

Crowd Sense Signal for Funds

Methodology

Morningstar Behavioral Research
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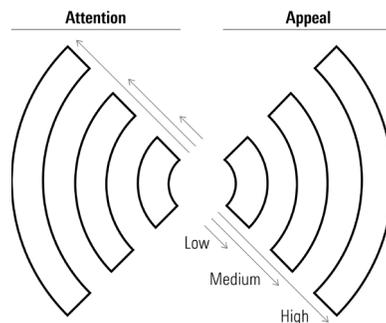
As investors, we all have a tremendous range of investments that we can draw from. Too many investors tend to act on the latest news headlines without considering those investments more deeply. Crowd Sense helps investors gain a broader picture of investment popularity and places that popularity in the context of the underlying appeal of the investment.

Signal

The Signal is a measure of investors’ preferences compared with a measure of an investment’s quality. It enables investors to identify which investments may be overhyped and which may be overlooked, and to track changes in interest over time.

The Signal is assigned for U.S.-domiciled mutual funds and exchange-traded funds. It is made up of two dimensions: Attention and Appeal.

Exhibit 1 The Signal



Source: Morningstar. Data as of dd/mm/yyyy.

Attention

The Signal’s Attention dimension depicts the level of investor interest in an investment. Investor interest in any given investment is estimated by aggregating anonymized Morningstar.com page view data for that investment. For purposes of comparing investments with each other to assign the Attention value, U.S. open-end funds and exchange-traded funds are grouped together. Attention values are assigned on a monthly basis.

High: attention volume of target investment in top third of all investments
 Medium: attention volume of target investment in middle third of all investments
 Low: attention volume of target investment in bottom third of all investments

If an investment does not have sufficient attention data for the calculation time period, the value for Attention is assigned as "Too Low." These investments are excluded from the calculation universe before High, Medium, and Low Attention values are assigned.

Appeal

The Signal's Appeal dimension is assigned based on Morningstar qualitative and quantitative forward-looking ratings. These ratings are used as an indication of an investment's quality.

Managed investments under Morningstar research analyst coverage will have a Morningstar Analyst Rating,TM and so this measure is used to assign the value for Appeal. If a managed investment is not under analyst coverage, but is assigned a Morningstar Quantitative Rating,TM that measure will be used instead.

High: Gold, Silver, or Bronze
 Medium: Neutral
 Low: Negative

If an investment does not have a Morningstar Analyst Rating or a Morningstar Quantitative Rating, no value for Appeal is assigned.

Attention Trend

While the Signal's Attention dimension depicts an investment's attention relative to other investments at a point in time, the Attention Trend shows how an investment's share of attention within the universe has changed from the previous month. For example, the 6/30 Attention Trend value for an exchange-traded fund will compare the percentage of page views that exchange-traded fund represented within the universe for the month of June with the corresponding value for the month of May.

Rising: Attention percentage increased > 25% month over month
 Stable: Attention percentage increased <= 25% or decreased <=25% month over month
 Falling: Attention percentage decreased > 25% month over month

If an investment has an Attention value of Too Low in the current month, the previous month, or both, no Attention Trend is assigned.

Source of Data

Currently, all Signal and Attention Trend data is based, in part, on aggregated and anonymized Morningstar.com page views.



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