five posted positive ICs in 2013 [Figure 12]. Like the Growth and Value Benchmark Models, Valuation again led the way as the Valuation sub-component had the largest return spread and IC. Valuation has been the top performing sub-component in both in-sample and out-of-sample periods.

Figure 12: Quality Model Components: 1M-Equal Weighted Spread and Information Coefficient – Russell 3000 [January 2013 – December 2013]

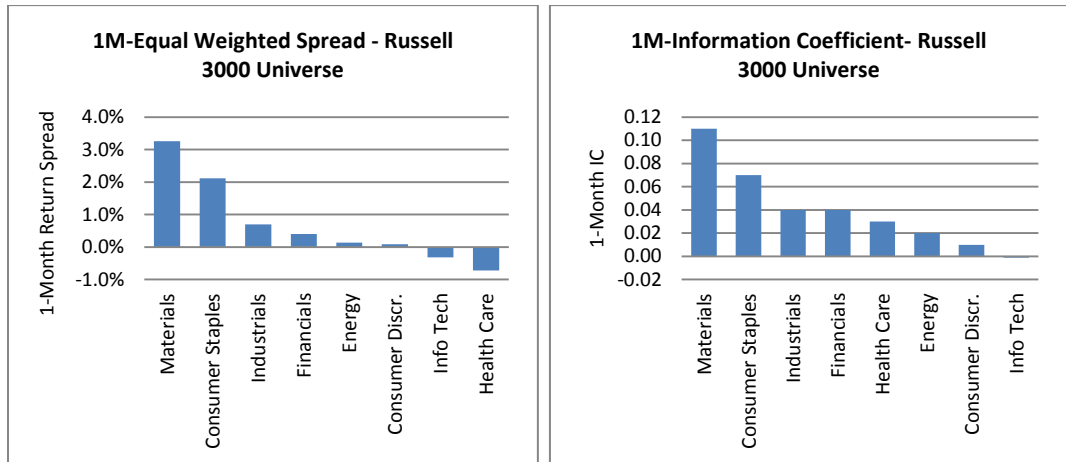


Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

3.2 Sector Performance

Similar to the Growth and Value Benchmark Models, the top two sectors in terms of average 1-month spreads and ICs were Materials and Consumer Staples (Figure 13) while Consumer Discretionary, Health Care, and Information Technology fell near the bottom.

Figure 13: Quality Model: Sector 1-Month Average Return and 1-Month Average Information Coefficient – Russell 3000 Universe (January 2013 – December 2013)

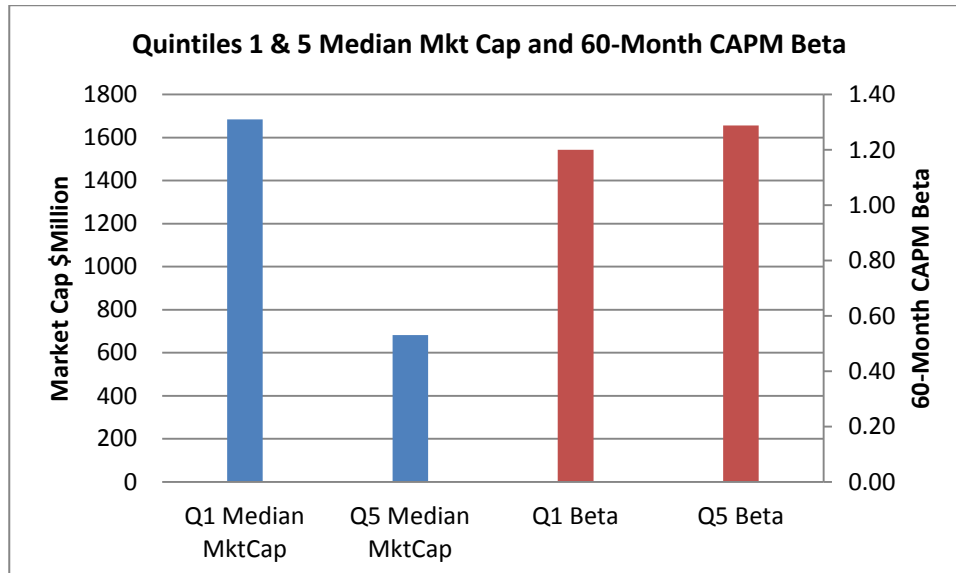


Source S&P Capital IQ Quantamental Research

3.3 Quintile Portfolio Characteristics / Portfolio Tilt Neutralization

The size and beta characteristics of the Quality Model's top [quintile 1] and bottom [quintile 5] portfolios are shown in Figure 14. As expected, the long portfolio [quintile 1] was tilted towards large cap names, as these names tend to provide more predictable earnings and dividend streams, unlike small cap stocks. The top quintile portfolio also had a moderately lower beta than the bottom quintile (1.20 vs. 1.29), in line with what was seen in the Growth and Value Benchmark Models.

Figure 14: Quality Benchmark Model: Median Market Cap and Median 60-Month CAPM Beta for Quintile 1 and Quintile 5 Portfolios – Russell 3000 Universe [Jan 2013 – Dec 2013]



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

Table 8 displays the average 1-month return spread and IC after we eliminate both tilts⁶. The model's results did not change much from the base Quality Model [QM] with an average monthly long-short return of 0.36% for the Size/Beta Neutral Model vs. 0.34% of the base Quality Model.

Table 8: Quality Model – Performance Results with Elimination of Beta and Market Cap Tilts: Russell 3000 [January 2013 – December 2013]

Model	Average 1-Month Spread	Average 1-Month IC
QM	0.34%	0.03
Size/Beta Neutral QM	0.36%	0.04

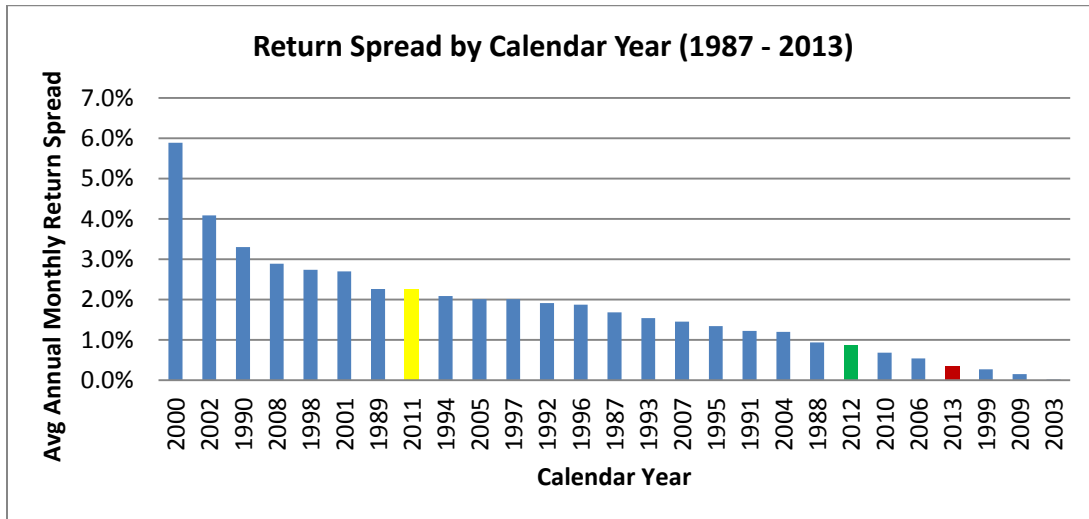
Source S&P Capital IQ Quantamental Research

3.4 Historical Comparison

2013 was another positive year for the model, though performance was not as strong as most of the other calendar years [Figure 15]. Nonetheless, the out-of-sample return for the Quality Model [2011-2013] was quite good at 0.92%. The best calendar long-short return was in 2000 when value and high quality stocks rallied after the collapse of the tech bubble. The worst return for QM was in 2003 [0.02%] when low quality stocks out-performed their high quality counterparts.

⁶ Q1 and Q5 both had average market cap and beta of \$1.1B and 1.26 respectively after we adjusted the model for size and beta exposures.

Figure 15: Quality Model: Calendar Year Average Monthly Quintile Spread:
Russell 3000 Universe (January 1987 to December 2013)



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.
Returns are simulated and are a result of an out of sample backtest

4 Price Momentum Model

S&P Capital IQ's Price Momentum Model was constructed to predict future stock price movement using price and trading volume data. The model is made up of short-term and long-term components; the former uses a short to medium term look-back window, typically 1-day to 3-months for factor construction, while the latter adopts a longer window, around 3 to 12 months for signal formulation. Table 9 details the summary performance statistics for the model over the last 27 years. The model has been very successful over this time period, generating monthly return spreads and IC of 2.06% and 0.07 respectively [both statistically significant at the 1% level].

Table 9: Summary Performance Statistics for Price Momentum Model – Russell 3000
January 1987 – December 2013

Return Summary						
	Q1	Q2	Q3	Q4	Q5	Long-Short Return
Average Monthly Equal Weighted Return	1.57%	1.17%	0.78%	0.27%	-0.49%	2.06%***
Annualized Return	20.56%	14.98%	9.77%	3.29%	-5.72%	27.72%***
Annualized Info. Ratio	1.18	0.82	0.50	0.15	-0.26	2.40***

Information Coefficient Summary	
Avg 1-Month IC	0.07***
1-Month IC Info Ratio	0.82
1-Month IC Hit rate	84%***

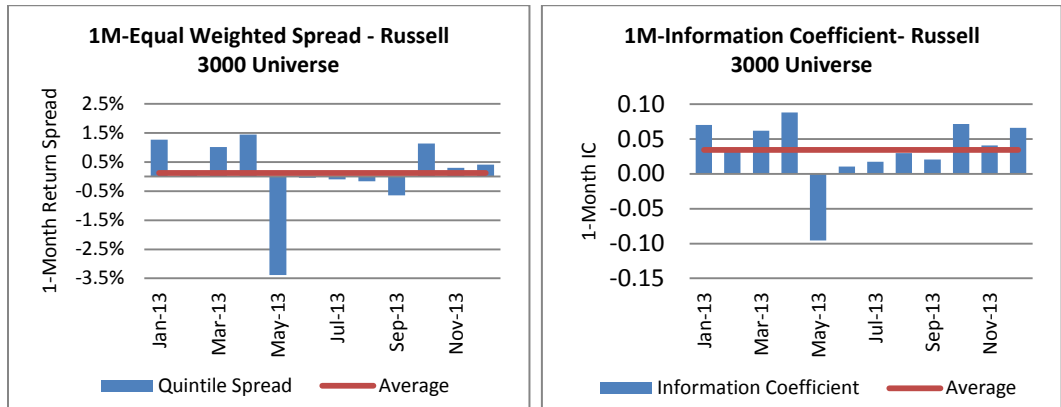
*** Significant at 1% level

Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.
Returns are simulated and are a result of an out of sample backtest

4.1 Model Performance in 2013

Figure 16 shows the average 1-month equal-weighted spread and average 1-month information coefficient for the Price Momentum Model in the Russell 3000. The average monthly spread and IC [red line in both graphs] were 0.12% and 0.03 respectively. The model generated positive IC in all months but May when it experienced its largest long-short return draw down [-3.4%].

Figure 16: Price Momentum Model: 1M-Equal Weighted Spread and Information Coefficient – Russell 3000 [January 2013 – December 2013]



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

Table 10 shows the average 1-month spread and average IC for both subcomponents of the Price Momentum Model over the Russell 3000 universe for 2013. The Long-term Component’s spread was 33% lower than that of the Short-term Component, whereas the IC was 29% higher.

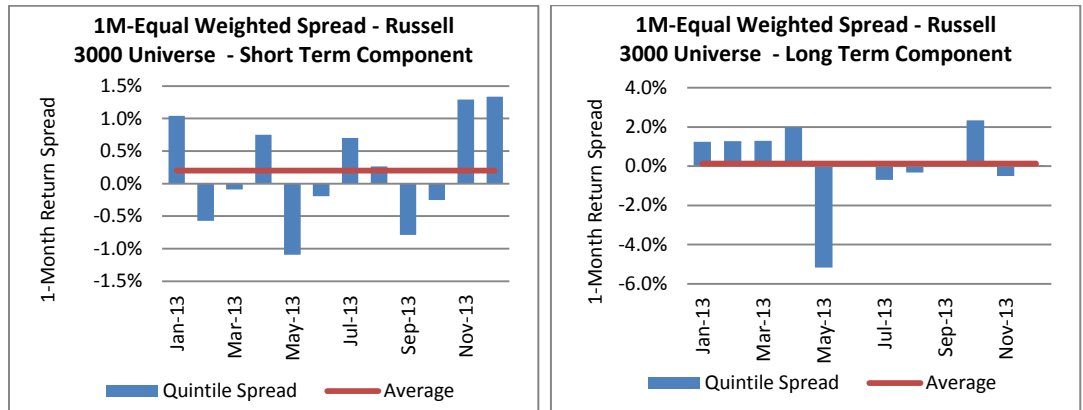
Table 10: Price Momentum Model: 1M-Equal Weighted Spread and Information Coefficient – Russell 3000 [January 2013 – December 2013]

Component	1-Month Spread	1-Month IC
Short-Term Component	0.20%	0.03
Long-Term Component	0.13%	0.03

Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

Figure 17 shows the average 1-month spread and average IC for both Short and Long Term Components of the Price Momentum Model over the Russell 3000 universe for 2013.

Figure 17: Price Momentum Model – Short & Long Term Components: 1M-Equal Weighted Spread [January 2013 – December 2013]



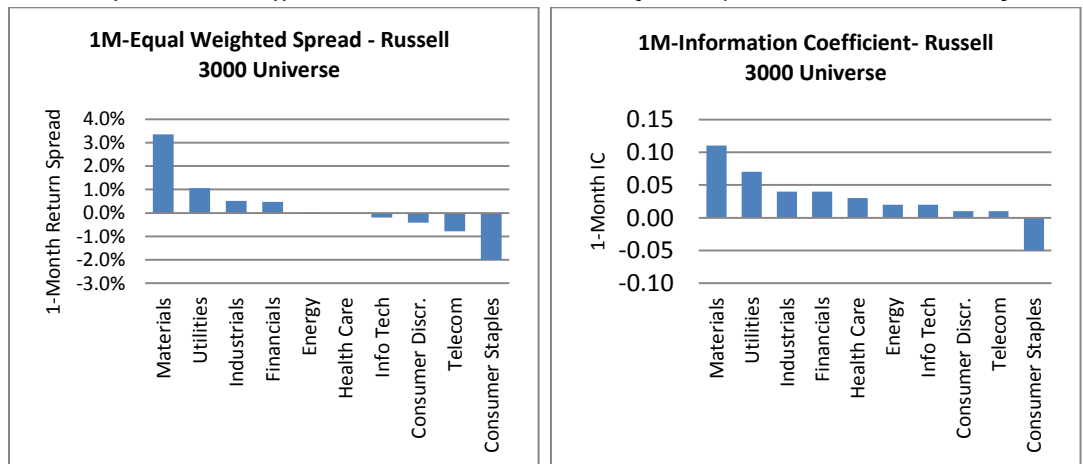
Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

The long-term and short-term components of the Price Momentum Model generally tend to complement each other - for instance the Short-term Component was down by -0.57% in February, while the Long-term Component was up by 1.28%; similar trends applied in March and June through November. Although there were months where the long-term and short-term components of the Price Momentum Model both generated positive or negative return spreads, the complementary nature of both components helps to mitigate large draw downs if the model had been based solely on either the Long or Short Component. The major exception to this rule was May, when the Short-Term [Long-Term] component was down -1.10% [-5.18%].

4.2 Sector Performance

The model generated positive ICs [Figure 18] in all sectors, except for the Consumer Staples. The top three sectors in terms of performance [IC or return] were Materials, Utilities, and Industrials.

Figure 18: Price Momentum Model: Sector 1-Month Average Return and 1-Month Average Information Coefficient – Russell 3000 Universe [January 2013 – December 2013]

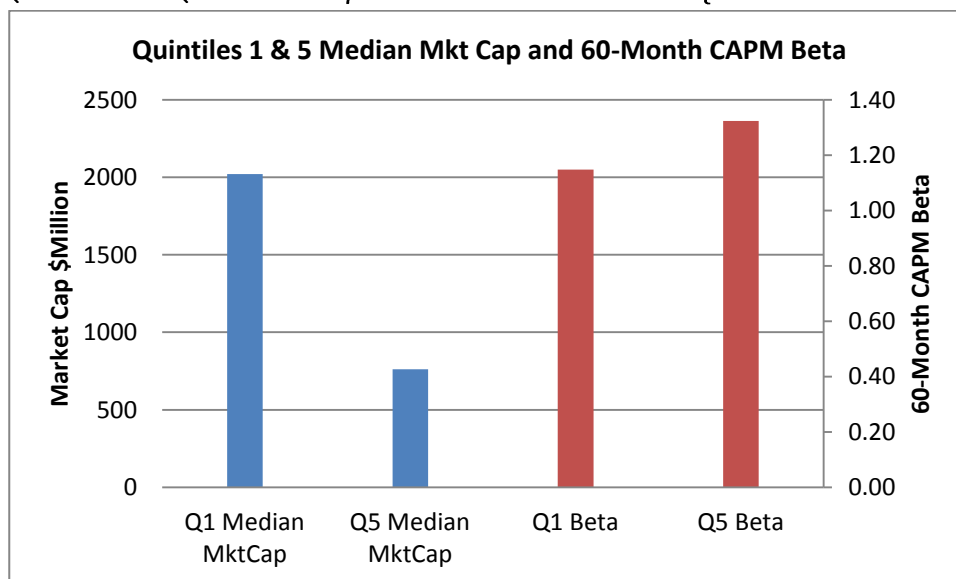


Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

4.3 Quintile Portfolio Characteristics / Portfolio Tilt Neutralization

The median market capitalization and median 60-month CAPM beta of the quintile 1 and quintile 5 portfolios of the Price Momentum Model are displayed in Figure 19.

Figure 19: Price Momentum Model: Median Market Cap and Median 60-Month CAPM Beta for Quintile 1 and Quintile 5 Portfolios - Russell 3000 Universe (Jan 2013 – Dec 2013)



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

Similar to the other models, the top quintile of the Price Momentum Model had a large cap bias [compared to the bottom quintile], implying that large cap stocks were the “momentum” stocks in 2013. The median market cap of the long portfolio [Q1] was \$2.02 billion compared to \$0.76 billion for the short portfolio [Q5]. Quintile 1 also had a lower exposure to the market [60-month CAPM beta of 1.15] compared to quintile 5 [1.32]. Since Volatility was the best investment style out of eight tracked on AFL in 2013, the model’s top quintile’s lower exposure to volatility compared to the bottom quintile may have negatively affected long-short spread in 2013. This is in direct contrast to 2011 and 2012 when volatility as a style did poorly, and a lower exposure to volatility benefitted the Price Momentum Model.

The performance characteristics of the model after eliminating both size and beta tilts⁷ are shown in Table 11. The Price Momentum Model’s average 1-month spread remained relatively stable, shrinking only slightly from 0.12% to 0.10%, while average 1-month IC stayed at 0.03 after beta and size neutralization, indicating that the size and beta biases of the model portfolios had little impact on the model’s overall performance.

⁷ Q1 and Q5 had median market cap and 60-month CAPM Beta of \$1.1B and 1.2 respectively after neutralization

Table 11: Price Momentum Model: Original and Beta/Size Neutralized Results – Russell 3000 Universe [January 2013 – December 2013]

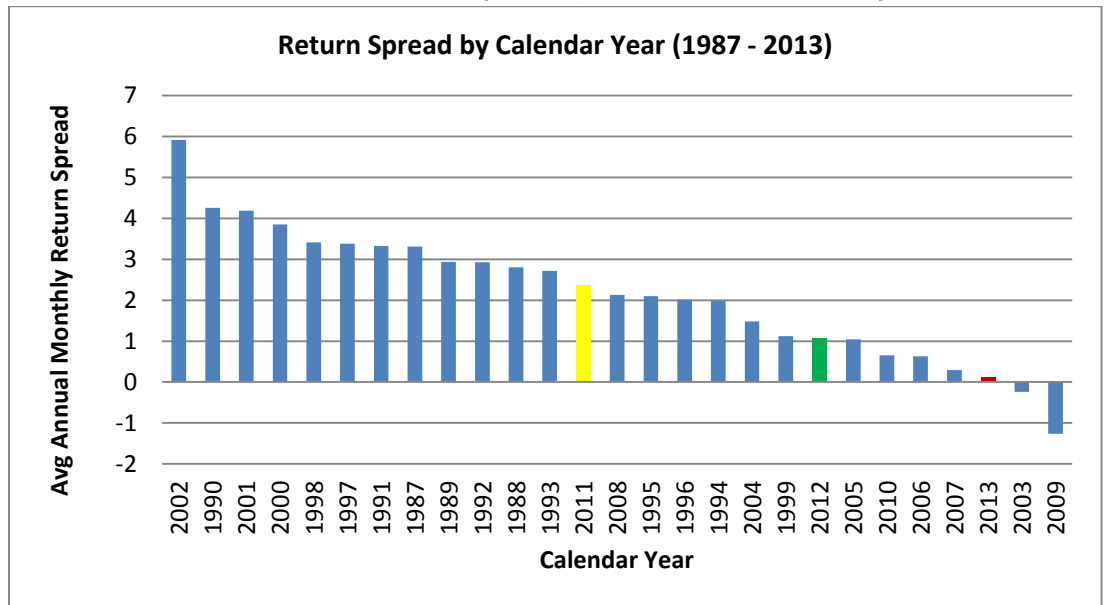
Model	Average 1-Month Spread	Average 1-Month IC
PMM	0.12%	0.03
Size/Beta Neutral PMM	0.10%	0.03

Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

4.4 Historical Comparison

The average 1-month quintile spread by each calendar year is charted in Figure 20.

Figure 20: Price Momentum Model: Calendar Year Average Monthly Quintile Spread: Russell 3000 Universe [January 1987 to December 2013]



Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results. Returns are simulated and are a result of an out of sample backtest

Performance in 2013 was weak compared all other calendar years, except for 2003 and 2009 when momentum as a theme failed spectacularly. The out-of-sample return for the model was 0.82% compared to 2.22% for the in-sample period.

5 Model Stability

Model stability in 2013 as measured by the autocorrelation of monthly ranks is listed in Table 12. The correlation numbers are in line with what was observed during model back-tests and demonstrate the low turnover of each of the models, particularly the Growth, Value, and Quality Models.

Table 12: Model 1-month Rank Autocorrelation (January 2013 –December 2013)

Model	1-Month Rank Autocorrelation
Growth	0.91
Value	0.92
Quality	0.89
Price Momentum	0.58

Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.

6 Conclusions

In this research report, we summarized the performance of S&P Capital IQ's four stock selection models (Value Benchmark, Growth Benchmark, Quality, and Price Momentum) in 2013 as well as during the entire out-of-sample period, 2011-2013. All four models generated positive return spreads in 2013, with the Growth Benchmark Model posting the strongest results. Each model's out-of-sample performance is also solid. Valuation was the driver of performance in the Growth, Value, and Quality Models. Unlike in 2011 and 2013, the positive exposures of the models to large cap and low beta names in 2013 had a minor negative impact on performance during the year. We found that neutralizing these exposures generally slightly improved model spreads when benchmarked to the spreads of original models.

APPENDIX A

*Difference in Means T-Test for Avg Monthly Returns in Down, Moderate and Up Market Years:
January 1987 – December 2013*

Model Name	Difference in Means T-Statistics		
	Down vs. Moderate Years	Down vs. Up Years	Moderate vs. Up Years
Growth Benchmark Model	2.35	2.37	-0.56
Value Benchmark Model	4.68	4.24	0.32
Price Momentum Model	2.39	2.05	-0.03
Quality Model	3.31	3.01	-0.05

Source S&P Capital IQ Quantamental Research. Past performance is not a guarantee of future results.
Returns are simulated and are a result of an out of sample backtest

Our Recent Research

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: [Beggars 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](#)

Leveraging Compustat customer segment data, we investigate the impact of news for customers and subsequent stock returns for their suppliers, over the time period May 2000 through April 2011 and find that:

- Shares of suppliers with major customer relationships reacted to positive and negative earnings surprise of their customers with a statistically significant 0.93% to 1.97% abnormal spread in the 5 to 60 trading days following the surprise.
- A monthly rebalanced backtest of long-short supplier portfolios based on customer momentum would have resulted in a statistically significant 0.81% average monthly return, or 0.70% after controlling for common risk factor exposures.
- The customer momentum signal historically performs best in cyclical sectors such as Materials and Consumer Discretionary.

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

In this paper, we revisit the asset growth anomaly. Our results indicate:

- Asset growth demonstrates return predictive power globally with and without controlling for size, value, 12-month price momentum, and 1-month price reversal factors.
- Information coefficient correlation analyses indicate that there are potential diversification benefits from adding asset growth to other alpha factors.
- The companies that demonstrated the highest asset growth show subsequent deterioration in their top-line and bottom-line growth rates while companies that had the lowest asset growth experience subsequent improvement in their top-line and bottom-line growth rates.

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

This month we build upon the work done by Cohen and Lou in their 2010 paper, "Complicated Firms", to determine if we can exploit industry level information from pure-play firms to predict the future performance of multi-industry, complicated firms. Leveraging Compustat segment data and Standard Industrial Classification (SIC) 2 digit codes, we exploit the lag in incorporating industry level information between simple and complicated firms to forecast the future performance of complicated firms. This is done by constructing pseudo-conglomerate returns, revisions, and valuation signals that combine the relevant information of all the industries in which a complicated firm operates. These pseudo-conglomerate signals simply weight industry level information (ex: industry return) proportionately to the complicated firm's reported sales in each industry.

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

Equity Risk models are subject to a common criticism. We examined three techniques to further enhance the S&P Capital IQ Fundamental Factor risk models: Utilized the cross sectional dispersion of stock and factor returns by adjusting model factors and stock specific volatilities, change the model production frequency from monthly to daily to capture recent data, and shorten data look back window [1 year as opposed to 2 years] resulting in a more reactive model. Dispersion based adjustments, and high frequency of model generation both improved model results, while a shortened calibration window showed no appreciable improvement.

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

Can profits be made by following the actions of activists? One month after the commencement of activism, the strategy yielded a market-adjusted excess return of 3.4%. After controlling for market, size, value, and industry, the excess return was 2.7. Twelve months after the disclosure of activist involvement, the strategy produced an average excess return of 14.1% after controlling for market, size, value, and momentum. We did not find evidence of return reversal up to two years after activism or of diminished excess returns in 2008 -- 2012 vis-à-vis those in 2003 -- 2007.

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

In this report, we review the performance of S&P Capital IQ's four U.S. stock selection models in 2012. These models were launched in January 2011, and this analysis will assess the underlying drivers of each model's performance over the 12 months ended December 31, 2012.

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

At the beginning of every year, one topic frequented by many institutional investors is the January Effect. Investors often point to January as the most pronounced example of seasonality, where longer term trend following strategies suddenly underperform and short-term reversal and mean-reversion dominate. But which strategies have performed well in January and is this performance sustainable? With several studies in the Literature documenting the January Effect on company capitalization, we decided to undertake our own review using our S&P Capital IQ Alpha Factor Library (AFL), to examine various strategies' effectiveness during the month.

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](#)

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: [COA 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](#)

Copyright © 2014 by Standard & Poor's Financial Services LLC. All rights reserved.

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P). The Content shall not be used for any unlawful or unauthorized purposes. S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. S&P's opinions, analyses and rating acknowledgment decisions (described below) are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P does not act as a fiduciary or an investment advisor except where registered as such. While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P reserves the right to assign, withdraw or suspend such acknowledgement at any time and in its sole discretion. S&P Parties disclaim any duty whatsoever arising out of the assignment, withdrawal or suspension of an acknowledgement as well as any liability for any damage alleged to have been suffered on account thereof.

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

S&P may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P reserves the right to disseminate its opinions and analyses. S&P's public ratings and analyses are made available on its Web sites, www.standardandpoors.com (free of charge), and www.ratingsdirect.com and www.globalcreditportal.com (subscription), and may be distributed through other means, including via S&P publications and third-party redistributors. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees.

Standard & Poor's and S&P are registered trademarks of Standard & Poor's Financial Services LLC. Capital IQ is a registered trademark of Capital IQ Inc.

The Global Industry Classification Standard (GICS[®]) was developed by and is the exclusive property and a trademark of Standard & Poor's and MSCI. Neither MSCI, Standard & Poor's nor any other party involved in making or compiling any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, Standard & Poor's, any of their affiliates or any third party involved in making or compiling any GICS classifications have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.