On the relation between forecast precision and trading profitability of financial analysts

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ABSTRACT

We analyze the relation between earnings forecast accuracy and the expected profitability of financial analysts. Modeling forecast errors with a multivariate normal distribution, a complete characterization of the payoff of each analyst is provided. In particular, closed-form expressions for the probability density function, for the expectation, and, more generally, for moments of all orders are obtained. Our analysis shows that the relationship between forecast precision and trading profitability needs not be monotonic, and that the impact of the correlation between the forecasts on the expected payoff of any single analyst depends on the relative accuracy of his signal.

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1. Introduction

Financial analysts play a key role in financial markets. They analyze and process stock related information, make earnings-per-share forecasts, and issue recommendations for investment decisions. Given their unique skills in collecting and analyzing relevant information, they are supposed to add value to their clients (Huang, Mian, and Sankaraguruswamy, 2009). In doing so they

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increase the information content of stock prices (Easley, O'Hara, and Paperman, 1998; Barber, Lehavy, McNichols, and Trueman, 2001; Gleason and Lee, 2003; Jegadeesh and Kim, 2006).

Many empirical studies indicate that financial analysts differ in their forecast accuracy (Stickel, 1992, Sinha, Brown, and Das, 1997), and that these differences are persistent over time (Mikhail, Walther, and Willis, 2004). Therefore it is natural to ask how the forecast ability of an analyst translates into the profitability of a trading strategy based on his advice. This question is addressed in the works of Loh and Mian (2006) and Ertimur, Sunder, and Sunder (2007), among others. The authors of both papers find that (factor adjusted) trading returns based on recommendations of highly accurate analysts outperform those of less accurate analysts. In particular, they provide empirical evidence that forecast precision and trading profitability are positively related. However, as noted by Ertimur, Sunder, and Sunder (2007), since both papers focus only on the contemporaneous relationship between accuracy and profitability, the reported abnormal excess returns among analysts cannot be considered as evidence for the existence of an implementable ex ante trading strategy.

In fact, many different works indicate that earning abnormal trading returns based on the recommendations of financial analysts is by no means an easy task: Bradshaw (2004) shows that although earnings forecasts have the highest explanatory power for recommendations, these projections have the least association with future excess returns; Barber, Lehavy, McNichols, and Trueman (2001) and Mikhail, Walther, and Willis (2004) conclude that, after trading costs are taken into consideration, the differences in trading performance among analysts become insignificant; Brown and Pfeiffer (2008) argue that reported abnormal returns might be spurious due to the fact that forecast errors are scaled by share prices. Bonini, Zanetti, Bianchini, and Salvi (2010) analyze target price accuracy and show that even if analysts possess superior earnings forecast accuracy, they fail to forecast target prices accurately. In particular, it is challenging to reconcile this last piece of evidence with the documented contemporaneous relationship between accuracy and profitability, and thus it merits further analysis. Hall and Tacon (2010) examine whether *future* profitability of analysts' stock recommendations can be inferred by observing *past* forecast accuracy and recommendation profitability. They propose an implementable trading strategy that exploits the variation in forecasting ability across security analysts, as suggested by Loh and Mian (2006) and Ertimur, Sunder, and Sunder (2007). Their main conclusion is that, while there is some statistical evidence of persistence in forecast accuracy, the magnitude of this persistence is so limited that portfolios formed from analyst recommendations perform no better than the benchmark.

To explain the absence of a clear positive relationship between forecast precision and trading profitability one can simply invoke the efficient market hypothesis: if market prices reflect correctly all available information, then, due to the level playing field, no market participant can earn abnormal returns. The paradox of the efficient market hypothesis is that, if every investor believed in the efficiency of the market, then the market would not be efficient because no one would have an incentive to process information. This issue is addressed by Grossman and Stiglitz (1980), who argue that the strong-form efficient market hypothesis is not a meaningful assumption and that abnormal returns are necessary to compensate investors for their costly information processing activities.

Therefore, another natural way to analyze the problem is to consider inefficient markets.[1] Different simulation studies by Schredelseker (1984, 2001), Pfeifer, Schredelseker, and Seeber (2009), and Hauser and Kaempff (2013) show that for markets out of equilibrium and with asymmetric information, the relationship between forecast accuracy and trading profitability might be non-monotonic. The main findings of these simulation studies are confirmed also by different experimental market settings (Huber, 2007; Huber, Kirchler, and Sutter, 2008). Huber (2007) presents results from experimental financial markets with asymmetrically informed traders. In all treatments he finds a J-shaped distribution of returns: while the best informed participants outperform all others, average informed traders have significantly lower returns than the least informed ones. The results are supported by two-sided Wilcoxon signed ranks tests. Such a non-monotonic relationship between

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[1] For instance, Hanke and Schredelseker (2010) use an analytical model and find that in inefficient markets index funds are expected to underperform the index.