



# DEFAP

## Graduate School in Public Economics





**DEFAP**

**Graduate School in Public Economics**



**RESEARCH GROUP IN**

**MACROECONOMICS AND  
MACRO-FINANCIAL  
ECONOMETRICS**



**DEFAP**

**Graduate School in Public Economics**



**The macro & macro-finance econometrics group covers a broad spectrum of research topics which could be grouped in two areas:**

- **Macroeconomic theory/models**
- **Empirical macro-finance models**



DEFAP

Graduate School in Public Economics



# 1. Macroeconomic theory/models (1)

- Market power, firm dynamics, wage and price rigidity: **Colciago, Tirelli**
- Rule of thumb consumers, limited asset market participation: **Tirelli, Colciago, Albonico**
- Banking/financial frictions;
- unconventional monetary policies/forward guidance;
- multisectoral models (official/shadow economy: **Tirelli**)



DEFAP

Graduate School in Public Economics



# 1. Macroeconomic theory/models (2)

- Financial fragility/instability: **Assenza, Delli Gatti, Dia, Grazzini**
- Heterogeneous agents and macroeconomic performance: **Assenza, Colciago, Delli Gatti, Grazzini, Longaretti, Massaro, Tirelli**
- Distributive effects of monetary and fiscal policies: **Gobbi, Tirelli**
- Departures from full rationality in expectations formation: **Assenza, Massaro, Motolese, Nielsen**





DEFAP

Graduate School in Public Economics



# 1. Macroeconomic theory/models (3)

- The impact of dispersed information on macroeconomic outcomes: **Femminis, L. Colombo**
- Macroeconomic models with stochastic rationing: **Weinrich**
- Macro performance and exchange rate regimes in advanced and emerging countries: **E. Colombo, Lossani**



DEFAP

Graduate School in Public Economics



# 1. Macroeconomic theory/models (4)

- **Toolkits:**
  - The most preferred theoretical framework is (New Keynesian) dynamic stochastic general equilibrium (e.g. **Tirelli, Colciago, Albonico**)
  - Some researchers are also developing macroeconomic agent based models) and network models (e.g. **Assenza, Delli Gatti, Grazzini, Liberati, Massaro**)



DEFAP

Graduate School in Public Economics



## 2. Empirical Macro-Finance (1)

- **The macro-finance interface:**
  - how macro conditions determine asset prices,
  - how asset prices determine macro conditions.
- **Toolkit**
  - DSGE models with limited asset market participation, and financial variables.
  - Large scale multi-country macroeconomic models with macro-financial interactions.
  - Large scale time-varying parameter dynamic models.
- **Albonico, Colciago, E. Colombo, Morana, Tirelli**





DEFAP

Graduate School in Public Economics



## 2. Empirical Macro-Finance (2)

- **Early warning indicators of macro-financial risk:**
  - **theoretical underpinnings of macroprudential policy;**
  - **financial linkages (network);**
  - **early warning indicators of incoming economic and financial distress**
- **Colciago, Colombo, Liberati, Morana, Tirelli, Zappa**



## 2. Empirical Macro-Finance (3)

- **Commodity/energy markets and the macroeconomy:**
  - what drives commodity prices: demand or supply? The role of speculation
  - Real effects of oil price shocks?
- **Toolkit**
  - ARMA-GARCH/FAVAR modeling of the linkage between (1) spot commodity prices and future market speculative pressure; (2) spot commodity prices and macroeconomic conditions; (3) oil price shocks and macro conditions.
- **Manera, Morana, Pelagatti**



DEFAP

Graduate School in Public Economics



## 2. Empirical Macro-Finance (4)

- **The European economy:**
  - Are EU economies converging or diverging?
  - Implications for stabilization policies
  - Real effects of cohesion policies
  - Development, globalization and the “secular stagnation” hypothesis

**Albonico, Morana, Tirelli** investigate these issues via DSGE models and large scale econometric models.



DEFAP

Graduate School in Public Economics



## 2. Empirical Macro-Finance (5)

- **The Economic and financial implications of climate change:**
  - **Econometric modelling of climatological phenomena**
  - **Impact analysis of direct and feedback effects of climate change on the real and financial sectors**

**Morana** investigate these issues via small and large scale econometric models.

# Bayesian methods in economics and finance (Stefano Peluso)

**Common theme:** resolution of relevant **financial** and **economic problems** (in high frequency finance, credit risk, graphical modelling, interest rates) through applications and generalizations of **parametric** and **nonparametric Bayesian** statistical methodologies

## **Potential open problems:**

- **High-frequency finance:** Expectation-Maximization based method for integrated variance estimation with leads and lags among returns (extension of Corsi, Peluso, Audrino 2015)
- **Credit risk models:** multidimensional urn-based credit risk models for nonparametric estimation of migration and default rates (extension of Peluso, Mira and Muliere, 2015)
- **Network models:** time evolution of urn-based network models, with application to international financial flows (extension of Peluso, Mira, Muliere and Lomi, 2016)



**DEFAP**

**Graduate School in Public Economics**



# **Members**

## **Coordinators:**

**Domenico Delli Gatti** (Macro, ABM)

**Claudio Morana** (Macro-Fin E'trics)

## **Research team** (*Università Bicocca, Università Cattolica*):

- 1. Alice Albonico** (UB: Macroeconomics, DSGE)
- 2. Tiziana Assenza** (UC/Toulouse: Macroeconomics, ABM)
- 3. Andrea Colciago** (UB: Macroeconomics, DSGE)
- 4. Emilio Colombo** (UC: Macroeconomics, Macro-Fin E'trics)
- 5. Domenico Delli Gatti** (UC: Macroeconomics, ABM)
- 6. Enzo Dia** (UB: Macroeconomics, Macro-Fin E'trics)
- 7. Gianluca Femminis** (UC: Macroeconomics, Information )





**DEFAP**

**Graduate School in Public Economics**



**Members**

- 8. Alessandro Gobbi (UC: Macroeconomics, DSGE)**
- 9. Jakob Grazzini (UPV: Macroeconomics, ABM)**
- 10. Caterina Liberati (UB: Financial Networks)**
- 11. Riccarda Longaretti (UB: Macroeconomics)**
- 12. Marco Lossani (UC: Macroeconomics)**
- 13. Matteo Manera (UB: Energy, Macro-Fin E'trics)**
- 14. Domenico Massaro (UC: Macroeconomics)**
- 15. Andrea Monticini (UC: Macroeconomics, Macro-Fin E'trics)**
- 16. Claudio Morana (UB: Macroeconomics, Macro-Fin E'trics)**
- 17. Maurizio Motolese (UC: Macroeconomics)**
- 18. Carsten Nielsen (UC: Macroeconomics)**
- 19. Stefano Peluso (UC: Macro-Fin E'trics)**



DEFAP

Graduate School in Public Economics



## Members (cont.)

- 20. Matteo Pelagatti** (UB: Macroeconomics, Macro-Fin E'trics)
- 21. Patrizio Tirelli** (UPV: Macroeconomics, DSGE)
- 22. Gerd Weinrich** (UC: Macroeconomics,)
- 23. Paola Zappa** (UB: Financial Networks)