

QUANTITATIVE RESEARCH

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11 Industries, 70 Alpha Signals

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The Value of Industry-Specific Metrics

Investors routinely utilize industry intelligence in their investment process. But which information is relevant? Which is irrelevant? Our work yields some surprising results.

Many commonly used industry metrics provide powerful signals. For example, One-Year Growth in Revenue Passenger Miles for the Airline industry provides a monthly 1.73% excess return spread.

Several commonly used industry factors provide little more than noise. Investors that use Retention Ratios in Insurance or Growth in Premiums for Managed Care companies might be surprised to find out that they do not have any significant predictability of stock prices movements.

Yet more concerning would be use of metrics such as Churn Rate or Broadband Subscriber Growth in Telecommunications. Our work shows these, and several other metrics to be perverse to investor expectations.

This work complements our earlier efforts around the larger industries; Retail (June 2011), Banking (Oct 2011), and Oil & Gas (May 2012). Using S&P Capital IQ's Global Point-in-Time database and Compustat Industry-Specific data to explore industry-specific signals across a broad range of industries, we look at 70 common factors in 11 industries: airlines, hospitals & facilities, managed healthcare, pharmaceuticals & biotechnology, homebuilding, insurance, telecommunications, utilities, gold miners, hotels & gaming, and restaurants. We find that

- **12 of the 70 factors we examined produce statistically significant 1 month long-short return spreads or information coefficients.**
- **4 metrics have statistically significant *perverse* performance:** Churn Rate and Broadband Subscriber Growth (Telecom), Patents to Market Cap (Pharma) and Revenue per Facility (Managed Care).
- **Industry specific signals often outperform generic ratios.**
- **Industry-specific factors exhibit low correlations with commonly used factors and can be valuable additions to alpha models.**
- **We find significant relationships between industry factors and cycles.** Cost metrics within the airline industry perform especially well (poorly) during low (high) jet fuel % change regimes; 1 Year Growth in Net New Orders outperforms during low interest rate regimes for homebuilders; Margin-related factors are strong performers during falling interest rate regimes for the insurance industry; Production to Market Cap performs particularly well when gold price changes are high; strong revenues are rewarded while GDP growth is low for hotels & gaming; and most restaurant factors perform better during high real GDP growth rate % regimes.

1 Best Industry Metrics

Some of the best performing industry-specific ratios are summarized below in Table 1. This table highlights the Information Coefficients [IC] and Long-Short Tertile Spreads [L-S]. Most of these factors outperformed the majority of generic and have low correlations with the generic signals. The definition and performance statistics of these and the 53 other industry-specific factors, as well as a detailed comparison to commonly used cross-industry factors are available in each industry section.

Table 1: Best Performing Metrics
All industries in BMI Global & U.S. Indices, 1/1999-9/2012

Industry	Factor	IC	L-S
Airlines	1Year Growth in Revenue Passenger Miles	0.041***	1.73%***
	Operating Exp per available seat miles	0.035**	1.48%***
Hospitals & Facilities	Growth in Average Length of Stay	0.048**	0.73%
	Patient Days Growth	0.035*	1.14%
Managed Healthcare	1 Year Growth in Healthcare Premiums	0.03	0.07%
	1 Year Growth in Total Enrollment	0.023	1.12%*
Pharm & Biotech	Growth in Number of Products in Phase 3	0.064***	0.89%*
Homebuilders	1 Year Growth in Total Homebuilding Revenue to Finished/Constr in Progress	0.015	0.34%
Insurance	1Yr Growth in Underwriting Profit	0.024*	0.65%**
Telecom	1Yr Growth in Net Wireless Subscriber Additions	0.017	0.41%
Utilities	1Yr Growth in Electric, Gas, Water Sales	0.011	0.21%
Gold Mining	1 Year Change in Actual Production	0.032	0.62%
Hotels & Gaming	Room Revenues less Room Expenses / Rooms at Period End	0.055**	0.90%
	Total Room Revenue / Rooms at Period End	0.034*	0.67%
Restaurants	1 Year Change in Restaurants Closed in the Last 12 Months	0.028*	1.24%***
	1 Year Growth in Same Restaurant Sales	0.026*	0.45%
	1 Year Growth in Same Restaurant Sales Growth	0.023	0.74%*

*p-value < 10% **p-value < 5% ***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

2 Worst Industry Metrics

The worst performing factor ideas are shown in Table 2. Many of these factors are highly valued by analysts even with the perverse [highlighted in red] nature of their performance. Four of these factors actually had statistically significant negative performance. These, and all the other industry-specific signals are found in each industry section.

Table 2: Worst Performing Metrics
All industries in BMI Global & U.S. Indices, 1/1999-9/2012

Industry	Factor	IC	L-S
Airlines	Total Profit per available seat miles	0.004	0.29%
	Passenger Load Factor	-0.002	-0.11%
Hospitals & Facilities	Total Revenue per Facility	0.007	-0.76%*
	Hospitals and Facilities Growth	0.002	-0.33%
Managed Healthcare	Days in Medical Costs Payable to Medical Costs	-0.032	-0.94%
Pharm & Biotech	Number of Patents/ MktCap	-0.030***	3.16%
Homebuilders	1Yr Growth in Total Homebuilding Revenue to Inventories	-0.011	-0.10%
	1Yr Growth in Housing Sales Revenue	-0.019	-0.94%
Insurance	Combined Ratio	-0.007	-0.11%
	Retention Ratio	-0.014	-0.35%
Telecom	1 Year Growth in Churn Rate	-0.02	-1.00%
	Churn Rate	-0.038	-1.93%*
	1Yr Growth in Broadband Subscribers	-0.040***	-0.85%
Utilities	1Yr Growth in Average Revenue/KWh	0.005	-0.17%
Gold Mining	Reserve Acquisition Cost	-0.012	-0.28%
	Actual Production / Market Cap	-0.027	-0.26%
Hotels & Gaming	1 Year Change in Total Number of Properties	-0.014	-0.19%
	1 Year Change in Room Revenue / Rooms at Period	-0.015	-0.78%
Restaurants	Restaurants Opened & Acquired in the Last 12 Months / Total Restaurants at Period End	0.004	-0.14%
	Restaurants Closed & Sold in the Last 12 Months / Total Restaurants at Period End	0.001	-0.77%

*p-value < 10% **p-value < 5% ***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

3 Generic Factors

We assessed the value of these industry specific factors by comparing their performance to several generic factors commonly used by investors to select stocks. These factors were selected from the Alpha Factor Library, S&P Capital IQ's global web based factor research library and are representative of different investment themes. The factors chosen include:

- Free Cash Flow to Price [FCFP] – Valuation
- 3-month Change in Fiscal Year 1 Estimates [3MRevFY1] – Analyst Expectation
- Return on Assets [ROA] – Capital Efficiency
- 1-Year Change in Earnings per Share [1YEPSG] – Growth
- 12-month Price Momentum [12MPriceMo] – Price Momentum

4 Industry Factors

We provide a short summary of the performance of factors in each industry and their relation to the generic factors used as benchmarks. More comprehensive analyses of all industry-specific factors, including factor definitions, factor returns, comparisons with generic signals, and regime tests, are in each industry section.

1. **Airlines** – Investors may consider focusing on factors related to passenger growth and cost management as they are the best performing signals we tested. These factors also outshined most of the generic factors we compared them to.
2. **Healthcare**
 - a. **Hospitals & Facilities** – Some of the best factors in this industry were those that capture patient growth and patient length of stay at hospitals.
 - b. **Managed Healthcare** – Factors related to growth in enrollment and revenues from enrollment performed best.
 - c. **Pharmaceuticals & Biotechnology** – Growth in products in Phase 3 performed best. Pharma & biotech factors generally have mediocre performance but low correlations with generic signals.
3. **Homebuilding** –Overall, generic factors were superior to industry specific signals; the best industry signal was growth in revenues to construction in progress.

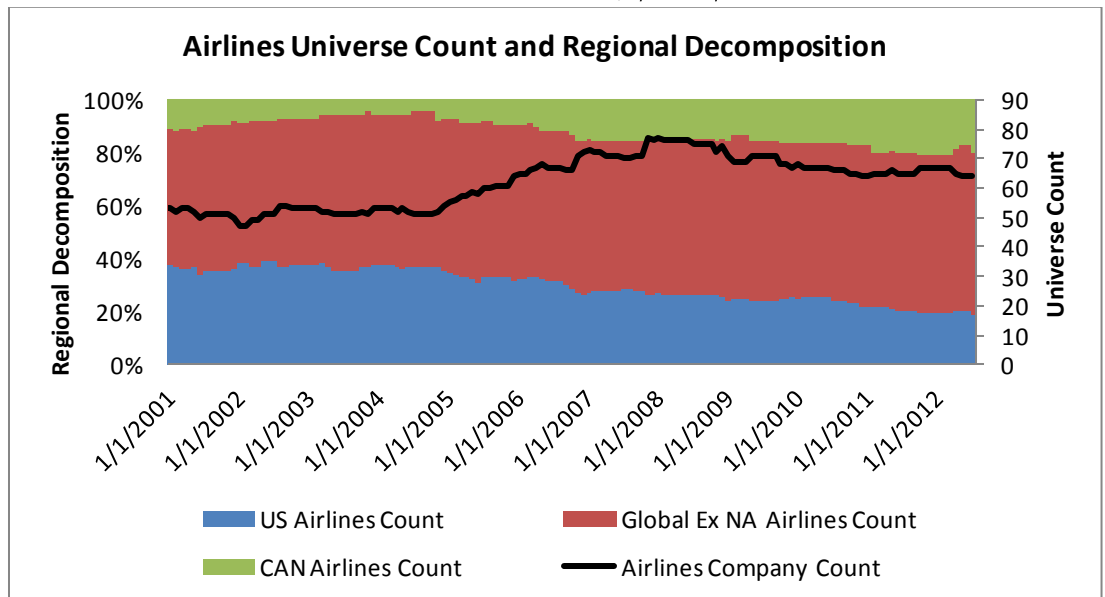
4. **Insurance** – Similar to what we observed in the homebuilding industry, generic signals showed better ability in differentiating winners from losers. Industry signals based on the core operations of an insurance firm, such as underwriting profit, were the most promising.
5. **Telecommunications** – Performance of industry signals were mostly weak, with several factors such as churn rate having perverse long-short spreads. Candidate factors that could possibly be used in combination with generic factors in a multi-factor context include wireless penetration and subscribers growth.
6. **Utilities** – Factors related to growth in utility revenues performed best, and utility factors generally have low correlations with generic factors.
7. **Gold Miners** – This is another industry where our selected generic factors performed better their industry specific counterparts. The best industry specific factor out of the six we tested was production growth.
8. **Hotels & Gaming** – The best industry signals were those related to revenue and profit per room.
9. **Restaurants** – Factors related to the pace of restaurant openings and closings were at the top of the candidate factors we tested in this industry.

4.1 Airlines

The airlines universe consists of companies classified into the GICS industry code 203020 [Airlines] within the S&P BMI global universe. Figure 1 shows the total company count within this universe as well as the relative breakdown of the securities across three regions, the U.S., Canada, and International [the universe ex North America].

Figure 1: Airlines Universe Company Count and Regional Decomposition

Airlines in S&P BMI Global Index, 1/1999-9/2012



Source: S&P Capital IQ

Metrics that are of special importance to the airline industry include passenger traffic, passenger revenue, and cost structure. Our factors [see Table 3] were constructed with these metrics in mind in order to gain the most insight into the airline industry. The direction of the factor is indicated in the table as Ascending [A] or Descending [D] rank order.

Table 3: Factor Definitions

Airlines in S&P BMI Global Index, 1/2001-9/2012

Factor	Description	Direction
1Year Growth in Revenue Passengers Carried ("1YrGrRPC")	This ratio is the growth in the actual number of passengers carried during a period. The more passengers a carrier flies, the more revenues it generates.	D
1Year Growth in Revenue Passenger Miles ("1YrGrRPM")	Revenue passenger miles (RPMs) is the total number of passengers carried multiplied by the average distance flown. RPMs closely follow airline revenues and are therefore a useful signal to examine.	D
Passenger Load Factor ("PassengerLF")	This ratio represents the percent of an airline's seats that are filled during a period. A higher percentage generally means greater profitability.	D
Total Profit per available seat miles ("TotProfit/ASM")	This ratio examines the profit earned per seat mile available (ASM). A higher ratio shows greater operating efficiency.	D
Operating Exp per available seat miles ("OpExp/ASM")	This factor measures the operating expenses per available seat mile (ASM), where keeping expenses down is good for airlines.	A
Fuel Consumed per available seat miles ("FuelCons/ASM")	This signal views the number of gallons of jet fuel were consumed per ASM. It measures the fuel efficiency. Airlines that consume less jet fuel per ASM have a distinct competitive advantage.	A
Avg Age of Aircraft ("AvgAgeofAircraft")	Newer aircrafts are usually more fuel efficient and also have lower operating maintenance expenses compared to older aircrafts.	A

Source: S&P Capital IQ

Table 4 displays our factor backtest results. One-Year Growth in Passengers Carried and Operating Expense Per Available Seat Miles provide statistically significant long-short return spreads, information coefficients, and long-short hit ratios¹. 1 Year Growth in Revenue Passenger Miles has statistically significant hit ratios. Our other metrics do not exhibit statistically significant results.

¹ A hit ratio is the percent of months where the long-short return spread or information coefficient is greater than zero.

Table 4: Airline Factor Results

Airlines in S&P BMI Global Index, 1/2001-9/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
1YrGrRPM	Jan-01	41	0.041***	1.73%***	59%**	56%
OpExp/ASM	Jan-01	42	0.035**	1.48%***	59%**	59%**
1YrGrRPC	Jan-01	36	0.018	0.94%	61%***	59%**
FuelCons/ASM	Jan-01	21	0.018	0.71%	57%*	54%
AvgAgeofAircraft	Jan-01	36	0.013	0.56%	56%	54%
Total Profit/ASM	Jan-01	43	0.004	0.29%	51%	49%
PassengerLF	Jan-01	42	-0.002	-0.11%	46%	49%

*p-value < 10%

**p-value < 5%

***p-value < 1%

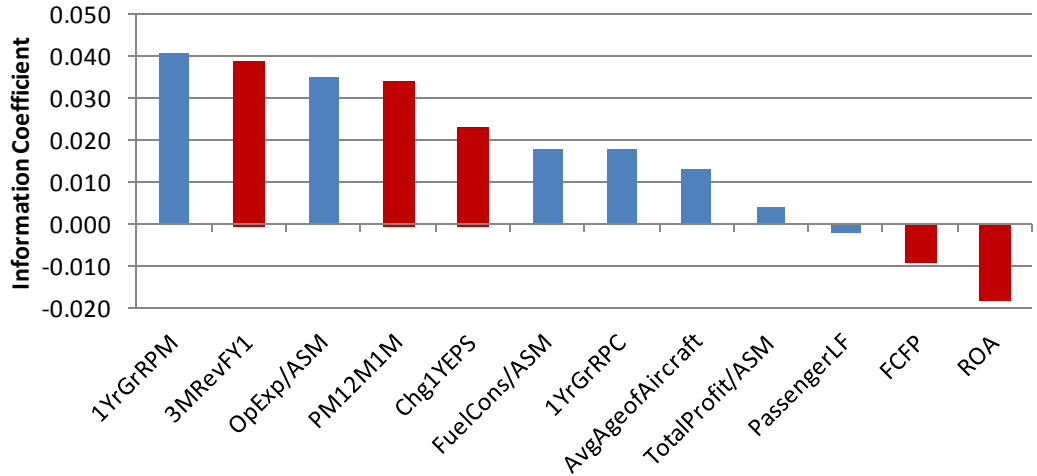
Source: S&P Capital IQ. Backtested performance is not an indication of future results.

When benchmarked to generic factors, airline factors do quite well [Figure 2]. Growth in passengers carried and the revenue that those passengers generate are important metrics for airlines. Apart from revenue growth, cost management is another indicator to consider, as the other factor with statistically significant IC and spread is OpExp/ASM - Operating Expense per Available Seat Mile. 1-Year Growth in Revenue Passenger Miles and Operating Expense per Available Seat Mile are significantly correlated with most generic factors. However, our other airline factors generally have lower correlations [Table 31 in the Appendix]. We compare the IC decay and 1 year rolling average monthly turnover² of 1 Year Growth in Revenue Passenger Miles to one generic factor, Rev3MFY1, in Figure 3 and Figure 4. 1-Year Growth in Revenue Passenger Miles proves to be a strong factor as it shows superior IC decay and much lower turnover than Rev3MFY1.

² Turnover is the percent of companies that change ranks from one tertile to another from the previous month.

Figure 2: 1M IC of Airlines and Generic Factors

Airlines in S&P BMI Global Index, 1/2001-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 3: IC Decay, Rev3MFY1 & 1YrGr RPM

Airlines in S&P BMI Global Index, 1/2001-9/2012

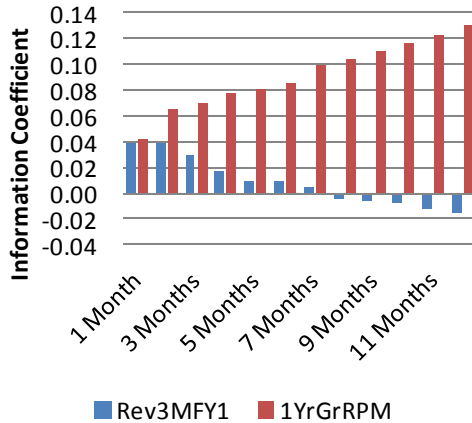
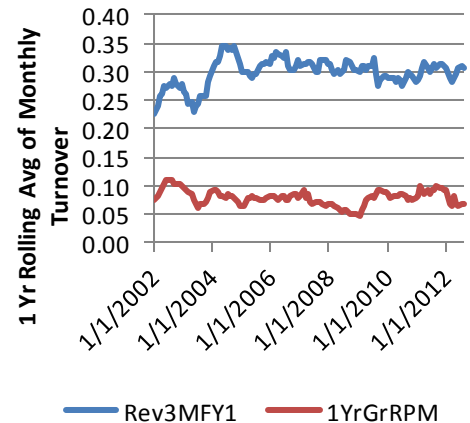


Figure 4: 1 Yr Rolling Avg of Monthly Turnover, Rev3MFY1 & 1YrGrRPM

Airlines in S&P BMI Global Index, 1/2001-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

We extended our analysis by testing our airline factor performance during different fuel cost cycles. Fuel costs are airlines 2nd largest expense and make up approximately 33% of airline operating expenses. Because of the importance of managing these costs, we analyzed how our airlines factors perform during rising and falling jet fuel price regimes. We define our high [low] % change in jet fuel price regimes as months where the 1 month % change in jet fuel price is in the top [bottom] half from the start of our test period, Jan 2001. Jet Fuel prices are defined as monthly U.S. Gulf Coast Kerosene-Type Jet Fuel Spot Price FOB (Dollars per Gallon) as stated by the U.S. Energy Information Administration (EIA).

Table 5: High/Low % Change in Jet Fuel Price Regimes

Airlines in S&P BMI Global Index, 1/2001-9/2012

	Monthly IC		Monthly Spread	
	High Jet Fuel Prices % Change	Low Jet Fuel Prices % Change	High Jet Fuel Prices % Change	Low Jet Fuel Prices % Change
1YrGrRPM	0.031	0.051***	1.35%	2.12%**
TotalProfit/ASM	-0.009	0.017	-0.21%	0.79%
PassengerLF	0.001	-0.006	0.30%	-0.53%
AvgAgeofAircraft	-0.006	0.033	-0.77%	1.92%*
1YrGr RPC	0.012	0.024	0.67%	1.22%
FuelCons/ASM	0.048*	-0.014	1.64%**	-0.24%
OpExp/ASM	0.053**	0.017	1.81%***	1.15%
Regime count	71	69	71	69

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

We observe that the effect of high [low] % change in jet fuel prices is particularly pronounced on cost metrics. Companies with low values for Fuel Consumed/ASM and Operating Expenses/ASM perform especially well during high jet fuel % price change periods compared to their competitors, with spreads & IC's significant at the 10% level or better. Keeping expenses low, especially when fuel costs are high, is important to the profitability of airline firms.

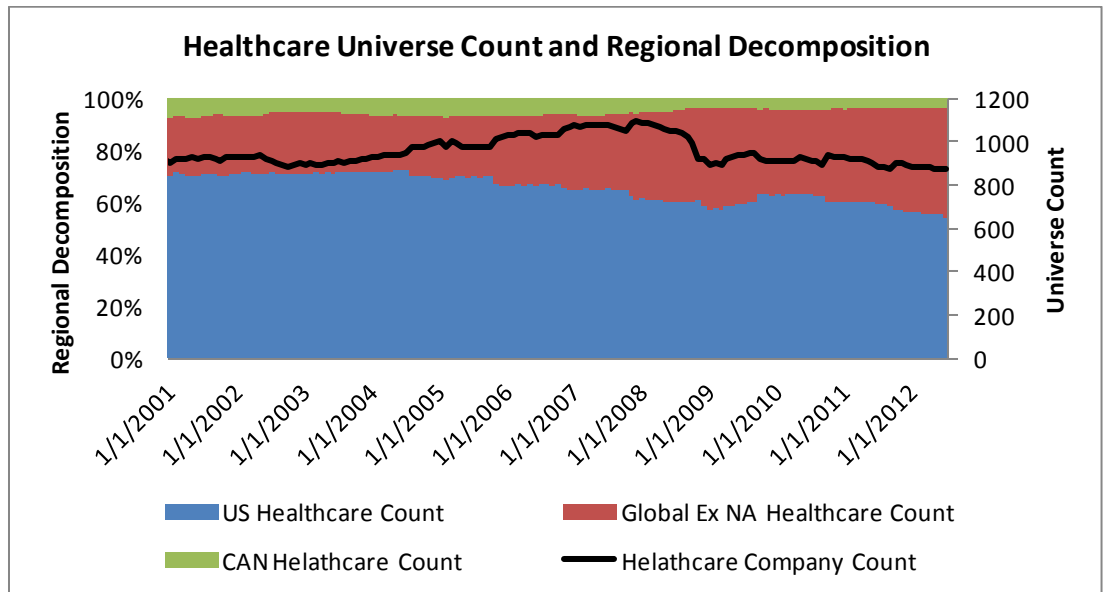
4.2 Healthcare

4.2.1 Hospitals & facilities

We examine factors for the hospitals & facilities industry over the healthcare universe that consists of companies classified into the GICS sector code 35 [healthcare] within the S&P BMI global universe. Figure 5 shows the company count within the global healthcare universe as well as the relative breakdown of the securities across three regions, the U.S., Canada, and International.

Figure 5: Healthcare Universe Company Count and Regional Decomposition

Healthcare in S&P BMI Global Index, 1/1999-7/2012



Source: S&P Capital IQ

Investors in this sector value metrics related to facilities, admissions, and patient stays. These metrics were important to our idea generation process for this industry [Table 6].

Table 6: Factor Definitions

Healthcare in S&P BMI Global Index, 1/2001-9/2012

Factor	Description	Direction
% Change in Admissions ("ChgAdmissions")	Admissions represent the number of inpatient admissions over a period. Hospitals draw greater revenues from inpatients as opposed to outpatients. Inpatient admissions are one of the main determinants of facility utilization in the hospital industry.	D
Patient Days Growth ("PatientDaysGr")	Patient days is the total number of days of inpatient care provided in a period. This should be looked in conjunction with admissions as an indicator of growth. Longer patient stays lead to greater revenues.	D
Growth in Average Length of Stay ("GrAvgLengthStay")	Inpatient length of stay is reported as Average Length of Stay. The longer the average length of stay, the greater the facility utilization and the more revenues are generated per inpatient.	D
Hospitals and Facilities Growth ("FacilitiesGr")	Size has become a key driver of profits and revenues in the industry. The number of facilities can be tracked to see company growth in terms of acquisitions and newly-built facilities.	D
Total Revenue per Facility ("TotRevperFacility")	This ratio measures the total revenues divided by the facilities owned & operated. Greater revenue per facility is a positive sign for a healthcare firm.	D
Surgeries Growth ("SurgeriesGr")	Hospitals will attempt to boost the number of surgeries and procedures over time to increase revenues. This growth factor measures the growth in the core business.	D
Licensed Beds Growth ("LicensedBedsGr")	Licensed beds represent beds that the appropriate state agency has licensed the facility for use, regardless of whether they are made available. More beds means more availability for patients and more potential revenue.	D

Source: S&P Capital IQ

Our backtest results are shown in Table 7. Growth in Average Length of Stay and Patient Days Growth have statistically significant positive IC's. Total Revenue per Facility performs adversely to expectations with a statistically significant negative long-short return spread. Each of the other factors does not provide statistically significant results.

Table 7: Factor Results

Healthcare in S&P BMI Global Index, 1/2001-9/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
GrAvgLengthStay	Aug-01	14	0.048**	0.73%	53%	59%**
LicensedBedsGr	Jan-01	32	0.039	0.14%	55%	55%
%ChangeAdmissions	Aug-01	14	0.037	1.00%	58%*	56%
PatientDaysGr	Apr-01	16	0.035*	1.14%	57%	53%
SurgeriesGr	Apr-01	21	0.009	-0.42%	51%	53%
TotalRevperFacility	Mar-01	60	0.007	-0.76%*	46%	54%
FacilitiesGr	Mar-01	29	0.002	-0.33%	47%	49%

*p-value < 10%

**p-value < 5%

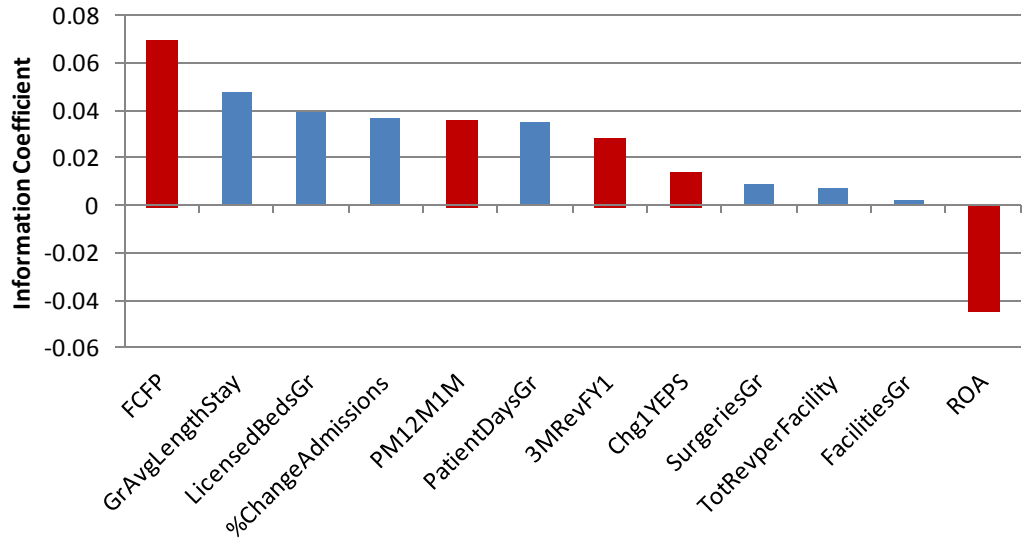
***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Hospital & facility factors consistently perform better than the generic factors (Figure 6). Factors related to the growth of the number of patients and the length of stay performed best. Comparisons of the IC decay and 1 year rolling average monthly turnover of one industry-specific factor and one generic factor are shown in Figure 7 and Figure 8. The industry factor, Patient Days Growth, and the generic factor, FCFP, have very comparable IC decays and turnovers. Given the low correlation between these two factors, -0.01 [see Table 32 in Appendix], there may be value to be found in this industry-specific signal.

Figure 6: 1M IC of Healthcare and Generic Factors

Healthcare in S&P BMI Global Index, 1/2001-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 7: IC Decay, FCFP & PatientDays Gr

Healthcare in S&P BMI Global Index, 1/2001-9/2012

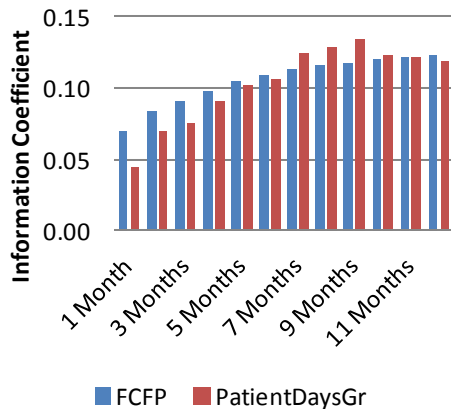
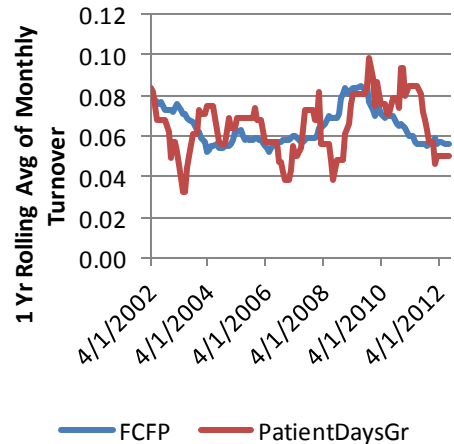


Figure 8: 1 Yr Rolling Avg of Monthly Turnover, FCFP & PatientDaysGr

Healthcare in S&P BMI Global Index, 1/2001-9/2012



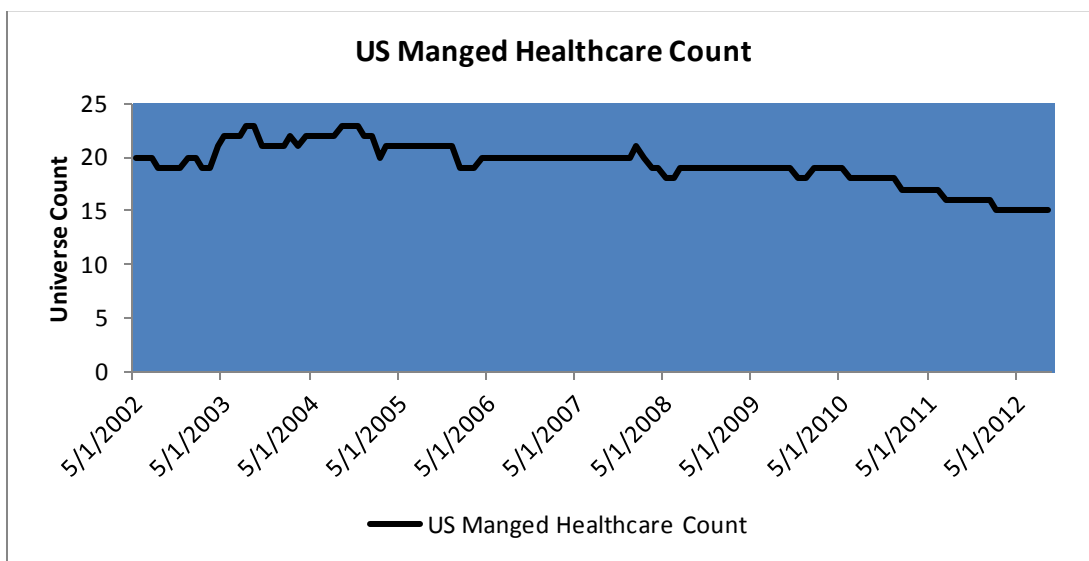
Source: S&P Capital IQ. Backtested performance is not an indication of future results.

4.2.2 Managed Healthcare

Another important segment within the healthcare industry is managed healthcare. We tested managed healthcare firms separately in the United States with GICS code 35102030 using Compustat data. Figure 9 shows the company count, through time, within the U.S. managed healthcare universe,

Figure 9: U.S. Managed Healthcare Universe Company Count

Managed Healthcare in S&P Capital IQ US Universe, 5/2002-9/2012



Source: S&P Capital IQ

Key metrics for these firms that we considered when constructing our factors include enrollment, premiums, and costs associated with government and private healthcare programs & providers [Table 8].

Table 8: Factor Definitions

Managed Healthcare in S&P Capital IQ US Universe, 5/2002-9/2012

Factor	Description	Direction
Medical Loss Ratio ("MedicalLossRatio")	This ratio is calculated by dividing total medical costs by total healthcare premiums, giving the percent of premium revenues spent on medical costs. It is essentially the inverse of gross profit margin, so we would expect a lower value to be a positive sign.	A
Days in Medical Costs Payable to Medical Costs ("DCPtoMedCosts")	Days in medical costs payable is the number of days it would take to expense the claims payable and an indication of how efficiently an MCO paid its claims in a quarter. If total medical costs are fairly low in a quarter, and DCP is fairly high, we may expect higher costs to follow in later periods	A
1 Year Growth in Healthcare Premiums ("1YrGrwHealthcarePremiums")	Healthcare premiums are the largest source of revenue for managed healthcare firms, so growth in these revenues is important for the business.	D
1 Year Growth in Total Enrollment ("1YrGrwEnrollment")	Higher enrollment means higher revenue potential for an MCO, so growing enrollment is a sign of financial health for a company.	D

Source: S&P Capital IQ

Our backtests in Table 9 show very tepid results. Only 1-Year Growth in Total Enrollment shows a statistically significant spread, but the information coefficient and hit ratios are not significant.

Table 9: Factor Results

Managed Healthcare in S&P Capital IQ US Universe, 5/2002-9/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
1YrGrwHealthcarePremiums	May-02	15	0.03	0.07%	52%	51%
1YrGrwEnrollment	May-02	15	0.023	1.12%*	57%	53%
MedicalLossRatio	May-02	15	0.005	-0.23%	52%	51%
DCPtoMedCosts	May-02	8	-0.032	-0.94%	50%	54%

*p-value < 10%

**p-value < 5%

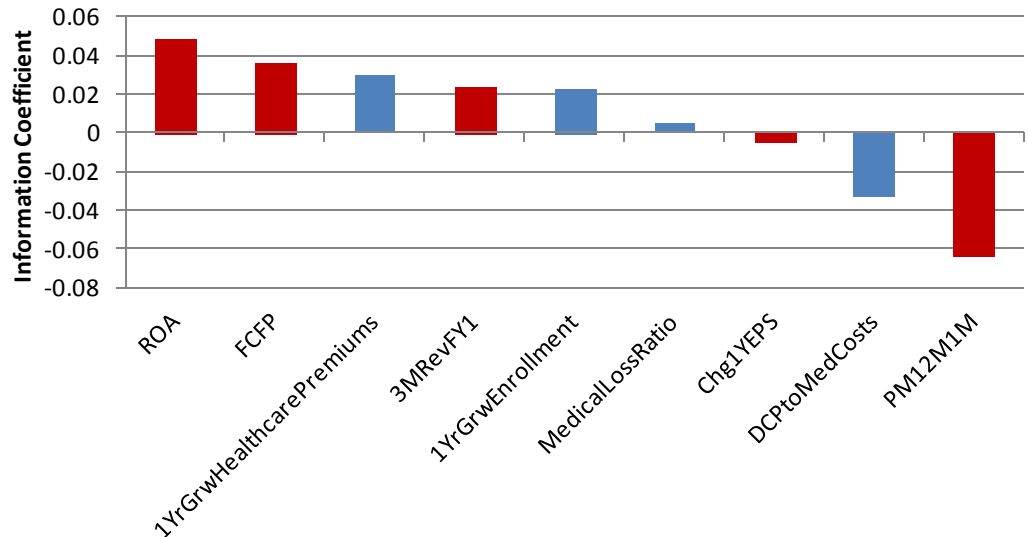
***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

The managed healthcare factors performance is comparable to the generic factors (Figure 10). Though not significant, factors relating to growth in revenue sources provided the largest positive ICs. Managed health care factors generally have low correlations with generic factors (shown in Table 33 in the Appendix). We compare the IC decay and 1-year rolling average monthly turnover of one industry-specific factor and one generic factor in Figure 11 and Figure 12. The industry factor, 1-Year Growth in Healthcare Premiums, has a weaker IC decay and slightly higher turnover than the generic factor, ROA.

Figure 10: 1M IC of Managed Healthcare and Generic Factors

Managed Healthcare in S&P Capital IQ US Universe, 5/2002-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 11: IC Decay, ROA & 1YrGrwHealthcarePremiums

Managed Healthcare in S&P Capital IQ US Universe, 5/2002-9/2012

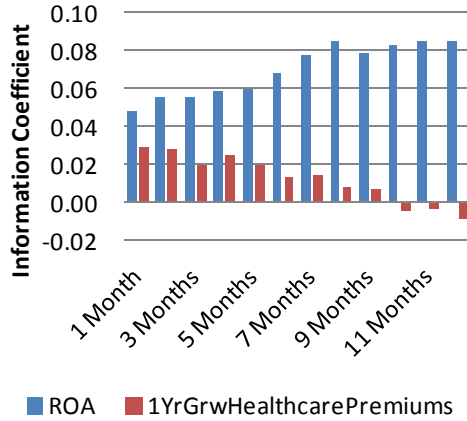
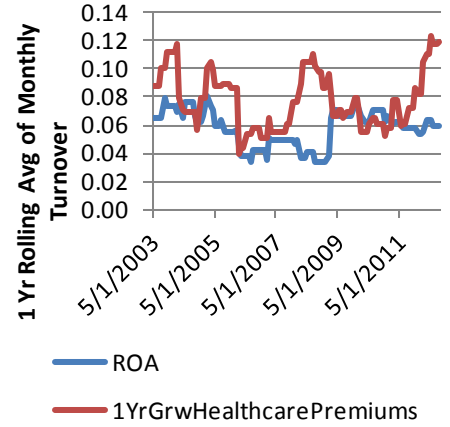


Figure 12: 1 Yr Rolling Avg of Monthly Turnover, ROA & 1YrGrwHealthcarePremiums

Managed Healthcare in S&P Capital IQ US Universe, 5/2002-9/2012



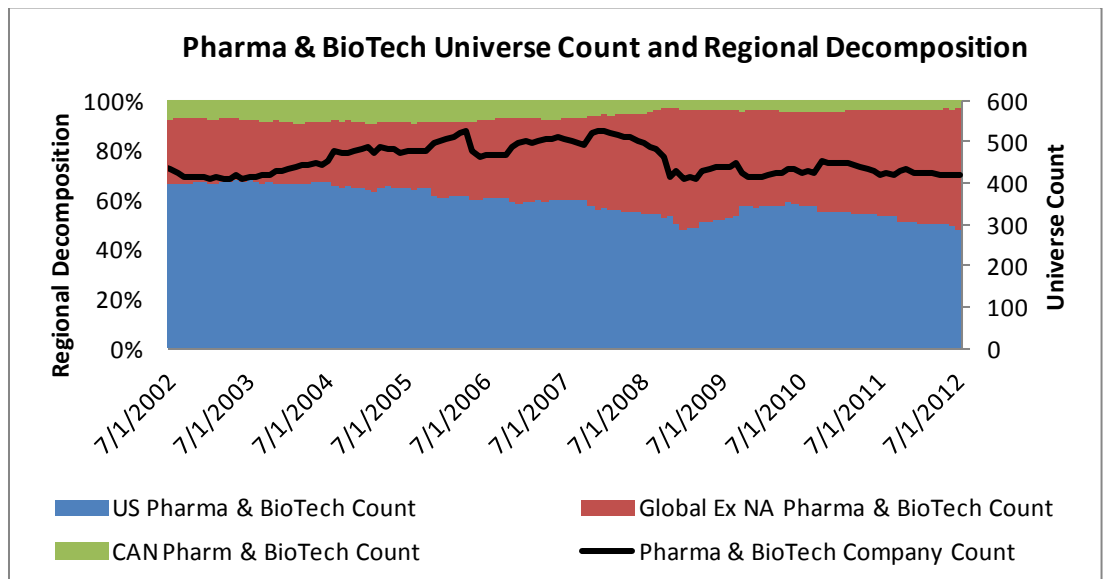
Source: S&P Capital IQ. Backtested performance is not an indication of future results.

4.2.3 Pharmaceuticals & Bio-Tech

The final segment we considered within the healthcare sector is Pharmaceuticals & Biotechnology [Pharm & BioTech]. The pharmaceuticals & biotech universe consists of companies classified into the GICS codes 352010 [Biotechnology] & 352020 [Pharmaceuticals] within the S&P BMI global universe. Figure 13 shows the company count within the pharm & biotech universe as well as the breakdown of the securities across three regions, the U.S., Canada, and International.

Figure 13: Pharma & BioTech Universe Company Count and Regional Decomposition

Pharma & BioTech in S&P BMI Global Index, 7/2002-9/2012



Source: S&P Capital IQ

Applying for and receiving patent approval is a critical phase for these firms as are the conversion & development of these patents into products. These metrics were important to consider when generating factor ideas for the pharm & biotech industry [Table 10].

Table 10: Factor Definitions

Pharma & BioTech in S&P BMI Global Index, 7/2002-9/2012

Factor Name	Description	Direction
Number of Patents/ MktCap ("PatentstoMktCap")	More patents approved can mean more intellectual property and more potential for innovation. This factor examines how much the market is willing to pay for the patents that a company holds	D
Growth in Number of Patents ("1YrGrwNumPatents")	The importance of patents to pharmaceutical innovation has been reported in several cross-industry studies by economists. Studies found that the pharmaceutical industry placed the highest importance on patents so a growing number of patents is a positive sign of innovation for a company	D
Growth in Number of Patent Applications ("1YrGrwNumPatentApps")	Like growth in patents, growth in patent applications is also a positive sign of innovation for a company. Though patent applications are not always approved, this ratio looks at the patents applied for as a positive sign of innovation.	D
Growth in Number of Products in Phase 3 ("1YrGrwNumProdsinPh3")	The number of biotech drugs in late stage clinical trials is increasing. Over the last five years, there is a clear move towards late-stage (phase II and III) development as a proportion of all products in clinical trials. Growth in products in phase III is a positive sign.	D

Source: S&P Capital IQ

Table 11 shows our factor backtest results. Growth in Number of Products in Phase 3 exhibits a statistically significant information coefficient, long-short return spread, and IC hit ratio. Conversely, Number of Patents/Market Cap is a perverse signal with an information coefficient and IC hit ratio significant at the 1% level.

Table 11: Factor Results

Pharma & BioTech in S&P BMI Global Index, 7/2002-9/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
1YrGrwNumProdsinPh3	Jun-02	76	0.064***	0.89%*	54%	72%***
1YrGrwNumPatentApps	Jun-02	91	0.012	-0.53%	47%	52%
1YrGrwNumPatents	Jun-02	121	-0.005	-3.34%	44%	47%
PatentstoMktCap	Jun-02	149	-0.030***	3.16%	47%	35%***

*p-value < 10%

**p-value < 5%

***p-value < 1%

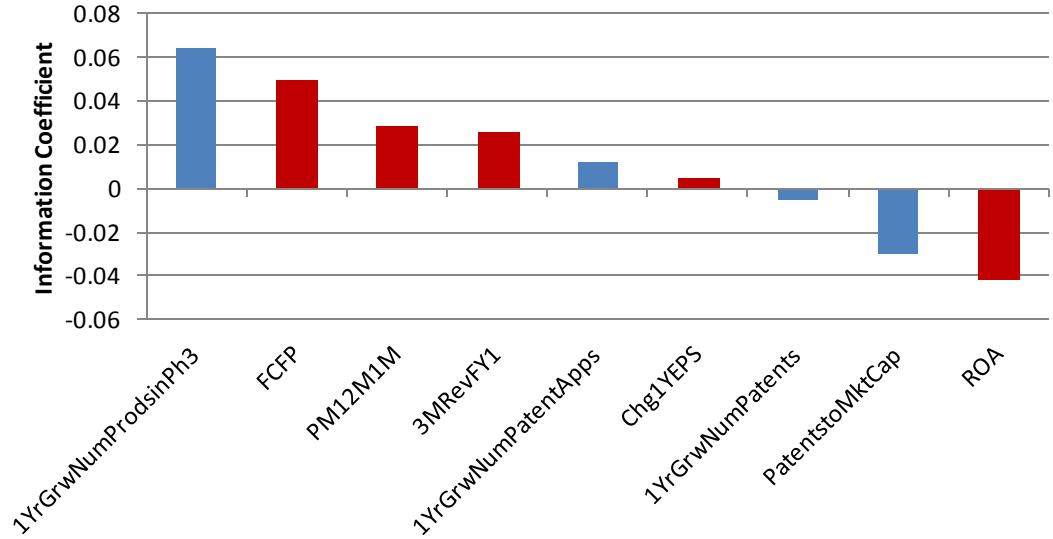
Source: S&P Capital IQ. Backtested performance is not an indication of future results.

The industry factors' performance is in line with that of the generic factors, but only one industry-specific factor performs better than all the generic factors, Growth in Number of Products in Phase 3 (Figure 14). As products enter the last phase of development (Phase 3), the likelihood that the product will be approved for use in some form and generate revenue in future increases. Accordingly, investors tend to reward companies that are successful at moving products along the development process into the final phase. In contrast, factors that focus on the number of patents or rate of patent applications are weak as the revenue potential of these applications is still unclear. Comparisons of the IC decay and 1-year rolling average monthly turnover of one

industry-specific factor, Growth in Number of Products in Phase 3, and one generic factor, FCFP are shown in Figure 15 and Figure 16. Growth in Number of Products in Phase 3 has slightly higher turnover than FCFP, but it does show better IC decay, implying a longer lasting signal, and low correlation with each of the generic factors [see Table 34 in Appendix].

Figure 14: 1M IC of Pharm & Bio-tech and Generic Factors

Pharma & BioTech in S&P BMI Global Index, 7/2002-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 15: IC Decay, FCFP & 1YrGrwNumProdsinPh3
Pharma & BioTech in S&P BMI Global Index, 7/2002-9/2012

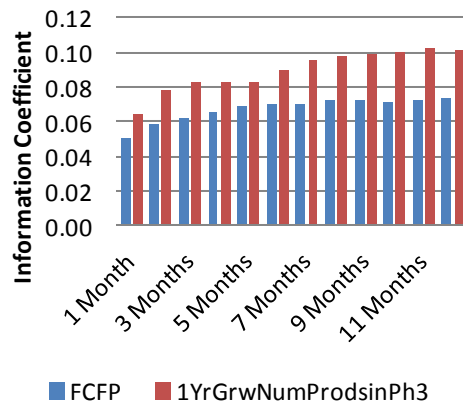
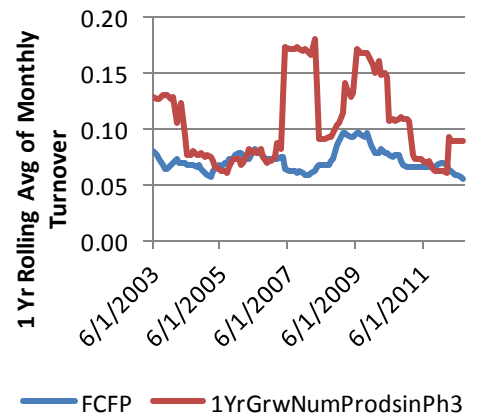


Figure 16: 1 Yr Rolling Avg of Monthly Turnover, FCFP & 1YrGrwNumProdsin-Ph3
Pharma & BioTech in S&P BMI Global, 7/2002-9/2012



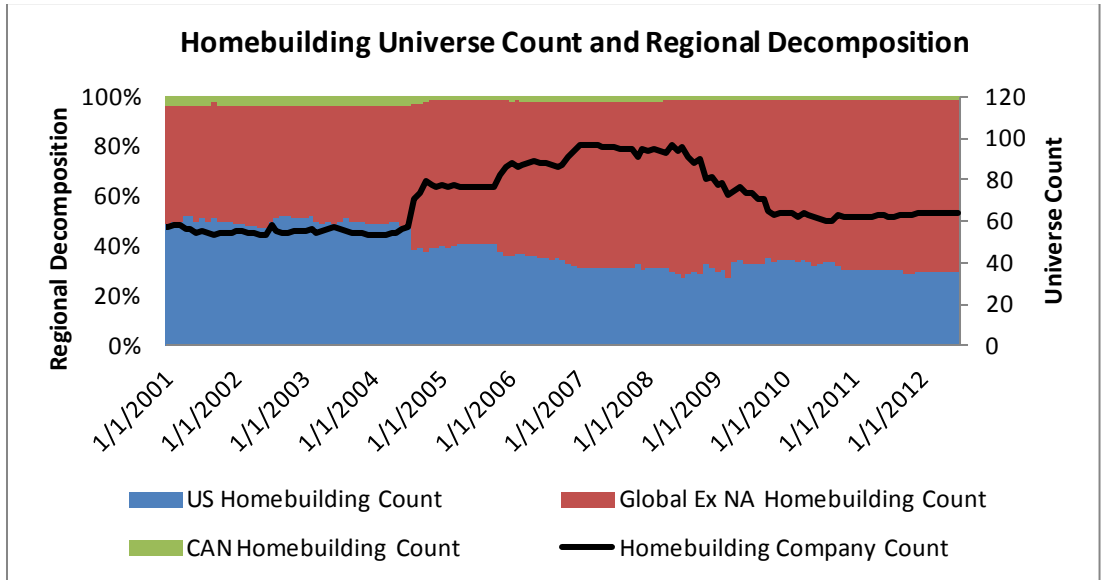
Source: S&P Capital IQ. Backtested performance is not an indication of future results.

4.3 Homebuilding

The homebuilding universe consists of companies classified into the GICS sub-industry code 25201030 [homebuilding] within the S&P BMI global universe. Figure 17 shows the company count within the homebuilding universe as well as the relative breakdown of the securities across three regions, the U.S., Canada, and International.

Figure 17: Homebuilding Universe Company Count and Regional Decomposition

Homebuilding in S&P BMI Global Index, 1/2001-9/2012



Source: S&P Capital IQ

Operations within the Homebuilding industry focus primarily on construction activity and land purchases. Metrics related to the growth of orders and the revenue generated from these orders are important for evaluating this industry [Table 12].

Table 12: Factor Definitions

Homebuilding in S&P BMI Global Index, 1/2001-9/2012

Factor	Description	Direction
1Yr Growth in Net New Orders ("1YrGrNetNewOrders")	This factor measures the change in the actual number of new contracts year-over-year. New orders suggest future revenue.	D
1Yr Growth in Housing Sales Revenue ("1YrGrHouseSalesRev")	Housing Sales is the main component of Revenue for Homebuilders. This factor measures the year-over-year change in Home Sales Revenue.	D
1 Year Growth in Total Homebuilding Revenue to Finished/Constr in Progress ("1YGrTotHRevtoConsinProg")	Total homebuilding revenue to finished homes/construction in progress measures the relationship between sales and work-in-progress inventories. We would like to see year-over-year increasing sales to finished homes/construction in progress.	D
Delivered Homes Value Growth to Market Cap ("DelivHomeValGrwtoMktCap")	Deliveries or Closings are defined as the total value of contracts closed within a period and is the purest indicator of true sales growth or decline. This factor reflects the year-over-year change these sales to the market cap of the firm.	D
Backlog Homes Value Growth ("BacklogHomesValueGr")	Backlog homes value is the dollar value for all existing orders not yet closed minus current period closings. This factor measures the year-over-year change in total dollar value for Backlog Homes.	D
1Yr Growth in Total Homebuilding Revenue to Inventories ("1YGrTotHomeRevtoInv")	Total inventories include finished homes, land under development, undeveloped inventories, and deposits. This ratio examines the sales to inventory growth ratio, where increased growth is a positive sign.	D
Home Gross Margin ("HomeGM")	Gross margin is important for builders as the largest costs i.e. land, labor and materials are aggregated into Cost of Goods Sold. High margins are good for homebuilding companies.	D

Source: S&P Capital IQ

The results of our factor backtests are displayed in Table 13. The performance of our homebuilding factors are lackluster. None of the homebuilding factors show signs of statistical significance in terms of IC, return spread, or hit rate.

Table 13: Factor Results

Homebuilding in S&P BMI Global Index, 1/2001-9/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
1YGrTotHRevtoConsinProg	Jan-01	34	0.015	0.34%	54%	54%
BacklogHomesValueGr	Mar-01	18	0.009	0.37%	54%	51%
1YrGrNetNewOrders	Mar-01	17	0.005	0.04%	51%	55%
DelivHomeValGrwtoMktCap	Feb-01	34	0.002	-0.19%	47%	50%
HomeGM	Jan-01	36	-0.003	-0.07%	54%	51%
1YGrTotHomeRevtoInv	Jan-01	37	-0.011	-0.10%	47%	49%
1YrGrHouseSalesRev	Jan-01	37	-0.019	-0.94%	46%	45%

*p-value < 10%

**p-value < 5%

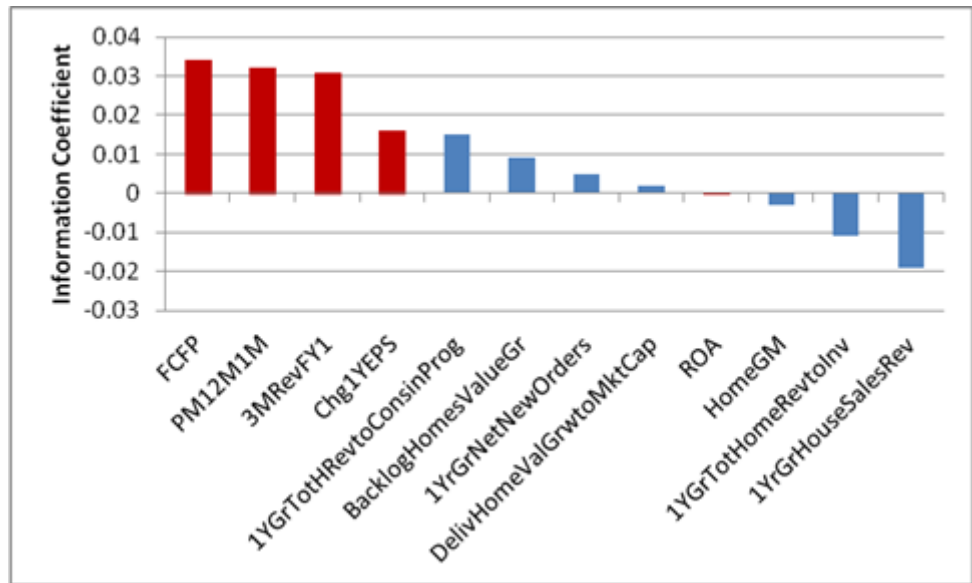
***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Unlike most of the other industries that we tested, we find that generic factors perform quite well when compared to our industry-specific signals (Figure 18). The top four performing factors were all generic signals. The performance of a few of our industry signals was actually perverse to our priors. We compare the IC decay and 1-year rolling average monthly turnover of one industry-specific factor, 1-Year Growth in Homebuilding Revenue to Construction-in-Progress, and one generic factor, FCFP in Figure 19 and Figure 20 and find that 1-Year Growth in Homebuilding Revenue to Construction-in-Progress has a superior IC decay to FCFP and only slightly higher turnover through time. This factor also has low correlation with the generic factors (see Table 35 in Appendix).

Figure 18: 1M IC of Homebuilding and Generic Factors

Homebuilding in S&P BMI Global Index, 1/2001-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 19: IC Decay, FCFP & 1YGrTotHRevtoConsinProg
Homebuilding in S&P BMI Global Index, 1/2001-9/2012

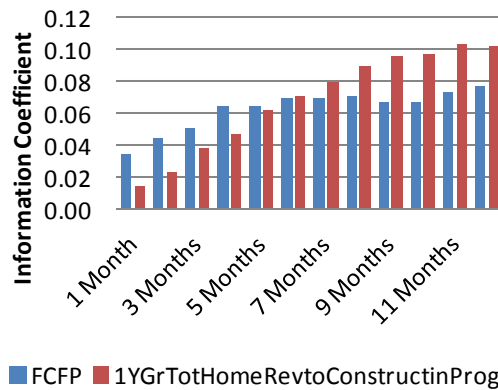
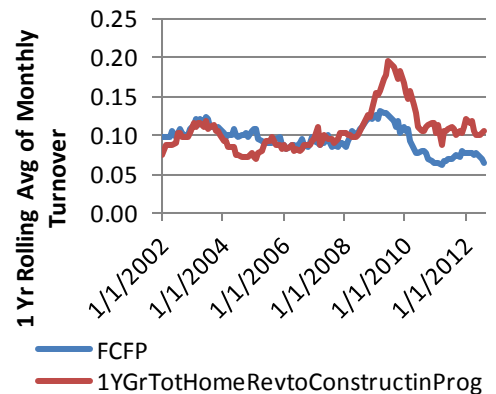


Figure 20: 1 Yr Rolling Avg of Monthly Turnover, FCFP & 1YGrTotHRevtoConsinProg
Homebuilding in S&P BMI Global Index, 1/2001-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

To examine the impact of macroeconomic factors on the homebuilding industry we extend our previous tests by viewing the performance of our homebuilding factors in high/low interest rate regimes. Housing starts generally tend to move in the opposite direction of interest rates. We define our high [low] interest rate regimes as the months when the 10 Yr U.S. Gov Bond Yield is in the top [bottom] half of observations since the start of our test period, Jan 2001.

Table 14: High/Low % Change in 10 Yr U.S. Gov Treasury Bond Yield
Homebuilding in S&P BMI Global Index, 1/2001-9/2012

	Monthly IC		Monthly Spread	
	High 10 Yr. Gov Bond Yield	Low 10 Yr. Gov Bond Yield	High 10 Yr. Gov Bond Yield	Low 10 Yr. Gov Bond Yield
BacklogHomesValueGr	0.015	0.003	-0.17%	0.87%
1YrGrNetNewOrders	-0.008	0.017	-0.37%	0.42%
1YrGrHouseSalesRev	-0.006	-0.037	-0.44%	-1.49%*
DelivHomeValGrwtoMktCap	-0.011	0.011	-0.43%	-0.09%
HomeGM	0.018	-0.013	0.30%	-0.27%
1YrGrTotHRevtoConsinProg	0.010	0.013	0.54%	-0.06%
1YrGrTotHomeRevtoInv	0.000	-0.030	0.36%	-0.77%
Regime count	66	72	66	72

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

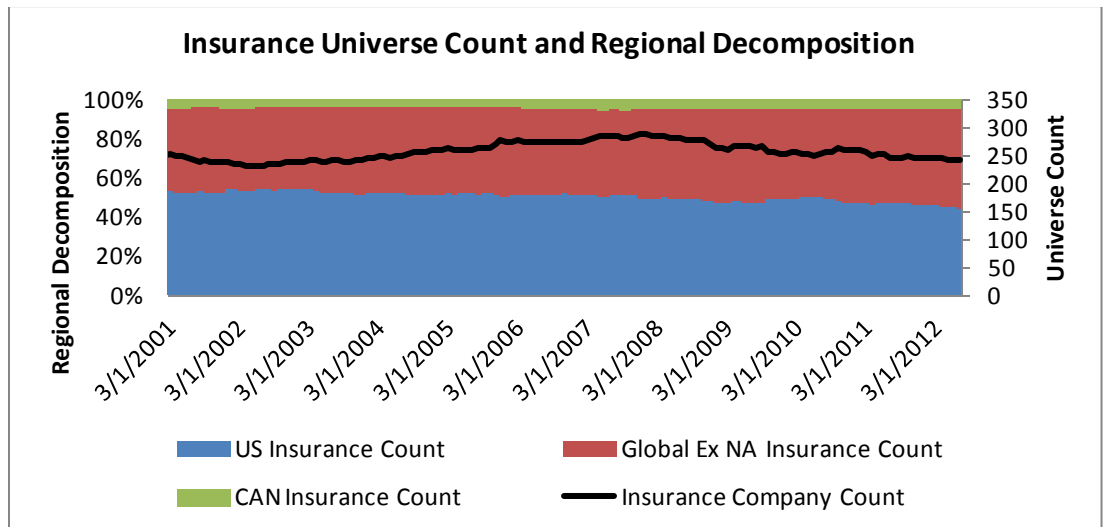
When government bond yields are low, housing starts are generally high, so we would expect the homebuilding sector to perform better during those times. What we see with our factors is that in low interest rate & high housing starts periods, growing orders (as seen by 1 Year Growth in Net New Orders) seems to be valued, even if the orders grow at the expense of margins (Home Gross Margin) and with growing inventory (1-Year Growth in Homebuilding Revenue to Inventories).

4.4 Insurance

The insurance universe consists of companies classified into the GICS sub-industry codes 40301020, 40301030, 40301040, and 40301050 within the S&P BMI global universe. Figure 21 shows the company count within the insurance universe as well as the relative breakdown of the securities across three regions, the U.S., Canada, and International.

Figure 21: Insurance Universe Company Count and Regional Decomposition

Insurance in S&P BMI Global Index, 3/2001-7/2012



Source: S&P Capital IQ

Insurance companies inherently seek to manage risk. With this in mind, the financial strength of an insurance company is particularly important to investors. We constructed factors that look to target the profitability and solvency of these companies. Specifically, we focus on the company's ability to retain customers, grow margins, and cover claims effectively.

Table 15: Factor Definitions

Insurance in S&P BMI Global Index, 3/2001-7/2012

Factor Name	Description	Direction
Retention Ratio ("RetentionRatio")	This is the ratio of Net Written Premiums to Gross Written Premiums. It indicates the extent of dependence on reinsurance. The higher the ratio the better.	D
1Yr Growth in Net Premiums Earned ("1YrGrwNPE")	Premium revenue is the primary source of revenue for most insurers, and it is generally more persistent than other revenue sources. Growth in net premiums is a positive sign for an insurance firm.	D
Combined Ratio ("CombinedRatio")	This popular insurance metric combines claims losses and operating expenses against premiums earned. This measures the profitability of underwriting operation.	A
Net Premium Written to Statutory Surplus ("NPWtoStatSurp")	This ratio measures the company's overall underwriting exposure in relation to its assets available to cover potential claims. A lower ratio implies more surplus available to cover losses	A
Solvency Ratio ("SolvencyRatio")	This ratio is comprised of net written premiums to net assets and measures a firm's ability to cover claims with its capital base. A lower ratio means greater solvency for an insurance firm.	A
1Yr Growth in Total Investments ("1YrGrwTotInvestments")	A major portion of Insurance company's profit comes from investments. This is a measure of the growth in investments.	D
1Yr Growth in Underwriting Profit ("1YrGrwU/wProfit")	UnderwritingProfit is the profit that an insurer derives from providing insurance or reinsurance coverage, exclusive of the income it derives from investments. This factor measures the year-over-year growth in underwriting profit.	D
Underwriting Margin ("U/wMargin")	This metric examines the ratio of Underwriting Profit to Net Premiums Eamed (insurance revenues), where higher a profit margin is better.	D
Claims Ratio ("ClaimsRatio")	A common insurance metric, the claims ratio is claims payable as a percentage of premium income. It indicates what percentage of claims are being settled with recipients. A lower ratio is preferred because it implies a greater risk margin to cover potential adverse events.	A
Expense Ratio ("ExpenseRatio")	A common insurance metric, this ratio measures the percentage of underwriting and acquisition expenses to net earned premiums. It measures operational efficiency in underwriting where lower is better.	A

Source: S&P Capital IQ

The factor results shown in Table 16 are uninspiring. Only one factor, 1-Year Growth in Underwriting Profit provides a statistically significant information coefficient, long-short return spread, and long-short hit ratio.

Table 16: Factor Results

Insurance in S&P BMI Global Index, 3/2001-7/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
1YrGrwU/w Profit	Mar-01	74	0.024*	0.65%**	61%***	54%
U/wMargin	Mar-01	75	0.009	0.10%	51%	49%
Expense Ratio	Mar-01	184	0.004	0.10%	55%	51%
NPWtoStatutorySurplus	Mar-01	99	0.003	-0.16%	49%	51%
1YrGrwTotInvestments	Mar-01	248	0.002	0.07%	46%	51%
SolvencyRatio	Mar-01	155	-0.002	-0.14%	46%	51%
ClaimsRatio	Mar-01	139	-0.003	0.00%	54%	51%
1YrGrwNPE	Mar-01	204	-0.006	-0.04%	54%	48%
CombinedRatio	Mar-01	130	-0.007	-0.11%	53%	49%
RetentionRatio	Mar-01	131	-0.014	-0.35%	46%	45%

*p-value < 10%

**p-value < 5%

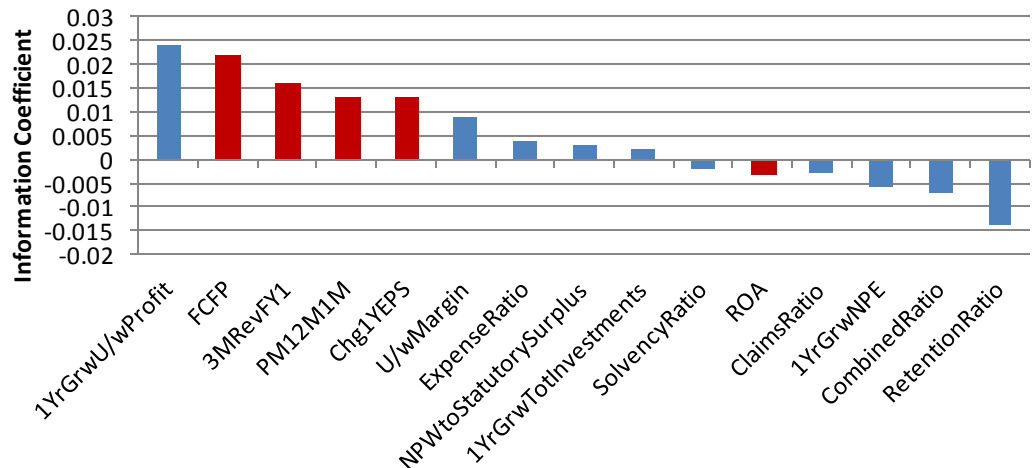
***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

1-Year Growth in Underwriting is the only insurance factor to outperform all generic factors, Figure 22. All other insurance factors demonstrate insignificant performance. Several factors seem to move contrary to our expectations. Table 36 in the Appendix shows that many insurance factors are moderately correlated with generic factors, particularly with ROA. Figure 23 and Figure 24 provide a comparison of the IC decay and 1-year rolling average monthly turnover of one industry-specific factor and one generic factor. The industry metric, 1-Year Growth in Underwriting Profit, has a poorer IC decay but only slightly higher turnover than the generic factor, FCFP.

Figure 22: 1M IC of Insurance and Generic Factors

Insurance in S&P BMI Global Index, 3/2001-7/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 23: IC Decay, FCFP & 1YrGrwU/wProfit Insurance in S&P BMI Global Index, 3/2001-7/2012

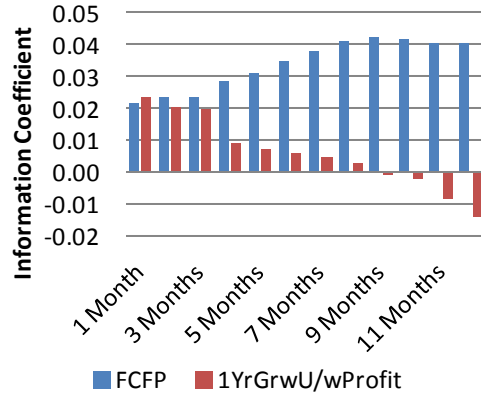
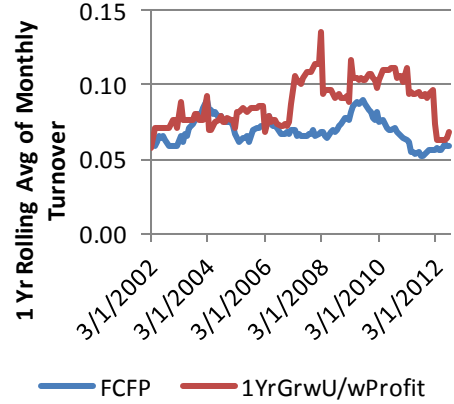


Figure 24: 1 Yr Rolling Avg of Monthly Turnover, FCFP & 1YrGrwU/wProfit Insurance in S&P BMI Global Index, 3/2001-7/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Changes in interest rate may have a profound effect on investment return for insurance companies since approximately 90% of their investments are in fixed income securities. We view the performance of our insurance factors in high/low % change in interest rate regimes. The high [low] % chg in interest rate regimes are defined as the months when the 1 month % change in the 10 Yr U.S. Government Bond Yield is in the top [bottom] half of observations since the start of our test period in March 2001. We find using U.S. bond yields to be appropriate for a global universe due to the high correlation between U.S. government bond yields and those of other developed countries like the U.K. [0.93 correlation] and Germany [0.90 correlation].

Table 17: High/Low % Change in 10 Yr U.S. Gov Treasury Bond Yield
Insurance in S&P BMI Global Index, 3/2001-9/2012

	Monthly IC		Monthly Spread	
	High % Change 10 Yr. Gov Bond	Low % Change 10 Yr. Gov Bond	High % Change 10 Yr. Gov Bond	Low % Change 10 Yr. Gov Bond
CombinedRatio	0.005	-0.018	0.36%	-0.58%
ClaimsRatio	0.006	-0.012	0.64%*	-0.63%
1YrGrwTotInvestments	0.009	-0.005	0.34%	-0.19%
1YrGrwNPE	-0.007	-0.006	0.19%	-0.27%
1YrGr wU/wProfit	0.004	0.044**	0.21%	1.09%***
U/wMargin	-0.020	0.038**	-0.50%	0.70%
ExpenseRatio	0.012	-0.003	0.35%	-0.15%
RetentionRatio	-0.006	-0.022	-0.18%	-0.51%
SolvencyRatio	-0.007	0.002	-0.23%	-0.06%
NPWtoStatutorySurplus	0.001	0.004	-0.36%	0.04%
Regime count	68	69	68	69

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

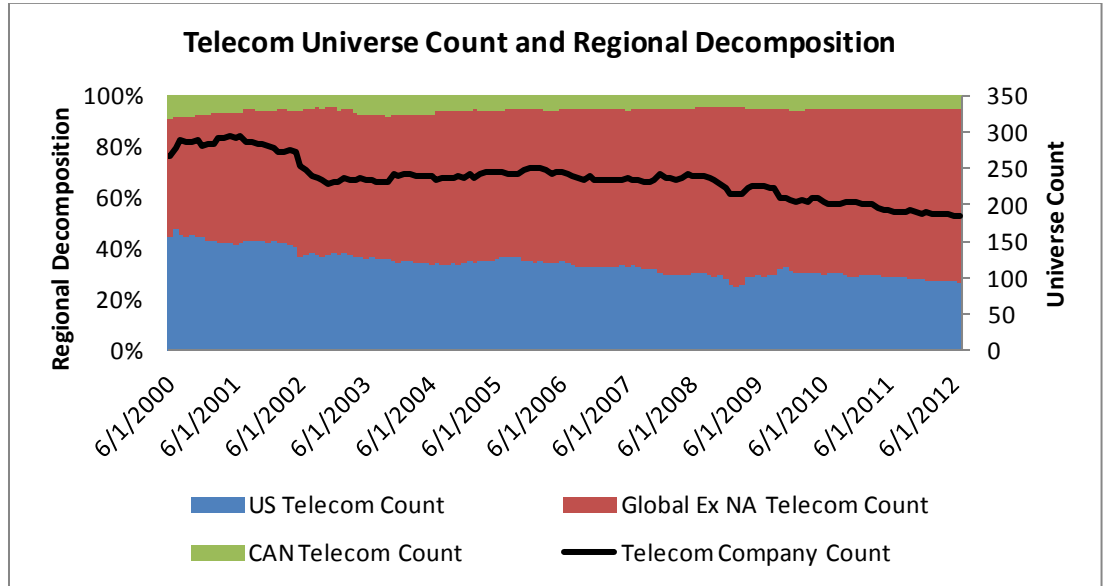
We observe that the margin related factors are the most sensitive to the high [low] % chg in interest rates. When 10 Yr U.S. Gov Bond Yields are falling, bond prices are rising, leading to increased value of an insurance company's bond portfolio. There is significant positive performance for our two margin factors, 1 Yr Gr in U/w Profit and U/w Margin during high % chg in interest rate regimes.

4.5 Telecommunications

The telecommunications universe consists of companies classified into the GICS sector code 50 [telecommunications] within the S&P BMI global universe. Figure 25 shows the company count within telecommunications universe as well as the breakdown of the securities across three regions, the U.S., Canada, and International.

Figure 25: Telecom Universe Company Count and Regional Decomposition

Telecom in S&P BMI Global Index, 1/1999-7/2012



Source: S&P Capital IQ

Telecommunications companies report information related to the size of their wireless and broadband networks as well as their customer base and churn rate. These were indicators we believed would be predictive of performance in the industry; we therefore constructed and tested factors that reflected these ideas [Table 18].

Table 18: Factor Definitions

Telecommunications in S&P BMI Global Index, 6/2000-9/2012

Factor	Description	Direction
1Yr Growth in Net Wireless Subscriber Additions ("1YrGrwNetSubsAdds")	This ratio is the number of new customers added, less customers that terminated service with the carrier. Growth in subscribers usually mean growth in revenues for a telecom company.	D
1Yr Growth in Broadband Subscribers ("1YrGrwBroadbandSubs")	Broadband has become the focus for telecom carriers. Research indicates that more than half of the revenue for the wireline service comes from Broadband services. This factor measures the year-over-year growth in the Broadband Subscribers.	D
Wireless Penetration Rate ("WirelessPenetrationRate")	Market penetration is a measure of the subscriber base as a percentage of the total number of potential customers, or overall population. It shows how deeply wireless service has entered a market and, thus, suggests how much growth potential remains in the subscriber base.	D
Churn Rate ("ChurnRate")	Churn is the percentage of subscribers that terminate wireless service with the carrier on a monthly basis. The lower the churn, the less pressure on a carrier to add new subscribers to generate revenues. It is an indicator of customer satisfaction.	A
1 Year Growth in Churn Rate ("1YrGrwChurnRate")	1 Year growth in churn rate measures if companies are having growing terminations of wireless service. Growing churn rates are a poor sign for a company.	A

Source: S&P Capital IQ

The factor backtest results for the telecom industry are displayed in Table 19. None of the factors have statistically significant positive information coefficients or long-short spreads. However, two factors, Churn Rate and 1-Year Growth in Broadband Subscribers, provide statistically significant performance contrary to our priors in terms of long-short return spread and information coefficient respectively.

Table 19: Factor Results

Telecommunications in S&P BMI Global Index, 6/2000-9/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
1YrGrwNetSubsAdds	Jun-00	85	0.017	0.41%	50%	57%*
WirelessPenetrationRate	Jun-00	21	0.023	-1.64%	47%	57%*
1YrGrTotWirelessSubs	Jun-00	84	0.001	-0.43%	45%	48%
1YrGrwChurnRate	Jul-01	18	-0.020	-1.00%	44%	48%
ChurnRate	Mar-01	22	-0.038	-1.93%*	49%	46%
1YrGrwBroadbandSubs	Apr-01	40	-0.040***	-0.85%	40%**	40%**

*p-value < 10%

**p-value < 5%

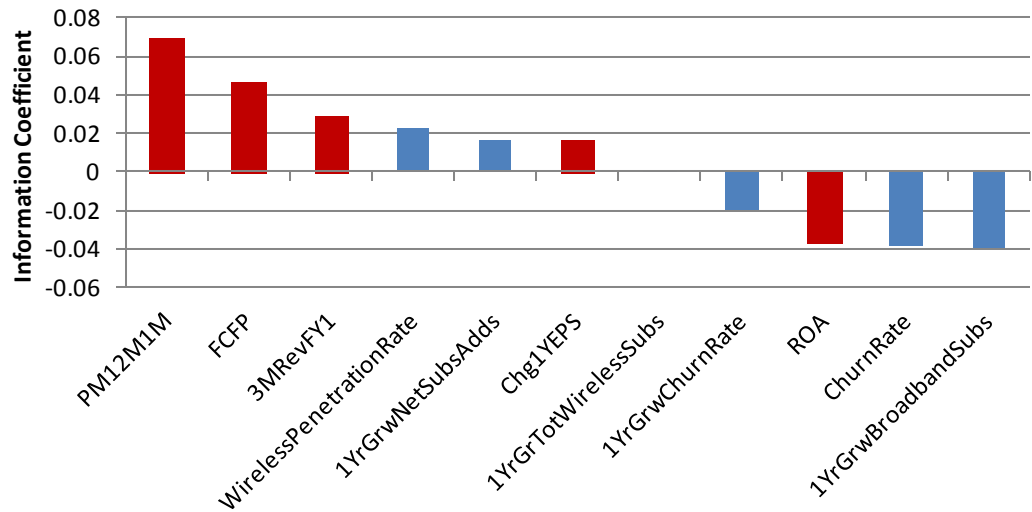
***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Overall, our telecom factors do not perform as well as the generic factors [Figure 26]. In fact, as discussed above, a couple factors perform contrary to our priors and worse than all generic signals. Comparisons of the IC decay and 1 year rolling average monthly turnover of one industry-specific factor, 1 Year Growth in Net Wireless Subscriber Additions, to one generic factor, PM12M1M, are shown in Figure 27 and Figure 28. 1-Year Growth in Net Wireless Subscriber Additions has a poorer IC decay than PM12M1M, but lower turnover. This factor also has low correlations with each of the generic factors [see Table 37 in the Appendix].

Figure 26: 1M IC of Telecommunications and Generic Factors

Telecommunications in S&P BMI Global Index, 6/2000-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 27: IC Decay, PM12M1M & 1YrGrwNetSubsAdds Telecommunications in S&P BMI Global Index, 6/2000-9/2012

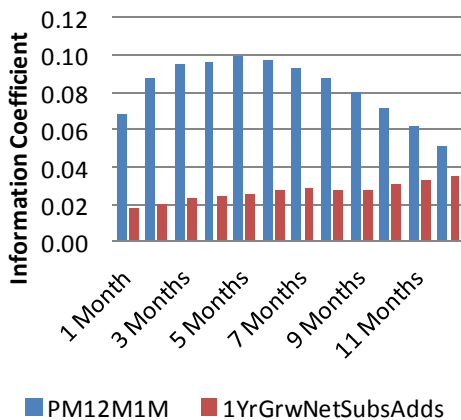
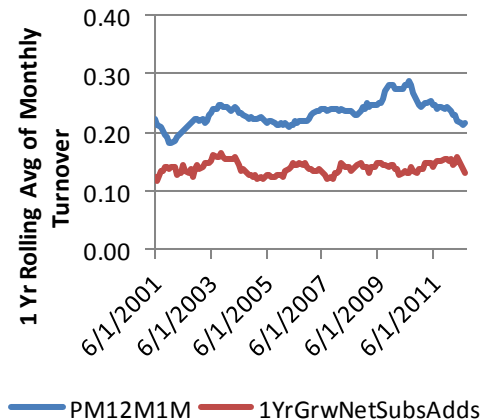


Figure 28: 1 Yr Rolling Avg of Monthly Turnover, PM12M1M & 1YrGrwNetSubs-Adds Telecommunications S&P BMI Global, 6/2000-9/2012



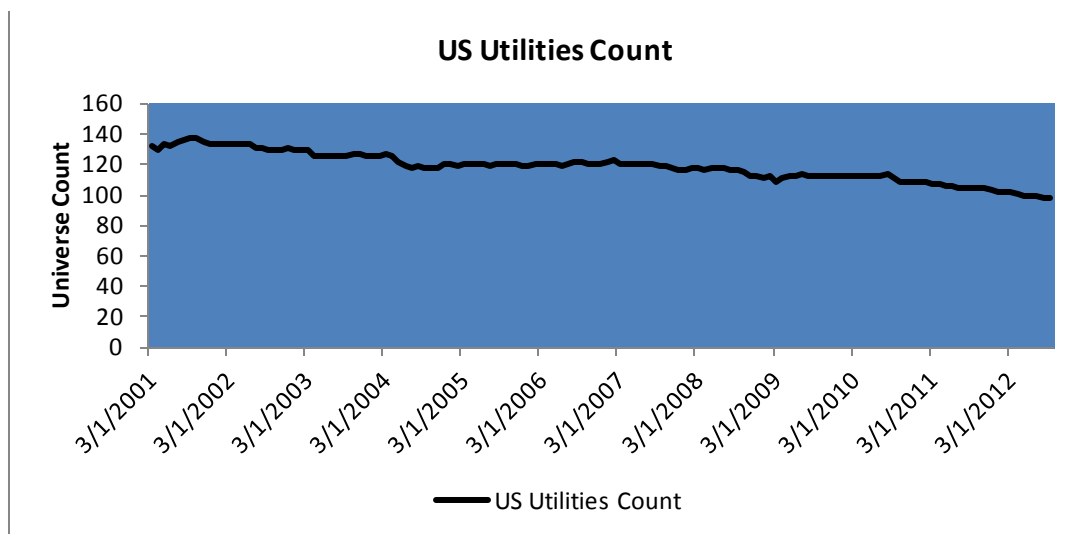
Source: S&P Capital IQ. Backtested performance is not an indication of future results.

4.6 Utilities

The utilities universe consists of companies classified into the GICS sector code 55 (utilities) within the S&P Capital IQ U.S. Universe. Figure 29 shows the company count within the US utilities universe.

Figure 29: U.S. Utilities Universe Company Count

Utilities in S&P Capital IQ U.S. Universe, 3/2001-9/2012



Source: S&P Capital IQ

The utilities industry has long been one of the most regulated industries worldwide. Important metrics for utilities companies include revenue for electricity, gas, and water generation as well as the costs associated with producing and distributing them.

Table 20: Factor Definitions

Utilities in S&P Capital IQ U.S. Universe, 3/2001-9/2012

Factor Name	Description	Direction
1Yr Growth in Fuel Cost - Electric, Gas ("1YrGrwFuelCostsElecGas")	Fuel is the largest and most variable item on a utility's list of operating expenses, and it is often the least controllable. An improving trend in operating and maintenance costs usually indicates that a company is focusing on streamlining its operations and controlling costs. Lower the better.	A
1Yr Growth in Electric, Gas, Water Sales ("1YrGrwElecGasWaterSales")	This factor measures the year-over-year growth for total electric, gas, and water sales. Increasing sales in these categories is a positive sign for a utility firm.	D
1Yr Growth in Average Revenue/KWh ("1YrGrwAvgRevperKWh")	This ratio examines the year-over-year growth in average revenue per kilowatt-hour. Generating more revenue for less energy usage is a strong sign of efficiency.	D
1Yr Growth in Operating Revenue - Electric, Gas, Water ("1YrGrwOpRevElecGasWater")	This factor measures the growth in operating revenues for electric, gas, and water services, where increased operating revenue is a good sign of growth.	D

Source: S&P Capital IQ

Table 21 shows the factor backtest results. We examine four common metrics used by analysts in evaluating utilities. The performance of our utilities factors is indifferent with positive but insignificant long-short return spreads and information coefficients.

Table 21: Factor Results

Utilities in S&P Capital IQ U.S. Universe, 4/2001-9/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
Gr in Elec, Gas, Water Sales	Mar-01	67	0.011	0.21%	51%	51%
Gr in Fuel Cost-Elec, Gas	Mar-03	20	0.009	0.09%	48%	51%
Gr in Oper Rev-Elect, Gas, Water	Mar-01	84	0.009	-0.08%	47%	52%
Gr in Avg Revenue/KWh	Mar-01	33	0.005	-0.17%	51%	51%

*p-value < 10%

**p-value < 5%

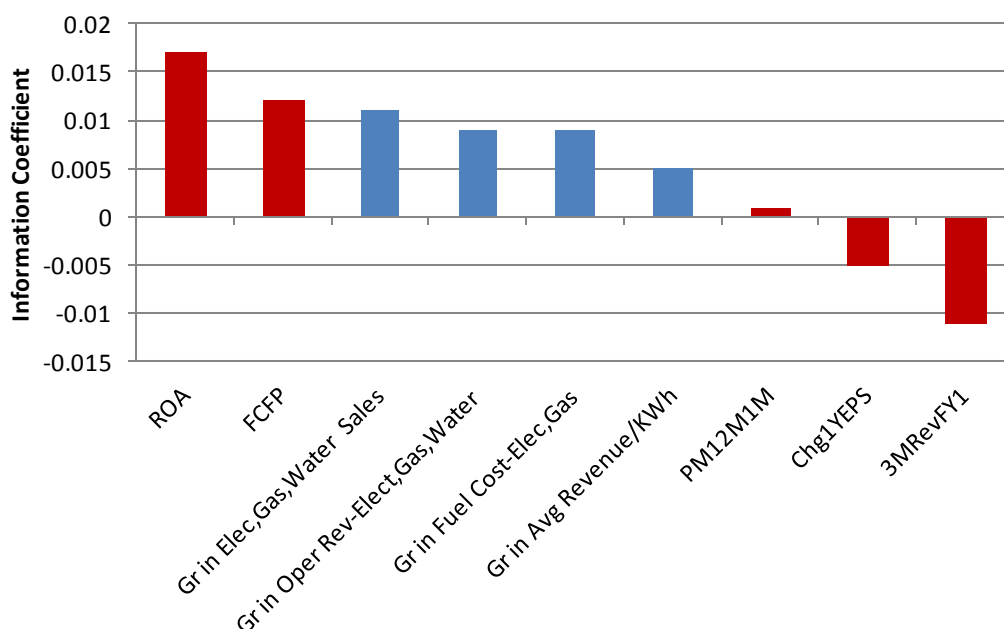
***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Though we do not see significant IC's or return spreads, the performance of the utilities factors is in line with that of the generic factors, Figure 30. All our utilities factors are in the expected direction, while a couple of the generic signals perform opposite of expectations. No utilities factors show especially elevated correlation with the generic factors [Table 38 of the Appendix]. Figure 31 and Figure 32 compare the IC decay and 1 year rolling average monthly turnover of one industry-specific factor and one generic factor. The industry factor, 1 Year Growth in Electric, Gas, & Water Sales, has an inferior IC decay and slightly lower turnover than the generic factor, ROA.

Figure 30: 1M IC of Utilities and Generic Factors

Utilities in S&P Capital IQ U.S. Universe, 3/2001-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 31: IC Decay, ROA & Gr in Elec, Gas, Water Sales

Utilities in S&P Capital IQ U.S. Universe, 3/2001-9/2012

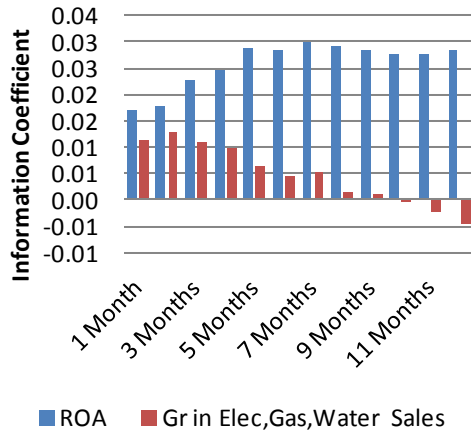
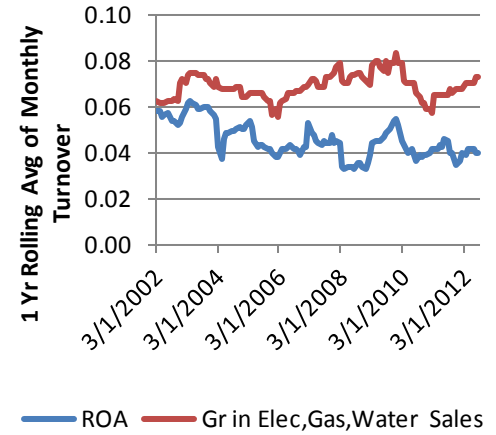


Figure 32: 1 Yr Rolling Avg of Monthly Turnover, ROA & Gr in Elec, Gas, Water Sales

Utilities in S&P Capital IQ U.S. Universe, 3/2001-9/2012



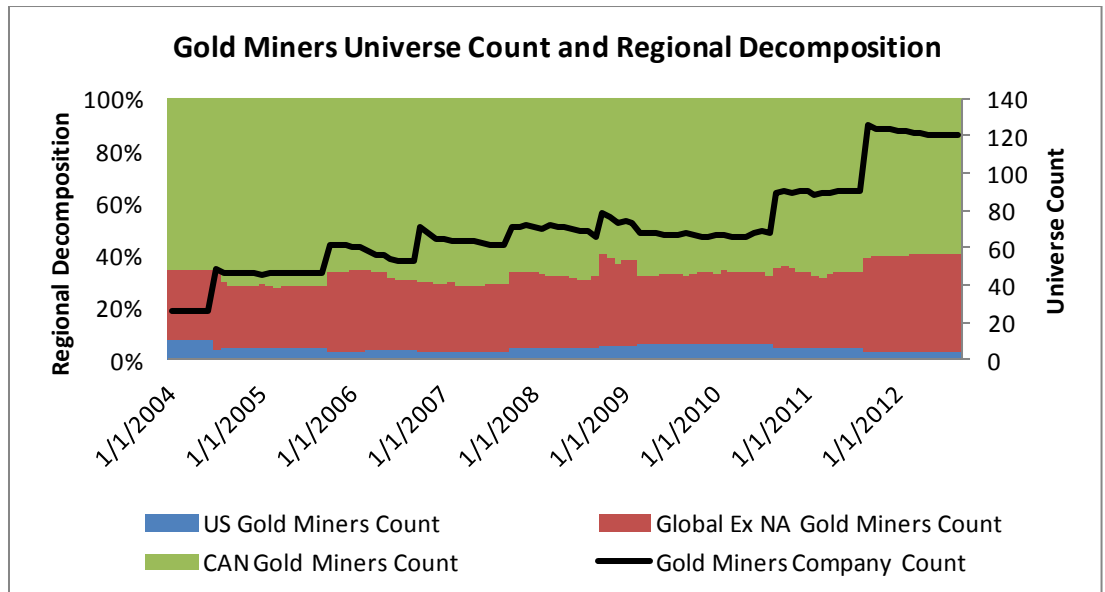
Source: S&P Capital IQ. Backtested performance is not an indication of future results.

4.7 Gold Mining

Gold miners consist of companies classified into the GICS industry code 15104030 [gold mining] within the S&P BMI global universe. Figure 33 shows the company count within the gold mining universe as well as the breakdown of the securities across three regions, the U.S., Canada, and International.

Figure 33: Mining Universe Company Count and Regional Decomposition

Gold Mining in S&P BMI Global Index, 1/2004-9/2012



Source: S&P Capital IQ

Valuation for mining companies typically is determined not by their earnings but rather by their assets. Reserves and production are among the most important items to mining companies and items that we considered when generating our gold mining factor ideas [Table 22].

Table 22: Factor Definitions

Gold Mining in S&P BMI Global Index, 1/2004-9/2012

Factor	Description	Direction
Proved & Probable Reserves / Market Cap ("P&PRestoMktCap")	Reserves are extremely important to gold mining companies. This signal measures the proved and probable reserves of a company to its market cap	D
Reserve Acquisition Cost (1 Yr Change in Proved & Probable Reserves / Exploration Expenditure "YoYChgP&PRestoExploreExp")	This signal measures the cost of acquiring new reserves. It is defined as the one year change in proved & probable reserves to exploration expenditure	D
Actual Production / Market Cap ("ProdtoMktCap")	This is the market capitalization divided by actual production. This shows how much the market is willing to pay for each ounce of production. We look at the inverse of this signal	D
Proved & Probable Reserves / Actual Production ("MineLife")	This signal is equal to proved & probable reserves divided by annual production. Mine life represents the years a mine has left at its current production rate. A higher mine life is better	D
1 Year Change in Actual Production ("ProductionGrowth")	This signal is the one year change in actual production. We prefer companies with growing production.	D
1 Year Change in Proved & Probable Reserves ("ReserveGrowth")	Growing reserves can be a sign the gold mining companies are doing well. This signal measure the one year change in proved and probable reserves.	D

Source: S&P Capital IQ

Table 23 displays the backtest results of our mining metrics. The performance of all factors is uninspiring with no significant information coefficients or long-short return spreads.

Table 23: Factor Results

Gold Mining in S&P BMI Global Index, 1/2004-9/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
ProductionGrowth	Feb-04	43	0.032	0.62%	50%	58%
P&PRestoMktCap	Jun-03	68	0.010	0.64%	52%	46%
MineLife	Feb-04	44	0.002	-0.12%	45%	50%
ReserveGrowth	May-04	55	0.000	-0.11%	47%	48%
ReserveAcquisitionCost	Nov-04	45	-0.012	-0.28%	48%	44%
ProdtoMktCap	Feb-04	52	-0.027	-0.26%	49%	40%*

*p-value < 10%

**p-value < 5%

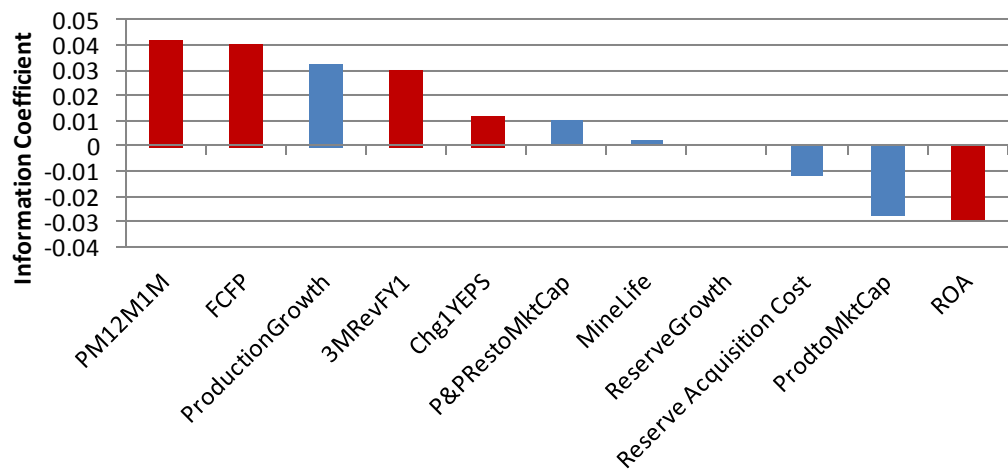
***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

The generic factors show stronger performance than many of the gold mining factors, Figure 34. Production Growth is the strongest performer among the industry factors followed by Proved & Probable Reserves to Market Cap. As anticipated, investors seem to value future revenue potential focusing on companies with large reserves and growth in production. Comparisons of the IC decay and 1-year rolling average monthly turnover of one industry-specific factor, Proved & Probable Reserves to Market Cap, and one generic factor, PM12M1M, are shown in Figure 35 and Figure 36. Proved & Probable Reserves to Market Cap has a poorer IC decay than PM12M1M, though it does have a much lower turnover rate than that same factor. Two factors, Proved & Probable Reserves to Market Cap and Production to Market Cap have statistically significant correlations with some generic factors [Table 39 of the Appendix].

Figure 34: Average 1M IC of Gold Mining and Generic Factors

Gold Mining in S&P BMI Global Index, 1/2004-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 35: IC Decay, PM12M1M & P&PrestoMktCap
Gold Mining in S&P BMI Global Index, 1/2004-9/2012

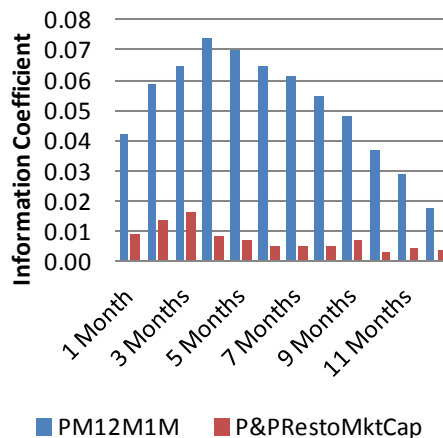
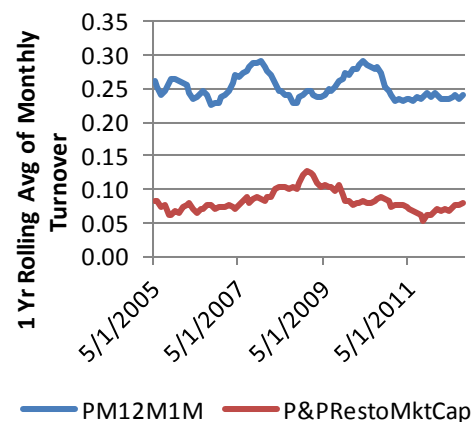


Figure 36: 1 Yr Rolling Avg of Monthly Turnover, PM12M1M & P&PrestoMktCap

Gold Mining in S&P BMI Global Index, 1/2004-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

We examined the performance of our gold mining factors in high/low % change in gold price regimes. We would expect our production related factors to perform particularly well when gold prices are on the rise because the gold produced can be sold at the current gold prices. The performance statistics for each of the regimes can be found in Table 24.

Table 24: Gold Mining Regime Test Results

Gold Mining in S&P BMI Global Index, 1/2004-9/2012

	Monthly IC		Monthly Spread	
	High Gold Price % Change	Low Gold Price % Change	High Gold Price % Change	Low Gold Price % Change
P&P Resto MktCap	0.000	0.019	0.98%	1.14%
Reserve Growth	-0.018	-0.036	-1.32%	-1.20%
Reserve Acquisition Cost	-0.035	-0.020	-1.55%	-0.41%
Production Growth	-0.009	0.007	-0.46%	0.77%
Production to MktCap	0.016	-0.024	1.66%	-1.07%
Mine Life	-0.039	0.040	-1.62%*	1.65%
Regime count	52	51	52	51

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

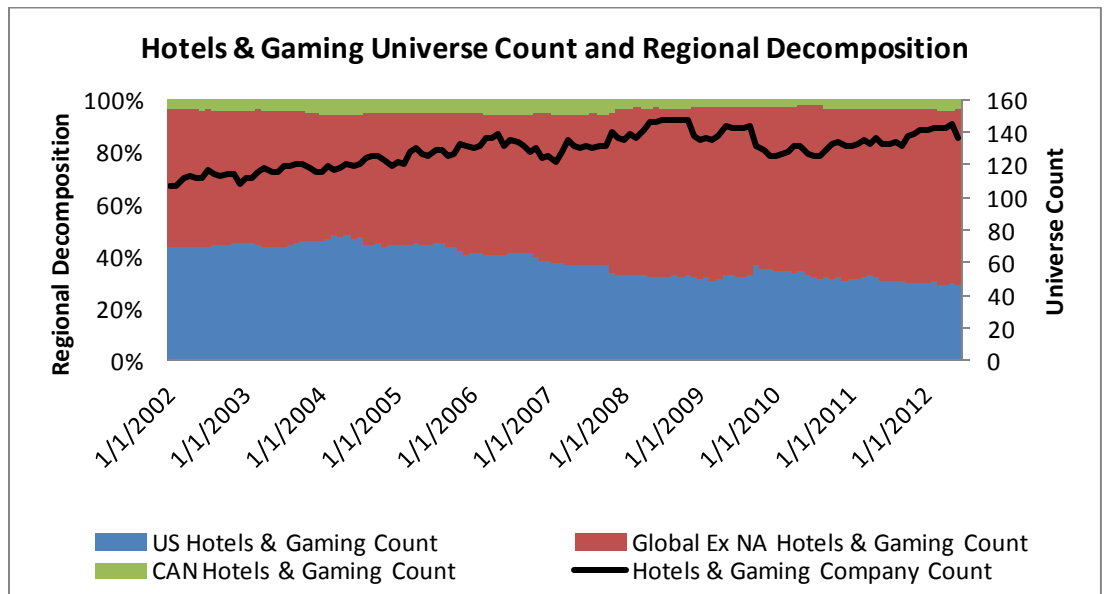
The results between regimes are not as pronounced as we expected. When gold prices are rising, many of our factors do not perform better. Only Production to Market Cap improves substantially in high % change in gold price regimes. The lackluster performance for reserve related factors may be due to the fact that reserves take time to mine and sell, so gold prices now may not give an accurate indication of gold prices when the reserves are mined.

4.8 Hotels & Gaming

Though hotel companies and gaming companies can be divided into two separate industries, they tend to share many similarities [i.e. most gaming companies also run hotels or resorts in conjunction with their gaming facilities, and most cruise lines also having gaming facilities on their ships]. Therefore, we grouped these two industries into one industry for industry specific data purposes. The hotels & gaming universe consists of companies classified into the GICS sub-industry code 25301010 [Casinos & Gaming] and 25301020 [Hotels, Resorts, & Cruise Lines] within the S&P BMI global universe. Figure 37 shows the company count within the hotels & gaming universe as well as the breakdown of the securities across three regions, the U.S., Canada, and International.

Figure 37: Hotels & Gaming Universe Company Count and Regional Decomposition

Hotels & Gaming in S&P BMI Global Index, 1/2002-9/2012



Source: S&P Capital IQ

Important information for this industry includes items related to hotel & casino revenues, room revenues, and growth in rooms & properties. These metrics were useful for gaining the most insight into the hotels & gaming industry in our factor construction process [Table 25].

Table 25: Factor Definitions

Hotels & Gaming in S&P BMI Global Index, 1/2002-9/2012

Factor	Description	Direction
Hotel, Motel, Casino, and Resort Revenue / Operating Expenses ("Hotel&CasinoRevtoOperExp")	For hotel & gaming companies, hotel, motel, casino, and resort revenues are key to their success. This signal is the total of all these revenues over total operating expenses	D
Total Room Revenue / Rooms at Period End ("RevperRoom")	This signal is the ratio of the total room revenue over the total number of rooms at the end of the period. More revenue per room is a positive sign for companies	D
Room Margin ("RoomMargin")	This signal is the room revenue less expenses all over room revenues. Higher margins show higher profitability for companies and are considered to be a positive sign	D
Room Revenues less Room Expenses / Rooms at Period End ("ProfitperRoom")	This signal is the room profit per room, that is, room revenue less room expenses over the total number of rooms at period end. Higher profit per room shows that companies are operating more efficiently.	D
1 Year Change in Total Number of Properties ("YoYChgNumProperties")	Growing properties can lead to more revenues and increase economies of scale. This signal is the one year change in number of properties at period end	D
1 Year Change in Total Number of Rooms ("YoYChgNumRooms")	Expanding the number of rooms is also a positive growth sign for companies. This signal measures the one year change in number of rooms at period end	D
1 Year Change in Room Revenue / Rooms at Period End ("YoYChgRevperRoom")	Room revenue per room alone is a valuable signal, but a positive growth trend for this ratio is also a positive sign for a company.	D

Source: S&P Capital IQ

The backtest results for the hotels & gaming industry are displayed in Table 26. Two factors, Profit per Room and Revenue per Room have statistically significant information coefficients and long-short hit rates. All other factors do not provide statistically significant performance.

Table 26: Factor Results

Hotels & Gaming in S&P BMI Global Index, 1/2002-9/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
ProfitperRoom	Jan-02	16	0.055**	0.90%	59%**	57%
RevperRoom	Jan-02	23	0.034*	0.67%	61%***	52%
RoomMargin	Jan-02	18	0.021	0.76%	53%	55%
Hotel&CasinoRevtoOperExp	Jan-02	54	0.013	-0.47%	47%	50%
YoYChgNumRooms	Mar-02	36	0.010	0.35%	52%	49%
YoYChgNumProperties	Jul-04	23	-0.014	-0.19%	40%**	46%
YoYChgRevperRoom	Mar-02	19	-0.015	-0.78%	52%	45%

*p-value < 10%

**p-value < 5%

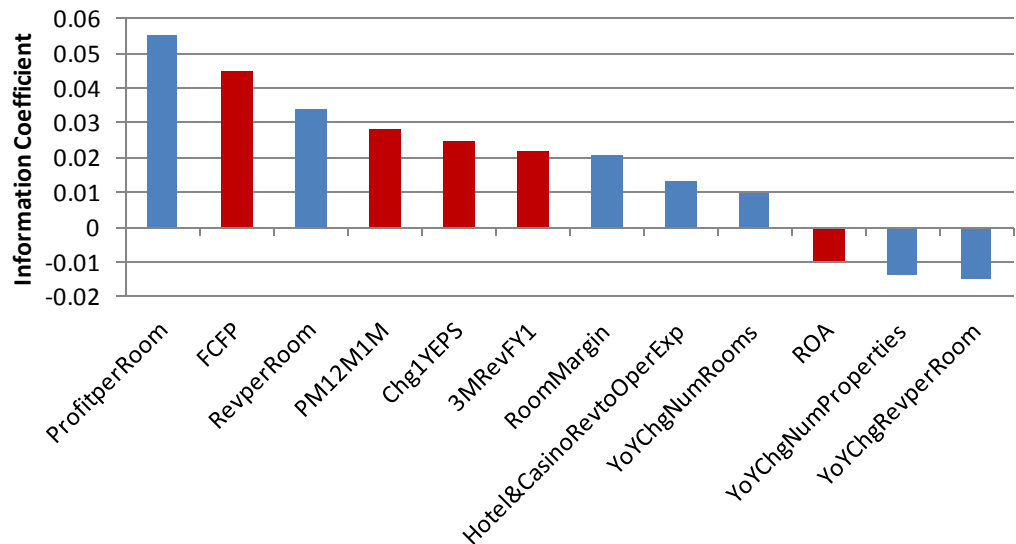
***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Some of the hotel & gaming factors show strong performance relative to the benchmark generic factors, Figure 38. These results indicate that there is important information to be found in using industry specific signals for the hotels & gaming industry. Filling rooms and managing room expenses are important factors for hotel & gaming firms to consider. We compare the IC decay and 1-year rolling average monthly turnover of Profit per Room and one generic factor, FCFP, in Figure 39 and Figure 40. Profit per Room has a stronger IC decay and lower turnover than FCFP. These are positive signs of a longer lasting more consistent signal for the industry factor. In our correlation tests, only Hotel & Casino Revenue to Operating Expenses has significant correlations with each of the generic factors, Table 40 of the Appendix.

Figure 38: Average 1M IC of Hotels & Gaming and Generic Factors

Hotels & Gaming in S&P BMI Global Index, 1/2002-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 39: IC Decay, FCFP & ProfitperRoom Hotels & Gaming in S&P BMI Global Index, 1/2002-9/2012

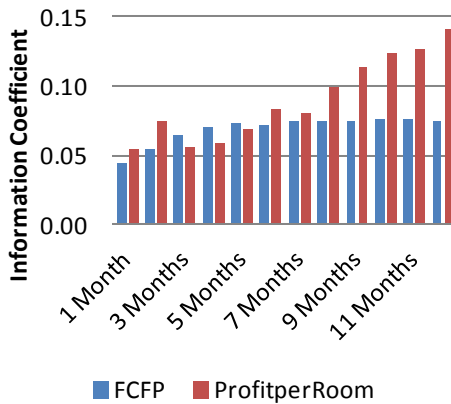
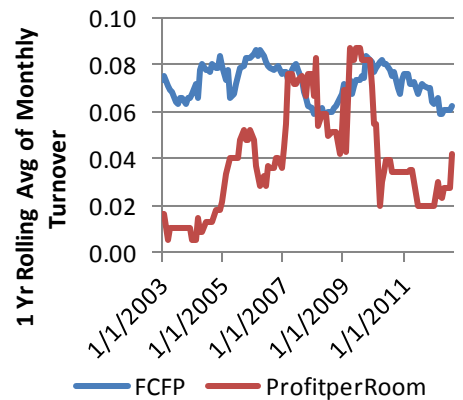


Figure 40: 1 Yr Rolling Avg of Monthly Turnover, FCFP & ProfitperRoom Hotels & Gaming in S&P BMI Global Index, 1/2002-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Since Hotels & gaming companies are dependent on consumer discretionary spending and are vulnerable to economic downturns, we analyze the performance of our hotels & gaming factors during high/low real GDP growth rate % regimes. The GDP growth rates used here are a weighted average of the GDP rates for the G7³ countries as calculated by the Organization for Economic Co-operation and Development [OECD]. The weights for each individual country in the G7 are based on the previous year's private final consumption expenditure of households and non-profit institutions serving households expressed in purchasing power parity. Table 27 shows the results for the tests in the high/low real GDP growth rate % regimes.

Table 27: Hotels & Gaming Regime Test Results

Hotels & Gaming in S&P BMI Global Index, 1/2002-9/2012

	Monthly IC		Monthly Spread	
	High Real GDP Growth Rate %	Low Real GDP Growth Rate %	High Real GDP Growth Rate %	Low Real GDP Growth Rate %
Hotel&CasinoRevtoOperExp	-0.013	0.037*	-0.89%*	-0.07%
YoYChgNumRooms	-0.015	0.036	-0.18%	0.89%
YoYChgNumProperties	-0.041	0.009	-0.52%	0.10%
RevperRoom	0.008	0.060**	0.19%	1.13%
ProfitperRoom	0.056	0.053	0.52%	1.26%
YoYChgRevperRoom	0.001	-0.032	0.15%	-1.70%
RoomMargin	0.032	0.011	0.94%	0.58%
Regime count	63	65	63	65

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

During low GDP growth rate periods when consumer discretionary expenditure is low, companies with high Revenue per Room and Hotel & Casino Revenue to Operating Expense do particularly well. This may be because most hotels & gaming companies struggle during these economic down times, so those companies that do still generate strong revenues are especially rewarded. During high GDP Growth Rate % regimes consumer discretionary spending tends to increase, encouraging hotel & gaming companies to expand or acquire new facilities. However, the adverse performance of 1-Year Change in Number of Properties and 1-Year Change in Number of Rooms in high GDP growth rate regimes suggests that investors should be cautious as overexpansion during these periods is a serious risk.

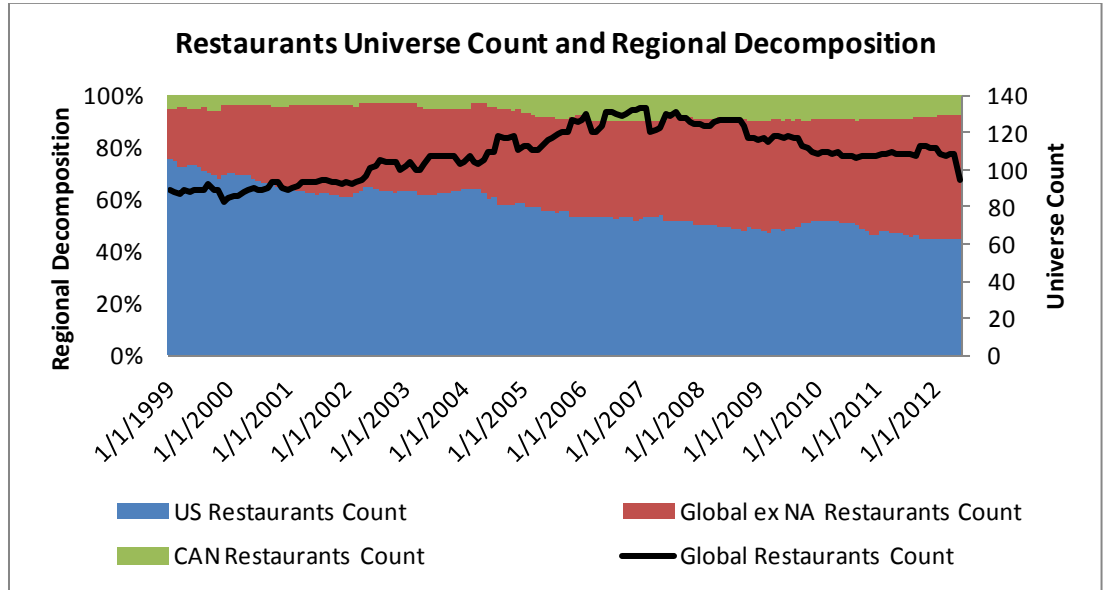
³ The G7 countries are the United States, the United Kingdom, France, Germany, Italy, Japan, and Canada

4.9 Restaurants

The restaurants universe consists of companies classified into the GICS sub-industry code 25301040 (Restaurants) within the S&P BMI global universe. Figure 41 shows the company count within the restaurants universe as well as the breakdown of the securities across three regions, the U.S., Canada, and International.

Figure 41: Restaurants Universe Company Count and Regional Decomposition

Restaurants in S&P BMI Global Index, 1/1999-9/2012



Source: S&P Capital IQ

Important restaurant financial information includes metrics measuring same restaurant sales and restaurant openings and closings. We used these and related ideas when generating factor ideas for the restaurants industry [Table 28].

Table 28: Factor Definitions

Restaurants in S&P BMI Global Index, 1/1999-9/2012

Factor	Description	Direction
Restaurants Opened & Acquired in the Last 12 Months / Total Restaurants at Period End ("TTMRestaurantsOP&Acq")	This signal is restaurants opened or acquired over the last 12 month over total restaurants at the end of the last 12 months. Similar to the above factor, opening and acquiring stores is can be good but over-saturation and overexpansion is a risk.	A
Restaurants Closed & Sold in the Last 12 Months / Total Restaurants at Period End ("TTMRestaurantsCLS&Sold")	This signal looks at restaurants closed or sold over the last 12 month over total restaurants at the end of the last 12 months. Similar to the above factor, closing or selling restaurants can be a sign of struggling but it may also show companies trimming away poorly performing restaurants.	A
Restaurant Operating Margin ("RestaurantOperMargin")	A higher operating margin shows higher profitability for a restaurant.	D
1 Year Growth in Same Restaurant Sales ("SameRestSalesGrw")	This signal is the 1 year growth in sales from restaurants open for at least a year. Growing same restaurant sales is a positive sign for companies.	D
1 Year Growth in Same Restaurant Sales Growth ("YoYChgSRSGrw")	This is the 1 year change in same restaurant sales growth. It looks at the acceleration of same restaurant sales where a growing growth rate is a positive signal.	D
1 Year Change in the Number of Restaurants at Period End ("YoYChgNumRestaurants")	This signal is the 1 year change in number of restaurants in operation. As with some above factors, growing the number of restaurants can be good but could also signal possible overexpansion?	A
1 Year Change in Restaurants Opened in the Last 12 Months ("RestaurantsOPMOM")	This is the 1 year change in number of restaurants opened over the last 12 months. Increasing the pace of restaurant openings may be positive (good growth) or negative (overexpansion).	A
1 Year Change in Restaurants Closed in the Last 12 Months ("RestaurantsCLSMOM")	This is the 1 year change in number of restaurants closed over the last 12 months. A growing number of closings may indicate continuing struggles for a company rather than simply trimming away poorly performing locations.	A

Source: S&P Capital IQ

The factor backtest results are shown in Table 29. Restaurant Closing Momentum provides a statistically significant information coefficient, long-short return spread, and hit ratios. Same Restaurant Sales Growth and 1-Year Change in Same Restaurant Sales Growth have a significant IC and spread respectively.

Table 29: Factor Results

Restaurants in S&P BMI Global Index, 1/1999-9/2012

	Start Date	Count	IC	L-S	HR L-S	HR - IC
RestaurantsCLSMOM	Dec-00	31	0.028*	1.24%***	58%*	58%*
SameRestSalesGrw	Jan-99	44	0.026*	0.45%	52%	56%
YoYChgSRSGrw	Jan-99	30	0.023	0.74%*	54%	55%
RestaurantOperMargin	Mar-01	42	0.017	-0.62%	48%	51%
RestaurantsOPMOM	Mar-00	48	0.015	0.45%	57%	55%
YoYChgNumRestaurants	Mar-00	62	0.005	0.36%	55%	51%
TTMRestaurantsOP&Acq	Mar-00	69	0.004	-0.14%	45%	51%
TTMRestaurantsCLS&Sold	Mar-00	51	0.001	-0.77%	49%	51%

*p-value < 10%

**p-value < 5%

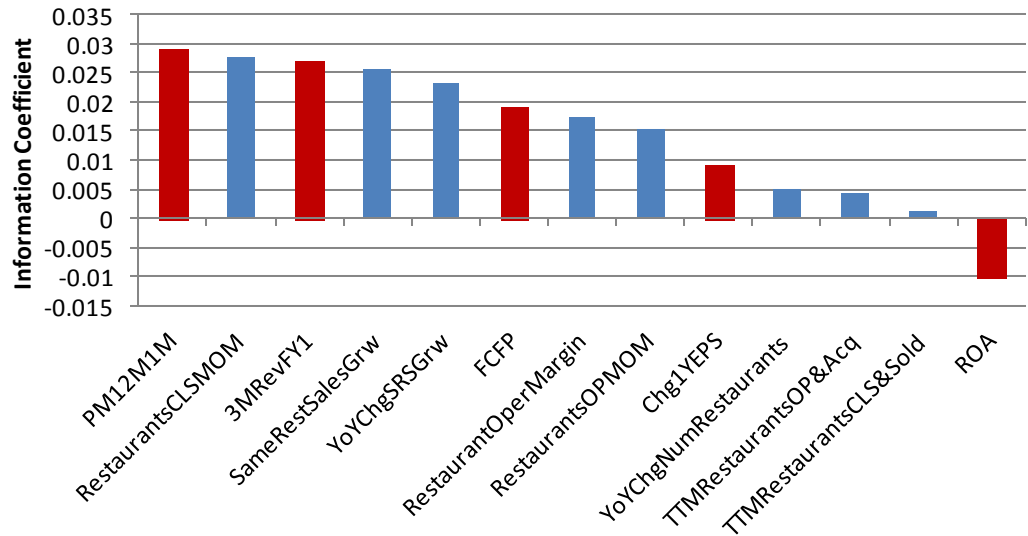
***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Our restaurant factors perform in line with the generic factors and better in many cases, Figure 42. While restaurants closed & sold in the last 12 months [TTMRestaurantsCLS&Sold] is a weak signal, increasing the rate of closings [RestaurantsCLSMOM] is a strong sign of poor company performance. Furthermore, this factor also has low correlations with generic factors, Table 41 of the Appendix. Comparisons of the IC decay and 1 year rolling average monthly turnover of one industry-specific factor and one generic factor are shown in Figure 43 and Figure 44. The industry factor, Same Restaurant Sales Growth, outdoes the generic factor PM12M1M with a better IC decay and a much lower turnover rate.

Figure 42: Average 1M IC of Restaurants and Generic Factors

Restaurants in S&P BMI Global Index, 1/1999-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Figure 43: IC Decay, PM12M1M & SameRestSalesGrw Restaurants in S&P BMI Global Index, 1/1999-9/2012

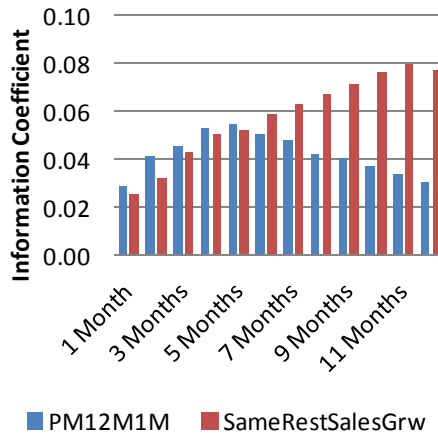
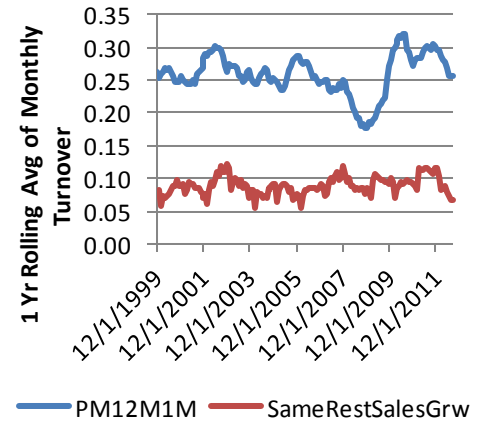


Figure 44: 1 Yr Rolling Avg of Monthly Turnover, PM12M1M & SameRestSalesGrw Restaurants in S&P BMI Global Index, 1/1999-9/2012



Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Like hotels & gaming and retail companies, restaurants are classified in the consumer discretionary sector and are therefore vulnerable to economic downturns. To see how this may affect factor performance, we tested our restaurant factors during high/low real GDP growth rate % regimes. The GDP growth rates used here are a weighted average of the GDP rates for the G7 countries. Table 30 shows the results for the tests in high/low real GDP growth rate % regimes.

Table 30: Restaurants Regime Test Results

Restaurants in S&P BMI Global Index, 1/1999-9/2012

	Monthly IC		Monthly Spread	
	High Real GDP Growth Rate %	Low Real GDP Growth Rate %	High Real GDP Growth Rate %	Low Real GDP Growth Rate %
SameRestSalesGrw	0.037	0.016	0.73%	0.08%
YoYChgSRSGrw	0.030	0.023	0.79%	0.54%
TTRestaurantsOP&Acq	0.001	0.004	-0.21%	-0.15%
RestaurantsCLSMOM	0.021	0.030	1.00%*	1.38%***
RestaurantOperMargin	0.025	0.007	-0.17%	-1.11%
YoYChgNumRestaurants	0.004	0.008	0.04%	0.76%
RestaurantsOPMOM	0.001	0.031*	-0.19%	1.10%**
TTRestaurantsCLS&Sold	-0.005	0.001	-0.61%	-1.05%
Regime count	75	75	75	75

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Same Restaurant Sales Growth performs well at all times, but especially strongly during good economic periods [when GDP growth rates are high]. Likewise, most other factors perform similar or better in high GDP growth rate periods. Restaurants Opening Momentum does well in low GDP growth rate periods, which may indicate that increasing restaurant openings in economic down times could be risky and lead to over expansion.

5 Data Definition

Industry-specific data for this study is sourced from S&P Capital IQ's Global Point-in-Time database and Compustat Industry-Specific data. The start of data coverage for each industry varies but typically begins around 2001. The universes, for the most part, are constructed using the S&P BMI global universe filtering by GICS sector, industry, or sub-industry codes depending on the industry being tested. Because for our Utility and Managed Healthcare industries we use Compustat data, which only covers US firms, our utilities & managed healthcare universes are made up of utility [GICS code 55] or managed healthcare [GICS code 35102030] companies respectively within the S&P Capital IQ Universe only. This universe covers all securities with primary listing in the US.

6 Conclusion

Industry specific metrics have long been utilized by fundamental investors. Many investors however struggle with the relative usefulness of the metrics and thus use the metrics to create a mosaic of a company's operations.

Conversely, Industry specific data has been often overlooked by quantitative modelers in the past as, by its very nature, it sacrifices breadth for depth.

In this piece we use S&P Capital IQ's Global Point-in-Time data and Compustat Industry-specific data to examine 70 factors in 11 industries: airlines, hospitals & facilities, managed healthcare, pharmaceuticals & biotechnology, homebuilding, insurance, telecommunications, utilities, gold miners, hotels & gaming, and restaurants. The backtest results for many of these factors are encouraging. Industry factors often have higher IC's, higher 1 month return spreads, and lower turnover than some of the most commonly used and best performing generic factors. Furthermore, industry factors have low correlations with generic factors. Including industry factors alongside generic factors in a multi-factor model could provide important insight and added value to a stock picking strategy.

The factors discussed in this paper will be added to the Alpha Factor library. This will deepen our industry-specific offering joining the retail, banking, and oil & gas factors from our previous studies.

APPENDIX: Correlations

The table within each industry section shows the 1-month IC factor correlation matrix of each of our industry factors with each of the five generic factors used as benchmarks. We mark cells with correlations that significantly different from zero with p-values of 10% or less.

Airlines

1-Year Growth in Revenue Passenger Miles and Operating Expense per Available Seat Mile are significantly correlated with most generic factors. However, our other airline factors generally have lower correlations. This is a promising sign that the industry factors are incorporating new information not covered by generic alpha signals.

Table 31: 1-Month IC Correlation Matrix

Airlines in S&P BMI Global Index, 1/2001-9/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
1YrGrRPM	0.24***	0.12	0.19**	0.47***	-0.44***
OpExp/ASM	-0.33***	-0.25***	-0.20**	-0.25***	0.28***
1YrGr RPC	0.16*	0.08	0.08	0.43***	-0.35***
FuelCons/ASM	0.04	0.02	-0.06	-0.07	0.15*
AvgAgeofAircraft	-0.01	-0.18**	-0.22***	-0.05	0.14*
PassengerLF	0.23***	-0.06	-0.15*	0.04	0.08
TotalProfit/ASM	0.05	-0.17**	-0.16*	-0.01	-0.12

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Hospitals & Facilities

Only Total Revenue per Facility is significant with each of the generic factors. The other hospital & facility factors have low and generally not significant correlations, which is a good indication that the industry factors are incorporating new information not covered by generic alpha signals.

Table 32: 1-Month IC Correlation Matrix

Healthcare in S&P BMI Global Index, 1/2001-9/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
FacilitiesGr	0.04	0.06	0.01	0.05	-0.11
GrAvgLengthStay	0.18**	-0.06	-0.03	0.08	-0.17*
TotalRevperFacility	0.23***	0.17**	0.19**	0.21**	-0.24***
%ChangeAdmissions	-0.01	0.06	0.01	0.02	-0.03
PatientDaysGr	-0.01	0.05	0.04	0.00	-0.04
LicensedBedsGr	-0.07	0.14*	0.06	0.04	0.01
SurgeriesGr	0.10	0.13	0.11	0.08	-0.15*

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Managed Healthcare

1 Year Growth in Enrollment and 1 Year Growth in Healthcare Premiums are strongly correlated with ROA, but generally, the managed healthcare factors have low correlations with generic factors.

Table 33: 1-Month IC Correlation Matrix

Managed Healthcare in S&P Capital IQ US Universe, 5/2002-9/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
1YrGrwEnrollment	-0.06	0.01	0.15*	0.13	-0.35***
1YrGrwHealthcarePremiums	0.02	0.10	0.20**	0.21**	-0.22***
MedicalLossRatio	-0.09	-0.09	-0.08	-0.04	0.09
DCPtoMedCosts	0.05	-0.02	0.06	-0.22**	-0.03

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Pharma & Bio-tech

Only Patents to Market Cap is highly correlated with the generic factors. All other pharm & biotech factors have low correlations indicating that they are incorporating new information beyond generic alpha signals.

Table 34: 1-Month IC Correlation Matrix

Pharma & BioTech in S&P BMI Global Index, 7/2002-9/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
1YrGrwNumPatentApps	-0.09	-0.06	0.06	-0.01	0.06
1YrGrwNumPatents	0.06	0.04	0.13	0.12	-0.05
1YrGrwNumProdsinPh3	-0.02	0.12	-0.06	-0.17*	-0.01
PatentstoMktCap	-0.57***	0.11	-0.53***	-0.21**	0.53***

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Homebuilders

Three homebuilding factors in particular show elevated correlation with the generic factors, Home Gross Margin, Delivered Homes Value Growth to Market Cap, and 1Yr Growth in Housing Sales Revenue. All other factors have moderate to low correlation.

Table 35: 1-Month IC Correlation Matrix

Homebuilding in S&P BMI Global Index, 1/2001-9/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
HomeGM	-0.49***	0.17**	0.26***	0.44***	-0.64***
BacklogHomesValueGr	-0.06	0.18**	0.14*	0.15*	-0.09
1YrGrNetNewOrders	-0.13	0.10	0.05	0.06	-0.07
DelivHomeValGrwtoMktCap	-0.15*	0.00	-0.04	0.32***	-0.43***
1YGrTotHRevtoConsinProg	0.07	0.00	0.08	0.18**	-0.10
1Yr Growth in Housing Sales Revenue	-0.33***	0.30***	0.21**	0.62***	-0.62***
1YGrTotHomeRevtoInv	0.11	-0.04	-0.03	0.11	0.02

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Insurance

Several insurance factors have elevated correlation with generic factors, especially the Expense Ratio, Solvency Ratio, and 1-Year Growth in Total Investments . Most insurance factors are significantly correlated with ROA. Still, low correlations among many factors, Net Premiums Written to Statutory Surplus in particular, demonstrate that there is new information being incorporated by these factors

Table 36: 1-Month IC Correlation Matrix

Insurance in S&P BMI Global Index, 3/2001-7/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
RetentionRatio	0.21**	-0.09	-0.12	-0.06	0.32***
U/wMargin	-0.03	0.05	0.06	0.18**	-0.43***
1YrGrwU/wProfit	0.08	0.03	0.01	0.38***	-0.22***
1YrGrwNPE	0.08	0.12	0.11	0.19**	-0.14
1YrGrwTotInvestments	0.05	0.27***	0.29***	0.35***	-0.30***
ClaimsRatio	-0.36***	0.00	0.06	0.01	-0.14
CombinedRatio	-0.38***	0.06	0.14	0.03	-0.22***
ExpenseRatio	-0.35***	0.18**	0.27***	-0.02	-0.52***
SolvencyRatio	0.22***	-0.07	-0.17**	0.07	0.39***
NPWtoStatutorySurplus	0.12	0.00	0.00	0.10	0.13

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Telecom

Wireless Penetration Rate and Churn Rate in particular have elevated correlations with a few generic signals. Most factors are not highly correlated with the generic factors.

Table 37: 1-Month IC Correlation Matrix

Telecommunications in S&P BMI Global Index, 6/2000-9/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
1YrGrwBroadbandSubs	-0.04	-0.18**	-0.13	-0.13	0.04
1YrGrwNetSubsAdds	-0.14*	0.02	0.02	0.10	-0.06
WirelessPenetrationRate	0.26***	0.17**	0.13	0.13	-0.32***
ChurnRate	-0.13	-0.11	-0.21**	-0.11	0.34***
1YrGrTotWirelessSubs	-0.16*	-0.02	-0.14*	-0.02	0.19**
1YrGrwChurnRate	-0.03	0.01	-0.10	0.00	0.11

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Utilities

In this instance there are no utilities factors that show especially elevated correlation with the generic factors, only 1-Year Growth in Electric, Gas, & Water Sales has a significant correlation with Chg1YEPS at the 5% level.

Table 38: 1-Month IC Correlation Matrix

Utilities in S&P Capital IQ U.S. Universe, 3/2001-9/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
Gr in Fuel Cost-Elec,Gas	-0.10	-0.07	-0.01	-0.10	0.07
Gr in Avg Revenue/KWh	0.00	-0.11	-0.12	-0.05	0.11
Gr in Oper Rev-Elec,Gas,Water	-0.13	0.00	-0.13	0.19**	0.12
Gr in Elec,Gas,Water Sales	-0.02	0.01	0.04	0.09	-0.01

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Gold Mining

Two factors, Proved & Probable Reserves to Market Cap and Production to Market Cap have statistically significant correlations with some generic factors. Overall though, most mining factors are not correlated with generic signals indicating that gold mining factors are incorporating new information.

Table 39: 1-Month IC Correlation Matrix

Gold Mining in S&P BMI Global Index, 1/2004-9/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
ReserveGrowth	0.13	-0.14	0.04	0.00	-0.11
ProductionGrowth	-0.11	-0.04	0.06	0.08	-0.03
MineLife	0.13	0.12	0.04	-0.01	0.11
Reserve Acquisition Cost	0.11	-0.07	0.10	-0.03	0.01
P&PrestoMktCap	-0.32***	0.05	-0.26***	-0.06	0.22**
ProductiontoMktCap	-0.27***	-0.16	-0.45***	-0.05	-0.09

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Hotels & Gaming

Hotel & Casino Revenue to Operating Expenses has significant correlations with each of the generic factors. 1-Year Change in Number of Properties also has elevate correlation. On the whole though, the hotels & gaming factors are not significantly correlated with these generic factors.

Table 40: 1-Month IC Correlation Matrix

Hotels & Gaming in S&P BMI Global Index, 1/2002-9/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
Hotel&CasinoRevtoOperExp	0.35***	0.18**	0.22**	0.15*	-0.45***
YoYChgNumRooms	-0.15*	-0.03	0.00	0.14	-0.14
YoYChgNumProperties	-0.27***	-0.15	-0.22**	0.06	0.16
ProfitperRoom	-0.10	0.11	0.05	0.11	-0.01
YoYChgRevperRoom	0.22**	0.10	0.08	-0.08	-0.01
RoomMargin	-0.12	-0.01	-0.06	-0.04	0.17**
RevperRoom	-0.03	0.21**	0.15*	0.13	-0.05

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

Restaurants

Several restaurant factors are significantly correlated with some generic factors, particularly Same Restaurant Sales Growth, Restaurant Operating Margin, and 1 Year Change in Number of Restaurants. However, two of the best performing industry factors, Restaurant Closing Momentum and 1-Year Change in Same Restaurant Sales Growth have low correlations and provide unique insight that is not covered by generic alpha signals.

Table 41: 1-Month IC Correlation Matrix

Restaurants in S&P BMI Global Index, 1/1999-9/2012

	FCFP	3MRevFY1	PM12M1M	Chg1YEPS	ROA
SameRestSalesGrw	-0.07	0.12	0.20***	0.39***	-0.35***
YoYChgSRSGrw	-0.01	0.01	0.05	0.13	-0.02
TTMRestaurantsOP&Acq	-0.07	0.02	0.03	0.31***	-0.34***
RestaurantsCLSMOM	0.19**	0.01	-0.09	0.04	0.04
RestaurantOperMargin	-0.12	0.15*	0.23***	0.29***	-0.63***
YoYChgNumRestaurants	-0.20***	0.05	0.02	0.29***	-0.40***
RestaurantsOPMOM	-0.25***	-0.22***	-0.14*	0.04	0.04
TTMRestaurantsCLS&Sold	0.13*	-0.06	-0.17**	-0.15*	0.43***

*p-value < 10%

**p-value < 5%

***p-value < 1%

Source: S&P Capital IQ. Backtested performance is not an indication of future results.

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Our Recent Research

October 2012: Introducing S&P Capital IQ's Fundamental Canada Equity Risk Models

In July 2012 we released our regional risk models -- the Pan-Asia ex. Japan and the Pan-European Models, and updated versions of our US and Global Risk Models. Continuing in our efforts to provide a broad set of models to the asset management community, we are now releasing our second single country risk model -- Canada Fundamental Equity Risk Model.

September 2012: Factor Insight: Earnings Announcement Return – Is A Return Based Surprise Superior to an Earnings Based Surprise?

In this report, we compare the performance of SUE to one based on returns around a firm's earnings announcement date [EAR], proposed by Brandt et al [2008]. We test both factors globally and find EAR dominates SUE in the U.S in the post Reg FD era on both a long-short return and top quintile excess return basis...

August 2012: Supply Chain Interactions Part 1: Industries Profiting from Lead-Lag Industry Relationships

Supply chain relationships are among the most visible and measurable, as revenues and costs shape the realized economic and financial performance of connected companies. Studies have shown that events within a supply chain do introduce these ripple effects, and theories incorporating this information into an investment process have garnered attention in recent years. We construct a map quantifying industry level connections along the supply chain. Using this map, and trailing industry returns as a proxy for industry level information shocks, we construct inter-industry momentum signals. These signals exhibit lead-lag relationships over short horizons, as the information shocks diffuse through the market and manifest themselves in the performance of related industries.

July 2012: Releasing S&P Capital IQ's Regional and Updated Global & US Equity Risk Models

Over the course of the last two years we released our Global and US Fundamental Equity Risk Models. As a natural progression we are releasing the first set of Regional Models – the Pan-Asia ex. Japan and the Pan-Europe Fundamental Equity Risk Models. This document will explain some of the salient aspects of the process adopted for constructing the Regional Models. We have also made additional improvements to our US & Global Equity Risk Models, and we shall explain these changes.

June 2012: Riding Industry Momentum – Enhancing the Residual Reversal Factor

Unlike individual stocks whose short-term returns tend to revert from one month to the next, industry portfolios exhibit return momentum even at a one-month horizon. We examine a strategy that takes advantage of both industry level momentum and stock level reversal. We combine our residual reversal factor with an industry momentum score, and find that the factor performance is greatly enhanced in the Russell 3000 universe between January 1987 and February 2012. The decile return spread is increased by 42 bps per month on average.

May 2012: The Oil & Gas Industry – Drilling for Alpha Using Global Point-in-Time Industry Data

In the oil & gas industry, a key determinant of value and future cash flow streams is the level of oil & gas reserves a firm holds. While most fundamental analysts/investors take into consideration a company's reserves in arriving at price targets, a majority of systematic driven processes do not. Using S&P Capital IQ's Global Point-in-Time database, we investigate the importance of reserve and production information provided by oil & gas companies.

May 2012: Case Study: S&P Capital IQ – The Platform for Investment Decisions

Ten years ago, AAPL traded just below \$12 and closed at \$583.98 on April 30, 2012. That is an average annual return of 48.1% over the period. During this same time the S&P 500 grew at an annual rate of only 2.65%. On April 2nd, Topeka Capital Markets initiated coverage of AAPL with a price target of \$1001. If achieved, this would make AAPL the first company to ever reach a \$1 trillion market cap. In this case study, we highlight some key S&P Capital IQ functionality in analyzing AAPL hypothetically reaching \$1000:

March 2012: Exploring Alpha from the Securities Lending Market – New Alpha Stemming from Improved Data

Numerous studies have examined the information content of short interest and found that heavily shorted stocks tend to underperform and liquid stocks with low levels of short interest subsequently outperform. Most studies relied on short interest data obtained directly from the exchanges available with a significant delay.

January 2012: S&P Capital IQ Stock Selection Model Review – Understanding the Drivers of Performance in 2011

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

January 2012: Intelligent Estimates – A Superior Model of Earnings Surprise

As residual stakeholders, equity investors place enormous importance on a company's earnings. Analysts regularly forecast companies' future earnings. The prospects for a company's future earnings then become the basis for the price an investor will pay for a company's shares. Market participants follow sell side analysts' forecasts closely, identifying those analysts that demonstrate forecasting prowess and track those analysts' forecasts going forward.

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 – Tough Times for Active Managers

July 2011: Research Briefs- 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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