Academic Career Statement – Valerio Dionisi

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October 2025

I am a Ph.D. Candidate in Economics, Statistics, and Data Science at the University of Milano-Bicocca, jointly with the Catholic University of Milan, under the supervision of Prof. Andrea Colciago, with visiting research periods at the economics department of Universitat Pompeu Fabra (2023-2024) and University of Oxford (2024-2025). As a visiting scholar at Pompeu Fabra University under Prof. Davide Debortoli, I refined my skills in numerical methods to simulate complex macroeconomic models. While visiting the University of Oxford under Prof. Francesco Zanetti, I concluded a project on the horizontal dimension in production networks. These experiences strengthened both my empirical and theoretical expertise while fostering collaborative research in international environments. Prior my doctoral studies, I earned an M.Sc. in European Economy and Business Law from Tor Vergata University, and a B.A. in Political Science from Roma Tre University.

My academic trajectory has been guided by a continuous effort to understand the structural foundations of the contemporary economic systems, and how these shape macroeconomic outcomes and economic policy design. From my earliest studies in political science to my current doctoral research, my work has followed a coherent line of inquiry: how economic systems, through their inter-dependent structure of production and exchange, transmit shocks, generate inequality, and influence policy effectiveness.

During my undergraduate studies in Political Science at Roma Tre University, I cultivate my academic interest in economics. I first examined the evolution and the interaction of economic and institutional settings, with particular focus on the European context. My bachelor thesis, focused on the design and implementation of the optimal coordination of monetary and fiscal policy instruments to the internal (price stability and full employment) and external (trade balance) objectives of economic policies, introduced me to the tension between policy intentions and structural constraints – an interest that would later evolve into a more formal investigation of macroeconomic interdependencies.

Building upon this institutional perspective, my master's studies in European Economy and Business Law at Tor Vergata University allowed me to integrate analytical and empirical methods into my understanding of macroeconomic coordination. My master thesis, titled "Evidence of Debt Consolidation Dynamics for Europe and Italy" combined econometric techniques with fiscal policy and debt sustainability analysis, reflecting an early attempt to connect quantitative modelling with institutional realities of the design and the implementation of policies. This study reinforced my conviction that macroeconomic outcomes cannot be fully understood without accounting for the complex characteristics – both structural and policy-driven – that bind sectors and economies together.

The transition to doctoral research at the University of Milano-Bicocca marked a natural progression toward formal modelling and quantitative macroeconomic analysis. Under the supervision of Professor Andrea Colciago, my research employs dynamic general equilibrium frameworks and Input-Output data to analyse how micro-level connections and complementarities among sectors shape macroeconomic stability, and how the sector-level substitution possibilities among production inputs act as a driver of the U.S. real wage inequality. This focus represents the logical synthesis of my earlier interests: from institutional policy design to network-based macroeconomic interdependence. The research agenda of my Ph.D. thesis, titled *Macroeconomic Perspectives on Sectoral Composition: Networks and Inequality*, sits at the confluence of macroeconomics, network theory, and labour markets, seeking to understand how sectoral complementarities and interactions shape aggregate dynamics.

In my Job Market Paper, *The Horizontal Geometry of Production Networks*, I develop a novel theoretical framework capturing the notion that sectors are densely interconnected not only by their existing trade flows but also through common Input-Output relationships, and these similarities give birth to an "horizontal geometry" of production networks. To capture this additional dimension, I propose new measures of "network economic distances" between sectors via shared upstream and downstream linkages that generates sectoral horizontal interdependencies and complements the classical propagation channel along vertical supply chains, thereby yielding richer predictions on how idiosyncratic shocks diffuse across sectors. Moreover, this setting allows to linearly capture the relevance of non-linear complementarities in intermediate inputs through shared inter-sectoral trade relationships. Empirically, using U.S. sector-level data, I show that shocks in closely connected sectors generate negative comovement, while shocks in further sectors generate stronger comovement. In a second paper, *Industry Contribution to U.S. Wage Inequality*, I explore how industry heterogeneity in capital-labour substitution elasticities shapes wage inequality. By disentangling a quantity effect (changes in input composition) from a structural effect (changes in substitution technology), I find that structural heterogeneity on the labour side dominates in driving inequality, re-framing the conventional view on Skill-Biased Technological Change.

Visiting research experiences at Pompeu Fabra Uniersity (2023-2024) and at University of Oxford (2024-2025) further strengthened the coherence of this intellectual path. At Pompeu Fabra, with Professor Davide Debortoli, I focused on numerical techniques for quantitative macroeconomics, deepening my technical expertise in model calibration and simulation, and to evaluate the strength of economic policies through their transmission across the economy. At Oxford, under the supervision of Professor Francesco Zanetti, I explored the interplay between sectoral interdependencies and transmission of idiosyncratic and independent micro-level shocks. These experiences refined both the theoretical and empirical dimensions of my research, providing a consistent methodological foundation that bridges theory, computation, and data.

In line with my academic path, I am currently co-authoring two inherently complex papers, but with a strong policy-oriented focus. Together with scholars from Banque de France, De Nederlandsche Bank, and Polytechnic University of Milan, we are working on theory-plus-empirics paper to study how participation and positioning in production networks influence the slope of the aggregate Phillips curve and the transmission of shocks within and across Euro Area countries – with particular emphasis on the asymmetric effects of common monetary policy interventions. The other parallel but distinct project is on the microfoundation of the endogenous decision of firms to locate upstream or downstream in domestic production networks and Global Value Chains (GVCs), thereby speaking simultaneously to monetary-policy design, to the evaluation of fiscal and trade interventions, and to the global sourcing and re-shoring choices.

Across these stages, my studies have evolved along a clear and unified trajectory: from the institutional analysis of policy coordination, to the empirical study of fiscal dynamics, to the structural modelling of interconnected economies. Each stage has deepened and refined the same central question – how interdependence, both institutional and productive, shapes macroeconomic outcomes.

Teaching has always been a central part of my academic identity. I currently teach Macroeconomics, International Macroeconomics, and Numerical Methods for Advanced Macroeconomics at both undergraduate and graduate levels. Together, these courses cover the theoretical foundations, empirical applications, and computational techniques that define modern macroeconomic analysis. I view teaching economics as both an invitation and a challenge – an invitation to engage students in rigorous analytical thinking, and a challenge to connect abstract models with the dynamics of real economies. My goal is to create a classroom where students not only learn to interpret models and data but also develop the capacity to think like economists: logically, critically, and with an awareness of the policy relevance of their insights. To me, research and teaching are inseparable. Both are acts of discovery: one advances knowledge, the other transmits the capacity to create it. As a scholar, I aspire to contribute to a research community that deepens our understanding of interconnected economies; as an educator, I seek to cultivate the next generation of economists who can apply analytical tools with both intellectual rigour and ethical awareness.