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Herding behavior of business cycle forecasters

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ABSTRACT

Using a large international data set, we analyze whether business cycle forecasters herd or anti-herd. In general, we find evidence for anti-herding, i.e. forecasters appear to scatter their forecasts deliberately away from the forecasts of others. Anti-herding tends to be more prevalent for the longer (next year) horizon. There is some evidence for a reduced level of anti-herding at times of increased forecast uncertainty and when the forecasts are being revised more substantially.

1. Introduction

Business cycle and growth expectations play a major role in understanding macroeconomic relationships. They also determine the extent to which economic policy agents, including central banks, can influence macroeconomic outcomes. One way to deal with forecast uncertainty is to pool the expectations of professional forecasters (Zarnowitz, 1984) in order to hedge against the errors of individual forecasters, thus improving the forecast quality. Such surveys of professional forecasters are provided by either central banks or private companies. The idea of these consensus forecasts is that, although individual forecasters may outperform the average of a group of forecasters in certain cases, an individual forecaster rarely outperforms others systematically. Zarnowitz and Lambros (1987) find that the forecast errors of consensus forecasts are smaller than those of most individual forecasters. Batchelor (2001) shows that consensus forecasts are more accurate than the projections published by the OECD or the IMF.

The reliability and superiority of consensus forecasts depends crucially on whether the forecasters actually reveal their own best forecast or behave strategically, i.e., show herding or anti-herding tendencies. Forecaster herding arises if the forecasters ignore their private information and instead follow the forecasts of others (Scharfstein & Stein, 1990). For example, Bewley and Fiebig (2002) show that interest rate forecasters tend to indicate values in the safe consensus range, in order to avoid sticking their neck out with "extreme" forecasts. This is because a poor forecast may not damage a forecaster's reputation if other forecasters also delivered poor forecasts. Thus, herding behavior biases the distribution towards the mean. Forecaster herding should not be confused with forecast clustering, where similar forecasts may be observed because all forecasters have access to the same set of economic data and similar forecast techniques. Herding behavior, on the other hand, refers to forecasters deliberately deviating from their best private forecasts for strategic reasons.

Forecaster anti-herding may arise if forecasters, for strategic or other reasons, deliberately scatter their forecasts away from the forecasts of others. This may arise when a forecaster's income (or reputation) depends not only on the accuracy of their own forecasts, but also on their relative performances. If some of the customers of professional forecasters buy forecasts only occasionally,

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and pick the forecasters with the best performances in the last period, forecasters have a strong incentive to differentiate their forecasts from those of others. An "extreme" forecast may have a small probability of being accurate, but the expected payoff can be high if the forecasters can attract new customers in the case of a stroke of luck (Laster, Bennett, & Geoum, 1999).

From the perspective of monetary and economic policy, a knowledge regarding the reliability of forecasts is of the utmost importance. Forecaster herding implies not only a smaller level of forecast heterogeneity, but also forecast inertia, so that the adjustment of the consensus forecast to newly available economic data is delayed. As forecasts may themselves influence economic reality through self-fulfilling prophecy effects (Grisse, 2009), it is essential to know whether pooled forecasts are subject to (anti-) herding biases or not.

There is a substantial body of literature on the analysis of herding behavior in the forecasting industry. For GDP growth forecasts of the Consensus Economics data set for the USA, the UK and Japan, Gallo, Granger, and Jeon (2002) find that forecasters pay too much attention to leaders in the group. Pons-Novell (2003) uses unemployment rate forecasts for the USA, published in the Livingston survey, to analyze whether professional forecasters behave strategically in order to maximize publicity, salary or their prestige. He finds that age and reputation effects matter. Lamont (2002) shows that, as forecasters become older and more established, they produce more radical forecasts, indicating reputation effects. Pierdzioch, Rülke, and Stadtmann (2010) use the test proposed by Bernhardt, Campello, and Kutsoati (2006) to investigate (anti-)herding behavior in the forecasting of financial variables (commodity prices and exchange rates), and find evidence of anti-herding. Freedman (2013) shows that the herding behavior of macroeconomic forecasters is related inversely to the sizes of past forecast errors, and decreases when other forecasters make large errors.

In this paper, we analyze whether herding or anti-herding behaviors are inherent in GDP growth forecasts. We are the first to analyze this topic over the period of the global economic and financial crisis. Our sample period allows us to investigate a novel hypothesis in this context which has been disregarded by the literature to date: the stage within the business cycle, and therefore the level of economic uncertainty, may influence researchers' incentives to either hide in the comfortable consensus middle or go out on a limb with extreme forecasts. More specifically, we investigate (anti-)herding tendencies during times of elevated forecast uncertainty, relative to normal times. We study forecaster herding using the empirical test developed by Bernhardt et al. (2006), and find evidence of anti-herding behavior for most industrial economies, but signs of forecaster herding for emerging economies. We relate this finding to the high incidence of economic and financial crises in these countries, since tests confirm that forecasters tend to herd in times of high forecast uncertainty and we do not find any statistically significant relationship between a country's stage of economic development and herding behavior.

2. Data

In our empirical analysis, we use monthly survey data on business cycle forecasts compiled by Consensus Economics, which has been publishing average forecasts for a broad set of countries since October 1989. Today, the monthly survey covers forecasts from more than 1000 economists worldwide for 75 countries and various variables (GDP growth, inflation, the current account balance, interest rates). However, disaggregated forecast data (i.e., the forecasts of individual survey participants) are only available for a subset of 45 countries. Thus, our analysis is limited to these 45 countries. All forecasters are located in the country for which they are forecasting, and hence, should have a very good idea concerning business cycle developments.[1]

The numbers of forecasters and forecasts vary across countries. While we have at our disposal about 800 forecasts submitted by a group of 18 forecasters for the Philippines, we can also study data from 68 forecasters who published more than 14,000 business cycle forecasts for the United Kingdom. Our sample period ends in December 2011, and includes a total of 226,851 business cycle forecasts published by 1604 forecasters. Among other indicators, Consensus Economics publishes forecasts each month for the average annual growth rates of GDP for the current and next year. Thus, there are 24 consecutive consensus forecasts for a given calendar year.[2]

There are at least three reasons why our data set is particularly suitable for studying the herding instinct of business cycle forecasters. First, because the poll is conducted during the first week of each month and released within the second week, it is a timely and frequent indicator for growth expectations. Second, the dataset has large cross-sectional and time series dimensions of more than twenty years.

Third, individual forecasts are published together with the name and affiliation of the forecaster. This enables us to evaluate the performance of an individual forecaster. Since the survey is non-anonymous, forecasters' performances can be expected to have an effect on their reputations. This link between performance and reputation may strengthen forecasters' incentives to herd, since a poor forecast may not damage a forecaster's reputation if the other forecasters also delivered poor forecasts. On the other hand, the effect of performance on reputation may also foster a scattering of forecasts if an occasional excellent forecast can give rise to a "superstar" effect. In both cases, the forecasts provided may deviate from the "best" forecast.[3]

[1] The forecasters either work in the private sector or are professional economists working for universities and financial institutions in the respective country. Further information on the survey can be found on the website: www.consensuseconomics.com.

[2] In addition, Consensus Economics also provides surveys of forecasts with a longer horizon on a less frequent basis. These are not taken into account here.

[3] The question arises as to whether this anti-herding behavior is conditional on the publication of forecasters' affiliations. Pierdzioch and Rülke (2013) use the anonymous Livingston survey to show that interest rate forecasters deliberately place their forecasts away from the consensus forecast, i.e., anti-herd. Hence, anti-herding behavior does not appear to be conditional on the non-anonymity of a survey.