

### What trigger levels are other funds using?

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#### *Introduction*

The practice of employing a fair value methodology to estimate the value of international equity securities at the time of net asset value (NAV) calculation has gained nearly universal acceptance in the mutual fund industry. This is a result of both heightened regulatory scrutiny as well as quantitative research, which supports the view that a systematic approach to fair valuation can effectively reflect current market conditions. While utilizing fair value methodologies has become widespread, the question of how often these procedures are employed remains a subject of continuing debate.

The most common approach to managing this decision is the use of “trigger levels”. For example, a fund may choose to invoke its fair value procedure if a proxy (*e.g.* the S&P 500<sup>®</sup> Index Futures) moves by 50 basis points (bps) or more, in absolute terms, between the time that the local market closes and the time the fund strikes its NAV. In this case, the 50 bps trigger level signifies the occurrence of a significant event, requiring the fund to use its fair value pricing procedures.

In this study, we used public NAV data for 166 U.S. mutual funds (from different fund families) investing in international equities to estimate how often fair value procedures were used over a three-year period (April 2004-March 2007) and to estimate the trigger levels used by each fund. Our observations show a clear trend in the industry towards the more frequent use of fair value procedures and towards the use of lower trigger levels over the past few years. In fact, our research identified a 0 trigger level as currently the most prevalent.

#### *Trigger Benchmarks: Constructing Hypothetical NAV Movements Based on Triggers*

As a foundation for this study, we assumed that all of the funds used relevant market indicators as proxies to assist them in determining if a fair value process should be triggered on any given day. Security-level triggers and fundamental analysis were not considered in our study. The four market indicators we chose were the S&P 500 Index Futures from Tokyo close to 4:00 P.M. Eastern Time (ET), the S&P 500 Index Futures from London close to 4:00 P.M. (ET), the Russell 1000<sup>®</sup> Index from U.S. market open to 4:00 P.M. (ET), and the S&P 500 Index from the previous day’s close to 4:00 P.M. (ET). The trigger levels tested began at 0 bps and increased in increments of 25 bps up to 300 bps for each market indicator.

Next, we created two time series of hypothetical NAVs for a capitalization-weighted portfolio of 750 international equity securities – one using local closing prices, called Local750, and the other using evaluated prices from Interactive Data Pricing and Reference Data’s Fair Value Information Service, called FairValue750.<sup>1</sup> We then constructed 49 different time series of daily log changes in the hypothetical NAVs, using each day’s hypothetical NAV either from the Local750 series or the FairValue750 series, depending

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<sup>1</sup> See *e.g.* Peter Ciampi and Robert Haddad, *White Paper #10, Using NAV to Measure the Effectiveness of a Fair Value Methodology* (2005), for a similar approach to estimating use of a fair value methodology.

## WHITE PAPER #13 (CONTINUED)

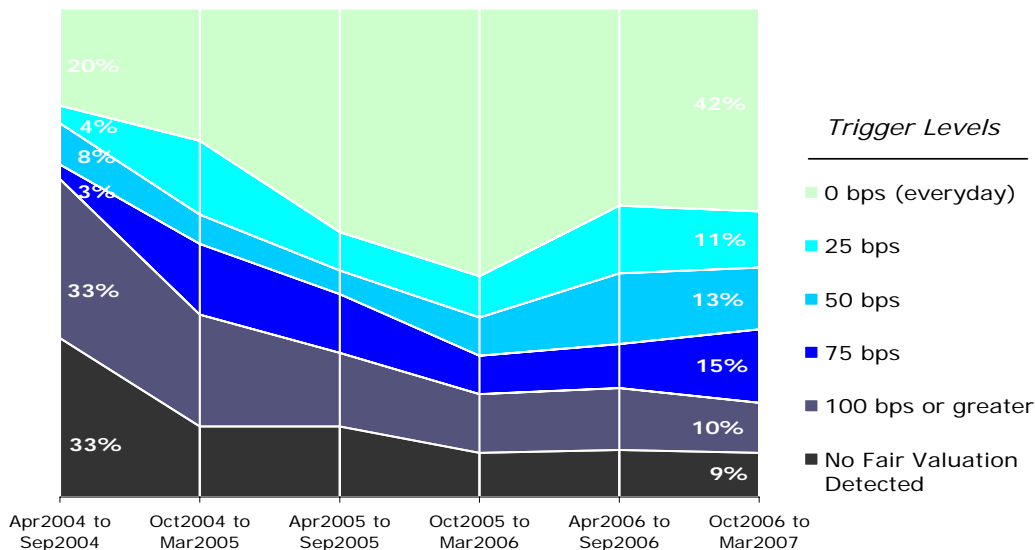
upon the corresponding market indicator's movement that day.<sup>2</sup> For instance, take the series of hypothetical NAV movements based on the S&P 500 Index Futures from London close to 4:00 P.M. (ET) exceeding at least 25 bps. On day 1, this market indicator's movement is +15 bps, and on day 2 the movement is -73 bps. In this example, since the 25 bps trigger was not exceeded on day 1, but was exceeded on day 2, we measure a hypothetical NAV movement from Local750 NAV on day 1 to FairValue750 NAV on day 2. This approach allows us to create international portfolios at various trigger levels, which collectively we refer to as "trigger benchmarks".

### *The Correlation Horse Race: International Funds vs. Trigger Benchmarks*

To obtain our sample of international funds, we chose a single fund from each fund family and assumed this fund represented the fund family's approach to fair valuation for international equities. We relied on Morningstar® data to assist us in selecting our sample of international funds. In general, we imposed a selection bias towards funds classified by Morningstar as foreign large blend style, with higher net assets under management compared to similar funds in the same family. We also required the funds to have reported daily NAVs over the three year period from April 2004 to March 2007. From this selection process, we arrived at our sample of 166 funds, and calculated daily NAV returns, adjusted for dividends, over the three-year period. To estimate how often each fund was using a proxy-based systematic fair value methodology, we measured the correlation coefficients between each fund's NAV returns to each of the 49 trigger benchmark returns. The trigger benchmark with the highest correlation to the fund over the six-month time interval was assumed to be the proxy used by the fund.

The following illustration, Chart 1, represents the percentage of fund families we estimated using various trigger levels, irrespective of market indicator, for each of the six-month periods. It should be noted that while this process indicated that in some cases no fair value methodology was being used, this may not necessarily have been the case. Among other things, these funds may have used a trigger level that was not exceeded over the six-month period, different proxies, or another alternative method for determining fair valuations.

Chart 1: Percentage of Fund Families Using Various Trigger Levels



<sup>2</sup> (4 market indicators \* 12 trigger levels) + 1 zero trigger series = 49 time series

### *“What trigger levels are other funds using?”*

The clear trend shown in this illustration is the gravitation towards lower trigger levels over the first two years, and the subsequent stabilization in the most recent period. In the first six-month period from April 2004 to September 2004, 33% of the fund families were estimated to have a trigger level of 100 bps or greater. By contrast, this “higher trigger” grouping dropped to 10% of the fund families in the most recent six-month period from October 2006 to March 2007. Similarly, no fair valuation proxy was detected for 33% of the fund families in the first period, while in the most recent period this dropped to 9% of the fund families. Conversely, the “middle trigger” grouping of 25, 50, and 75 bps (albeit, a wide grouping in terms of volatility), rose from 15% in the first period to 39% in the most recent period. While at the same time, the 0 trigger grouping, or “fair value everyday” approach, rose from 20% to 42%.<sup>3</sup> Overall, in the most current period, 91% of the fund families were estimated to have employed a systematic fair value methodology.<sup>4</sup>

### *Summary*

Using public NAV data for 166 U.S. international equity funds and hypothetical trigger benchmark portfolios created using Interactive Data Pricing and Reference Data’s Fair Value Information Service, we estimated the trigger levels used for funds over a three-year period. Our study has demonstrated a clear trend in the industry towards more frequent use of fair value procedures and overall lower trigger levels over the past few years. Moreover, our analysis indicated that of the trigger levels we tested, the 0 trigger level was the most prevalent, although the majority of fund families were estimated to have used trigger levels of 25 bps or greater. Empirically based observations of mutual fund peers can assist a board of directors or pricing committee in decisions regarding what trigger levels are appropriate for their funds. In addition, many funds employ back testing at various trigger levels, and compare the performance of these test results. Such information can serve as a quantifiable objective input into the decision-making process.

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<sup>3</sup> In general, this trend towards lower trigger levels over the past few years is consistent with the results reported in the 2006 Fair Value Pricing Survey conducted by Deloitte & Touche, in which 77 asset managers participated. Deloitte found an average trigger of 72 bps in 2006 and that more than 30% of funds using triggers had decreased their trigger from the previous year.

<sup>4</sup> Our estimation that approximately 91% of the fund families in our sample employed fair value practices from April 2006 to March 2007 is supported by the 2007 Fair Value Pricing Survey conducted by Deloitte & Touche, in which more than 50 asset managers participated. Deloitte reported that 9 out of 10 funds reported utilizing third-party pricing vendors to value foreign equities.

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