

# Is more information always better? Experimental financial markets with cumulative information

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## Abstract

We study the value of information in financial markets by asking whether having more information always leads to higher returns. We address this question in an experiment where information about an asset's intrinsic value is cumulatively distributed among traders. We find that only the very best informed traders (i.e., insiders) significantly outperform less informed traders. However, there is a wide range of information levels (from zero information to above average information levels) where additional information does not yield higher returns. The latter result implies that the value of additional information need not be strictly positive.

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## 1. Introduction

This paper addresses the question whether having more information than others is always advantageous when trading on financial markets. More precisely, we study whether traders who are better informed about the intrinsic value of an asset can expect to earn higher returns than traders with less information. If the answer to that question were positive, then we might conclude that having more information has generally a positive marginal benefit. In individual decision-making tasks this is typically the case, as has already been pointed out by Blackwell (1951). However, in an interactive context such as trading on financial markets, the answer to our question is less obvious and might not necessarily be positive for all information levels. Game theory, for instance, shows that “having more information (or, more precisely, having it known to other players that one has more information) can make the player worse off” (Gibbons, 1992, p. 63).<sup>1</sup>

We will present an experimental study to examine the marginal value of additional information for traders in financial markets. Traders will have different levels of information about the intrinsic value of a tradable asset. The distribution of information is cumulative, meaning that a better informed trader knows everything that a less informed trader knows, plus a little extra. By implementing such a cumulative information system and holding all other conditions constant, it is possible to analyze the marginal value of additional information. The two features of: (i) considering more than two different information levels and (ii) having a cumulative information system distinguish our paper from almost all previous studies. Most experimental papers on the value of information have considered two distinct information levels only, showing that informed traders outperform uninformed ones (see, e.g., Copeland and Friedman, 1992; Ackert et al., 2002). Yet two information levels (in particular in the binary context of informed versus uninformed traders) are not enough to conclude that more information is always better. There are several theoretical papers on the value of information when more than two traders have different information. These models, which will be related more specifically to our paper in Section 2, are typically characterized by a combination of public information about an asset and private information, with the latter being idiosyncratic for each trader. Although these models provide very useful insights into asset pricing, they are not suitable for answering the question of whether more information leads to better results (in terms of trading profits) than less information, because no trader has *more* information than another trader in these models, just *different* information. This led Figlewski (1982, p. 99) to claim that “independent information is not likely to be an adequate description of the information structure of a real-world speculative market”. Rather, we think it is more realistic to assume that information is cumulatively distributed, meaning that some traders know more than others by having the same plus some extra information. For instance, there may be some investors relying exclusively on information from newspapers or TV. Such information is, of course, also available to better informed investors who also take into account companies’ fundamentals such as their public financial statements or revenue outlook. Finally, there may be some very well-informed traders (insiders) having all the previously mentioned information, but

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<sup>1</sup> Bassan et al. (1997) provide some nice examples for situations in which having more information is actually detrimental to a player’s payoffs in a two-person game (see also the related paper of Kamien et al., 1990). In the context of financial markets one might refer to Cowles (1933, 1944) who was the first to show that financial advisors and professionals are almost without exception not able to outperform the market. Hence, the (presumably) better information of financial experts need not yield higher returns. A related argument is made by Malkiel (2003a,b) who shows that 80 percent of professionally managed funds do worse than the market average.

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