Global Country Allocation Strategies

Country Selection Based on Fundamental, Macro and Sentiment Indicators

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Global equity managers face the problem of efficiently allocating capital across countries, a challenging task that impacts portfolio performance in a meaningful way. A number of studies have demonstrated that country effects explain more than 20% of the variance in stock and mutual fund excess returns[1].

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:

- **The performance of developed and emerging markets (DM and EM) are driven by different types of signals, with valuation being the only common driver.** Investors may want to consider DM and EM separately when making country allocation decisions.
- **In DM, a variety of fundamental, macro and sentiment factors were effective in country selection over our test period.** We documented statistically significant performance metrics for various valuation, profitability (as one aspect of quality) and sentiment factors, as well as for Credit Default Swap (CDS) spread change.
- **Within EM, the most effective indicators were valuation signals.** We also found currency depreciation to be effective in EM country selection.
- **Valuation and profitability are low-turnover strategies while macro and sentiment indicators tend to result in more frequent rotation among countries.** The monthly rank auto-correlation[2] of effective factors in DM range from -0.07 for the CDS spread change to 0.97 for the profitability factors. Valuation factors in EM have a rank auto-correlation above 0.90.

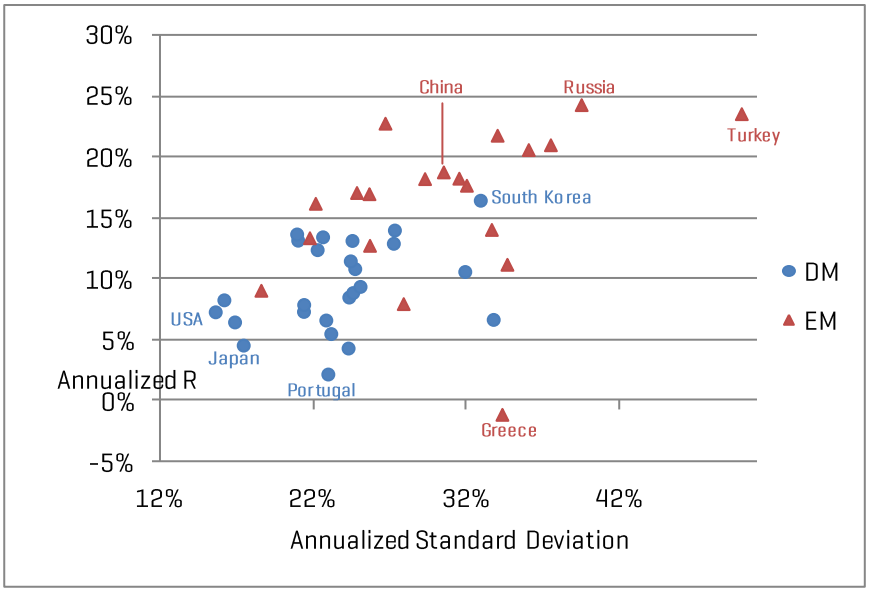
[1] Heckman and Mullen (2006) estimates that country allocation explained 21% of fund excess returns on a month-to-month basis, using the performance of 56 global mutual funds during 2001 and 2005. Over longer holding periods, country allocation explained 34% - 50% of the variance in excess returns. Way (2014) shows that country selection represented over 25% of returns at the end of 2013.

[2] Rank auto-correlation is the serial rank correlation between the signal and its lagged value.

1. Introduction

With the lowering of trade barriers and loosening of capital controls around the world, global financial markets have become increasingly integrated over time. This has resulted in rising correlation among global equity markets returns[1], a phenomenon of great interest to investors as it diminishes cross-border diversification benefits and affects optimal portfolio asset allocation. However, there are still sizable differences in individual country performance. Figure 1 shows a wide dispersion in returns even within the developed world (blue markers), with the difference between the best performing country (South Korea) and the worst performing one (Portugal) exceeding 14% over the past 15 years, suggesting profitable opportunities in allocating toward the right countries. In this report, we explore strategies that can be used for country selection across global equity markets.

Figure 1 Risk and Return Profile of Country Indices
S&P Developed BMI Index (DM) and S&P Emerging BMI Index (EM); Jan 1999 – Nov 2014



Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Our work builds on previous studies on country allocation strategies in several ways:

- We segregated the global universe into developed and emerging markets (DM and EM). Academia and practitioners alike have argued that emerging market countries are different in a variety of ways from their developed market counterparts and the two should be considered separately[2]. Economically, emerging markets sectors tend to be concentrated in energy and

[1] Tokat (2004)
[2] Bekaert and Harvey (2014), J.P.Morgan Global Quantitative Strategy (2014)

materials[1]. Financially, their markets are often characterized by limited float and restrictions on the level of foreign ownership. These attributes tend to make the returns of EM countries less correlated to those of DM countries. For these reasons, we believe investors are better served keeping DM and EM segregated. Our analysis sheds some light on the important differences in the returns drivers of these two markets.

- We constructed fundamental factors to account for the differences in capital structure across countries where applicable. For example, return on assets (ROA), usually calculated as net income / total assets, can be impacted by the level of debt and equity companies use to fund their operations. For our analysis, we included returns to both equity and debt holders for ROA[2] so that it provides a comprehensive picture of a country's ability to generate returns for all stakeholders.
- Where applicable, we constructed the ratios such that both the denominator and the numerator correspond to the same group of beneficiaries. For example, whereas Free Cash Flow / Enterprise Value (FCFEV) and Free Cash Flow / Price are both commonly used valuation metrics, we favor the former over the latter because free cash flow (operating cash flow – capital expenditures) and enterprise value represent cash flows and investments pertaining to all investors, while stock price is only relevant to common shareholders.
- All our fundamental aggregates and macro factors were constructed using point-in-time (PIT) data. As we have shown in our previous work[3], tests based on non-PIT data may have an inherent look-ahead bias, as data restatements occur frequently after initial release and changes are often applied retroactively in non-PIT databases. PIT data allows the user to side step such bias by ensuring that only the information available to investors at the time of portfolio formation is used for analysis.

2. Methodology

We ranked the countries according to their country-level factor value and grouped them into three tertiles. The top (bottom) tertile contains the countries that are expected to have the highest (lowest) returns based on the factor. In any month, a factor must cover at least half of the countries in the universe before countries are ranked. We then backtested the factor using monthly, quarterly, and semi-annual rebalancing. Because monthly rebalancing shows the strongest pattern in most cases, especially for the more fast-moving sentiment signals, we focus on the 1-month horizon in the main body of this paper. However, we recognize that most practitioners have a longer horizon in making country allocation decisions. Therefore, we include the 3-month and 6-month results in the Appendix.

The equal-weighted (cap-weighted) top-bottom tertile spread is calculated as the equal-weighted (cap-weighted) return of the top third countries with the best rankings minus that of the bottom third countries with the worst rankings. The equal-weighted (cap-weighted) top tertile excess return is calculated as the equal-weighted (cap-weighted) return of the top third countries with

[1] MSCI Research (2012)
[2] See the Appendix for the exact formula for ROA
[3] For example, Introducing S&P Capital IQ Stock Selection Model for the Japanese Market (August 2015) and Obtaining an Edge in Emerging Markets (February 2014)

the best rankings minus that of all countries in the universe. The hit rate is the percentage of time that the return spread or excess return is positive. IC (information coefficient) is the rank correlation between factor value and subsequent country return.

3. Factor Performance Overview

Table 1 summarizes the factors that have been effective as country selection indicators within DM and EM over the last 15 years. Countries are equally weighted in the strategies with a one-month holding period. A full list of factors that we considered is in the Appendix (Figure A.1), along with their definition and 1-month, 3-month and 6-month equal-weighted and cap-weighted performance. We sourced our factor ideas from a wide array of academic papers, buy-side and sell-side research, and conversations with practitioners. We focus on the equal-weighted results in the main body of the paper to avoid excess influence of the largest equity markets on factor performance.

Table 1 shows a difference between the factors that have been effective in DM and EM. While we found a wide variety of effective factors in DM, most of the important indicators in EM were valuation signals. Table 1 suggests that investors may want to consider different country characteristics when allocating investments among DM and among EM.

Table 1 Factor Performance in Country Selection – 1 Month Equal-Weighted Returns
S&P Developed BMI Index (DM) and S&P Emerging BMI Index (EM); Jan 1999 – Nov 2014[1]

DM	Top-Bottom Tertile Spread		Top Tertile Excess Return		Information	# of
	Mean Spread	Hit Rate	Mean Return	Hit Rate	Coefficient	months
EP Spread	0.34% **	54%	0.13%	54%	0.029 **	191
FCFEV	0.22%	55%	0.15% *	53%	0.034 **	191
CDS Spread 1M Chg	0.72% ***	65% ***	0.25% *	56%	0.087 **	97
NovyMarx Profitability	0.36% **	58% **	0.18% **	55%	0.025 **	191
ROA	0.28% *	56%	0.17% *	53%	0.030 **	191
Money Flow 3Mon	0.51% ***	54%	0.29% ***	58% **	0.025 **	191
PM6M	0.45% **	53%	0.20% *	57% *	0.031 **	191
Rev3MFY1 GAAP Net Count	0.29% *	56%	0.01%	49%	0.037 **	140

EM	Top-Bottom Tertile Spread		Top Tertile Excess Return		Information	# of
	Mean Spread	Hit Rate	Mean Return	Hit Rate	Coefficient	months
FCFEV	1.05% ***	59% **	0.79% ***	61% ***	0.067 ***	191
EBITDAEV	0.99% ***	58% **	0.66% ***	54%	0.038	191
BP	0.98% ***	57% *	0.65% ***	55%	0.032	191
EP	0.69% **	58% **	0.53% **	57% *	0.047 **	191
EP Spread	0.61% **	54%	0.26%	50%	0.049 ***	191
Currency 3Mon Depreciation	0.73% **	54%	0.42% **	57% *	0.032	191

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

[1] Except for Rev3MFY1 GAAP Net Count (CDS Spread 1M Chg) which only reached decent coverage after Apr 2003 (Nov 2006). Please see the Appendix for the definition of all factors.

4. A Deeper Look at the Factors

In this section we look at specific factors, grouped by investment theme, to obtain a better understanding of why certain signals may be effective in DM and not EM, or vice versa.

4.1 Valuation

Valuation is one of the most popular strategies in country allocation models, and Table 1 above suggests the reason why. Valuation type factors were among the best indicators for country selection in both DM and EM over our backtest period. This is in line with the stock-level performance of valuation as an investment style. Investors worldwide use valuation metrics to identify over- and under-valued assets; therefore it is not surprising that these metrics are associated with future returns at the country level.

FCFEV (Free Cash Flow / Enterprise Value) was one of the most effective signals with consistent performance in both DM and EM. Other valuation factors that we found to be effective, particularly in EM, include those based on EBITDA, book value and earnings. Apart from the valuation level, several studies have established that the value spread predicts aggregate market return[1]. Our analysis confirmed that countries with large earnings yield spread (EP Spread), measured as the difference between the 75th and 25th percentiles of company-level EP ratios, outperformed those with a narrow spread by 34 basis points (bps) and 69 bps per month in DM and EM, respectively, both significant at the 5% level (see Table 1 on page 4).

4.2 Sovereign Credit Default Swap (CDS) Spread

Sovereign CDS spread is a market indicator of credit risk for a country. It reflects economic fundamentals and tends to reveal new information more rapidly during periods of economic stress[2]. The CDS data used in this study starts in November 2006 due to low coverage in earlier years. Table 1 on page 4 shows that the CDS spread factor has been effective in DM: countries with widening CDS spreads underperformed those with narrowing spreads by 72 bps per month on average, significant at the 1% level. In addition, this factor may be useful in spotting countries with deteriorating credit conditions, as the bottom third countries with the largest spread widening underperformed the equal-weighted S&P Developed BMI Index by 47 bps over our test period.

We then explored whether large movements in CDS spreads might provide a meaningful signal beyond the cross sectional approach we used above. For this test, we form an equal-weighted portfolio of countries that experience at least a 20 bps CDS spread widening over the past 3 months. The portfolio is rebalanced every month and if there is no country in the portfolio in any given month, the capital is assumed to earn US 1-month Treasury bill returns[3]. Using equal-weighted DM country indices as a benchmark, the portfolio strongly underperformed by 1.34% per month since 2006 (Table 2).

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[1] Eleswarapu and Reinganum (2004), Campbell (2007)
[2] IMF Global Financial Stability Report (2013)
[3] T-bill returns are downloaded from Kenneth French's data library:
http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/ftp/F-F_Research_Data_Factors.zip

Table 2 Strategy Performance Based on CDS Spread Change Threshold
S&P Developed BMI Index (DM); Nov 2006 – Nov 2014

	Average Excess Return	Hit Rate	Average Portfolio Size
CDS Spread Widening 20+ bps	-1.34% ***	35% ***	5

***Significant at the 1% level

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

4.3 Currency

Currency depreciation was one of the few factors we found to be effective in EM outside of valuation. A weakening currency is often beneficial for countries that depend on exports, because it makes their goods and services cheaper to foreign purchasers. The opposite should theoretically apply to countries that rely on imports. To incorporate this effect, we divided the EM into net exporters and net importers[1] and tested the currency depreciation factor within each group (Table 3). We found that net exporters whose currencies weakened over the previous 3 months significantly outperformed those whose currencies strengthened over the same time frame. On the other hand, we did not see a statistically significant relationship between currency and equity market returns for net importers. This is consistent with Bartram and Bodnar (2010) study which finds a stronger currency effect on equity returns for net exporters than for net importers.

Table 3 Currency Depreciation in Selecting EM Exporters and Importers – Monthly Rebalancing
S&P Emerging BMI Index (EM); Jan 1999 – Nov 2014

	Top Bottom Spread	Information Coefficient	Average Portfolio Size
All	0.73% **	0.032	6
Net Exporters	0.90% **	0.069 ***	3
Net Importers	0.41%	0.020	3

***Significant at the 1% level; **significant at the 5% level.

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

A possible cause for weak performance of currency depreciation in DM, also proposed by Bartram and Bodnar (2010), is that the developed countries have more expertise and tools to hedge exchange rate risk, thereby reducing their economies' sensitivity to currency exposure. Another issue with the currency factor in DM is that almost half of the developed countries in our universe use Euro[2]. As a result, there is limited differentiation in the factor values across DM countries.

[1] We use IHS Global Economic data to define import and export countries.

[2] Among the 25 developed markets defined by S&P Global BMI as of November 2014, 11 of them belong to the Euro zone, namely Austria, Belgium, Germany, Spain, Finland, France, Ireland, Italy, Luxemburg, Netherlands and Portugal.

4.4 Profitability

A number of recent studies have documented a positive relationship between companies' profitability and their stock returns[1]. We found this relationship extends to the country level, when profitability is measured as return on assets (ROA) or NovyMarx Profitability (gross profit / total assets).

Regulatory policies and maturity of capital markets may impact the funding choices of companies, leading to differences in firm capital structure across countries. In the ROA calculation, we account for this difference by considering both earnings for equity holders and interest income for debt holders, which provides a more comprehensive picture of how efficiently companies in a market are using their assets to generate returns for all stakeholders. Developed countries with high ROA outperformed those with low ROA by 28 bps per month on average, significant at the 10% level (see Table 1 on page 4).

Our January 2015 report[2] shows that Novy-Marx profitability is an effective stock selection signal across major developed markets. At the country level, we found that developed market countries with highly profitable companies outperformed those with less profitable companies by 36 bps a month over our test period (see Table 1 on page 4).

Similar to the stock-level observation that profitable firms are able to maintain their high profitability, we find that country profitability is also quite persistent: both ROA and NovyMarx Profitability have a rank auto-correlation of 0.97. Therefore, these factors tend to pick countries that are best capable of generating profits and stay invested in those markets for an extended period of time. It is possible that these markets happen to have outperformed in our backtest period. For that reason, we have our reservation about these factors being effective country "selection" indicators. However, to the extent that profitability is linked to future equity returns, the high auto-correlation suggests profitability can provide a low turnover strategy for country allocation.

4.5 Sentiment

We measure sentiment in three different ways: price momentum, money flow, and analyst revision. Numerous studies have documented the "momentum effect" in countries[3]. Countries with the highest returns over the previous 1-12 months tend to outperform those with the lowest returns over the same formation period. Our analysis confirmed that for DM, countries with high returns over the past 6 months outperformed those with low past returns by 45 bps per month between January 1999 and November 2014, significant at the 5% level (see Table 1 on page 4). However, more recent research has documented weakened profitability of the strategy since 2007[4]. If we break down our backtest window into two sub-periods, we notice that the momentum performance is mainly driven by the first half of the sample, when the 6-month momentum factor generated statistically significant top-bottom spread as well as top-tertile excess return (Table 4).

[1] Asness (2014), Novy-Marx (2013)
[2] S&P Capital IQ Quantamental Research (January 2015): Profitability: Growth-Like Strategy, Value-Like Returns
[3] Macedo (1995), Richards (1997), Chan et al. (2000), Desrosiers et al. (2004). Note that all these papers examine momentum effect among DM, or across global markets which include both DM and EM.
[4] Zaremba (2014)

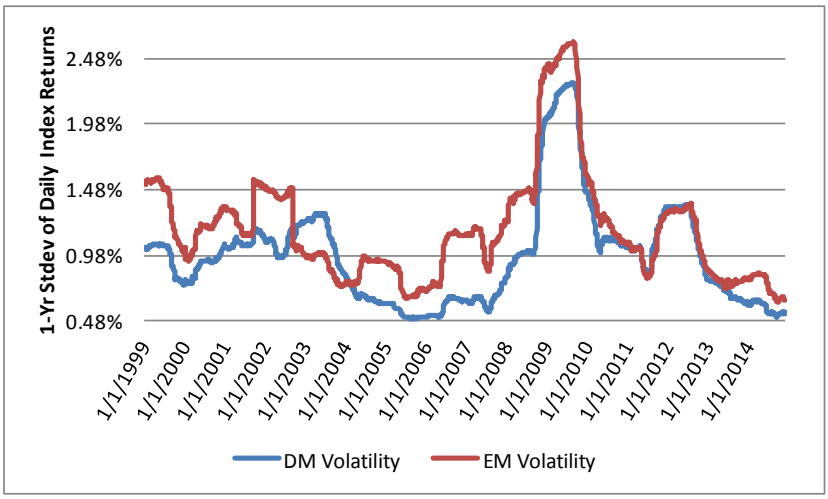
Table 4 PM6M Performance in Sub-Periods – 1 Month Equal-Weighted Returns
S&P Developed BMI Index (DM); Jan 1999 – Nov 2014

DM	Top-Bottom Tertile Spread		Top Tertile Excess Return		Information	# of
	Mean Spread	Hit Rate	Mean Return	Hit Rate	Coefficient	months
PM6M 1999 - 2014	0.45% **	53%	0.20% *	57% *	0.031	191
PM6M 1999 - 2006	0.58% *	54%	0.36% **	61% **	0.027	96
PM6M 2007 - 2014	0.33%	53%	0.03%	52%	0.034	95

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level.
Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Momentum has not been effective in EM country selection, possibly because emerging market country returns tend to be more volatile and momentum as a strategy usually works better in periods of low to moderate volatility. Figure 2 plots the one-year rolling standard deviation of the daily returns of S&P Developed and Emerging BMI Indices over the past 15 years. The EM index (red line) has higher volatility historically than the DM index (blue line), though the two markets have converged in recent years.

Figure 2 DM and EM Index Return Volatility
S&P Developed BMI Index (DM) and S&P Emerging BMI Index (EM); Jan 1999 – Nov 2014



Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Money flow, as another way of measuring market sentiment, takes into account trading volume information[1] in addition to past return. Increasing stock prices accompanied by active trading

[1] See Appendix for the exact formula for money flow factors

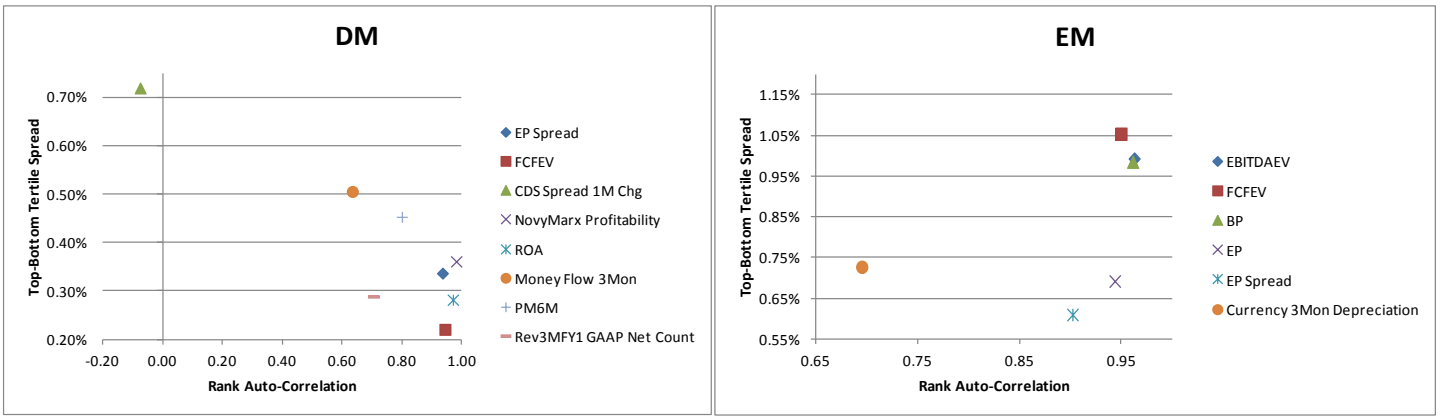
activities can be an indicator of positive market sentiment. In DM, countries with high money flow ratios outperformed those with low ratios by 51 bps over the next month between January 1999 and November 2014 (see Table 1 on page 4).

Analyst estimates, often referred to as "street sentiment", are closely followed by investors. A shift in estimates represents a change in the view of analysts regarding the future prospects of a company. We captured a similar concept at the country level using an indicator "Rev3MFY1 GAAP Net Count", which favors countries with more upward company-level revisions and fewer downward revisions. We prefer this approach of measuring analyst sentiment to the one that aggregates the magnitude of stock-level revisions (Rev3MFY1 GAAP[1]), as the former is not likely to be biased by a small number of large revisions, and should better describe market-wide sentiment. In DM, countries with more positive sentiment as captured by Rev3MFY1 GAAP Net Count outperformed those with negative sentiment by 29 bps a month, significant at the 10% level (see Table 1 on page 4). The factor has not performed as well in EM, possibly because of the lower data coverage and poorer estimates quality due to the lack of transparency.

5. Strategy Turnover

It is important for investors to understand the stability of the signals we have looked at so far in this report, because high turnover can erode the profitability of a strategy. In Figure 3 we plot the monthly return spread (y-axis) and rank auto-correlation (x-axis) of each factor that has been effective in DM and EM. Factors in the top-right corner are highly persistent and generated large return spreads over our test period.

Figure 3 Stability and Performance of Country Selection Indicators
S&P Developed BMI Index (DM) and S&P Emerging BMI Index (EM); Jan 1999 – Nov 2014[2]



Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

[1] See the Appendix for the exact formula for both factors
[2] Except for Rev3MFY1 GAAP Net Count (CDS Spread 1M Chg) whose coverage starts from Apr 2003 (Nov 2006).

As discussed in Section 4.4, profitability signals are very stable, as evidenced by their high monthly auto-correlation. These signals yield positive return spread by constantly allocating toward countries that are able to generate high profits. We also find valuation signals to be relatively stable, both in DM and EM. On the other end of the spectrum is CDS spread change, which has a rank auto-correlation close to 0. This factor provides large return spread by avoiding deteriorating economies in a timely manner, but the signal decays very rapidly.

6. Data

Developed and emerging markets are defined using the classification of S&P Global BMI (Broad Market Index) series, a comprehensive, rules-based index suite measuring global stock market performance. As of November 2014, there are 25 (23) developed (emerging) markets in the index[1]. Country returns are based on the total USD return series of the S&P BMI country indices, which includes both price return and dividends. Securities within each country are capitalization-weighted to aggregate to country returns.

Company fundamentals come from S&P Capital IQ's Global Point-in-Time (PIT) database. To calculate a country-level fundamental-based factor, we aggregate the stock-level numerator and denominator respectively for those companies with both numerator and denominator data available within each country[2]. All values are in USD to ensure consistency across countries. We also require that the companies with factor data cover at least 70% of the country's market cap before we calculate a factor value for the country, so that the factor value is representative of the country's characteristic.

CDS spreads are part of the S&P Capital IQ Credit Risk Indicators package and exchange rate is sourced from IHS Global Economic Data. Other macro data was downloaded from the OECD website[3], which provides a number of PIT macroeconomic data points. Macro data is released with a significant lag versus their reporting date, especially for some developing countries, and can be revised several times after the initial release. However, very few data sources offer PIT macro data outside the US. In order to avoid look-ahead bias in our global analysis, we choose to focus on macro factors that can be constructed from OECD PIT data.

7. Summary

In this report we studied a suite of fundamental, macroeconomic and sentiment indicators for country selection constructed with point-in-time data. We found that valuation has been the common driver of the developed and emerging equity markets over our test period. In addition to valuation, investors can also benefit from considering profitability, sentiment and CDS spread change in selecting developed countries. Currency depreciation has been effective in EM country selection, although we documented a stronger currency effect among net exporters than net

[1] S&P Global BMI Methodology (2014)
[2] Except for DivP, FwdEP GAAP and Rev3MFY1 GAAP, which are calculated using cap-weighted stock-level winsorized factor value. See the Appendix for the exact formula for all factors.
[3] http://stats.oecd.org/index.aspx?queryid=57153

importers. Given the difference between DM and EM, we believe investors would be better off keeping them segregated when designing country allocation strategies.

APPENDIX

We considered a wide range of factors that might be correlated with future country returns, including valuation, quality, sentiment, volatility and macro factors. Figure A. 1 details the calculation for each factor on the country level. If a factor is ranked in ascending (descending) order, then countries with the lowest (highest) factor value are expected to have the highest (lowest) future return. For all factors that involve Enterprise Value[1] or Operating Cash Flow (OCF), we exclude Financials sector from the aggregation.

Figure A. 1 Factor Definitions

Factor	Formula	Ranking
EBITDAEV	EBITDA / Enterprise Value	Descending
FCFEV	(OCF – CapEx) / Enterprise Value	Descending
BP	Total Common Equity / Market Cap	Descending
DivP	Winsorized Dividend Yield weighted by Market Cap	Descending
Total Yield	(Share Repurchase + Debt Reduction + Dividend) / Enterprise Value	Descending
Capital Base Reduction	(Share Repurchase + Debt Reduction) / Enterprise Value	Descending
EP	Net Income Excluding Extra Items / Market Cap	Descending
FwdEP GAAP	Winsorized (FY1 GAAP EPS Mean Estimates / Price) weighted by Market Cap	Descending
EP Spread	Difference between 75 percentile E/P and 25 percentile E/P within a country	Descending
SEV	Total Revenues / Enterprise Value	Descending
TobinQ	(Market Cap + Total Liabilities) / Total Assets	Ascending
ROA[2]	(Earnings + After-Tax Interest Expense) / Total Assets	Descending
ROE	Earnings / Total Common Equity	Descending
LTDE[3]	(Long-Term Debt + Long-Term Portion of Capital Leases + Non Current Financial Division Debt) / (Total Common Equity + Preferred Equity)	Ascending
CFROIC	OCF / (Total Equity + Total Debt)	Descending
NovyMarx Profitability	Gross Profit / Total Assets	Descending
Gross Profit Margin	Gross Profit / Total Revenues	Descending
Money Flow 30D	Sum of 30-Day (Daily USD Trading Volume * Sign of Daily Index Return) / Sum of 30-Day Daily USD Trading Volume	Descending
Money Flow 3Mon	Sum of 3-Month (Daily USD Trading Volume * Sign of Daily Index Return) / Sum of 3-Month Daily USD Trading Volume	Descending
Money Flow 6Mon	Sum of 6-Month (Daily USD Trading Volume * Sign of Daily Index Return) / Sum of 6-Month Daily USD Trading Volume	Descending
Money Flow 12Mon	Sum of 12-Month (Daily USD Trading Volume * Sign of Daily Index Return) / Sum of 12-Month Daily USD Trading Volume	Descending
PM1M	1-Month percentage change in country index level	Descending
PM6M	6-Month percentage change in country index level	Descending
PM9M	9-Month percentage change in country index level	Descending
PM12M	12-Month percentage change in country index level	Descending
Rev3MFY1 GAAP	Winsorized (FY1 GAAP EPS Mean Estimate 3-Month Change / Price) weighted by Market Cap	Descending
Rev3MFY1 GAAP Net Count	(#Companies with positive FY1 GAAP EPS Mean Estimate 3-Month Change - #Companies with negative FY1 GAAP EPS Mean Estimate 3-Month Change) / #Companies with FY1 GAAP EPS Mean Estimate coverage	Descending

[1] Enterprise Value = Market Cap + Long-Term Debt + Current Portion of Long-Term Debt + Preferred Equity + Minority Interest – Cash and Short-Term Investments
[2] Excludes banks
[3] Excludes Financials

Figure A. 1 Factor Definitions (Continued)

Factor	Formula	Ranking
Return Dispersion 1M	Cross-section standard deviation of 1-month stock return within a country	Descending
Return Dispersion 12M	Cross-section standard deviation of 12-month stock return within a country	Descending
Return Volatility 1M	1-Month standard deviation of daily country index return	Descending
Return Volatility 12M	12-Month standard deviation of daily country index return	Descending
Beta 252D	Coefficient from the 252-day regression of daily country index return on daily DM or EM index return	Descending
CDS Spread 1M Chg	1-Month percentage change in 5-Year Sovereign CDS Spread	Ascending
CDS Spread 3M Chg	3-Month percentage change in 5-Year Sovereign CDS Spread	Ascending
CDS Spread 6M Chg	6-Month percentage change in 5-Year Sovereign CDS Spread	Ascending
CDS Spread 12M Chg	12-Month percentage change in 5-Year Sovereign CDS Spread	Ascending
Currency 3Mon Depreciation	3-Month percentage change in local currency exchange rate against US dollar	Descending
Currency 12Mon Depreciation	12-Month percentage change in local currency exchange rate against US dollar	Descending
Real GDP 1Yr Growth	1-Year percentage change in real GDP in local currency	Descending
CLI Annualized Rate of Chg	OECD Composite Leading Indicator: 6-Month Rate of Change (Annualized)	Descending
Industry Production Index 3Mon Growth	3-Month percentage change in OECD Index of Industrial Production	Descending
Industry Production Index 12Mon Growth	12-Month percentage change in OECD Index of Industrial Production	Descending
Retail Trade Volume Index 3Mon Growth[1]	3-Month percentage change in OECD Retail Trade Volume Index	Descending
Retail Trade Volume Index 12Mon Growth[1]	12-Month percentage change in OECD Retail Trade Volume Index	Descending

[1] Not available for EM countries

Tables A.1 through A.4 show the factor backtest performance for 1-month equal-weighted and capitalization-weighted returns within the DM and EM universes.

Table A. 1 Factor Performance in DM Country Selection – 1 Month Equal-Weighted Returns
S&P Developed BMI Index (DM); Jan 1999 – Nov 2014

	DM	Top-Bottom Tertile Spread		Top Tertile Excess Return		Information	# of
		Mean Spread	Hit Rate	Mean Return	Hit Rate	Coefficient	months
Valuation	EBITDAEV	0.14%	53%	0.15%	55%	0.017	191
	FCFEV	0.22%	55%	0.15% *	53%	0.034 **	191
	BP	0.18%	53%	0.05%	46%	0.012	191
	DivP	0.14%	53%	0.07%	53%	0.018	191
	Total Yield	-0.43%	37%	-0.18%	37%	-0.052	79
	Capital Base Reduction	0.10%	49%	0.07%	53%	0.018	191
	EP	0.13%	54%	0.08%	55%	0.028 *	191
	FwdEP GAAP	0.01%	54%	-0.07%	53%	0.023	144
	EP Spread	0.34% **	54%	0.13%	54%	0.029	191
	SEV	0.00%	48%	0.00%	47%	-0.001	191
	TobinQ	0.16%	55%	0.10%	55%	0.007	191
Quality	ROA	0.28% *	56%	0.17% *	53%	0.030 *	191
	ROE	-0.15%	49%	-0.13%	48%	0.004	191
	LTDE	0.13%	50%	0.01%	48%	0.017	191
	CFROIC	0.18%	54%	0.06%	53%	0.035 **	191
	NovyMarx Profitability	0.36% **	58% **	0.18% **	55%	0.025	191
	Gross Profit Margin	-0.03%	55%	-0.09%	52%	0.010	191
Sentiment	Money Flow 30D	0.06%	49%	-0.01%	50%	0.006	191
	Money Flow 3Mon	0.51% ***	54%	0.29% ***	58% **	0.025	191
	Money Flow 6Mon	0.30%	51%	0.17%	53%	0.016	191
	Money Flow 12Mon	0.29%	53%	0.18% *	57% *	0.008	191
	PM1M	0.18%	52%	0.05%	49%	0.008	191
	PM6M	0.45% **	53%	0.20% *	57% *	0.031	191
	PM9M	0.32%	54%	0.15%	53%	0.021	191
	PM12M	0.21%	55%	0.10%	54%	0.020	191
	Rev3MFY1 GAAP	0.22%	59% *	0.13%	61% ***	0.034	140
	Rev3MFY1 GAAP Net Count	0.29% *	56%	0.01%	49%	0.037 *	140
Volatility	Return Dispersion 1M	0.06%	49%	-0.02%	50%	0.003	191
	Return Dispersion 12M	0.17%	49%	0.16%	53%	0.015	191
	Return Volatility 1M	-0.03%	50%	-0.02%	49%	-0.003	191
	Return Volatility 12M	-0.03%	52%	0.04%	49%	-0.011	191
	Beta 252D	-0.20%	46%	-0.09%	49%	-0.028	191
Macro	CDS Spread 1M Chg	0.72% ***	65% ***	0.25% *	56%	0.087 ***	97
	CDS Spread 3M Chg	0.50% **	53%	0.17%	50%	0.069 ***	94
	CDS Spread 6M Chg	0.49% *	58%	0.13%	54%	0.071 **	90
	CDS Spread 12M Chg	0.74% **	59%	0.21%	57%	0.083 **	86
	Currency 3Mon Depreciation	-0.11%	49%	0.01%	47%	0.000	191
	Currency 12Mon Depreciation	-0.12%	51%	0.08%	51%	0.001	191
	Real GDP 1Yr Growth	0.04%	54%	0.03%	53%	-0.001	173
	CLI Annualized Rate of Chg	0.31% *	54%	0.13%	53%	0.021	158
	Industry Production Index 3Mon Growth	-0.03%	48%	-0.10%	50%	-0.005	185
	Industry Production Index 12Mon Growth	0.03%	52%	0.00%	51%	0.002	176
	Retail Trade Volumn Index 3Mon Growth	0.20%	50%	-0.08%	47%	0.024	185
	Retail Trade Volumn Index 12Mon Growth	0.11%	51%	-0.08%	47%	0.016	175

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Table A. 2 Factor Performance in DM Country Selection – 1 Month Cap-Weighted Returns
S&P Developed BMI Index (DM); Jan 1999 – Nov 2014

	DM	Top-Bottom Tertile Spread		Top Tertile Excess Return		Information	# of
		Mean Spread	Hit Rate	Mean Return	Hit Rate	Coefficient	months
Valuation	EBITDAEV	-0.10%	51%	0.02%	50%	0.017	191
	FCFEV	0.24%	54%	0.20%	55%	0.034 **	191
	BP	-0.14%	47%	-0.09%	47%	0.012	191
	DivP	0.02%	53%	0.01%	51%	0.018	191
	Total Yield	-0.16%	46%	-0.14%	49%	-0.052	79
	Capital Base Reduction	0.07%	52%	0.17%	53%	0.018	191
	EP	0.38% *	57% *	0.22%	53%	0.028 *	191
	FwdEP GAAP	0.27%	56%	0.18%	58% *	0.023	144
	EP Spread	0.26%	57% *	0.15%	60% ***	0.029	191
	SEV	-0.37%	39%	-0.10%	43%	-0.001	191
	TobinQ	0.14%	50%	0.09%	52%	0.007	191
Quality	ROA	0.42% *	56%	0.36% *	58% **	0.030 *	191
	ROE	0.24%	55%	0.15%	57% *	0.004	191
	LTDE	-0.07%	42%	0.06%	50%	0.017	191
	CFROIC	0.39% *	59% **	0.16%	58% **	0.035 **	191
	NovyMarx Profitability	-0.12%	48%	-0.02%	47%	0.025	191
	Gross Profit Margin	0.21%	54%	0.13%	56%	0.010	191
Sentiment	Money Flow 30D	0.04%	54%	0.19%	55%	0.006	191
	Money Flow 3Mon	0.41% **	58% **	0.38% ***	58% **	0.025	191
	Money Flow 6Mon	0.28%	55%	0.32% **	60% ***	0.016	191
	Money Flow 12Mon	0.18%	55%	0.16%	54%	0.008	191
	PM1M	0.00%	52%	-0.06%	52%	0.008	191
	PM6M	0.24%	49%	0.08%	51%	0.031	191
	PM9M	0.07%	51%	0.04%	53%	0.021	191
	PM12M	-0.18%	50%	-0.04%	51%	0.020	191
	Rev3MFY1 GAAP	0.10%	54%	0.13%	51%	0.034	140
	Rev3MFY1 GAAP Net Count	0.43% *	57%	0.17%	51%	0.037 *	140
Volatility	Return Dispersion 1M	0.09%	49%	-0.04%	49%	0.003	191
	Return Dispersion 12M	-0.12%	46%	0.11%	51%	0.015	191
	Return Volatility 1M	0.20%	53%	0.15%	52%	-0.003	191
	Return Volatility 12M	0.09%	53%	0.16%	54%	-0.011	191
	Beta 252D	0.03%	53%	0.04%	52%	-0.028	191
Macro	CDS Spread 1M Chg	0.58% **	57%	0.16%	53%	0.087 ***	97
	CDS Spread 3M Chg	0.25%	57%	0.06%	55%	0.069 ***	94
	CDS Spread 6M Chg	0.15%	49%	-0.12%	44%	0.071 **	90
	CDS Spread 12M Chg	0.51%	55%	0.13%	50%	0.083 **	86
	Currency 3Mon Depreciation	0.13%	55%	0.06%	54%	0.000	191
	Currency 12Mon Depreciation	0.11%	55%	0.20%	55%	0.001	191
	Real GDP 1Yr Growth	-0.20%	43%	-0.03%	44%	-0.001	173
	CLI Annualized Rate of Chg	0.31%	53%	0.25% **	53%	0.021	158
	Industry Production Index 3Mon Growth	-0.04%	46%	-0.11%	49%	-0.005	185
	Industry Production Index 12Mon Growth	-0.06%	50%	0.05%	55%	0.002	176
	Retail Trade Volumn Index 3Mon Growth	0.37% *	51%	0.08%	54%	0.024	185
	Retail Trade Volumn Index 12Mon Growth	0.09%	53%	-0.05%	47%	0.016	175

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Table A. 3 Factor Performance in EM Country Selection – 1 Month Equal-Weighted Returns
S&P Emerging BMI Index (EM); Jan 1999 – Nov 2014

	EM	Top-Bottom Tertile Spread		Top Tertile Excess Return		Information	# of
		Mean Spread	Hit Rate	Mean Return	Hit Rate	Coefficient	months
Valuation	EBITDAEV	0.99% ***	58% **	0.66% ***	54%	0.038	191
	FCFEV	1.05% ***	59% **	0.79% ***	61% ***	0.067 ***	191
	BP	0.98% ***	57% *	0.65% ***	55%	0.032	191
	DivP	0.28%	53%	0.18%	52%	0.014	191
	Total Yield	-0.29%	48%	-0.10%	48%	-0.014	92
	Capital Base Reduction	0.21%	48%	0.26%	49%	0.017	191
	EP	0.69% **	58% **	0.53% **	57% *	0.047 **	191
	FwdEP GAAP	-0.19%	48%	-0.21%	45%	-0.013	121
	EP Spread	0.61% **	54%	0.26%	50%	0.049 ***	191
	SEV	0.26%	46%	0.19%	48%	0.011	191
	TobinQ	0.45%	49%	0.37% *	48%	0.013	191
Quality	ROA	0.18%	53%	0.13%	49%	0.023	191
	ROE	0.32%	57% *	0.16%	51%	0.031	191
	LTDE	0.49%	52%	0.38% **	51%	0.016	191
	CFROIC	0.31%	52%	0.10%	48%	0.025	191
	NovyMarx Profitability	0.49%	51%	0.20%	50%	0.023	191
	Gross Profit Margin	0.46%	53%	0.25%	51%	0.016	191
Sentiment	Money Flow 30D	-0.34%	48%	-0.09%	47%	-0.027	191
	Money Flow 3Mon	-0.18%	53%	-0.12%	52%	-0.004	191
	Money Flow 6Mon	-0.26%	48%	0.01%	52%	-0.009	191
	Money Flow 12Mon	0.30%	54%	0.06%	53%	0.028	191
	PM1M	-0.19%	49%	-0.05%	52%	0.002	191
	PM6M	-0.31%	47%	-0.15%	48%	-0.015	191
	PM9M	-0.28%	50%	0.00%	50%	-0.005	191
	PM12M	0.01%	53%	0.01%	54%	0.016	191
	Rev3MFY1 GAAP	0.35%	54%	0.26%	55%	0.021	108
	Rev3MFY1 GAAP Net Count	0.11%	47%	-0.02%	51%	0.002	108
Volatility	Return Dispersion 1M	0.02%	50%	0.04%	46%	-0.005	191
	Return Dispersion 12M	-0.48%	47%	-0.16%	48%	-0.011	191
	Return Volatility 1M	0.24%	49%	0.03%	49%	-0.012	191
	Return Volatility 12M	0.38%	53%	0.20%	51%	0.002	191
	Beta 252D	-0.12%	48%	-0.12%	51%	-0.012	191
Macro	CDS Spread 1M Chg	0.40%	57%	0.10%	53%	0.027	94
	CDS Spread 3M Chg	-0.12%	48%	0.00%	49%	-0.008	93
	CDS Spread 6M Chg	-0.11%	52%	-0.11%	53%	-0.005	90
	CDS Spread 12M Chg	-0.32%	51%	0.09%	52%	-0.012	84
	Currency 3Mon Depreciation	0.73% **	54%	0.42% **	57% *	0.032	191
	Currency 12Mon Depreciation	0.39%	52%	0.26%	47%	0.012	191
	Real GDP 1Yr Growth	0.17%	52%	-0.24%	46%	0.026	61
	CLI Annualized Rate of Chg	-0.01%	45%	-0.02%	52%	0.027	73
	Industry Production Index 3Mon Growth	-0.12%	45%	-0.09%	47%	-0.038	73
	Industry Production Index 12Mon Growth	-0.11%	51%	-0.29%	42%	-0.025	73

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Table A. 4 Factor Performance in EM Country Selection – 1 Month Cap-Weighted Returns
S&P Emerging BMI Index (EM); Jan 1999 – Nov 2014

	EM	Top-Bottom Tertile Spread		Top Tertile Excess Return		Information	# of
		Mean Spread	Hit Rate	Mean Return	Hit Rate	Coefficient	months
Valuation	EBITDAEV	1.13% ***	54%	0.86% ***	60% ***	0.038	191
	FCFEV	0.68% **	58% **	0.68% ***	60% ***	0.067 ***	191
	BP	0.82% *	50%	0.68% **	52%	0.032	191
	DivP	0.58%	51%	0.35%	55%	0.014	191
	Total Yield	0.01%	51%	0.11%	49%	-0.014	92
	Capital Base Reduction	0.25%	52%	0.42%	49%	0.017	191
	EP	1.05% **	55%	0.80% ***	54%	0.047 **	191
	FwdEP GAAP	0.23%	53%	0.07%	46%	-0.013	121
	EP Spread	0.71% *	51%	0.27%	49%	0.049 ***	191
	SEV	0.21%	52%	0.06%	53%	0.011	191
	TobinQ	0.31%	46%	0.16%	46%	0.013	191
Quality	ROA	0.31%	50%	0.28%	50%	0.023	191
	ROE	0.14%	52%	0.02%	54%	0.031	191
	LTDE	0.74% *	51%	0.45% *	50%	0.016	191
	CFROIC	0.47%	52%	-0.10%	46%	0.025	191
	NovyMarx Profitability	0.63% *	53%	0.25%	49%	0.023	191
	Gross Profit Margin	0.62%	54%	0.34%	48%	0.016	191
Sentiment	Money Flow 30D	-0.39%	45%	-0.27%	49%	-0.027	191
	Money Flow 3Mon	-0.21%	51%	-0.17%	49%	-0.004	191
	Money Flow 6Mon	-0.23%	49%	0.06%	54%	-0.009	191
	Money Flow 12Mon	0.61% *	52%	0.15%	53%	0.028	191
	PM1M	0.03%	49%	-0.05%	50%	0.002	191
	PM6M	0.03%	47%	0.08%	50%	-0.015	191
	PM9M	0.20%	49%	0.23%	54%	-0.005	191
	PM12M	0.10%	52%	-0.02%	54%	0.016	191
	Rev3MFY1 GAAP	0.46%	54%	0.49% *	63% ***	0.021	108
	Rev3MFY1 GAAP Net Count	0.36%	49%	-0.02%	51%	0.002	108
Volatility	Return Dispersion 1M	-0.02%	46%	-0.02%	49%	-0.005	191
	Return Dispersion 12M	-0.50%	48%	-0.14%	50%	-0.011	191
	Return Volatility 1M	-0.02%	50%	-0.14%	50%	-0.012	191
	Return Volatility 12M	0.10%	47%	0.13%	49%	0.002	191
	Beta 252D	0.25%	53%	0.01%	45%	-0.012	191
Macro	CDS Spread 1M Chg	0.54%	61% **	0.19%	56%	0.027	94
	CDS Spread 3M Chg	-0.51%	41%	0.00%	53%	-0.008	93
	CDS Spread 6M Chg	0.06%	53%	0.07%	53%	-0.005	90
	CDS Spread 12M Chg	-0.03%	48%	0.13%	50%	-0.012	84
	Currency 3Mon Depreciation	0.49%	50%	0.27%	53%	0.032	191
	Currency 12Mon Depreciation	0.07%	48%	0.15%	48%	0.012	191
	Real GDP 1Yr Growth	0.36%	56%	-0.09%	56%	0.026	61
	CLI Annualized Rate of Chg	-0.01%	51%	0.06%	52%	0.027	73
	Industry Production Index 3Mon Growth	-0.31%	48%	-0.35%	41%	-0.038	73
	Industry Production Index 12Mon Growth	-0.34%	47%	-0.40%	44%	-0.025	73

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Tables A.5 through A.8 show the factor backtest performance for longer holding periods alongside the 1-month results. The left half of the tables show top-bottom tertile spreads and the right half shows the top tertile excess returns. For the 3-month (6-month) results, holding-period returns are divided by 3 (6) to reach the average monthly returns, and p-values are adjusted for serial correlation by dividing the t-stat of returns by square root of 3 (6).

Table A. 5 Factor Performance in DM Country Selection – Equal-Weighted Returns
S&P Developed BMI Index (DM); Jan 1999 – Nov 2014

	DM	Average Monthly Top-Bottom Tertile Spread			Average Monthly Top Tertile Excess Return		
		1-Month	3-Month	6-Month	1-Month	3-Month	6-Month
Valuation	EBITDAEV	0.14%	0.19%	0.12%	0.15%	0.15%	0.10%
	FCFEV	0.22%	0.27% *	0.31% **	0.15% *	0.18% **	0.20% ***
	BP	0.18%	0.13%	0.09%	0.05%	0.05%	0.02%
	DivP	0.14%	0.12%	0.04%	0.07%	0.07%	-0.01%
	Total Yield	-0.43%	-0.33%	-0.27%	-0.18%	-0.13%	-0.11%
	Capital Base Reduction	0.10%	0.04%	0.13%	0.07%	0.04%	0.09%
	EP	0.13%	0.22%	0.20%	0.08%	0.12%	0.12%
	FwdEP GAAP	0.01%	0.07%	0.17%	-0.07%	-0.04%	-0.02%
	EP Spread	0.34% **	0.40% *	0.36%	0.13%	0.18%	0.20%
	SEV	0.00%	-0.01%	-0.03%	0.00%	-0.01%	-0.02%
	TobinQ	0.16%	0.09%	0.04%	0.10%	0.07%	0.05%
Quality	ROA	0.28% *	0.35% *	0.33% *	0.17% *	0.22% **	0.20% *
	ROE	-0.15%	-0.06%	-0.02%	-0.13%	-0.09%	-0.06%
	LTDE	0.13%	0.12%	0.16%	0.01%	0.01%	0.02%
	CFROIC	0.18%	0.22%	0.26% *	0.06%	0.10%	0.13%
	NovyMarx Profitability	0.36% **	0.38% **	0.35% **	0.18% **	0.18% **	0.15% *
	Gross Profit Margin	-0.03%	-0.02%	0.02%	-0.09%	-0.08%	-0.05%
Sentiment	Money Flow 30D	0.06%	0.19%	0.10%	-0.01%	0.11%	0.07%
	Money Flow 3Mon	0.51% ***	0.24%	0.14%	0.29% ***	0.12%	0.06%
	Money Flow 6Mon	0.30%	0.28%	0.19%	0.17%	0.14%	0.08%
	Money Flow 12Mon	0.29%	0.24%	0.14%	0.18% *	0.17%	0.10%
	PM1M	0.18%	0.18%	0.12%	0.05%	0.08%	0.06%
	PM6M	0.45% **	0.35%	0.32%	0.20% *	0.17%	0.17%
	PM9M	0.32%	0.35%	0.33%	0.15%	0.18%	0.16%
	PM12M	0.21%	0.16%	0.16%	0.10%	0.08%	0.05%
	Rev3MFY1 GAAP	0.22%	0.11%	0.17%	0.13%	0.04%	0.08%
	Rev3MFY1 GAAP Net Count	0.29% *	0.25%	0.20%	0.01%	0.03%	0.04%
Volatility	Return Dispersion 1M	0.06%	0.04%	0.01%	-0.02%	-0.01%	0.00%
	Return Dispersion 12M	0.17%	0.17%	0.07%	0.16%	0.13%	0.06%
	Return Volatility 1M	-0.03%	-0.05%	-0.03%	-0.02%	-0.01%	-0.03%
	Return Volatility 12M	-0.03%	0.02%	0.03%	0.04%	0.07%	0.07%
	Beta 252D	-0.20%	-0.19%	-0.21%	-0.09%	-0.05%	-0.03%
Macro	CDS Spread 1M Chg	0.72% ***	0.34%	0.21%	0.25% *	0.10%	0.04%
	CDS Spread 3M Chg	0.50% **	0.31%	0.22%	0.17%	0.10%	0.04%
	CDS Spread 6M Chg	0.49% *	0.30%	0.32%	0.13%	0.13%	0.11%
	CDS Spread 12M Chg	0.74% **	0.56% *	0.35%	0.21%	0.18%	0.11%
	Currency 3Mon Depreciation	-0.11%	-0.09%	-0.20%	0.01%	-0.03%	-0.06%
	Currency 12Mon Depreciation	-0.12%	-0.14%	-0.16%	0.08%	0.05%	0.02%
	Real GDP 1Yr Growth	0.04%	0.14%	0.17%	0.03%	0.09%	0.11%
	CLI Annualized Rate of Chg	0.31% *	0.18%	0.16%	0.13%	0.03%	0.03%
	Industry Production Index 3Mon Growth	-0.03%	0.02%	-0.03%	-0.10%	0.00%	-0.05%
	Industry Production Index 12Mon Growth	0.03%	0.05%	0.06%	0.00%	-0.03%	-0.01%
	Retail Trade Volumn Index 3Mon Growth	0.20%	0.33% *	0.21%	-0.08%	0.05%	-0.01%
	Retail Trade Volumn Index 12Mon Growth	0.11%	0.15%	0.14%	-0.08%	-0.02%	-0.04%

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Table A. 6 Factor Performance in DM Country Selection – Capitalization-Weighted Returns
S&P Developed BMI Index (DM); Jan 1999 – Nov 2014

	DM	Average Monthly Top-Bottom Tertile Spread			Average Monthly Top Tertile Excess Return		
		1-Month	3-Month	6-Month	1-Month	3-Month	6-Month
Valuation	EBITDAEV	-0.10%	0.05%	0.09%	0.02%	0.06%	0.08%
	FCFEV	0.24%	0.30%	0.28%	0.20%	0.22% *	0.21% *
	BP	-0.14%	-0.03%	0.02%	-0.09%	0.04%	0.06%
	DivP	0.02%	0.04%	0.04%	0.01%	0.03%	0.02%
	Total Yield	-0.16%	-0.07%	-0.05%	-0.14%	-0.15%	-0.07%
	Capital Base Reduction	0.07%	-0.09%	-0.06%	0.17%	0.07%	0.10%
	EP	0.38% *	0.37% *	0.36%	0.22%	0.24%	0.28%
	FwdEP GAAP	0.27%	0.29%	0.33%	0.18%	0.20%	0.25%
	EP Spread	0.26%	0.32%	0.37%	0.15%	0.19%	0.27%
	SEV	-0.37%	-0.33%	-0.31%	-0.10%	-0.06%	-0.06%
	TobinQ	0.14%	0.14%	0.17%	0.09%	0.16%	0.17%
Quality	ROA	0.42% *	0.51% **	0.52% **	0.36% *	0.44% **	0.42% *
	ROE	0.24%	0.28%	0.32%	0.15%	0.18%	0.19%
	LTDE	-0.07%	-0.01%	0.10%	0.06%	0.04%	0.07%
	CFROIC	0.39% *	0.31%	0.31%	0.16%	0.12%	0.16% *
	NovyMarx Profitability	-0.12%	-0.09%	-0.10%	-0.02%	-0.02%	-0.03%
	Gross Profit Margin	0.21%	0.22%	0.27%	0.13%	0.15%	0.18%
Sentiment	Money Flow 30D	0.04%	0.10%	0.04%	0.19%	0.17%	0.09%
	Money Flow 3Mon	0.41% **	0.14%	0.08%	0.38% ***	0.12%	0.09%
	Money Flow 6Mon	0.28%	0.35% *	0.19%	0.32% **	0.26% *	0.14%
	Money Flow 12Mon	0.18%	0.08%	-0.06%	0.16%	0.03%	-0.03%
	PM1M	0.00%	0.16%	0.09%	-0.06%	0.11%	0.10%
	PM6M	0.24%	0.10%	0.02%	0.08%	0.07%	0.07%
	PM9M	0.07%	0.12%	0.04%	0.04%	0.13%	0.06%
	PM12M	-0.18%	-0.23%	-0.25%	-0.04%	-0.11%	-0.13%
	Rev3MFY1 GAAP	0.10%	-0.03%	0.20%	0.13%	0.11%	0.20%
	Rev3MFY1 GAAP Net Count	0.43% *	0.33%	0.34% *	0.17%	0.14%	0.22% *
Volatility	Return Dispersion 1M	0.09%	0.06%	-0.06%	-0.04%	-0.04%	-0.04%
	Return Dispersion 12M	-0.12%	-0.12%	-0.16%	0.11%	0.11%	0.05%
	Return Volatility 1M	0.20%	0.16%	0.16%	0.15%	0.13%	0.14%
	Return Volatility 12M	0.09%	0.05%	0.05%	0.16%	0.11%	0.12%
	Beta 252D	0.03%	-0.02%	-0.06%	0.04%	0.03%	0.02%
Macro	CDS Spread 1M Chg	0.58% **	0.26%	0.08%	0.16%	0.04%	-0.04%
	CDS Spread 3M Chg	0.25%	0.07%	0.08%	0.06%	0.05%	-0.01%
	CDS Spread 6M Chg	0.15%	0.04%	0.16%	-0.12%	-0.06%	-0.02%
	CDS Spread 12M Chg	0.51%	0.23%	-0.03%	0.13%	0.09%	0.02%
	Currency 3Mon Depreciation	0.13%	0.17%	0.12%	0.06%	0.07%	0.06%
	Currency 12Mon Depreciation	0.11%	0.03%	-0.08%	0.20%	0.14%	0.10%
	Real GDP 1Yr Growth	-0.20%	-0.14%	-0.01%	-0.03%	-0.04%	0.04%
	CLI Annualized Rate of Chg	0.31%	0.26%	0.23%	0.25% **	0.21%	0.19%
	Industry Production Index 3Mon Growth	-0.04%	-0.13%	-0.05%	-0.11%	-0.02%	-0.04%
	Industry Production Index 12Mon Growth	-0.06%	-0.04%	-0.05%	0.05%	0.02%	-0.03%
	Retail Trade Volumn Index 3Mon Growth	0.37% *	0.32%	0.21%	0.08%	0.13%	0.05%
	Retail Trade Volumn Index 12Mon Growth	0.09%	0.10%	0.00%	-0.05%	-0.02%	-0.04%

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Table A. 7 Factor Performance in EM Country Selection – Equal-Weighted Returns
S&P Emerging BMI Index (EM); Jan 1999 – Nov 2014

	EM	Average Monthly Top-Bottom Tertile Spread			Average Monthly Top Tertile Excess Return		
		1-Month	3-Month	6-Month	1-Month	3-Month	6-Month
Valuation	EBITDAEV	0.99% ***	0.80% **	0.80% **	0.66% ***	0.56% **	0.48% **
	FCFEV	1.05% ***	0.80% **	0.77% **	0.79% ***	0.57% **	0.50% **
	BP	0.98% ***	0.76% **	0.62% *	0.65% ***	0.53% **	0.44% *
	DivP	0.28%	0.21%	0.18%	0.18%	0.14%	0.15%
	Total Yield	-0.29%	-0.13%	0.07%	-0.10%	0.00%	0.11%
	Capital Base Reduction	0.21%	0.00%	0.14%	0.26%	0.04%	0.03%
	EP	0.69% **	0.68% *	0.69% *	0.53% **	0.48% **	0.45% **
	FwdEP GAAP	-0.19%	-0.23%	-0.13%	-0.21%	-0.20%	-0.15%
	EP Spread	0.61% **	0.59% **	0.53% *	0.26%	0.25%	0.24%
	SEV	0.26%	0.30%	0.21%	0.19%	0.23%	0.19%
	TobinQ	0.45%	0.40%	0.34%	0.37% *	0.35%	0.33%
Quality	ROA	0.18%	0.15%	0.25%	0.13%	0.16%	0.17%
	ROE	0.32%	0.31%	0.31%	0.16%	0.12%	0.10%
	LTDE	0.49%	0.40%	0.35%	0.38% **	0.29%	0.23%
	CFROIC	0.31%	0.42%	0.46%	0.10%	0.09%	0.11%
	NovyMarx Profitability	0.49%	0.42%	0.47%	0.20%	0.06%	0.10%
	Gross Profit Margin	0.46%	0.42%	0.39%	0.25%	0.21%	0.18%
Sentiment	Money Flow 30D	-0.34%	-0.12%	-0.05%	-0.09%	0.02%	0.02%
	Money Flow 3Mon	-0.18%	-0.09%	-0.02%	-0.12%	-0.08%	-0.06%
	Money Flow 6Mon	-0.26%	-0.10%	0.22%	0.01%	0.07%	0.16%
	Money Flow 12Mon	0.30%	0.58% *	0.56% *	0.06%	0.21%	0.15%
	PM1M	-0.19%	-0.13%	-0.16%	-0.05%	-0.03%	-0.04%
	PM6M	-0.31%	-0.15%	0.06%	-0.15%	0.00%	0.09%
	PM9M	-0.28%	0.05%	0.12%	0.00%	0.12%	0.08%
	PM12M	0.01%	0.03%	-0.04%	0.01%	0.04%	0.00%
	Rev3MFY1 GAAP	0.35%	0.18%	0.19%	0.26%	0.15%	0.09%
	Rev3MFY1 GAAP Net Count	0.11%	0.03%	0.20%	-0.02%	0.03%	0.13%
Volatility	Return Dispersion 1M	0.02%	-0.11%	-0.19%	0.04%	-0.08%	-0.12%
	Return Dispersion 12M	-0.48%	-0.47%	-0.33%	-0.16%	-0.17%	-0.16%
	Return Volatility 1M	0.24%	0.33%	0.33%	0.03%	0.11%	0.14%
	Return Volatility 12M	0.38%	0.39%	0.33%	0.20%	0.19%	0.25%
	Beta 252D	-0.12%	-0.09%	-0.10%	-0.12%	-0.11%	-0.07%
Macro	CDS Spread 1M Chg	0.40%	0.07%	-0.02%	0.10%	0.04%	0.02%
	CDS Spread 3M Chg	-0.12%	-0.12%	-0.28%	0.00%	-0.01%	-0.09%
	CDS Spread 6M Chg	-0.11%	-0.38%	-0.30%	-0.11%	-0.14%	-0.04%
	CDS Spread 12M Chg	-0.32%	-0.24%	0.00%	0.09%	0.08%	0.20%
	Currency 3Mon Depreciation	0.73% **	0.63% *	0.36%	0.42% **	0.42% **	0.24%
	Currency 12Mon Depreciation	0.39%	0.43%	0.50%	0.26%	0.29%	0.29%
	Real GDP 1Yr Growth	0.17%	0.20%	0.33%	-0.24%	-0.28%	-0.23%
	CLI Annualized Rate of Chg	-0.01%	0.10%	0.18%	-0.02%	0.00%	0.05%
	Industry Production Index 3Mon Growth	-0.12%	-0.11%	-0.10%	-0.09%	-0.11%	-0.10%
	Industry Production Index 12Mon Growth	-0.11%	0.00%	-0.11%	-0.29%	-0.05%	-0.08%

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

Table A. 8 Factor Performance in EM Country Selection – Capitalization-Weighted Returns
S&P Emerging BMI Index (EM); Jan 1999 – Nov 2014

	EM	Average Monthly Top-Bottom Tertile Spread			Average Monthly Top Tertile Excess Return		
		1-Month	3-Month	6-Month	1-Month	3-Month	6-Month
Valuation	EBITDAEV	1.13% ***	1.00% **	1.13% **	0.86% ***	0.84% ***	0.81% ***
	FCFEV	0.68% **	0.64% *	0.61%	0.68% ***	0.59% **	0.52% *
	BP	0.82% *	0.66%	0.75% *	0.68% **	0.55% *	0.58% *
	DivP	0.58%	0.44%	0.59%	0.35%	0.25%	0.40% *
	Total Yield	0.01%	-0.01%	0.19%	0.11%	0.08%	0.15%
	Capital Base Reduction	0.25%	0.02%	0.09%	0.42%	0.14%	0.06%
	EP	1.05% **	0.83% *	0.80% *	0.80% ***	0.71% ***	0.71% ***
	FwdEP GAAP	0.23%	0.13%	0.24%	0.07%	0.13%	0.15%
	EP Spread	0.71% *	0.74% **	0.75% **	0.27%	0.23%	0.27%
	SEV	0.21%	0.37%	0.43%	0.06%	0.14%	0.22%
	TobinQ	0.31%	0.33%	0.44%	0.16%	0.20%	0.27%
Quality	ROA	0.31%	0.14%	0.13%	0.28%	0.16%	0.03%
	ROE	0.14%	0.26%	0.34%	0.02%	-0.02%	0.00%
	LTDE	0.74% *	0.57%	0.43%	0.45% *	0.32%	0.22%
	CFROIC	0.47%	0.41%	0.22%	-0.10%	-0.10%	-0.15%
	NovyMarx Profitability	0.63% *	0.48%	0.43%	0.25%	0.13%	0.15%
	Gross Profit Margin	0.62%	0.55%	0.54%	0.34%	0.30%	0.29%
Sentiment	Money Flow 30D	-0.39%	-0.23%	-0.08%	-0.27%	-0.11%	0.00%
	Money Flow 3Mon	-0.21%	0.01%	-0.04%	-0.17%	-0.09%	-0.10%
	Money Flow 6Mon	-0.23%	-0.09%	0.14%	0.06%	0.07%	0.07%
	Money Flow 12Mon	0.61% *	0.57%	0.24%	0.15%	0.19%	-0.07%
	PM1M	0.03%	-0.04%	-0.24%	-0.05%	-0.05%	-0.09%
	PM6M	0.03%	-0.08%	0.18%	0.08%	0.12%	0.21%
	PM9M	0.20%	0.23%	0.10%	0.23%	0.25%	0.13%
	PM12M	0.10%	-0.02%	-0.05%	-0.02%	0.02%	0.02%
	Rev3MFY1 GAAP	0.46%	0.31%	0.17%	0.49% *	0.31%	0.07%
	Rev3MFY1 GAAP Net Count	0.36%	-0.17%	0.08%	-0.02%	-0.27%	-0.07%
Volatility	Return Dispersion 1M	-0.02%	-0.05%	-0.06%	-0.02%	-0.10%	-0.09%
	Return Dispersion 12M	-0.50%	-0.47%	-0.24%	-0.14%	-0.12%	-0.06%
	Return Volatility 1M	-0.02%	0.18%	0.25%	-0.14%	0.01%	0.07%
	Return Volatility 12M	0.10%	0.10%	0.02%	0.13%	0.11%	0.20%
	Beta 252D	0.25%	0.22%	0.10%	0.01%	0.03%	0.02%
Macro	CDS Spread 1M Chg	0.54%	0.00%	-0.08%	0.19%	0.03%	0.06%
	CDS Spread 3M Chg	-0.51%	-0.19%	-0.31%	0.00%	0.06%	-0.06%
	CDS Spread 6M Chg	0.06%	-0.19%	-0.12%	0.07%	-0.14%	0.02%
	CDS Spread 12M Chg	-0.03%	0.30%	0.10%	0.13%	0.27%	0.15%
	Currency 3Mon Depreciation	0.49%	0.37%	0.12%	0.27%	0.29%	0.18%
	Currency 12Mon Depreciation	0.07%	0.11%	0.15%	0.15%	0.12%	0.11%
	Real GDP 1Yr Growth	0.36%	0.41%	0.60%	-0.09%	-0.05%	0.05%
	CLI Annualized Rate of Chg	-0.01%	0.11%	0.27%	0.06%	0.08%	0.10%
	Industry Production Index 3Mon Growth	-0.31%	-0.30%	-0.41%	-0.35%	-0.31%	-0.36%
	Industry Production Index 12Mon Growth	-0.34%	-0.17%	-0.44%	-0.40%	-0.07%	-0.20%

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level.

Source: S&P Capital IQ Quantamental Research. Results are as of 11/30/2014. For the above exhibits, backtested returns do not represent actual trading results and were constructed with the benefit of hindsight. Returns do not include payments of any sales charges or fees. Such costs would lower performance. Indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. It is not possible to invest directly in an index. Past performance is not a guarantee of future results.

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Our Recent Research

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 i[t']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?

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 generic[1] 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: Global Pension Plans: Are Fully Funded Plans a Relic of the Past?
In this brief we leverage S&P Capital IQ's extensive collection of pension data to examine:

- Companies with the strongest and weakest pension funding status globally.
- Global trends in pension funding and accounting.
- Companies with the most aggressive versus conservative pension accounting assumptions.
- Underfunded plans with the least and most three-year improvement in funding.

January 2015: Profitability: Growth-Like Strategy, Value-Like Returns
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.

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.

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

August 2014: Equity Market Pulse – Quarterly Equity Market Insights Issue 1

July 2014: Factor Insight: Reducing the Downside of a Trend Following Strategy

May 2014: Introducing S&P Capital IQ's Fundamental China A-Share Equity Risk Model

April 2014: Riding the Coattails of Activist Investors Yields Short and Long Term Outperformance

March 2014: Insights from Academic Literature: Corporate Character, Trading Insights, & New Data Sources

February 2014: Obtaining an Edge in Emerging Markets

February 2014: U.S Stock Selection Model Performance Review

January 2014: Buying Outperformance: Do share repurchase announcements lead to higher returns?

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

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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