Samenvatting van RMFI-scriptie: "Expectation Convergence and Herding Behavior among Professional Forecasters"

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Professional forecasters' expectations can have a significant impact on financial markets. Hommes (2011) points out that "individual expectations about future aggregate outcomes is the key feature that distinguishes social sciences and economics from the natural sciences". He mentions that weather forecasts do not influence the probability of rain, but that economic forecasts do influence financial markets.

On February 16, 2015, *Het Financieele Dagblad* contained an article titled "Alle neuzen dezelfde kant op", which describes a rising convergence of economists' expectations, resulting in a convergence of tactical asset allocation decisions, and an increased risk of high volatility of financial markets in case of unexpected new information. Triggered by the article I decided to research if forecasters show herding behavior when making forecasts: do they tend to move their individual forecasts towards the consensus forecast, as the title suggested?

Data used in my research originate from the extensive, quarterly Survey of Professional Forecasters (SPF) published by the Federal Reserve Bank of Philadelphia, which contain forecasts from both financial and non-financial service providers. The thesis focused on quarterly forecasts of, on average, 40 forecasters during the 1981-2015 period for seven US indicators: unemployment, industrial production, the TBill rate, corporate bond yields, real GDP growth, consumption expenditures and inflation.

Two conflicting biases may impact the behavior of forecasters. On the one hand, forecasters may have a tendency to stick to the mean consensus and to adopt their private forecasts accordingly. Consciously or unconsciously, the mean consensus acts as an anchor (see Barberis and Thaler (2003)). Forecasters may be afraid of turning out to be wrong when the common opinion points to another direction. On the other hand, driven by behavioral biases such as overconfidence and excessive optimism about their own forecasting abilities, and aiming for publicity for reputation and career purposes, forecasters may be inclined to strongly emphasize their opinion and to move their private forecasts away from the consensus.

A low dispersion level among forecasters does not necessarily need to be explained by herding behavior; it may be that forecasters base their predictions on similar information sets, resulting in a small variety among forecasters. Similarly, a high dispersion among forecasters may be caused by forecasters using different models or information sets, without adapting their private forecasts away from the consensus. The test that I applied to test for herding behavior among the SPF forecasters, which was developed by Bernhardt, Campello and Kutsoati (2004), corrects for this phenomenon. The test's core idea is that an unbiased forecaster will take all available information into account when envisioning the probability distribution of the forecasted indicator, and will report as his best estimate that distribution's median value. In practice, the forecast of an unbiased forecaster will with probability 50% undershoot (and with probability 50% overshoot) the realized outcome of the predicted variable.

If, however, a forecaster herds, his forecast will fall between his best estimate and the consensus. If a herding forecaster's reported prediction is above the consensus prediction, that reported prediction will be lower than the unbiased prediction of the forecaster, implying that the probability that the reported prediction overshoots the realized value is less than 50%. Similarly, when a herding forecaster's reported prediction is below the consensus, the probability that the reported prediction undershoots the realized value is less than 50%. With similar arguments, it is shown that these two probabilities should be above 50% if forecasters are anti-herding.

A test statistic is constructed which "replicates" these probabilities. A value significantly below (above) 50% would imply (anti) herding behavior. It should be noted that for some indicators a systematic optimism existed among forecasters in the investigated period. More than 70% of forecasts for short and long term interest rates, for example, were higher than the realized value, reflecting the fact that interest rates kept falling stronger than expected. Bernhardt et al. (2004) have shown, however, that the applied test statistic is robust to such a phenomenon of systematic optimism or pessimism among forecasters.

For all seven indicators I found a test statistic value significantly above 50% during the 1981-2015 period, with values ranging from 58% to 64%. The outcomes remained strongly above 50% when further analyzing sub-periods. Conclusion of the thesis is therefore that the phenomenon of "noses that point in the same direction", if existing, cannot be explained by herding behavior among the SPF forecasters; to the contrary, forecasters are more inclined to let their forecasts be influenced by anti-herding behavior.

A main topic for future research would be to further investigate the nature of the two conflicting biases among forecasters: the tendency to move a private forecast towards the consensus forecast (anchoring), versus the inclination to stand out from the crowd and emphasize a deviating opinion. We concluded that, among the SPF forecasters, the tendency to stand out from the crowd dominates the herding tendency; it would be very interesting to research, for example via laboratory experiments, which factors influence these biases, and which bias dominates in which specific circumstances. ■

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