Convergence Investment Partners

Convergence Long/Short Strategies

Q3-2019 Factor Analysis

> *"There are many ways one can attempt to reduce risk, improve performance, lower drawdown and reduce volatility."*
>
> *Barry Ritholtz, author/columnist*

Is now a good time to look at hedged equity and/or market neutral? We think an environment of market stress and uncertainty is ideal for an increased allocation to risk-averse and risk-mitigation strategies. These types of strategies have the objective of delivering positive returns while also protecting on the downside. For example, a hedged equity or long/short strategy will include short positions which can benefit the portfolio when stocks move lower in price. These strategies vary in their net exposure; our Convergence Long/Short Equity strategy targets a net exposure (long weight - short weight) from 70%-95%.

A market neutral strategy typically has a much lower net exposure, and typically targets a zero predicted beta aiming to provide a return stream that is independent of the broader market. Our Market Neutral strategy targets a forward-looking beta of 0.0 relative to the Russell 3000 Index and typically has a net exposure of 20-25%. We target a forward-looking beta of zero because our short positions tend to be slightly riskier and more volatile than our longs, thereby reducing the forward-looking beta. Market neutral strategies, like the Convergence Market Neutral strategy, are designed to benefit from the spread between the long and short positions. This spread return should be positive and independent of broader market returns, with the goal of delivering a low volatility return that is lowly correlated to the broader market. For example, if the market goes down, the short positions should fall in price more than the longs, generating a positive spread and therefore a positive return for the strategy investors. Finally, a hedged or market neutral strategy is designed to complement a diversified portfolio by helping to enhance return and mitigate volatility, especially in periods of stress and uncertainty.

We believe the inclusion of a hedged equity vehicle whose investment selection process is based on fundamental stock selection is worth strong consideration. Given the environment, we believe the opportunities for the Convergence Long/Short equity strategies are significant compared to long-only equity strategies. Given that each of our strategies have short positions, typically ranging between 20 and 100%, we target a source of alpha that is outside of the scope of long-only equity managers. The Convergence Long/Short equity strategies have the potential to source alpha opportunities from not only our best ranked long holdings, but also our top ranked short holdings. Finally, the long and short holdings are designed to act as a complement to each other and aid in producing a more diversified alpha relative to the overall portfolio.

Persistence of Factors: (quantifying investor appetites)

Our long-term investors are aware that at Convergence, we not only employ our factor composites for scoring and ranking all Russell 3000 Index members daily, but also seek to "quantify the environment" using these same factors. Moreover, some may recall that many years ago we discussed the persistence of these factors or "investor preferences" over time. Given the recent factor and stock market volatility, we thought it might be timely to revisit this idea.

In the following discussion we will use the words "preference" and "factor" interchangeably. Our process analyzes what investors are favoring or rewarding in the market at a particular time. At times, the environment favors companies with maximum operation leverage for example. At other times, large stable companies that might offer relative safety are favored. Our research has determined that as the cycle progresses, these shifts in preferences on the part of investors are observable, measurable and persistent.

The Convergence Process utilizes a proprietary ranking system, where the relative weights of the metrics within the model adjust based not only on the inputs, but also in response to the changing environment. Development of this ranking process began in the late 1990's and was designed to complement a fundamental stock selection process that had been in place for many years.

At Convergence, we look at 15 factor composites (composites are groups of similar factor metrics). Here are a few interesting nuggets about our composites and factors:

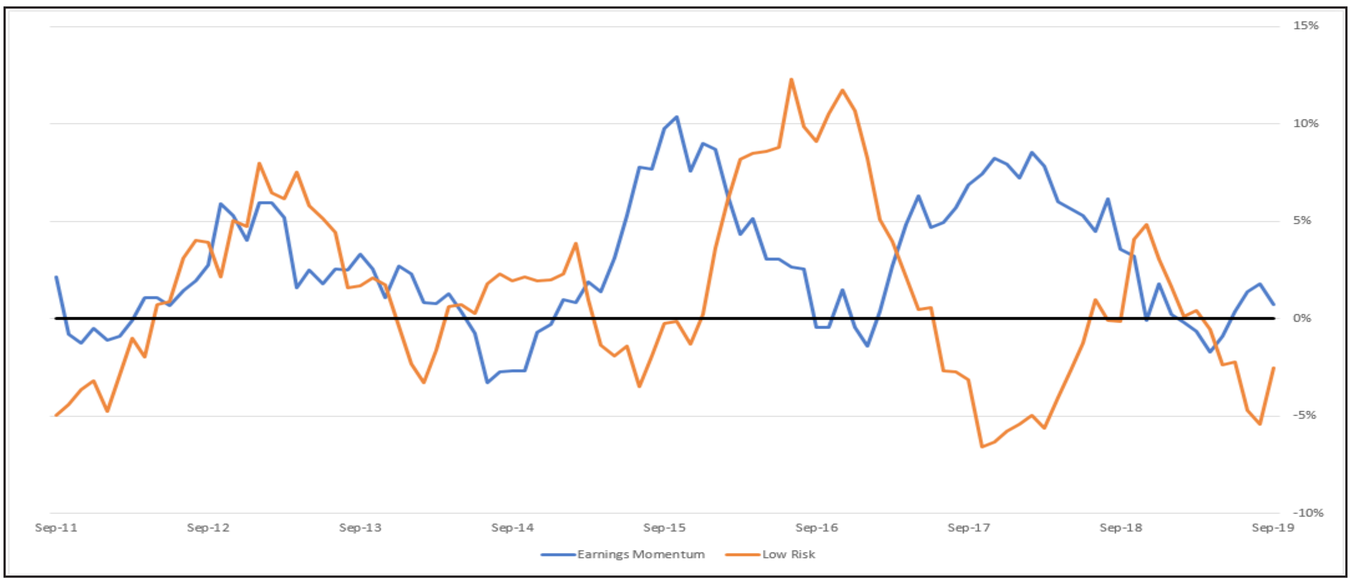
- These composites can be grouped into 5 categories: Value, Growth, Momentum, Quality and Risk
- Over 175 factors roll up into these composites
- The long model uses 14 composites
- The short model uses 13 composites
- The factors in each composite are different (but similar) for the longs and shorts
- Some factors and/or composites are different for certain industry groups

In addition to scoring the entire Russell 3000 Index daily on their standardized exposures to these factor composites, we also observe and measure how well each factor composite has been at predicting subsequent winners at the industry group level. Essentially, we look at how each of the 15 composites performed over the recent past in terms of returns, volatility, consistency, statistical efficacy (T-stat), etc. and tilt to favor the best rankings in our tactical scoring system in an effort to navigate market "corners," enhance return and reduce volatility. This is not intended to predict the future, and therefore, it only really matters if these top ranked metrics tend to remain effective for relatively longer time periods. In other words, are these preferences persistent?

In order to assess the persistence, we looked at the trailing 12 month spread returns of these factor composites to see how frequently these factors were delivering a positive return. We first looked at the monthly returns over a 20-year time period. Over 20 years there are 3,600 monthly returns; of these months, 58% of factor composite monthly returns are greater than zero. When we expand the time period from monthly to trailing 12 months, we now have 3,435 observations (we lose 165 in order to have the first 12-month observation), and the percentage of these values that are greater than zero jumps to 72%! This research helps validate our belief that factor composite performance is much more frequently greater than zero when looking at longer time periods.

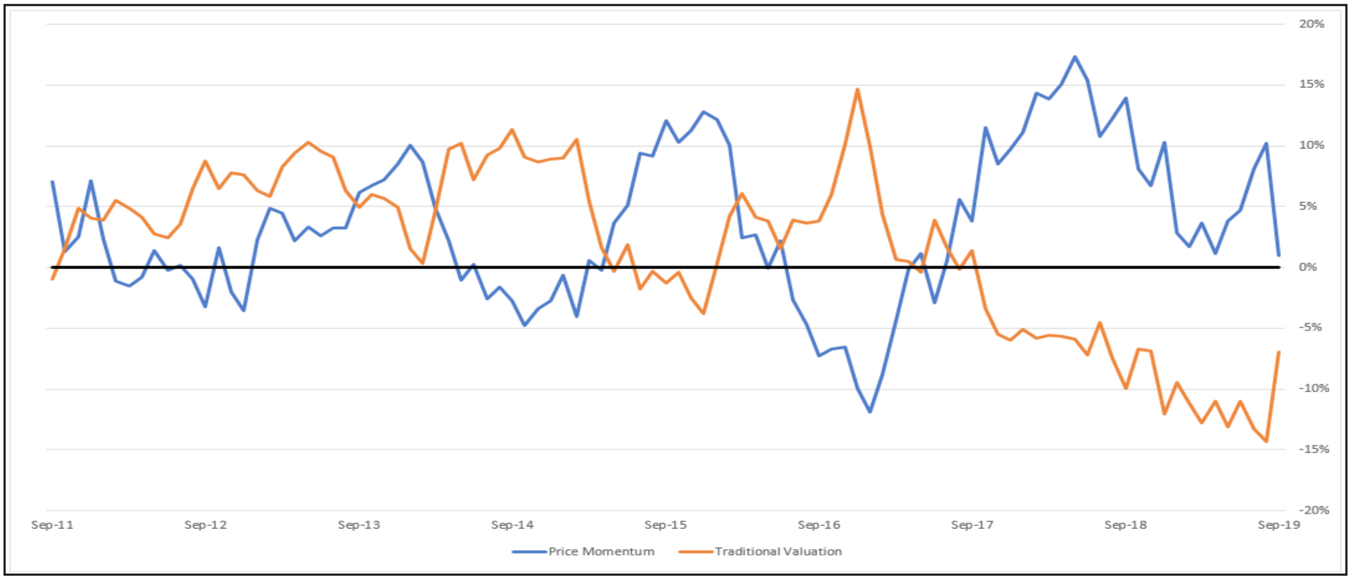
Looking at each composite individually makes these findings even more exciting (at least to us at Convergence), especially when we observe the interaction effects. Some of our composites are greater than zero 83% to 89% of the rolling 12-month periods. Our composites that are positive the least frequently have been positive 55% to 58% of the periods. These composites become much more attractive when their interaction effects (i.e., impact of diversification) are considered. Moreover, our factor tilting process is designed to lessen the weights of the less consistent factors in our tactical scoring process. Some interesting observations from this analysis are that the Expected Growth factor composite has done quite well in periods of irrational exuberance, when the Profitability and Quality factor composite are out of favor. Additionally, our Financial Leverage factor composite tends to be lowly correlated with improving sales and prudent capital discipline. For a complete list and detailed explanation of any of our factor composites, please feel free to reach out to us directly.

The following charts show two exciting interaction effects between our Earnings Momentum, Low Risk and Value Favored composites over the past 8 years. The first chart shows the trailing 12 month returns of Earnings Momentum versus Low Risk. Earnings Momentum favors companies with consistent forecasts of earnings over those with more inconsistent forecasts. It includes factors like earnings surprise and estimate dispersion. Low Risk favors lower volatility of price return, strong interest expense coverage and lower financial leverage.



Source: Convergence Investment Partners and Wilshire Analytics.

Although the average of the trailing 12 month returns of these two composites remains nicely above zero, it is also obvious that these two composites deliver returns that are lowly correlated to each other. Over the 20-year analysis period, these two composites have a -0.46 correlation. Another good example of two composites with low correlation are Traditional Value (think P/E, P/CF, P/Sales) and Price Momentum. This inverse relationship seems a bit more obvious. After a market scare, the names most sold off have a low valuation and poor momentum. These names subsequently move up in price as investor's appetite for risk returns. As the bull market rages on, valuations improve and then, extend past long-term market averages. This obviously fuels the momentum trade while taking the wind out of the value sails. The following chart shows the inverse relationship of these two factor composites. Over the 20-year analysis period, these two composites also have a -0.46 correlation.



Source: Convergence Investment Partners and Wilshire Analytics.

In addition to showcasing the benefits of combining factors to help improve return consistency, through low correlation, one can also observe the persistence of these factors or preferences. In the first chart, the risk composite remains in positive territory for well over a year in multiple instances. In the second chart, Traditional Valuation remains positive for nearly four consecutive years. This persistence supports the tactical overweighting of factors relative to other factors within our tactical scoring system, while the combination effects of lowly correlated factors support the utilization of strategic scoring methodology.

Factor Research

The following table shows the three top and bottom performing factors within the U.S. equity market over different time periods. We ranked all 15 factor composites by quintile spread return to show that what can work over the long term is not always true in the short term (see disclosures for a definition of quintile spread return).

	3 mo	6 mo	12 mo	5 yr	10 yr	20 yr
Top 3	Earnings Risk	Earnings Risk	Earnings Risk	Earnings Risk	Sales Growth	Traditional Value
	Size	Price Momentum	Size	Price Momentum	Earnings Risk	Price Reversal
	Price Reversal	Size	Price Reversal	Profits	Price Reversal	Relative Value
Bottom 3	Price Momentum	Traditional Value	RiskOff	Relative Value	RiskOff	Size
	Expected Growth	Accruals	Accruals	RiskOn	RiskOn	Price Momentum
	RiskOff	RiskOff	Traditional Value	Traditional Value	Expected Growth	Expected Growth

Source: Convergence Investment Partners and Wilshire Analytics.

The above table shows that Earnings Risk has been a very effective factor in the most recent time periods. This factor looks for stocks with consistent earnings, cash flow and sales. Additionally, it measures the uncertainty in analyst estimates for upcoming earnings. Earnings Risk has been an effective factor since the financial crisis. The factor draws on cash flow, which has been very powerful in the past 10-20 years. At Convergence we believe that the success of earnings risk reflects that investors have been favoring stability since the crisis, are relatively risk averse and, therefore, willing to reward stable growers of EPS, CF and sales. Conversely, these same investors have been punishing (selling) firms that have been inconsistent in their sales, earnings and cash flow. Another factor move that has been interesting to watch is Traditional Value (TV). Historically, this has been one of the most effective factors, and until September of this year, it had been one of the WORST performers in the recent past. The strong spread return in August (+7.1% top – bottom quintile) was powerful enough to pull TV out of the basement in both the trailing 3- and 6-month periods.

The table below shows an analysis of which factors worked in Q3-2019 versus their trailing 20-year returns. These tables show the long-short quintile spread returns of all the factor composites we monitor at Convergence Investment Partners. [1]

Factor metrics rewarded by market participants within the US equity markets

Source: Convergence Investment Partners; Wilshire Analytics

[1] These returns are linked monthly spread returns as opposed to the difference between the 12 month long and short holdings.

When looking at the 20-year chart, one easily observes that all Convergence Factor composites have generated a positive spread in this lengthy time period. Comparatively, when looking at the shorter, 3-month period, a few items become obvious:

- All but 1 composite had positive spread (the "factor reversal" we saw in Q2 remained intact for Q3)
- Earnings Risk, Size and Accelerating Sales were the real winners
- Value (traditional and relative) had positive spread for the quarter (mostly from September)
    - In the past 12 quarters TV & RV have been BOTH positive only 3 times (including Q3-19)
- In order to better observe thematic changes in factor efficacy, we created the following chart which shows spread returns of 3-month periods over the past 3 years. These are ranked from highest spread return to lowest spread return for each quarter (see the legend below).

Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	Sep-19
TV 10.32	PR 3.09	HG 2.83	PM 5.47	ER 3.45	PM 3	PM 3.15	PM 4.1	ER 9.17	PR 2.59	PM 4.15	ER 4.5
PT 4.93	AG 2.76	EM 2.17	EM 3.34	PM 3	AG 2.31	RV 2.28	PT 2.74	SZ 5.83	RV 0.59	EG 2	SZ 3.48
RON 4.38	CD 1.11	PM 1.73	PT 1.92	SZ 2.57	EG 1.92	RON 1.77	EM 1.65	RSK 3.49	RON -0.02	SZ 1.03	PR 3.05
ER 4.2	EM 0.98	SZ 1.09	CD 1.71	PT 2.56	ACC 1.61	CD 1.75	AG 1.1	HG 3.3	CD -0.51	PT 0.82	AG 2.75
AG 4.19	HG 0.92	PT 0.88	AG 1.06	TV 2.29	ER 1.02	RSK 0.97	ER 0.82	RV 1.7	HG -1.28	EM 0.82	EM 1.99
CD 3.57	SZ 0.59	ER 0.67	ACC 0.97	EM 1.23	HG 0.88	AG 0.96	CD 0.62	PT 1.6	EM -1.58	AG 0.72	CD 1.69
RSK 3.13	EG 0.13	AG 0.12	EG 0.8	AG 0.9	EM 0.87	ACC 0.93	PR 0.58	CD 1.57	EG -1.97	ER 0.66	PT 1.61
SZ 1.85	RV -0.64	EG -0.1	HG 0.73	RSK 0.3	PT 0.83	HG 0.1	EG 0.34	EG 1.08	ACC -2.02	HG 0.66	RON 1.31
PR 1.85	RON -0.68	CD -0.31	PR 0.12	RV 0.28	PR -0.1	EG -0.02	HG 0.23	PR 0.62	SZ -2.38	RV 0.33	RV 1.18
RV 0.9	PM -0.7	PR -0.52	RV 0.03	CD -0.22	CD -0.28	EM -0.24	RSK -0.43	TV -0.12	PT -2.76	PR -0.24	ACC 0.79
EM 0.25	RSK -1.18	ACC -0.62	ER -0.41	EG -0.29	SZ -0.57	PR -0.76	ACC -0.71	PM -0.24	AG -2.9	RON -0.39	TV 0.79
ACC 0.12	ACC -1.69	RV -1.49	TV -0.78	HG -0.93	RSK -0.98	ER -1.15	SZ -1.39	ACC -0.28	PM -3.22	CD -0.69	HG 0.5
HG -0.32	PT -1.95	RON -2.16	RON -1.11	PR -1.39	RON -2.9	PT -1.33	RON -2.5	EM -0.48	RSK -3.49	RSK -1.69	PM 0.46
EG -2.06	ER -2.39	TV -2.64	SZ -1.52	ACC -1.6	RV -3.07	TV -4.37	RV -2.7	AG -1.75	ER -4.56	TV -2.42	EG 0.22
PM -2.58	TV -4.83	RSK -3.47	RSK -1.54	RON -1.63	TV -4.41	SZ -6.7	TV -3.66	RON -2.32	TV -5.25	ACC -2.95	RSK -0.75

ACC	Accruals	HG	Historical Growth	RV	Relative Value
AG	Accelerating Growth	PM	Price Momentum	SZ	Size
CD	Capital Discipline	PR	Price Reversal	TV	Traditional Value
EM	Earnings Momentum	PT	Profits	RON	RiskOn
ER	Earnings Risk	RSK	RiskOff	EG	Expected Growth

Disclosures

Past performance is no guarantee of future results. Any investment contains risk including the risk of total loss. There is no guarantee that an investment or strategy will meet its investment objectives.

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Source of all factor data: Convergence Investment Partners.

No graph, chart, or formula should in and of itself be used to determine which securities to buy or sell.

FACTOR COMPOSITE RESULTS

Factor Composites (factors) are composed of securities in the Russell 3000 Index ranked by Convergence in terms of the identified metrics. Thus individual stocks appear in multiple composites. No client portfolios are managed to any one factor and all factor results reflect backtested data. Factor composites are not available for direct investment. Factor composite results are measured in terms of their quintile spread return ("spread return"): the difference between the index-weighted average results of the highest ranked 20% less that of the lowest ranked 20%. Higher positive numbers indicate that the factor was more relevant to / indicative of stocks that performed well. Negative results are similarly indicative of factors that could have made effective shorts. Convergence views most factors on an industry group neutral basis where industry group weights are fixed based on the selection universe/index weights.

The Russell 3000 Index measures the performance of the largest 3000 US companies. It is constructed to provide a comprehensive, unbiased, and stable barometer of the broad market and it is reconstituted annually to ensure new and growing equities are reflected. Comparison to any index is for illustrative purposes only and the volatility of the benchmark may be materially different from the volatility of the strategies due to varying degrees of diversification and/or other factors. Index performance returns do not reflect any management fees, transaction costs, or expenses. Indices are unmanaged. You cannot invest directly in an index.