

Wisdom of Crowd Study

Recently we ran across an article in CFA Institute's publications: ["The Wisdom and Whims of the Collective"](#). The major theme of the article was to find a middle ground between the market efficiency believers and the opponents of the efficiency idea. The article spoke about how a crowd could be smarter than even the brightest individuals included in one. This means for an investor that unless you are far above average, the market will be smarter than you are. The author applies the diversity prediction theorem, which holds that: "The collective is usually better than even the best of the individuals". The conditions for this theorem to work are: the cognitive diversity of the crowd (different viewpoints), the aggregation mechanism (participant input) and the presence of incentives – all three conditions are met by the stock market. When one of the conditions doesn't work the theorem doesn't either – the greatest example is when a crowd acts in a coordinated fashion, stock market pricing experiences abrupt irrational movements (e.g., Internet bubble). The author provides some empirical evidence of the theorem working in a classroom and other experimental settings. He also postulates that markets are efficient until diversity breaks down.

So, we decided to test if our crowd of 16 portfolio managers was large enough (addressing the diversity condition) for the theory to work in our case. We based our study on holdings and buys PMs made from 2004 to 2007. We took quarterly buys and holdings and compared the average performance of different "crowds" to overall PM performance (our baseline) and to performance of stocks with Score ≥ 60 for that period per our weeklies. We excluded all Master Portfolio transactions and holdings from the study in order to deal with the crowd coordination issue. We found that there was no crowd effect within our small universe of 16 PMs– the stocks picked by an increasing number of PMs did not materially outperform the stocks bought by a smaller number of PMs. The same observation was true for holdings. However, we did find that PMs picked stocks well, per their better performance than our universe of stocks with Score ≥ 60 .

As you can see in the charts below we identified the buys and holdings for different sized crowds and evaluated them for two performance periods – 6 months and one year following a quarter-end. For the buys we created four crowds: crowd 1 means the buys by one PM only, crowd 4 comprises buys conducted by four or more PMs in one quarter. We defined a "buy" as a position in which the market value of the position changed by 10% or more. Our baseline is all the buys PMs made during the quarter and 60+ is our universe of stocks with Score ≥ 60 . We noticed that there was no smooth progression in performance when we increased the number of collective buys – crowd of 1 (6.86% - 6 months and 14.5% - 1year) is better than crowd of 3 (5.32% and 13.5%) collective buys. Likely due to failing to meet the diversity prediction theorem preconditions, we observed no beneficial crowd effect.

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