Essays on the Econometrics of Macroeconomic Survey Data

The first chapter *Measuring Uncertainty and Disagreement in the European Survey of Professional Forecasters* proposes a density forecast methodology based on the piecewise linear approximation of the individual’s forecasting histograms, to measure uncertainty and disagreement of the professional forecasters. Direct measures of uncertainty are seldom available, whereas many surveys report point forecasts from a number of individual respondents. Unlike other surveys, the SPF represents an exception. It directly asks for the point forecast, and for the probability distribution, in the form of histogram, associated with the macro variables of interest. An important issue that should be considered concerns how to approximate individual probability densities and get accurate individual result for disagreement and uncertainty before computing the aggregate measures. We overcome the problem associated with distributional assumptions of probability density forecasts by using a non parametric approach that approximates the histogram by a piecewise linear function. In addition, and unlike earlier works that focus on US data, we employ European data, considering gross domestic product (GDP), inflation and unemployment.

The second chapter *Optimal Combination of Survey Forecasts* proposes an approach to optimally combine survey forecasts, exploiting the whole covariance structure among forecasters. There is a vast literature on forecast combination methods, advocating their usefulness both from the theoretical and empirical points of view (see e.g. the recent review by Timmermann (2006)). Surprisingly, it appears that simple methods tend to outperform more sophisticated ones, as shown for example by Genre et al. (2010) on the combination of the forecasts in the SPF conducted by the European Central Bank (ECB). The main conclusion of several studies is that the simple equal-weighted average constitutes a benchmark that is hard to improve upon. In contrast to a great part of the literature which does not exploit the correlation among forecasters, we take into account the full covariance structure and we determine the optimal weights for the combination of point forecasts as the minimizers of the mean squared forecast error (MSFE), under the constraint that these weights are nonnegative and sum to one. We compare our combination scheme with other methodologies in terms of forecasting performance. Results show that the proposed optimal combination scheme is a suitable methodology to combine survey forecasts. We extend our work considering the density forecasts combination. Moving from the main results presented in Hall and Mitchell (2007), we propose an iterative algorithm for computing the density weights which maximize the average logarithmic score over the sample period. The empirical application is made for the European GDP and inflation forecasts. Results suggest that optimal weights, obtained via an iterative algorithm outperform the equal-weighted used by the ECB density combinations.

The third chapter entitled *Opinion surveys on the euro: a multilevel multinomial logistic analysis* outlines the multilevel aspects related to public attitudes toward the euro. This work was motivated by the on-going debate whether the perception of the euro among European citizenships after ten years from its introduction was positive or negative. The aim of this work is, therefore, to disentangle the issue of public attitudes considering both individual socio-demographic characteristics and macroeconomic features of each country, counting each of them as two separate levels in a single analysis. Considering a hierarchical structure represents an advantage as it models within-country as well as between-country relations using a single analysis. The multilevel analysis allows the consideration of the existence of dependence between individuals within countries induced by unobserved heterogeneity between countries, i.e. we include in the estimation specific country characteristics not directly observable. In this chapter we empirically investigate which individual characteristics and country specificities are most important and affect the perception of the euro. The attitudes toward the euro vary across individuals and countries, and are driven by personal considerations based on the benefits and costs of using the single currency. Individual features, such as a high level of education or living in a metropolitan area, have a positive impact on the perception of the euro. Moreover, the country-specific economic condition can influence individuals’ attitudes.