TIM
An Acuris company

TIM Sentiment

Abstract

TIM Sentiment incorporates the investment insight of over 2,800 sell-side contributors on over 6,000 stocks trading on 23 exchanges. With more than ten years of history comprising millions of trade ideas, TIM Group is uniquely positioned to combine market knowledge, original insight, and a detailed understanding of our contributors' strengths to create a signal that produces uncorrelated alpha.

Since 2007, stocks with Sentiment scores of 10 have outperformed those with scores of 1 at an annualized rate of 23.55% after accounting for common risk factors. This effect shows strong monotonicity: each Sentiment score outperforms those below it.

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Introduction

TIM Sentiment systematically evaluates trade ideas, earnings cycle data, and TIM Group's insight into contributor and idea performance to produce an effective and uncorrelated alpha signal for stocks.

We express Sentiment as a decile score with 10 representing the stocks that are most likely to outperform the market and 1 representing those most likely to trail it. Since 2007, stocks with Sentiment scores of 10 have outperformed those with scores of 1 at an annualized rate of 23.55% with a Sharpe Ratio of 4.81.

TIM Sentiment is a unique source of alpha that can contribute to most investment processes. It is likely to be useful to portfolio managers in generating ideas, timing position entry and exit, and rebalancing equity portfolios.

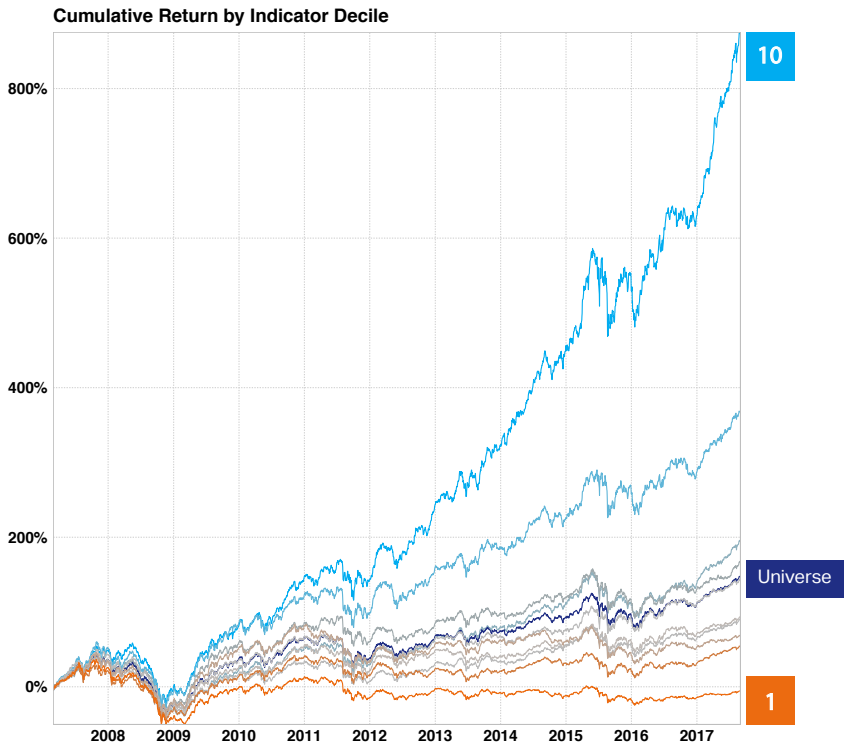

Figure 1: Global performance by Sentiment decile

Data

Since 2005, the TIM network has been the industry's leading trade idea distribution, valuation, and management solution, resulting in a proprietary database of millions of ideas from thousands of brokers with a significant history.

- Years of history: 12+
- Number of sell-side firms: 275
- Number of contributors: 2,800+
- Number of ideas: 2.2 million unique ideas derived from 10.5 million total ideas
- Median idea duration: 12 days

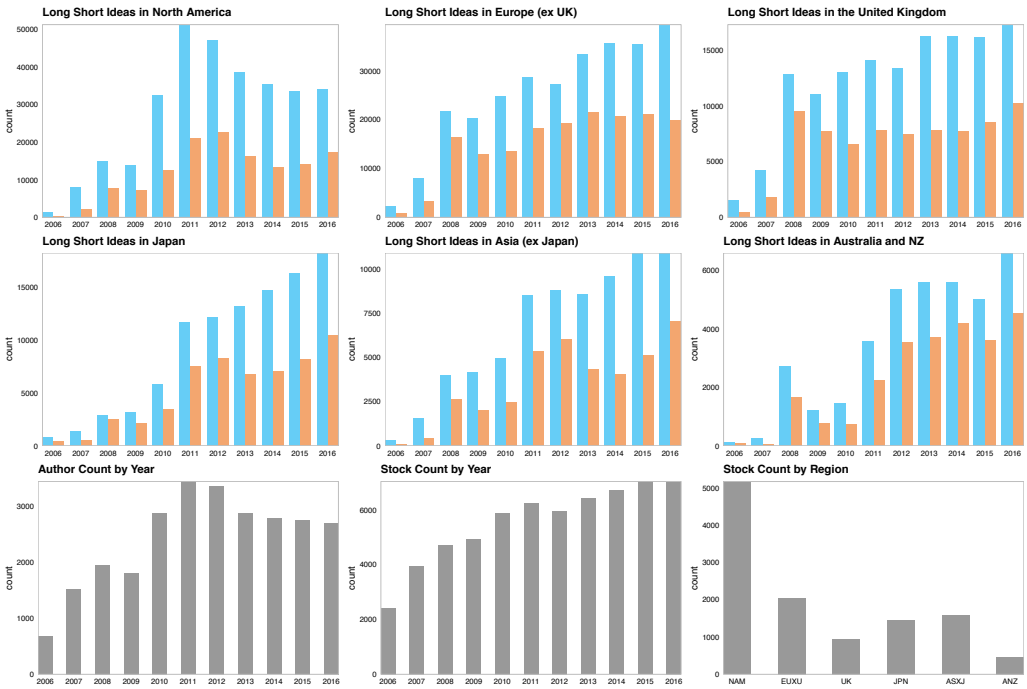

Figure 2:

Long and short ideas by region, 2006–2016

Contributor and stock count with regional coverage, 2006–2016

Methodology

TIM Group's analytics team employed a rigorous research process to create TIM Sentiment. Residual returns eliminate common risk factors including momentum, volatility, value, and size. An investible universe ensures that Sentiment recommendations are actionable, and careful statistical methodology ensures we avoid survivorship, selection, and look-ahead bias.

Avoiding bias

The historical trade ideas dataset includes all ideas submitted to the TIM network. We include all contributors who ever submitted an idea, even if they are no longer on the system. We also include all firms for which we have ideas, including those that have been acquired or delisted, to create a research dataset free of survivorship and selection bias.

We use only data available at the time of our analysis to avoid look-ahead bias. As a result, the research dataset represents an "as-was" snapshot of what a researcher would have observed historically.

Investible universe

To ensure the analytics team's research is actionable, we restricted our research to an investible universe consisting of stocks with minimum market capitalization of USD 500 million, minimum average daily volume of USD 1 million, and minimum price of USD 5.00 or the equivalent. In North America, this resulted in a universe of approximately 2,000 liquid names.

Residual returns

Our goal in building TIM Sentiment was to design a stock selection signal whose performance is independent of common sources of return. To do this, we created a dataset of daily stock price residualized returns. Residualization is a statistical technique that extracts the

components of returns that are not explained by common risk factors. We remove the performance effect of value (P/E, P/B, P/S), momentum, volatility, size, and sector. We then measure the performance of ideas, and of the Sentiment score, in terms of these residual returns.

In- and out-of-sample analysis and hypothesis testing

The analytics team employed two techniques to avoid the risk of overfitting. First, when analyzing which characteristics of ideas or their authors were more likely to lead to outperformance, we used a subset of approximately two-thirds of our historical dataset for training purposes. This subset is our in-sample time period. All hypotheses were tested against the in-sample data, and only when the Sentiment model was complete did we validate our findings on the remaining holdout set, the out-of-sample period.

Second, we limited our testing to concepts that have a clear econometric or behavioral explanation. For example, we thought perhaps that ideas representing a reversal (e.g., a short on a given stock after a series of longs) might outperform, but did not observe a statistically significant effect. By contrast, our intuition that ideas entered around earnings announcements would show consistent behavior was supported statistically, and is now part of Sentiment.

As a result, we tested a relatively parsimonious set of hypotheses, minimizing the chance of capturing spurious correlations. These techniques help ensure that the concepts underlying TIM Sentiment are robust and likely to persist over time.

Event studies

Event studies allow us to evaluate generalized idea performance after idea entry. Our expectation is that long ideas precede price increases and short ideas precede declines.

The chart below plots cumulative daily raw idea returns by direction (long or short), showing strong outperformance over the first several weeks.

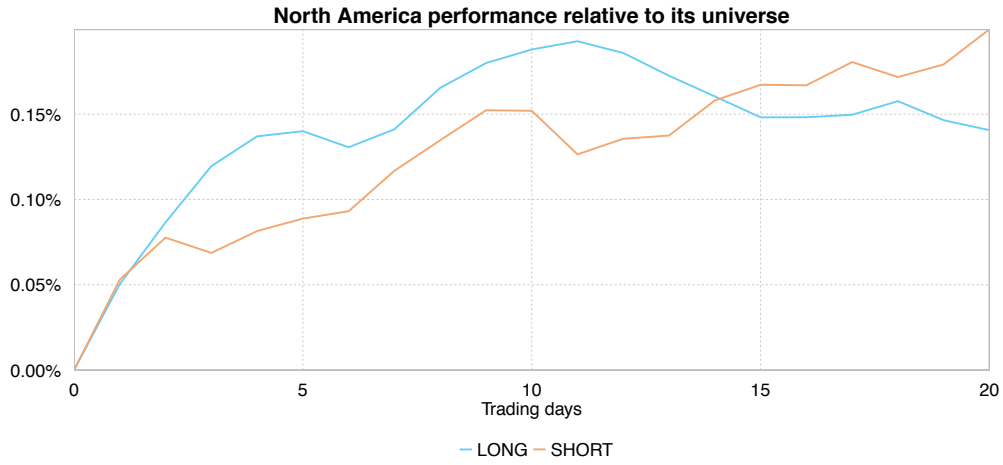

Figure 3:

Long and short North American idea performance relative to universe

These event studies allow TIM Sentiment to take into account the rate at which an idea's alpha decays over time. This in turn gives us a measure of the total alpha we expect to remain in an idea based on its age.

Further event studies demonstrate that closed ideas retain alpha, though the close itself is a valuable signal. We take these observations into account when constructing TIM Sentiment.

Track record

One of our key insights when designing TIM Sentiment is that contributor track record is persistent. That is, authors who have demonstrated superior stock picking skill in the past are likely to continue to do so in the future. By identifying historically profitable contributors we are able to overweight their ideas as most likely to outperform.

We measured track record in several ways. First, for authors who contributed at least three historical ideas, we calculated the average residual returns of the stocks on which those ideas were entered. This gives us a view of the profitability of an author's contributions.

The simple average residual return does not take into consideration the volatility of those ideas' returns. To address this, we developed an author Sharpe ratio, scaling the historical residual returns of an author's ideas by the standard deviation of those returns.

Finally, both the average return and the Sharpe ratio can be influenced by a handful of outlier ideas. To capture the consistency of an author's track record, we developed a hit rate that calculates the percentage of historical ideas followed by residual returns in the expected direction.

All three aspects of performance are related, but their correlations are low enough to suggest that they capture different aspects of performance. Our overall track record measure therefore combines all three measures.

Assume we assign authors to quintiles by return performance. If track record were not persistent, only a fifth (20%) of top-quintile authors would remain at the top two years later. Instead, we find that top performers are significantly more likely to remain at the top, and much less likely to become bottom performers.

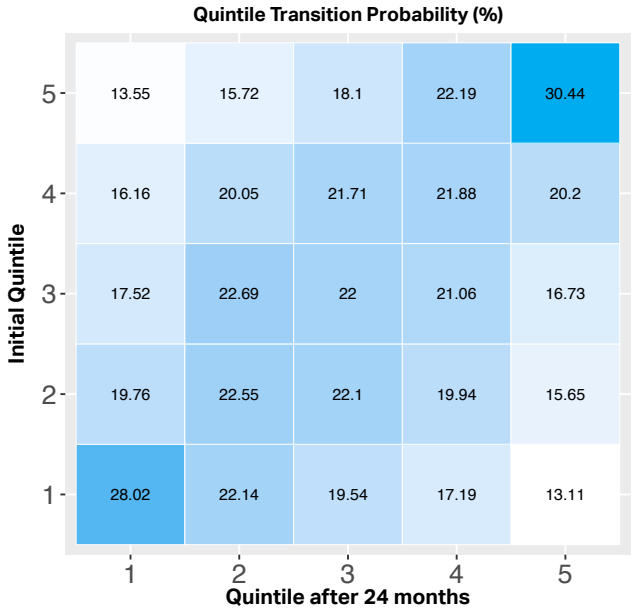

Figure 4:

Contributor transition matrix

A much higher percentage of top performers remain in the top quintile (30.44%) than fall to the bottom (13.55%) when we examine month-on-month performance over a two-year period.

The event study methodology also allows us to assess returns for various partitions of ideas. Here we split our dataset into ideas sent by top performers and others, to observe the degree to which top performers outperform their competitors.

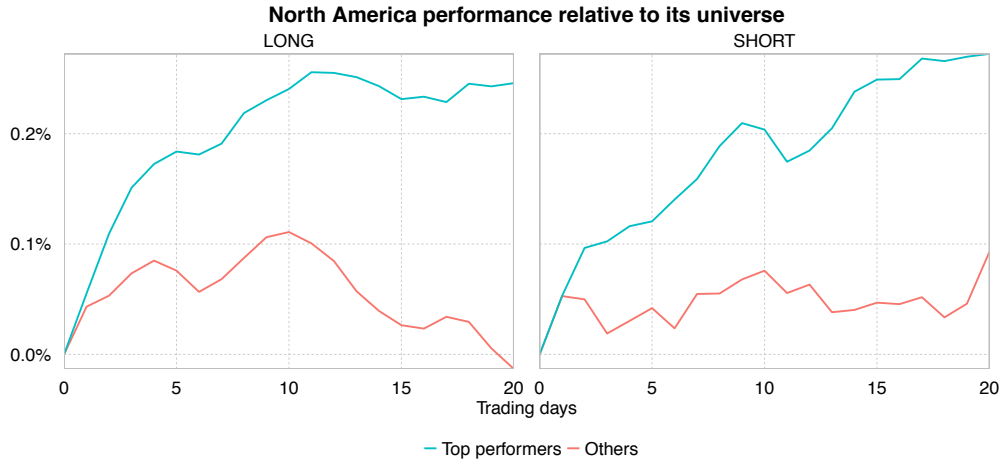

Figure 5:

Returns of top-quintile contributors

Earnings

Earnings announcements represent significant changes in information flow about a company. In the middle of a fiscal period, intermediaries like idea contributors can supply valuable information about a company's prospects. However, their information generally becomes obsolete once earnings are announced and the company provides significant guidance.

Our research has found that ideas are less valuable in the period just following an earnings announcement. As a result, we downweight ideas for a period of ten days following earnings.

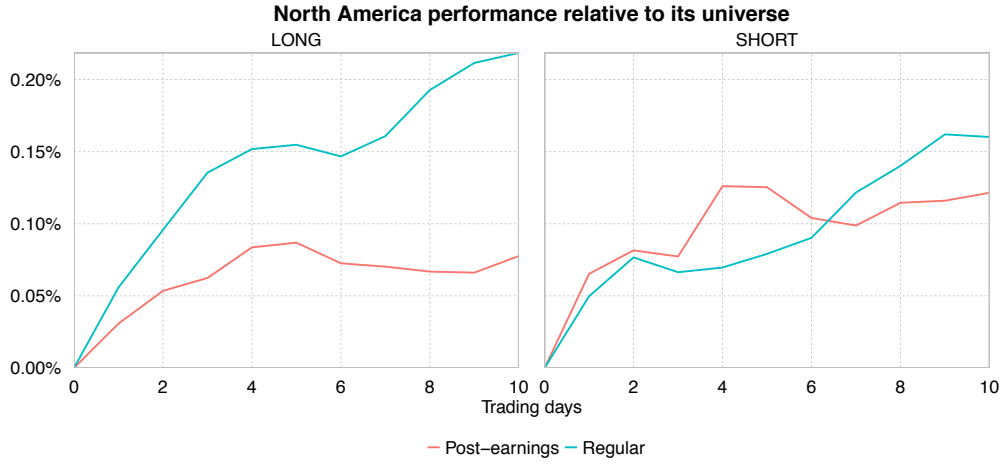

Figure 6:

Post-earnings performance in North America

Sentiment construction

To create TIM Sentiment, we combined the insights outlined above into a regression framework capturing the following observations:

- Ideas an author has closed have less alpha than those that remain open.
- Newer ideas are likely to have more alpha remaining in them than older ideas.
- Ideas tend to underperform in the period just following an earnings announcement.
- Ideas from authors with superior track records tend to outperform.

Our regression framework creates an explicit forecast of an idea's alpha as a function of its open/closed state, its age, its proximity to the most recent earnings announcement, and its author's track record. These insights are expressed in four components labeled Sentiment, Decay, Earnings, and Experts.

We use these inputs to calculate the expected alpha remaining in each idea on a given day, summing the individual idea alphas to create an aggregate stock alpha. We then scale aggregate alpha by the number of ideas it comprises so that larger stocks don't dominate simply because more contributors cover the name. Finally, we aggregate the raw Sentiment scores by region and bin into deciles numbered 1 through 10, accounting for ties. 10 identifies stocks with the highest expected return and 1 identifies stocks with the lowest.

We compute Sentiment regression coefficients monthly. The result is a Sentiment methodology that dynamically adjusts to changes over time.

Results

The following table shows cumulative annualized returns and turnover for the top and bottom deciles in each region. These results assume that Sentiment is traded daily without transaction costs. The decile portfolio is a long/short dollar neutral portfolio. We long all stocks with a Sentiment score of 10 and short all stocks with a Sentiment score of 1 in equal proportions, rebalancing daily. Return is the annualized return of the portfolio. Sharpe is the Sharpe ratio of the portfolio returns. Hit Rate shows the percentage of time periods during which this portfolio generates positive returns. Count shows the average number of names in each decile, and Turnover shows the percentage of the portfolio that changes on a given day.

	Decile				
Region	**Return**	**Sharpe**	**Hit Rate**	**Count**	**Turnover**
Global	23.55%	4.81	65%	346	19%
North America	16.74%	2.11	58%	151	17%
Europe (ex UK)	37.25%	4.58	63%	66	21%
United Kingdom	31.69%	2.67	56%	28	22%
Japan	20.94%	2.16	53%	47	18%
Asia (ex Japan)	19.11%	1.62	53%	43	18%
Australia and NZ	38.92%	1.99	56%	14	20%

Table 1:

Annualized returns trading top and bottom deciles, 2007–2017

These results show that TIM Sentiment can generate significant outperformance with a global Sharpe ratio of 4.81 in a universe of liquid names.

Summary

TIM Sentiment is a carefully constructed analytical tool designed to add unique, uncorrelated value to a portfolio manager's investment process. It employs rigorous methodologies including return residualization, hypothesis testing, persistence evaluation, and event studies to analyze sentiment, earnings cycle, and proprietary author data. Our research shows that TIM Sentiment has investment value across markets and over time, and can be a valuable new input for stock selection and position monitoring.

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