



Research Signals

Specialty Model Summaries

This document provides an overview of our industry specific and unique cross-sectional factors and models. We have included links to our research papers in this document.

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Airlines Factor Suite: (Live Since June 2011, Historical Data from May 2001)

- **What It Is:** Innovative industry factor measures analyzing the success of business operations covering revenue, expense, margin, capacity, Available Seat Miles, Revenue Passenger Miles and Size of Fleet
- **What It Does:** Uses granular operating metric detail found in management's discussion to formulate a systematic evaluation process. Offers detail on their return generating potential with an empirical analysis of univariate factor performance, both point-in-time cross-sectional results & year-over-year changes
- **What It Shows:** Test period is from Jan '01 - Feb '11. Our backtest spanned the period between Dec '93 and Sep '05. As shown in Graph 2 on page 5, the 3-month IC over our test period was 0.064 with a hit rate of 71%.
 - Coverage: ~ 98 securities

The full explanation of the investment recipe, industry background, the specifics behind the factors and the performance are detailed in the report.

Data Source(s): Thomson Reuters

ACCESS FULL REPORT HERE: [Airlines](#)

Automotive Signals: (Live Since January 2019, Historical Data from July 2008)

- **What It Is:** Proprietary industry-specific signals designed to predict global automotive stock returns. Systematically score stocks based on a number of metrics specific to the automobile industry. Metrics include stock-specific factors that quantify a company's sales growth, production trends, market share, production utilization and exposure to electric vehicles.
- **What It Does:** Utilizing robust statistical automotive data sets from IHS Markit that include vehicle sales and production history, aggregated registration information, manufacturing volumes and vehicle pricing insight across various geographies, Research Signals offers 35 quantitative equity factors and 4 raw values that complement both fundamental and quantitative methods.
- **What It Shows:** Factors are backtested over a universe of various geographies and manufacturers going back to 2008. We find strongest performance with factors Monthly trend in sales growth (2.46%) and YOY change in unit sales (2.13%) as measured by monthly average quintile return spread (Q1-Q5), with low correlations to existing growth, momentum and value factors.
 - Coverage: Avg number of names in Universe over this 10 yr period: 50 securities

The full explanation of the investment recipe, industry background, the specifics behind the factors and the performance are detailed in the report.

Data Source(s): IHS Markit

ACCESS FULL REPORT HERE: [Autos Signals](#)

Bank & Thrift II Model: (Live Since April 2010, Historical Data from Jan 1990)

- **What It Is:** Model of the US Bank & Thrift Industry utilizing FDIC data (e.g. call/thrift reports)
- **What It Does:** Utilizes detailed “specialty” measures that analyze asset quality, loan growth, and reserves and, in conjunction with a set of broad factors exhibiting strong performance w/in the bank & thrift industries, seeks to generate consistent outperformance.
- **What It Shows:** From July 1990 through February 2010 the model returned an average monthly decile spread of 3.16% with a standard deviation of 4.02% and a hit rate of 87.71. Since going live in 2010 the model has continued to outperform through Jan '14 w/an avg long/short spread of 1.35% /month and hit rate of 65.96%
 - Updated 10 yr Bank & Thrift II Model performance from Jan 2004 to Jan 2014: has an avg 1-mo IC of 0.09 and long/short spread of 278 bps per month.
 - Coverage: Over the past 10 years through Jan 31st 2014: 255 securities

The full explanation of the investment recipe, measures of robustness and performance against our previous model, and correlations against other available multifactor models from IHS Markit are also detailed in the report.

Data Source(s): Chicago Federal Reserve, FDIC, Thomson Reuters

ACCESS FULL REPORT HERE: [Bank and Thrift](#)

Credit Risk Factors: (Live Since Nov 2012, Historical Data from Jan 2005)

- **What It Is:** Proprietary measures of credit risk and momentum using IHS Markit CDS spread pricing data
- **What It Does:** We link CDS spread pricing data to Equity securities in order to produce measures of credit risk using daily market prices of risk from the credit market. We create 4 factors measuring risk, changes in risk, slope of the credit risk term structure, and the divergence between equity and credit market prices
- **What It Shows:**
 - From Jan '05 - Sep '12, the Credit Risk factor shows positive ICs in the US and Europe universes, and positive decile return spreads in Europe. We also find Credit Risk to be correlated, yet differentiated, from common measures of risk such as stock return volatility and Beta.
 - CDS divergence produces positive IC and decile returns across Europe, US, and Developed Pacific universes for 1 and 3 month holding periods
 - In periods where the MSCI World Index has lost more than 5% in the backtest period, the CDS Divergence Factor has an average decile spread of 3.172, highlighting the relevance of the credit market during bearish periods
 - Coverage: Average number of names covered are 500 in the US Large Cap space, 250 in Europe, and 300 in APAC

The full explanation of the investment recipe, explanation of the data source, and performance results are detailed in the report

Data Source(s): IHS Markit CDS Pricing

ACCESS FULL REPORT HERE: [CDS to Equity](#)

Cybersecurity Factors: (Live Since Feb 2018, Historical Data from Jan 2014)

- **What It Is:** A suite of 35 factors that quantify cybersecurity risks to enhance stock and portfolio risk management. Factors include: the key BitSight Rating, 18 scores from the BitSight risk vectors, and 16 derived factors measuring changes and volatility in ratings, z-scores, industry and sector positioning and impact of data breaches.
- **What It Does:** IHS Markit has partnered with BitSight, The Standard in Security Ratings, to provide asset managers with critical cybersecurity intelligence on organizations worldwide. BitSight captures cybersecurity risk through a proprietary process, providing quantifiable security ratings. These ratings are the key to assessing cyber risk in companies' ecosystems. Much like credit ratings (ranging from 250 to 900, with a higher rating indicating better security performance), this approach allows asset managers to gain insight into the security of companies, driving stock selection and risk management decisions.
- **What It Shows:**
 - We find BitSight Security Ratings are predictive of data breach events, and such events on average have a negative impact on excess stock price returns of 44 bps over the first 10 days from when a breach is identified
 - While breaches are rare overall, the frequency of breach is greatly increased for stocks with BitSight ratings that are more than 50 points below the industry median
 - Low rank correlations with fundamental factors indicating the unique nature
 - Overlaying Industry Relative BitSight Ratings with the base VMA2 model resulted in 5.4 percentage points of additional return for cumulative spreads over the analysis period
 - Coverage: Average number of names covered are 3000+ in the US Total Cap space

The full explanation of the investment recipe, explanation of the data source, and performance results are detailed in the report

Data Source(s): [BitSight Technologies](#)

ACCESS FULL REPORT HERE: [Cybersecurity factors powered by BitSight](#)

Dividend Forecast Factors: (Live Since April 2017, Historical Data from Feb 2011)

- **What It Is:** A suite of eight factors using forecasted dividends from IHS Markit Dividend forecast dataset. Factors include forecasted yield, growth and payout ratios.
- **What It Does:** Uses IHS Markit's Dividend Forecast dataset that provides announcements and forecasts for dividend amounts and dates for more than 8,000 stocks globally. Forecasts are calculated using a rigorous methodology based on fundamental analysis and the latest market news, taking into account a broad range of inputs enhanced by proprietary data.
- **What It Shows:** Our research suggests that accurate dividend forecasts are valuable additions to the investment process as inputs to quantitative factors and as signals of surprise dividend payments or cuts that may influence market reactions.
 - Dividend forecasting accuracy was the highest in the US with 93.4% of forecasts within 2% of the reported amount 1-month out, and developed Europe and Asia-Pacific within 10% for roughly 70% of forecasts.
 - Dividend payers with forecasted cuts underperformed their peers expected to grow dividends in the US and Europe by annual margins of 9.19% and 2.60%, respectively, underscoring the usefulness of accurate dividend forecasting as part of a holistic investment strategy
 - For the past 5 years, Dividend growth measures were effective long term alpha predictors in the US and Europe, while yield was a stronger signal in Europe and especially Asia-pacific
 - Leading 12-Month Total Dividend Yield was most successful in Asia-pacific followed by developed Europe, posting 12-month decile return spreads of 5.34% and 1.50%
 - 1-Year Ahead Regular Dividend Growth was an effective signal for US large caps with a 12-month spread of 7.66% and was also relatively strong for developed Europe (3.91%)

The full explanation of the investment recipe, industry background, the specifics behind the component building blocks of the model and the performance are detailed in the report.

Data Source(s): [IHS Markit's Dividend Forecast Dataset](#)

ACCESS FULL REPORT HERE: [Dividend forecasting factors](#)

Equity REIT Model: (Live Since August 2005, Historical Data from Feb 1994)

- **What It Is:** US REIT model utilizing proprietary data to enhance investment returns using Equity REIT's(EREIT)
- **What It Does:** Uses detailed property-level information on over 42,000 properties, spread across 4,000+ cities; looking at such metrics as occupancy rate, location, and building quality to construct a bottom-up assessment of REIT net asset value and demonstrating the diversification benefit relative to the overall market.
- **What It Shows:** From Dec '93 to Sep '05, the 3-month IC was 0.064 with a hit rate of 71%. The decile distribution graph, though not perfectly monotonic, shows that the top decile has a monthly excess return of 56 bps while the bottom decile has a monthly excess return of - 0.65 bps when compared to the NAREIT EREIT index. IHS Markit has been running the model live since Sept 2005 with a monthly return spread mean of 80 bps as of the end of 2012. The model has also held up well during the recent financial crisis period.
 - Updated 10 yr Performance for Apr '03 to Apr '13: has an avg 1-mo IC of 0.041 and long/short spread of 69 bps per month.
 - Coverage: Average number of names in the Universe over this 10 yr period: 133 securities

The full explanation of the investment recipe, industry background, the specifics behind the modules (e.g. NAV/Price, Mgmt quality, Capital Structure & Price and Earnings Momentum to name a few) and the performance are detailed in the report

Data Source(s): Thomson Reuters, CoStar, Vickers, Edgar Online

ACCESS FULL REPORT HERE: [Equity REIT Model V1](#) & [REIT Model V2](#)

ESG Factors: (Live Since Oct 2009, Historical Data from June 2003)

- **What It Is:** ESG scores sourced from ASSET4, measuring economic, environmental, social, and governance.
- **What It Does:** 23 factors and composites based on underlying 250 key performance indicators related to ESG.
- **What It Shows:** From Jun '03 - Sep '09, over the US universe the annualized long-short spread of the overall composite factor w/a 1-month holding period was 3.96% with an IC of 0.023. As holding period increases out to 12-months, the IC increases to 0.068 on average.
 - The research shows improved results of our VMM model by first screening for stocks with positive ESG characteristics
 - Our “Long Intersection” strategy is the best performer with an annual average active return of 2.34% by selecting only those stocks in the top decile of VMM and top 25% of ESG
 - Our Long Exclusion strategy, which removes names from the top of the overall composite factor VMM Decile which score in the bottom 25% of ESG also outperforms the VMM model

The full explanation of the investment recipe, the specifics behind the data source and ESG pillars, and the performance are detailed in the report

Data Source(s): Thomson Reuters Asset4

ACCESS FULL REPORT HERE: [Economic Environmental Social Corporate Governance](#)

Insurance Model: (Live Since Feb 2008, Historical Data from Apr 1996)

- **What It Is:** A model to enhance stock selection by accounting for the differences in accounting information between insurance co's & other financial services entities.
- **What It Does:** Based on 7 sub-components, it allows end users to compare relative performance of insurance co's using a consistent valuation framework that identifies stocks w/significant alpha generating potential across IHS Markit's Insurance Universe of ~113 stocks currently (excludes ADR's & Insurance brokers).
- **What It Shows:** March '96 - May '07: 22.12% annualized long-short spread that is both positive & significant.
 - Performance through Apr '13: Avg monthly long-short spread of 71 bps with a hit rate of 64%
 - Information Coefficient (IC) increases w/holding period – 6-mo period has highest avg IC over backtesting period.
 - Low avg cross-sectional correlations indicates model achieves core objective while discovering incremental sources of information for powerful alpha drivers & unique industry insight
 - Updated 10 yr Performance: (Jan '04 to Jan '14): avg 1-mo IC of 0.065 & long/short spread of 135 bps/month
 - Coverage: Average number of names in the Universe over this 10 yr period: 121 securities

The full explanation of the investment recipe, industry background, the specifics behind the component building blocks of the model (e.g. Mgmt quality, Investor Sentiment & Price and Earnings Momentum to name a few) and the performance are detailed in the report

Data Source(s): Thomson Reuters, Edgar Online

ACCESS FULL REPORT HERE: [Insurance](#)

Oil & Gas Model: (Live Since July 2013, Historical Data from Jan 2000)

- **What It Is:** A model expansion of our original oil & gas factor suite (Industry focus: Oil & Gas Jan 2012) that builds a systematic, multifactor equity evaluation strategy based on unique analytical attributes of companies in this industry
- **What It Does:** Systematically values firms using a multifactor strategy that employs industry-specific operating metric details such as production numbers and reserve amounts (e.g., Production Growth and Reserve-Replacement Ratio). Offers finer assessment of company performance and operating condition than items available for all industries; It builds upon exclusive corporate detail to provide a systematic evaluation process encompassing reserve metrics such as Reserve-Replacement Ratio as well as measures of operating efficiency including Relative Net Income-to-Wells, among others.
- **What It Shows:** Our empirical results reveal significant monthly average return spreads of 1.49% that persisted out to a 12-month cumulative (overlapping periods) average of 12.31%. Top returns were posted by Implied Loan Rate (1.25%) with a hit rate of 66% followed by TTM Operating Income to Enterprise Value (1.16%) which also featured an above average hit rate (68%).
 - Updated 10 yr Performance for Jan '04 to Jan '14: has an avg 1-mo IC of 0.046 and long/short spread of 96 bps per month.
 - Coverage: Average number of names in the Universe over this 10 yr period: 382 securities

See full report for more detailed information on the model sub-composites, return correlations (including relative to overall oil price changes), model scores and returns over multiple holding periods

Data Source(s): Thomson Reuters

ACCESS FULL REPORT HERE: [Oil & Gas](#)

Retail Suite: (Live Since Sept 2007, Historical Data from Jan 1985)

- **What It Is:** A suite of factors designed to generate excess return employing general signals alongside key industry specific measures; focusing on recent 2-yr results that highlights positive growth & momentum
- **What It Does:** Scores stocks on attributes including same store sales, store growth and operating strength, among others. Performance & attribution results based on IHS Markit Retail universe (avg ~270 US names since 2005). Industry representation includes restaurants, apparel & luxury goods co.'s, food & staples retailers, and internet & catalogue vendors, among others (pg. 1 &2 detail the 7 modules & respective component factors).
- **What It Shows:** Recent performance since May '10 through Apr '13 shows a strong IC (0.03) and avg return spread (+92 bps) - indicative of a growth and momentum bias in retail sector investor preferences over this period. Outperformance was driven by modules including Store Growth Efficiency (IC: 0.05) w/avg monthly return spread of 1.53%, SSS & Earnings Expectations (IC: 0.04) and Price Momentum (IC: 0.03)
 - Updated 10 yr Performance for Jan '04 to Jan '14: has an avg 1-mo IC of 0.042 and long/short spread of 98.5 bps per month.
 - Coverage: Average number of names in the Universe over this 10 yr period: 279 securities

The full explanation of the investment recipe, industry background, the specific retail modules and their respective component factors as well as the overall & component specific performance are detailed in the report

Data Source(s): [Chain Store Guide, Retail Metrics](#)

ACCESS FULL REPORT HERE: [Retail](#)

Sector Rotation Model: (Live Since January 2015, Historical Data from January 1999) – Developed Europe and US models available

- **What It Is:** Innovative multi-factor model that translates economic forecasts, market sentiment, and quantitative factors into a systematic attractiveness score of sector groups
- **What It Does:** Pairs IHS Markit Sector Purchasing Managers' Index (PMI) Survey data and proprietary CDS, securities lending and ETF sentiment indicators with momentum and fundamental factors to create a robust multi-factor signal that identifies the sectors expected to outperform and underperform over the subsequent one to twelve months
- **What It Shows – Europe Version**
 - Test period is from Jan'99 - Oct '14. In sample period is between Jan '99 and Dec '12. Spreads of equal-weighted sector returns for favorable vs unfavorable sectors along with hit rates (percent of occurrences of positive spreads) with returns computed in euros over 1-, 3-, 6- and 12-month holding periods. Additionally we demonstrating application of the Sector Rotation model used in combination with our IHS Markit Value Momentum (VMA), Deep Value (DVM) and Earnings Momentum (EMM) models
 - Over full test period: Avg monthly spread of 0.50%, extends to 8.04% over a 12-month holding period with hit rates of 60.7% and 73.8%, resp.
 - Since Jan '13: Avg 0.71% spread w/outperformance in 68.2% of months. At 12-month horizon, model returned avg 5.20% spread with 69.2% accuracy
 - VMA model overlay: 0.97% Avg 1-month decile return spread vs 0.71% for base model spread, out to 8.15% avg 12-month decile return vs 5.86% for base model
 - DVM & EMM Overlay: Base models enhanced w/ EMM return spread increases of 27 bps and 223 bps (1- & 12-month horizons). DVM reported improvement in 1-month (12-month) holding period decile spreads of 20 bps (170 bps)
- **What It Shows – US Version**
 - US model went live Feb 2016
 - For US large caps, the model delivered an average monthly return spread of 0.53% for favorable versus unfavorable sectors over the development period, extending to 5.42% at a 12-month horizon with positive out-of-sample performance

- For an equal-weighted portfolio of favorable Vanguard Sector ETFs, the excess return over the SPDR S&P500 ETF averages 0.19% monthly, extending out to a 2.60% average 12-month return with outperformance in 68% of observations
- We also demonstrate positive incremental alpha when overlaying the Sector Rotation model with our proven Value Momentum Analyst II stock selection model, with a decile return spread improvement of 15 bps for the 20% overlay strategy

Data Source(s): IHS Markit PMI, IHS Markit Securities Finance, IHS Markit CDS, IHS Markit Exchange Traded Products

ACCESS FULL REPORTS HERE:

Europe: [Europe Sector Rotation Model](#)

US: [US Sector Rotation Model](#)

Semiconductor Model: (Live Since Aug 2013, Historical Data from Jan 2005)

- **What It Is:** An operating-metric based factor model (SEMC2) for the Semiconductor industry designed to generate additional alpha with greater consistency in positive return spreads.
- **What It Does:** Built upon our original Tech Model, it utilizes four semiconductor-specific indicators around Order Bookings & Order Backlogs in conjunction with a unique Short Sentiment indicator to capture the distinct characteristics of semiconductor firms.
- **What It Shows:** From Jan '05 - Mar '13, over an Allcap (A) and Global (G) universe the annualized long-short spread w/a 1-month holding period was 17.16% (A)/12.6% (G) w/improved return spreads and incrementally decreased volatility vs our original model, emphasizing the increased alpha generation power of the model.
 - Recent Performance through Aug '13: has delivered an avg monthly long-short spread of 132 bps with a hit rate of 73%, and Information Coefficient (IC) of .053 tends to increase w/holding period – the 12-mo period has an .107 avg IC over backtesting period.
 - Updated 10 yr Performance for Jan '04 to Jan '14: has an avg 1-mo IC of 0.05 and long/short spread of 121 bps per month.
 - Coverage: Average number of names in the Universe over this 10 yr period: 582 securities

The full explanation of the investment recipe, industry background, the specifics behind the component building blocks of the model (e.g. Mgmt/Earnings quality, Backlog Growth, Unexpected Bookings, Technology Quality to name a few) and the performance are detailed in the report

Data Source(s): Thomson Reuters

ACCESS FULL REPORT HERE: [Semiconductor Factor Suite](#)

Short Sentiment Factor Suite: (Live Since Oct 2012, Historical Data from Jan 2007)

- **What It Is:** A suite of timely, global, short sentiment factors covering 3MM+ intraday transactions, spanning \$12 trillion of securities in the lending programs of over 20,000 institutional funds globally – captures ~90% of the securities lending market in developed markets
- **What It Does:** Allows better detection of negative driven sentiment around a company's prospects via the securities lending market. Short Sentiment indicators illuminate an opaque market segment, providing daily data ranging from supply and demand to borrow rates and market shares. The model is designed to capture performance at the extremes (more pertinent to short sentiment indicators)
- **What It Shows:** Performance & attribution over EUR, PAC, NA, EM mkts w/scores tabulated monthly, performance computed in local currency for 1-, 3- and 6-month (cumulative) returns and a common start date of Jan '07.(See table 1 on pg 3 for full universe count and factor coverage)
 - Active Utilization: EUR & NA 1-month return spreads of 0.39% & 0.52%, resp. EUR positive return spreads for Demand/Supply Ratio extend from a 1-month avg of 0.53% to 2.90% at 6-month horizon
 - Attribution: stock-specific returns represent a significant portion of the active returns suggesting a unique source of excess return. Regional effects to Short Interest: large cap bias in EUR, PAC & EM; NA has a small cap bias
 - Recent Performance: Jan '07 - Jan '13: Active Utilization: EUR & NA 1-month return spreads of 0.34% & 0.52, resp. EUR positive return spreads for Demand Supply Ratio - 1-month avg of 0.35% out to 2.78% at a 6-month horizon
 - Recent 2 Year Performance through Jan '13: Active Utilization outperformance in EUR and NA with 1-month return spreads of 0.836% & 01.11%, resp. EUR positive return spreads for Demand Supply Ratio - 1-month avg of 0.84% out to 6.23% at a 6-month horizon

The full explanation of the investment recipe, industry background, factor level results behind the indicators (e.g. Active Utilization, Implied Loan Rate, Days to Cover, demand/Supply Ratio, Lending Supply – see pg 3 for full list) and the overall performance are detailed in the report

Data source(s): [IHS Markit Securities Finance](#)

ACCESS FULL REPORT HERE: [Short Sentiment Factors](#)

Short Squeeze Model (Live Since April 2014, Historical Data from January 2011)

- **What It is:** A multifactor model designed to predict short squeeze events. The model utilizes capital constraint (short position PNL) indicators based on transaction-level securities loan data with event indicators to predict squeezes and generate excess alpha from a universe of highly shorted names in the IHS Markit US total Cap universe. Factors created using transaction level data are available globally.
- **What It Does:** Based on a hypothesis that squeezes are more likely to occur with stocks where short sellers are experiencing capital constraints (actual or potential losses), the model helps to identify those names at risk of a squeeze, improve the accuracy of short interest signals and provide deeper insight into short positions
- **What It Shows:** Data in-sample from Jan '11 to March '14. Squeezes occur about 0.94% of the time on a daily basis, while our model improves the prediction by 77% capturing 1.67% of the squeeze events daily up to 20.4% monthly, 300 bps better than the universe avg.
 - Over a daily (open/close), 1-week, 2-week, and 1-month period vs the (1) universe and on (2) a spread basis against our 10th decile (D10 - least likely to squeeze) results show highest probability stocks (D1) outperform the universe by 7 bps and 12 bps (vs D10) on open-to-close returns, extending out to 19 bps (30 bps) for 2-week returns and 44 bps (103 bps) for 1-month returns, respectively. Full sample period from Jan '11 – March '15 shows open to close cumulative growth of 150%.
 - Overlaid on single short interest & securities lending factors on long/short basis: Improves mean return/Information Ratio (IR) by ~ 19 bps/8bps to with 22-32% of D10 (short) names flagged as squeezes
 - Integrated w/traditional US models: See modest improvement in D1-D10 spread returns of 0.4 to 7.0bps and IR improvement of ~ 0.013 to 0.073 across Value Momentum, Deep Value, Earnings Momentum models

Report shows full detail of factors, data, application methodology, and in/out of sample returns.

Data Source(s): IHS Markit Securities Finance, Ravenpack

ACCESS FULL REPORT HERE: [Short Squeeze Model](#)

Social Media Indicators: (Live Since Dec 2013, Historical Data from Dec 2011)

- **What It Is:** A suite of 22 stock sentiment indicators used to gauge investor outlook on firms and identify potential buy and sell candidates. These sentiment indicators are derived from proprietary S-Scores™ provided by our partner, Social Market Analytics (SMA) – a data services company that provides analysis of social media data from Twitter to estimate market sentiment at the stock level.
- **What It Does:** Our unique social media indicators capture timely information gleaned from Twitter posts such as Tweet sentiment, Tweet Volume, Relative Value, Changing Sentiment and Dispersion (see report for full list), over several weighting methodologies (unweighted, exponential & normalized) w/data coverage beginning Dec 1st, 2011. As not all tweets are useful, SMA utilizes a proprietary extraction, evaluation and calculation algorithm that parses and analyzes daily tweet data polled from Twitter & GNIP API's with access to 500MM+ daily tweets. The system delivers S-Scores that are filtered for financial trading relevance & scored for market sentiment from "indicative" tweets posted by confirmed accounts. Aggregated tweet scores for each stock produce a sentiment measurement from which the overall indicators are derived.
- **What It Shows:** Cumulative returns show a very strong divergence of the positive and negative sentiment stocks relative to the market with remarkable consistency and minimal drawdowns. From Dec 1, 2011, using the IHS Markit Total Cap universe with 3000+ stocks, we present a time series of cumulative 1-day returns for a strategy to buy/sell S-Scores valued >3 / <-3 at the open and sell/buy at the close (Figure 6) compared to the market return proxy, SPDR S&P 500 ETF (SPY). Based on our empirical results, we report a cumulative (average) return of 76% (0.12%) for the buy portfolio compared to a 14% loss (-0.03%) for the sell portfolio and an open-to-close market return of 20% (0.04%). We find on average that 1200 names are covered daily, and that outcomes are persistent out to a 5-day holding period with healthier return spreads to small cap names and low rank correlations w/other sentiment factors. We also note skew towards positive sentiment signals.

The full explanation of the investment structure, market cap and tweet volume biases, weighting schemes, and performance as well as detailed

methodology behind the SMA S-Score™ calculation, and correlations against other sentiment factors are also detailed in the report.

Data Source(s): Social Market Analytics

ACCESS FULL REPORT HERE: [Social Media Indicators & Social Media Indicators in the UK](#)

Technology Model: (Live Since Aug 2010, Historical Data from Jan 1990)

- **What It Is:** Model combining several industry-specific models (communication, computer, semiconductors and software) with a cross sectional overlay achieving impressive long-only and long/short returns over the test period.
- **What It Does:** Addresses complex dynamics of technology sector w/industry-level model construction reflecting key tech industry attributes, combined w/a cross-sectional overlay to highlight more general market trends. Solves modelling difficulties w/in technology sector given significant business model differences w/four industry groups chosen as the optimal way to delineate amongst varied firms
- **What It Shows:** Jan '90 – June '10 saw 1.243% avg 1-month performance on a long only (Q1 excess) and 2.619% long/short. Signal efficacy increased w/holding period w/impressive hit rates. Factor exposure bias towards high book values & low betas, especially post-bubble period to present. Results suggest an optimal balance has been struck between qualitative reasoning and quantitative modeling.
 - Updated 10 yr Performance from Jan '04 to Jan '14: has an avg 1-Mo IC of .041 and long/short spread of 114bps per month
 - Coverage: Average number of names in the Universe over this 10 yr periods: 380

The full explanation of the investment recipe, industry background, the specific factors utilized behind the individual groups (they differ by group and show distinct results based on the unique aspects of the industry) and the individual and full model performance are detailed in the report.

Data Source(s): Thomson Reuters

ACCESS FULL REPORT HERE: [Technology Model](#)