On the negative value of information in informationally inefficient markets. Calculations for large number of traders

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In informationally inefficient markets, classical decision theory assumes the value of information to be positive. Recent developments, however, contradict this paradigm. Schredelseker (2001) proposed a simulation model wherein a single security is traded among non-cooperating and asymetrically informed traders. One of the main results was the fact that badly informed traders could expect higher returns than traders with more information (negative effect of information on gain). This negative effect can also be seen as a paradox property of the simple random walk.

However, Schredelseker was able to give exact results for a small number of traders only. Our presentation gives reliable results for a sufficiently large number of traders for both the expected gain and the probability of gain larger than zero. We are using combinatorial methods in order to get exact results for badly informed traders and simulation techniques for results of traders with higher level of information. The exact results are used (error between exact results and simulation results for the first traders) to determine the number of samples which have to be drawn with the simulation algorithm.

As a result it was possible to verify the negative value of information on gain for a sufficient large number of traders. It turned out that the minimum of expected gain is about traders getting 30 percent of the available information (which can be seen as critical mass of information).

Furthermore a partition of expected gain is given. Traders with less information seem to be in advantage because of that part of information which is unknown to them.

[1] K. SCHREDELSEKER: *Is the Usefulness Approach Useful? Some Reflections on the Utility of Public Information*. In: McLeay/Riccaboni (Ed.): Contemporary Issues in Accounting Regulation, Kluwer 2001, pp. 135-153.

[2] C. PFEIFER, K. SCHREDELSEKER, G.U.H. SEEBER: *On the negative value of information in informationally inefficient markets. Calculations for large number of traders*. European Journal of Operational Research 2009, 195, pp. 117-126.