Luca Barbaglia

I am a data scientist with a PhD in Econometrics: I exploit alternative, unstructured and big data to forecast economic developments using time series and machine learning. I work with macroeconomic data and natural resource markets to provide better predictions and policy support.

Keywords: Big Data, Econometrics, Data Science, Time Series.

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Work Experience

2018 – ... **Big Data and Forecasting Researcher (Centre for Advanced Studies)**
European Commission - Joint Research Centre (JRC)
Analyze alternative big data for economic forecasting, peer-reviewed publications and policy support:
- Residential mortgages in EU for default forecasting and regional assessment of economic crisis.
- Fraud detection in anti-dumping circumvention on international trade data towards the EU.
- Text mining on millions of newspaper articles to build economic sentiment indicators.
- Macro-economic nowcasting to support DG ECFIN during Covid-19 crisis.

2017 – 2018 **Data Science & Business Intelligence consultant**
Akronos Technologies at CNH Industrial (IVECO), Turin, Italy
- Analysis of large data sets, visualization of the results via dashboards and automatic reporting.
- Data-driven monitoring of business performances in the EMEA region (area Service).
- Provide direct recommendations and business insights to head-quarters management.

2015 – 2017 **PhD researcher in Econometrics**
KU Leuven, Belgium, Operation Research and Statistics (orstat)
- Multivariate time series modelling, programming in R, data visualization and networks.
- Experience in high-frequency financial data and financial data providers.
- *Teaching Assistant* for Advanced Time Series in R (master) and Econometrics in Stata (bachelor).

Education

2015 – 2017 **PhD Business Economics**
KU Leuven, Belgium
Thesis: *Large Vector AutoRegressions, Networks and Economic Applications*
Large Datasets, Lasso, Finance, Commodity Markets
Supervisors: Christophe Croux and Ines Wilms

2013 – 2015 **Research Master in Econometrics** - *Magna cum Laude*
UCL Université catholique de Louvain, Belgium
Final work: “Dynamics of agricultural and energy commodities”

2010 – 2013 **Bachelor in Economics and Social Sciences** - *109/110*
Bocconi University, Italy
Final work: “Shale gas and its impact on EU economies”

2013 **Exchange program**
University of Victoria, British Columbia, Canada

Publications and Working Papers

Publications in International Peer-reviewed Journals

Barbaglia, Croux and Wilms (2020) Volatility Spillovers in Commodity Markets: A Large t-Vector AutoRegressive Approach, *Energy Economics*, 85.

Wilms, Barbaglia and Croux (2018) Multi-class Vector AutoRegressive Models for Multi-store Sales Data, *Journal of the Royal Statistical Society, Series C* 67, 435-452.

Barbaglia, Wilms, Croux (2016) Commodity Dynamics: Sparse Multi-class Approach, *Energy Economics* 60, 62-72.

Books, Reports and Working Papers

Barbaglia, Consoli, Manzan (2020) Monitoring the Business Cycle with Fine-Grained, Aspect-Based Sentiment Extraction from News. In: Bitetta, Bordino, Ferretti, Gullo, Pascolutti, Ponti (eds) Mining Data for Financial Applications. MIDAS 2019. Lecture Notes in Computer Science, vol 11985. Springer.

Craglia et al. (2020) CAS, Publications Office of the European Union, *JRC119959*.

Barbaglia, Manzan, Tosetti (2020) Forecasting Loan Default in Europe with Machine Learning, *under revision*.

Barbaglia, Manzan, Tosetti (2020) Household Debt and Economic Growth in Europe, *submitted*.

Barbaglia, Consoli, Manzan (2020) Forecasting with Economic News, *submitted*.

Presentations at International Conferences

2020	*World Congress Econometric Society*, (August 2020 - virtual)
	MSBE seminar series Business School, University of Edinburgh UK (postponed due to Covid-19)
	Mathematical and Statistical Methods for Finance, Geneve, CH (postponed due to Covid-19)
	International Symposium on Forecasting, Rio de Janeiro, BR (postponed due to Covid-19)
2019	*Computational Statistics and Financial Econometrics*, London UK
	International Association for Applied Econometrics, Nicosia, Cyprus
	Big Data and Forecasting Conference at EC-JRC, Ispra, Italy (poster)
2018	*Big Data and Forecasting Workshop at EC-JRC*, Ispra, Italy
2017	*Weekly econometric seminar at Maastricht University*, Maastricht, The Netherlands
	Computational Statistics and Financial Econometrics, London UK
	International Association for Applied Econometrics, Sapporo, Japan
	Belgian Statistical Society (2017), Leuven, Belgium
2016	*International Association for Applied Econometrics*, Milan, Italy
	The Netherlands Econometrics Study Group, Leuven, Belgium (poster)
	The Leuven Statistics Days(2016), Leuven, Belgium (poster)

Languages

Italian	mother tongue
English	fluent (CAE-IELTS)
French	fluent
Dutch	intermediate

IT skills

Big Data	no-SQL (Spark & Hadoop) and SQL (Oracle R Enterprise)
	Good administration skills in Linux
	Cloud Computing AWS
	Machine Learning (h2o) and Text mining.
Coding	R (preferred), Python, Stata and some experience in Matlab
B.I.	MS Office, Excel, Qlik View, Tidyverse
Layout	LaTeX, Rstudio and Gephi (networks)
Teamwork	GitHub, Atlassian toolkit

Awards

2016 **Best poster presentation**
NESG The Netherlands Econometrics Study Group

2010 **Dolci-Colombo Scolarship**
Best final year students at Liceo Scientifico A. Tosi, Italy

Extra-curricular activities

Academic services

Present	Referee for *Energy Economics*, *The European Journal of Finance*, *Empirical Finance*, *PlosONE*
2020	Organization of special session on Big data in Economics and Finance (LOD 2020)
2019	Organization of the Big Data and Economic Forecasting 2-day international conference
	Program commitee for MIDAS 2019 : 4th Workshop on MIning DAta for financial applicationS
	Landslide Science and Art project with artist Tiny Domingos.

Additional courses

2020	Big data on Amazon Web Services (EC JRC)
2018	Additional courses on Python and factor models (EC JRC)
2017	Course on "Bayesian Dynamic Modelling for Multivariate Time Series Analysis" (by M. West)
2016	Noncausal Autoregression and the Modeling of Speculative Bubbles (by Gourieroux-Zakoian)
	Information cycle on international cooperation - Belgian Development Agency
2010	Sport Educator 1^{st} level and Junior Karate Trainer - Italian National Olympic Committee (CONI)

Volunteering

2010-20	Poverty alleviation with Ponitificio Istituto Missioni Estere (PIME) in Italy and Brazil
2015-18	Soup-kitchen aid by the Missionaries of Charity (Brussels, BE)
2010-13	Italian teacher for migrants with Agorá school
2009-10	American Field Service (AFS) exchange student assistant