Tommaso Di Francesco

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tommasodf.github.io

Research Interests

Behavioral Economics, Non-linear Dynamics, Macroeconomics

Education

2025*	**Ph.D.**, Economics, University of Amsterdam. Joint with Ca' Foscari University of Venice Advisors: Cars Hommes (UVA) and Paolo Pellizzari (UNIVE) EU MSCA programme Economic Policy in Complex Environments (EPOC)
2020	**M.A.**, Economics and Finance, Ca' Foscari University of Venice
2017	**B.Sc.** Economics and Management, University of Rome Tor Vergata

Teaching

Ca'Foscari University of Venice

2024	Computational Tools for Economics and Finance (ET4010) Trained a custom version of GPT 3.5 on the material of the course. The resulting software was made accessible to students as a Virtual Teaching Assistant.
2019, 2022	Teaching Assistant, Optimization (EM2Q12)
2019	Teaching Assistant, Financial Mathematics (ET0046)
2019	Tutorial Assistance, Mathematics For Economics (ET0047)

University of Amsterdam

2024	Tutorial Assistance, Mathematics 1 for Economics (6011P0236Y)
2024	Tutorial Assistance, Microeconomics (6011P0139Y)
2025	Tutorial Assistance, Statistics 1 for Economics (6011P0245Y)
2025	Tutorial Assistance, Econometrics 2 (6012B0378Y_B5)

Work Experience

2019-2020	Financial Consultant, Ernst&Young, Milan, Italy Invonveld in internation Project Streams (Central Europe, Belgium, Germany): Requirements collection and high level analysis. Design and implementation (CCH Tagetik CPM) of P&L Planning and Closing, BS&CF Planning, Virtual strategic plan for the US and Central Europe Project Stream. User training and Post-go-live support

*Defense scheduled on 04/06/2025.

Research

Publications

Sentiment-Driven Speculation in Financial Markets with Heterogeneous Beliefs: A Machine Learning Approach (with Cars Hommes)
Journal of Economic Dynamics and Control, 2025. Accessible here.

Working papers

(Mis)information diffusion and the financial market (with Daniel Torren Peraire)
R&R Journal of Economic Behavior and Organization. Accessible here.

> This paper investigates the interplay between information diffusion in social networks and its impact on financial markets with an agent based model (ABM). Agents receive and exchange information about an observable stochastic component of the dividend process of a risky asset à la Grossman and Stiglitz (1980). A small proportion of the network has access to a private signal about the component, which can be clean (information) or distorted (misinformation). Other agents are uninformed and can receive information only from their peers. All agents are Bayesian in updating their beliefs, but in a behavioural way. They adjust their beliefs according to the confidence they have in the source of information. We examine, by means of simulations, how information diffuses in the network and provide a framework to account for delayed absorption of shocks, that are not immediately priced as predicted by classical financial models. We show the effect of the network topology on the resulting asset price and offer an interpretation for excess volatility with respect to fundamentals, persistence amplification and lepto-kurtosis of returns.

Work In Progress

Sticky Information across the Wealth Distribution

> This paper investigates the role of wealth-dependent information stickiness in the transmission of monetary policy in a Heterogeneous Agent New Keynesian (HANK) model. Using survey data, I provide empirical evidence that households do not form expectations according to the full-information rational expectations (FIRE) hypothesis but instead exhibit stickiness in updating their information, with wealthier households updating more frequently. I evaluate the effect of this evidence on macroeconomic dynamics using a quantitative model. My findings reveal that inequality significantly affects the aggregate responses to monetary shocks. Specifically, models that neglect heterogeneity in information updating underestimate both the magnitude and the delay of the peak response to monetary policy shocks. Estimating the model by matching simulated impulse response functions (IRFs) to empirical ones shows that stickiness is crucial for accurately capturing the dynamics observed in the data.

Programming

Python, Julia, R, Stata

References

Prof. Dr. Cars Hommes University of Amsterdam C.H.Hommes@uva.nl	**Prof. Dr. Paolo Pellizzari** Ca' Foscari University of Venice paolop@unive.it

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