

MEMORANDUM

Regarding: BOYSON, N. M., STAHEL, C. W. and STULZ, R. M. (2010), Hedge Fund Contagion and Liquidity Shocks. *The Journal of Finance*, 65: 1789–1816
Date: 02/03/2015

We have been made aware of an error in a graph in the above article.¹ The error affects half of a figure and two sentences in the paper. It has no impact on the paper's conclusions.

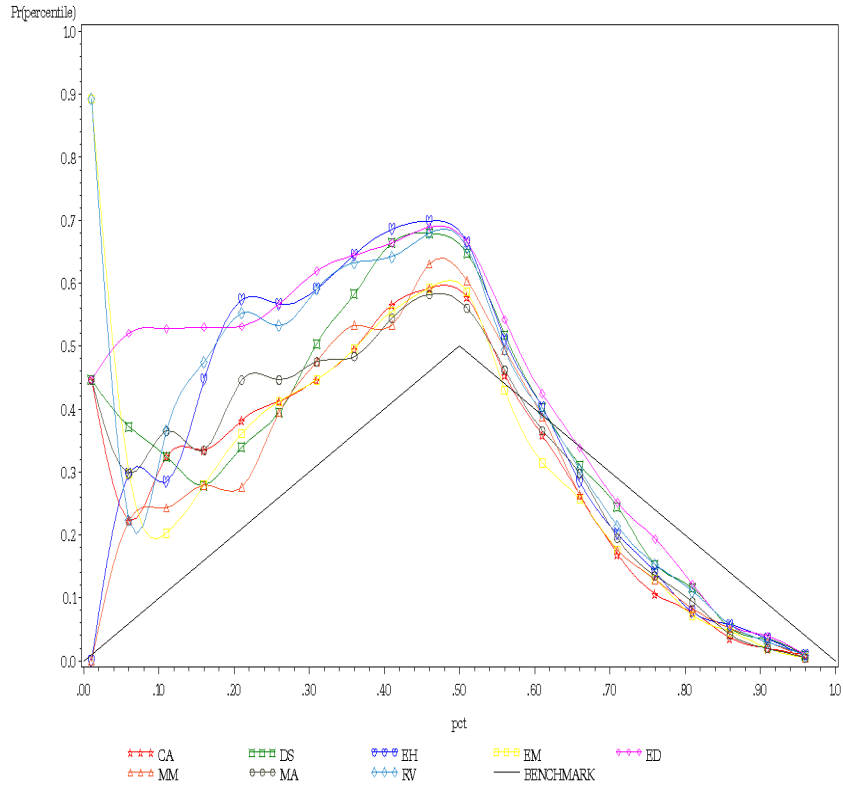
In an early section, the paper performs quantile regressions and presents the results in Figure 1 in the form of a co-movement box. All results are for returns of hedge fund styles, and the paper's focus is on negative contagion among hedge fund styles. Line eight of the second paragraph on page 1797 states that:

“Results from the analysis are presented in Figure 1. To construct the figure, we calculate the probabilities at the 1st and 99th quantiles, as well as for 5% increments between the 5th and 95th quantiles. These results provide strong evidence that the conditional probability of a hedge fund index having a return in any quantile below the 50th percentile is increased significantly when the equally weighted index of other hedge fund returns is also below the same quantile. For example, at the 10th quantile, the Event Driven index has about a 55% probability of being in the 10th quantile when the equally weighted index of other hedge fund styles is also in the 10th quantile, compared to an unconditional probability of 10% if there were no dependence.

Importantly, this conditional probability for quantile returns above the 50th percentile is close to (and often lower than) the unconditional probability of no dependence. The co-movement box thus illustrates an asymmetry in the data; when returns are bad, dependence among hedge fund indices increases but there is no corresponding increase when returns are good.”

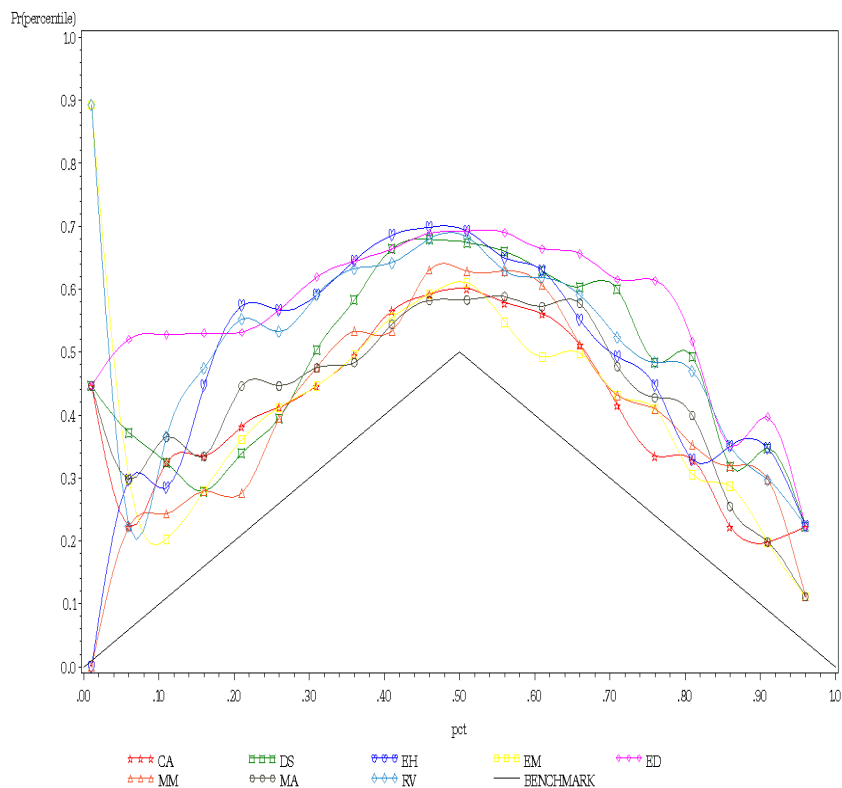
The argument is made to help motivate the remainder of the article in the sense that co-movement increases as we observe less and less likely events in the left tail of the distribution and is based on Figure 1 in page 1798 (reprinted here). The whole paper focuses on the left tail of the distribution.

¹ We thank Richard Sias for making us aware of this error through private correspondence.



Original Figure 1 on page 1798

The error relates to the graph and the underlying quantile regression and pertains only to the upper tail of the co-movement box. A coding error scaled the conditional probabilities down. Re-estimating the conditional probabilities, the upper tail conditional probabilities presented in the Updated Figure 1A below indicates a positive dependence for all return events above their median returns.



Updated Figure 1A on page 1798

The third paragraph on page 1797 states “Importantly, this conditional probability for quantile returns above the 50th percentile is close to (and often lower than) the unconditional probability of no dependence. The co-movement box thus illustrates an asymmetry in the data; when returns are bad, dependence among hedge fund indices increases but there is no corresponding increase when returns are good.” Therefore, parts of this statement are incorrect; it is the only place in the article that makes use of and refers to the quantile regression results.

The motivation for the remainder of the paper based on the graph remains valid. We have estimated the average conditional probability across all styles and calculated the difference in average conditional probabilities between the $\alpha\%$ quantile and the $100\% - \alpha\%$ quantile for all α between 1% to 50%. The results are presented below in Figure 1C.

Based on the updated Figure 1A and Figure 1C, the third paragraph of the paper should read: “The conditional probability for quantile returns above the 50th percentile also exhibits positive dependence. However, on average, the co-movement box illustrates an asymmetry in the data as positive dependence tends to be weaker in the upper tail than in the lower tail as we observe rarer and rarer return events.”

There are no other errors in the article. All the article’s conclusions are based on logit regressions estimated after discussing Figure 1.

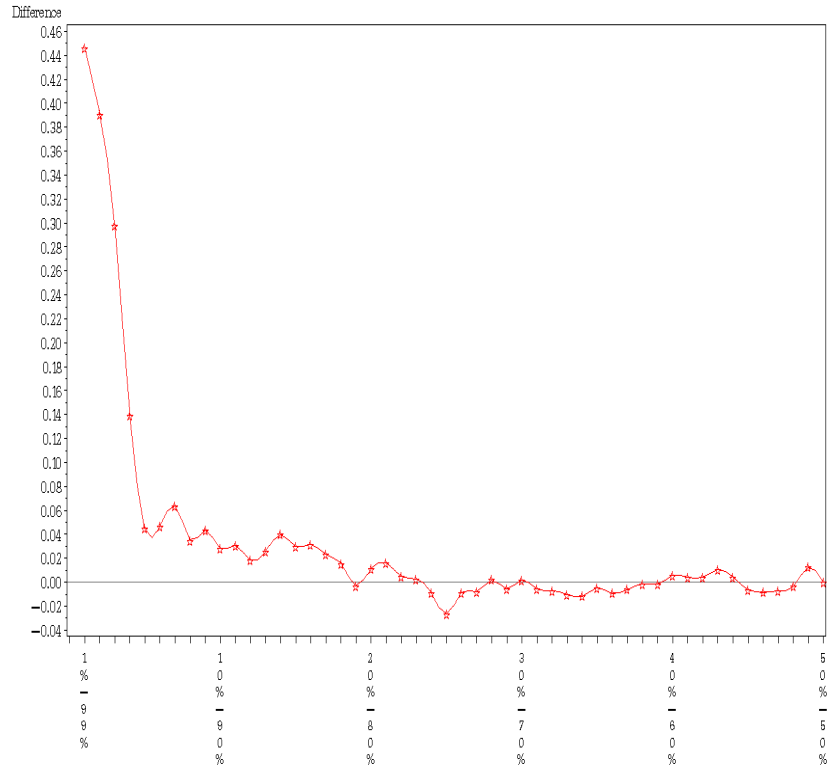


Figure 1C. Upper and Lower Quantile Differences in Average Conditional Probabilities