

Marco Lippi

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Citizenship: Italian.

Education: Laurea in Mathematics in 1965 at the University of Rome "La Sapienza".

Present Position: Fellow, Einaudi Institute for Economics and Finance

Academic Appointments:

—Professor of Economics and Econometrics 1979-2013, Universities of Modena and Rome, "La Sapienza".

—Lecturer at the Universities of Perugia, Rome and Modena.

—Dean of the Faculty of Economia e Commercio, University of Modena.

—Chairman of the Dipartimento di Scienze Economiche, University of Rome "La Sapienza".

Recent Scientific Collaborations and Appointments:

—Co-director (with Giuseppe Parigi) of the Banca d'Italia project: Methods for short-term forecasting, 2008.

—National director of the PRIN (Italian Ministry of Education) project: Multivariate dynamic common-factor models, with applications to macroeconomics and finance, 2006.

—Co-director (with Giuseppe Parigi) of the Banca d'Italia project: Methods for short-term forecasting, 2006.

—Co-director (with Mario Forni and Lucrezia Reichlin) of Eurocoin Project, 2001.

The project has been carried over at the Research Department of the Banca d'Italia and has produced the monthly European Indicator known as Eurocoin, issued jointly by the Banca d'Italia and the CEPR.

—Visiting at the Federal Reserve Bank of Saint Louis, January 2008.

—Visiting at the Federal Reserve Bank of Saint Louis, May 2003.

—Visiting Professor at ECARES, Université Libre de Bruxelles, 1997-98.

—CEPR Associate: Project "Model Specification, Identification and Estimation in Empirical Macroeconomics". Member of TMR Project "New Approaches to the Study of Economic Fluctuations".

Major Publications

- [43] "Dynamic factor models with infinite-dimensional factor space: Asymptotic analysis", (with Forni, M., Hallin, M. and P. Zaffaroni), *Journal of Econometrics*, forthcoming.
- [42] "Noisy News in Business Cycle", (with Forni M., Gambetti L. and L. Sala), *to the American Economic Journal: Macroeconomics*, forthcoming.
- [41] "Noise Bubbles", (with Forni M., Gambetti L. and L. Sala), *Economic Journal*, forthcoming.
- [40] "Dynamic Factor Models with Infinite-Dimensional Factor Space: One-Sided Representations ", (with M. Forni, M. Hallin and P. Zaffaroni), *Journal of Econometrics*, 2015, 185(2), 359-371.
- [39] "Clarifying the roles of greenhouse gases and ENSO in recent global warming through their prediction performance", (with Umberto Triacca, Antonello Pasini, Alessandro Attanasio, Alessandro Giovannelli), *Journal of Climate*, 2014, 27 (20), 7903-7910.
- [38] "Factor models in high-dimensional time series—A time-domain approach", (with Marc Hallin), *Stochastic Processes and their Applications*, 2013, 123.
- [37] "Infinite-Dimensional Autoregressive Systems and the Generalized Dynamic Factor Model", *Journal de la Société Française de Statistique*, 2012, 153.

- [36] "The general dynamic factor model: One-sided representation results", (with Mario Forni), *Journal of Econometrics*, 2011, 163.
- [35] "New Eurocoin: Tracking Economic Growth in Real Time" (with Altissimo, F., Cristadoro, R., Forni, M. and G. Veronese), *Review of Economics and Statistics*, 2010, 92, 4.
- [34] "Opening the Black Box: Structural Factor Models with Large Cross-Sections" (with Forni, M., Giannone, D. and L. Reichlin), *Econometric Theory*, 2009, 25.
- [33] "The Generalized Dynamic Factor Model: One-Sided Estimation and Forecasting" (with Forni, M., Hallin, M. and L. Reichlin), *Journal of the American Statistical Association*, 2005, 100.
- [32] "Issues Concerning the Approximation Underlying the Spectral Representation Theorem", *Econometric Theory*, 2004, 20.
- [31] "Do Financial Variables Help Forecasting Inflation and Real Activity in the EURO Area?" (with Forni, M., Hallin, M. and L. Reichlin), *Journal of Monetary Economics*, 2003, 50.
- [30] "The Generalized Dynamic Factor Model: Consistency and Rates" (with Forni, M., Hallin, M. and L. Reichlin), *Journal of Econometrics*, 2004, 119.
- [29] "Innovation and Corporate Growth in the Evolution of the Drug Industry" (with G. Bottazzi, G. Dosi, F. Pammolli, M. Riccaboni), *International Journal of Industrial Organization*, 2001, 19.
- [28] "Coincident and Leading Indicators for the EURO Area" (with M. Forni, M. Hallin and L. Reichlin), *The Economic Journal* 2001, 111.
- [27] "The Generalized Dynamic Factor Model: Representation Theory" (with M. Forni), *Econometric Theory*, 2001, 17.
- [26] "The Generalized Dynamic Factor Model: Identification and Estimation" (with M. Forni, M. Hallin and L. Reichlin), *Review of Economics and Statistics*, 2000, 82.
- [25] "Aggregation of Linear Economic Models" (with Mario Forni), *Journal of Mathematical Economics*, 1999, 31.
- [24] *Aggregation and the Microfoundations of Dynamic Macroeconomics* (with Mario Forni), Oxford University Press, 1997.
- [23] "Diffusion of Technical Change and the Identification of the Trend Component in Real GNP" (with L. Reichlin), *Review of Economic Studies*, 1994, 61.

- [22] "Common and Uncommon Trends and Cycles", (with L. Reichlin) *European Economic Review*, 1994, 38.
- [21] "VAR Analysis, Nonfundamental Representations, Blaschke Matrices" (with L. Reichlin), *Journal of Econometrics*, 1994, 63.
- [20] "The Dynamic Effect of Aggregate Demand and Supply Disturbances. Comment" (with L. Reichlin), *American Economic Review*, 1993, 83.
- [19] "On Persistence of Shocks to Economic Variables: a Common Misconception" (with L. Reichlin), *Journal of Monetary Economics*, 1992, 29.
- [18] "Trend-cycle Decompositions and Measures of Persistence: Does Time Aggregation Matter?" (with L. Reichlin), *The Economic Journal*, 1991, 101.
- [17] "On the Dynamic Specification of Aggregate Models" (with Mario Forni), in *Disaggregation in Economic Modelling*, edited by Barker and Pesaran, Routledge, 1990.
- [16] "Permanent and Transitory Components in Macroeconomics" (with L. Reichlin), Published in the Proceedings of the International Economic Association Conference on Business Cycle", Copenhagen, June 1989.
- [15] "On the Dynamics of Aggregate Macroequations: from Simple Microbehaviors to Complex Macrorelationships", in *Technical Change and Economic Theory*, edited by G. Dosi, C. Freeman, R. Nelson, G. Silverberg, L. Soete, 1988, Frances Pinter.
- [14] "On the Dynamic Shape of Aggregated Error Correction Models", in *Journal of Economic Dynamics and Control*, 1988, 12, special issue on Nonstationary Time Series, Unit Roots and Co-Integration.
- [13] "Joint Production in Sraffa: Some Open Issues", *Political Economy*, 1988.
- [12] "Profitti e differimento del consumo: a proposito di un recente contributo di Claudio Napoleoni", Intervento alla XXVIII Riunione Scientifica Annuale della Societa' degli Economisti 1987, in *Aspetti controversi della teoria del valore*, edited by Luigi Pasinetti, il Mulino, 1989.
- [11] "Aggregation and Dynamics in One-Equation Econometric Models", Proceedings of the IEEE Conference on *Decision and Control*, Athens 1986.
- [10] "Ancora su valore e costo reale: risposta alle critiche di Petri", *Rivista Internazionale di Scienze Economiche e Commerciali*, 1985.
- [9] "Sulla dinamica delle relazioni tra variabili aggregate", *Politica Economica*, 1985.

- [8] "The Short Term Behavior of Retail Prices in the Recent Italian Experience" (with Carlo Dell'Aringa), *Proceedings of the Conference on The Economics of Distribution*, Venice 1983.
- [7] "Il marxismo e l'economia dopo Sraffa", *Politica ed Economia*, 1983, 10.
- [6] "Meccanismi a correzione dell'errore e formulazioni econometriche" (with Carlo Giannini), *Studi e Ricerche dell'Istituto Economico*, Modena 1983.
- [5] *I prezzi di produzione*, Bologna 1979.
- [4] *Value and Naturalism in Marx*, New Left Book 1979. This is an English translation and revision of the 1976 book on Marx, containing a new Postscript. A Spanish translation was also published.
- [3] *Marx: il valore come costo sociale reale*, Milano 1976.
- [2] "Questioni relative alla teoria marxiana del capitale", in Bruno de Finetti (ed.) *Requisiti per un sistema economico accettabile in relazione alle esigenze della comunità*, Milano 1973.
- [1] "Sugli elementi uniti nelle collineazioni dei piani liberi e dei piani aperti", in *Rendiconti dell'Accademia Nazionale dei Lincei*, 1965.

Current Research Lines.

1. Aggregation of Stochastic Vectors and the Microfoundations of Macroeconomics. Given the microbehaviors as stochastic linear equations (Slutsky-Frisch), I have shown that if agents are heterogeneous the aggregate equations can be dramatically different from the corresponding microequations. In particular, the dynamics of a macroequation may be the consequence of heterogeneity of static microequations with dynamic exogenous variables. See [9], [11], [14], [15], [17], [24], [25].
2. Permanent and Transitory Components in Macroeconomics. The permanent component of the growth of aggregate output has been mainly interpreted as the productivity growth. If this interpretation is granted the dynamic shape of the permanent component can not be specified as a pure random walk. Rather, a smooth process accounting for imitation across firms and learning within firms must be used for identification. See [16], [18], [19], [22], [23].

3. Fundamentalness of Moving Average Representations. Diffusion processes are likely to produce moving average representations whose roots are not necessarily outside the unit circle and are therefore not necessarily invertible. I have studied the consequences of non-fundamentalness on VAR analysis. See [20], [21].
4. Dynamic Factor Models with a Large Number of Variables. Both in finance and macroeconomics data sets containing a large number of variables are available. I am studying the possibility of modelling such data sets as driven by a small number of common factors plus individual variables. See [26], [27], [28]. The model studied in these papers is at present the basis for the construction of a Euro-Area Business Cycle Indicator, a joint project between the CEPR (Center for Economic Policy Research) and the Banca d'Italia.

Other scientific work.

1. Production prices and classical economists. In the classical theory of value framework, as revived by Piero Sraffa's *Production of Commodities by means of Commodities*, several problems arise with fixed capital and joint production. In particular, with joint production the prices of production may be negative. A contribution to solve this problem is given in [5].
2. Marx and the Labour Theory of Value. An important debate on the labour theory of value in Marx and classical economists took place in the '60s and '70s. In [3], [4], [10] I put forward an interpretation of labour values in Marx, claiming that a naturalistic element influenced the identification between value and labour embodied in *Das Kapital*.

Teaching

Current teaching. Stochastic macroeconomic theory. Theory of stationary stochastic processes. The case of discrete time. Wold representation. Spectral representation. Filtering. Courses on these topics for undergraduate classes at the Facoltà di Scienze Statistiche in Rome, and for Doctoral Programs in Rome, Sant'Anna in Pisa, Université Libre de Bruxelles, Einaudi Institute for Economics and Finance, Rome.

Previous teaching. (1) Courses in Advanced Microeconomics and General Equilibrium Theory for final year undergraduate students and Doctoral Programs

in Modena and Rome. (2) Courses on Classical Economists and Marx in Modena. (3) Courses on Linear Systems of Production (classical economics and Sraffa) in Rome and Modena. (4) Courses in Geometry and Modern Algebra in Perugia and Rome.

