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RESEARCH STATEMENT

- **Overview of Research**

As a scholar my research interests lie in the macroeconomics realm. My aim is to examine and explore the theoretical underpinnings of the macroeconomy that can be empirically observed. In particular, I am interested in developing frameworks that can better explain the relationships we observe empirically between firms and their financiers, how these relationships affect firms' behaviors and lending practices of financiers, and the implications thereof for innovation, growth, banking, and financial regulations. In addition, I have a growing interest in examining the aforementioned mechanisms in an emerging market economy setup. As a researcher from an emerging market economy, my experiences helped me realize that conditions present in emerging market economies can offer unique insights for economics research. With these motivations, I take personal interests in firm dynamics, banking, credit market, innovation, and growth with a macroeconomist lens in my research. My approach to conducting research for these particular specialties can be best explained by supporting macro perspectives with microfoundations which is crucial to improve our understanding of the underlying mechanisms and the presence of granular datasets.

As an example, my job market paper *"Credit Reallocation and Technological Change"* (coauthored with Raoul Minetti and Pierluigi Murro) studies the dynamic process of credit reallocation and its interaction with aggregate innovative activity. We mainly try to uncover how credit reallocation affects the innovative activities of firms, if the intensity of credit reallocation matters for fostering innovation or on the contrary, hindering innovation due to potential financial instability caused by it, and how local financial development impacts innovative activities due to differences in access to credit. We put forward a theory of credit markets where borrowers choose either to innovate or not and lenders decide whether to reallocate credit. We show that an escalation in credit reallocation disrupts innovative activities and local financial development increases credit reallocation. To complement the predictions from the model, using a novel dataset on bank balance sheets and aggregate number of patents for Italy, we examine the effect of credit reallocation on innovation. We find that an increase in credit reallocation reduces innovative activity while aggregate credit growth helps to expand it. Additionally, we show that the results are not driven by the North-South divide which typically indicates differences in local financial development.

- **Current Research Projects**

Credit Reallocation, Dividend Payout and Innovation

This paper studies the effect of credit reallocation on dividend payouts and, ultimately, innovation in an economy with heterogeneous firms. I build on the intuition that innovative firms tend to pay higher dividends with the expectation of better future performance, while higher dividend payouts reduce the possibility of higher R&D investments leading to a lower level of innovation. At the same time, banks can play a 'Schumpeterian' role of creative destruction through reallocating credit to more innovative firms. My aim is to explore the underlying mechanism in a general equilibrium framework. In addition, I investigate the relationship employing the number of patents to measure firm innovation and the debt levels to calculate firm level measures of credit reallocation.

Innovation and Interest Rates: The Role of Patent Collateralization
(coauthored with Qingqing Cao and David Hong)

We investigate the role interest rates play in the decision making process of firms' innovation and capital expenditures. More precisely, evidence suggests firms have been placing their patents as collateral for loans in greater frequency. This brings up the possibility of asymmetric collateralization values between physical capital and loans which is the prime mechanism we aim to explore. Subsequently, we shall test the generated theoretical hypotheses to matched firm patent value US data. More explicitly,

we use USPTO's patent assignment database to see which patents are used as collateral and match patents with the Innovation (Patent) Valuation Database from Kogan et al. (2017). We posit a lower interest rate environment is more stimulative for innovation via the lending channel.

- **Future Research Agenda**

Bank Capital Structure and Credit Reallocation in the Knowledge Economy

I study the composition of bank assets and loan portfolios during the transition of the real sector to a knowledge economy. Annual Historical Bank Data from FDIC reveals two important facts: intangible asset holdings of U.S. commercial banks and savings institutions have increased dramatically over the past four decades, and the composition of loan portfolios has shifted from commercial and industrial loans to real estate loans. I aim to show that the compositional shift in loan portfolios are driven by the rise in bank intangible asset holdings which is a result of the transition to a knowledge economy and are not simply the results of financial innovations, higher mortgage demand, or deeper bond markets over the same time period.

The Macroeconomic Implications of Lending Favoritism by Public Sector Banks (coauthored with Yogeshwar Bharat and David Hong)

Sapienza (2004) finds evidence of lending favoritism by public sector banks. We aim to micro-found the lending decision-making process of both private and public sector banks and to postulate the macroeconomic implications of a recessionary shock. Utilizing matched bank firm Indian data via the Reserve Bank of India, we aim to test the evidence of such behavior by measuring the degree of credit reallocation/misallocation across sectors.

Nonlinear Knowledge Production and Patent Disclosures: A General Equilibrium Treatment Effects Approach (coauthored with Nick Brown and David Hong)

We aim to explore the incentives for firms to hide or reveal their innovations under a general equilibrium framework. To that end, appropriate derivations of an econometric estimator with the aim of alleviating sample selection bias and accounting for spillover effects in a general equilibrium treatment effect framework is our objective. A potential policy change we are considering is the passage of the Asset-Backed Securities Facilitation Act in Delaware in 2002 and the passage of the American Inventor's Protection Act of 1998 as well.

Supply Chain Induced Inflation: Input-Output Framework with Empirical Evidence from Turkey (coauthored with David Hong and Mehmet E. Samci)

La'O and Tahbaz-Salehi (2022) presents the optimal monetary policy under a multi-sector economy with input-output linkages. We aim to extend their production network framework and include empirical evidence from matched bank firm Turkish data. The novelty of our approach is the inclusion of micro-level input-output data that is also recorded at the Central Bank of the Republic of Turkey. We are currently underway in the process to receive permission to access said data.

References

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