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CURRENT APPOINTMENT

Vice President, Economist, Citigroup, 2022.7-present

PAST APPOINTMENT

Senior Quantitative Analyst, Credit Risk Modeling and Analytics, Fifth Third Bank, 2019.9-2022.6

EDUCATION

Ph.D. in Economics, North Carolina State University, 2019
Thesis Title: "Three Essays on Macroeconomics and Financial Frictions" (Advisor: Nora Traum)
M.S. in Applied Economics, East China University of Science and Technology, 2012
M.S. in International Business, ESDES School of Business and Management, 2011
B.A. in Public Administration, East China University of Science and Technology, 2009

REFERENCES

Prof. Nora Traum
Department of Applied Economics
HEC Montréal
(514) 340-6452
nora.traum@hec.ca

Prof. Giuseppe Fiori
Board of Governors
Federal Reserve System
(202) 452-7670
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Prof. Douglas Pearce
Department of Economics
North Carolina State University
(919)513-2880
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RESEARCH FIELDS

Macroeconomics, Time Series Econometrics, Financial Economics, International Finance, Empirical Finance

PUBLICATION

"Regime Dependent Dynamics of Parallel and Official Exchange Markets in China: Evidence from Cryptocurrency" (with Huachen Li), *Applied Economics (2024)*

WORKING PAPER

"Monetary Policy and Credit Supply Adjustment with Endogenous Default and Prepayment" [**Job Market Paper**]

This paper develops a general-equilibrium model to investigate how the credit supply mechanisms in the financial intermediation sector, which lends to households and entrepreneurs subject to financial frictions, influence monetary policy. In the model, endogenous default (of mortgage and business loans) and prepayment (referring to households' mortgage refinancing) influence the credit supply costs of a financial intermediary, who optimizes her loan portfolio composition given these cost variations with frictions. Moreover, the loan contracts allow the financial intermediary to share aggregate risk with borrowers, deviating from the canonical work by Bernanke et al. (1999). I estimate the model with US data. Likelihood inference indicates positive credit supply cost elasticities, significant frictions to portfolio adjustment, and balance-sheet strength fluctuation to borrowers' default and prepayment variations. Given households' endogenous behaviors, the conventional monetary policy's effectiveness in stabilizing inflation is enhanced under a TFP shock but reduced under a mortgage loan risk shock, and the credit supply channels worsen the latter situation. The effectiveness of unconventional monetary policy is enhanced by the credit supply channels.

"Bank Loan Portfolio, Monetary Policy Transmission, and Financial Downturns"

This paper studies the change in the financial sector's asset portfolio following a monetary policy contraction, as well as a tightening of financial conditions measured by loan-to-value (LTV) ratios in the residential mortgage market. By using three different datasets relating to bank loans and private sector liabilities in the U.S., the paper provides indirect support to active portfolio composition changes in the banking sector. This evidence is from the observed differences in the dynamics of loan responses between these datasets and over time. In terms of econometrics, both fixed and time-varying parameter vector autoregressive models are employed to identify these findings. Specifically, under a monetary contraction, results confirm the puzzling commercial and industrial (C&I) loan increase found in the literature. However, different degrees of the puzzling increase materialize depending on the dataset employed. Along the business cycles, this business loan puzzle is found to be more prominent in the 1980s, but varying over time, and slightly weaker after the Great Recession. Also, banks tend to favor real estate loans after the 2000s following a monetary contraction. Under a negative LTV ratio shock, banks tend to adjust their asset portfolio by cutting C&I loans more than real estate loans; over time, this response pattern shows little time variation across datasets, other than a notable boom in real estate liabilities after the 2000s. The response of monetary policy to credit crunches (or booms) seems to be time-varying: more aggressive before the Great Recession but weaker near and after the recession.

"Time-Varying Loan Puzzles", with Huachen Li

WORK IN PROGRESS

"Government Consumption: On the Effectiveness of Fiscal Stimulus at the Zero Lower Bound", with Nora Traum

PROFESSIONAL EXPERIENCE

2019-2022 VP Economist, Citigroup

- Led redevelopment of predictive models for a plethora of macroeconomic and finance variable families and productions utilizing clustering and other Machine Learning (ML) methods in Python with scikit-learn etc. for model specification and streamlined model development process in a systematic approach for the entire macroeconomic scenario expansion team.
- Improved production efficiency with automations in quarterly macroeconomic forecasting and scenario expansions using Python, VS Code, Git, Copilot, etc. in a forecasting system with 1500+ domestic and international macroeconomic variables; defended and communicated efficiently the team's forecast results given quarterly economic narratives and rationale with downstream users and stakeholders.
- Soley supported and enhanced efficiencies of economic scenario probability model assigning weights to key macroeconomic scenarios impacting major decisions in bank portfolio allocation and loss provision.
- Took initiative and self-directed in several projects including forecast overlay automation, statistical seasonality test, offline variable review plots; communicated closely with managers in the meantime to confirm the projects are with desired requirements, significantly lowered the team's risk of related aspects by standardizing judgements and increasing efficiencies.
- Communicated efficiently across teams, including new IT platform implementation, model revalidation and limitation closures; supported parallel teams' efforts including model development in finance team when needed and took core roles in commodity price model redevelopment given higher management's instructions.
- Participated actively and presented self-motivated peer-reviewed research projects in macroeconomics and finance during weekly team meetings on global macro data/news/outlook updates to about 50 team members including senior managers.

2019-2022 Senior Quantitative Analyst, Fifth Third Bank

- Independently conduct analyses and supported Dual Risk Rating Module (DRM) projects including model development, validation, production, monitoring, and documentation by working on Exposer-At-Default (EAD), Probability of Default (PD), and Loss-Give-Default (LGD) models, which are essential inputs for the bank's financial stress-testing models (CCAR, CECL).
- Supported commercial CCAR PD and its challenger model development using different methodologies; Lead machine learning study project by utilizing actual car loan default data.
- Facilitated modeling process by pulling and cleaning large commercial loan dataset using SAS, SQL and Python.

2011-2012 Enrolled student in Graduate Summer School, Shanghai Univ. of Finance and Economics
- 2011 Econometrics, Mathematics in Economics
- 2012 Microeconomics, Macroeconomics

TEACHING EXPERIENCE

Fall 2015-18 Independent Instructor, North Carolina State University, EC 202 (Principles of Macroeconomics)

Summer 2015 Instructor, Department Econ Math Camp to new Ph.D. students

Springs 2015-16 Lab Instructor for Prof. Lee Craig, North Carolina State University, EC 202 (Principles of Macroeconomics)

Fall 2014 Teaching Assistant for Prof. Douglas Pearce, North Carolina State University, EC 302 (Intermediate Macroeconomics) and EC 404 (Money and Banking)

2012-13 Instructor, Shanghai Guanghua College, Principles of Economics (Cambridge IGCSE)

SCHOLARSHIPS, HONORS AND AWARDS

2021 Horizon Award, Fifth Third Bank (award outstanding work performance)

2018-19 Jenkins Fellowship (one fellow in the department per academic year awarding research), North Carolina State University

2014-18 Economics Ph.D. program assistantship, North Carolina State University

2009-12 Postgraduate entrance scholarship grade 1, East China University of Science and Technology (2^{nd} out of 30)

PRESENTATIONS

2017-18 Macro Brown-Bag Lunch Seminar, North Carolina State University

SKILLS

Computing Matlab, Python, R, SAS, SQL, EViews

Languages Chinese (native), English (fluent), French (basic)

Certificate CFA Level 2 candidate