

EUROPEAN CENTRE FOR ADVANCED RESEARCH IN ECONOMICS AND STATISTICS
SOLVAY BRUSSELS SCHOOL OF ECONOMICS AND MANAGEMENT

Essays in Real-Time Forecasting

Dissertation présentée en vue de l'obtention du titre de
Docteur en Sciences économiques et de gestion

Le 12 Septembre 2012

par
Joëlle Liebermann

sous la direction du Professeur DOMENICO GIANNONE

Membres du jury:

Catherine FUSS	Banque nationale de Belgique et Université Libre de Bruxelles
Domenico GIANNONE	Université Libre de Bruxelles
Alain HECQ	Maastricht University
Lucrezia REICHLIN	London Business School
Vincenzo VERARDI	Facultés Universitaires Notre Dame de la Paix de Namur et Université Libre de Bruxelles
Philippe WEIL	Université Libre de Bruxelles

Contents

1	The impact of macroeconomic news on bond yields	1
1.1	Introduction	2
1.2	The fundamentals	5
1.2.1	Bond markets fundamentals	5
1.2.2	The real-time macroeconomic data flow	6
1.3	The data and the econometric methodology	11
1.3.1	The bond markets yields	11
1.3.2	The measure of news	11
1.3.3	The econometric methodology	13
1.4	The results	15
1.4.1	Bond market reaction to US macroeconomic news	15
1.4.2	Bond market reaction to foreign macroeconomic news	25
1.5	Conclusion	27
Appendix A.1.:	Data description	28
Appendix A.2.:	Tables and figures	32
Appendix A.3.:	Robust to outliers weighting procedure	39
2	Real-time nowcasting of GDP: a factor model versus professional forecasters	41
2.1	Introduction	42
2.2	The daily flow of information releases	44
2.3	The model	47
2.3.1	The dynamic factor model	47
2.3.2	The bridge equation	49
2.4	The empirical results	49
2.4.1	GDP target data, factor model specifications and benchmarks	49
2.4.2	The daily evolution of the nowcasts	51
2.4.3	Real-time now-and-forecasting competition	57
2.4.4	What about the 2001 and 2007-2009 recessions?	61
2.5	Conclusion	65
Appendix B.1.:	Data description	66
Appendix B.2.:	Sensitivity analysis	68

3 Real-time forecasting in a data-rich environment	73
3.1 Introduction	74
3.2 Real-time forecasting setting and dataset	77
3.3 Forecasting models and combination schemes	78
3.3.1 Forecasting models	78
3.3.2 Forecast combination schemes	85
3.4 Empirical results	86
3.4.1 Full-sample results	86
3.4.2 Sub-sample results	88
3.4.3 Real-time versus revised data forecasts	93
3.4.4 Marginal predictive ability of surveys, financials and commodity prices	95
3.4.5 How do these models fare relative to judgmental professional forecasts?	98
3.5 Conclusion	102
Appendix C.1.: Data description	104
Appendix C.2.: Tables and figures	106