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COURSES

I'm a second-year Ph.D. student in Economics at Princeton University. During the first year, I completed the core graduate sequence in Microeconomic Theory (ECO 501-502), Macroeconomic Theory (ECO 503-504), and Econometric Theory (ECO 517-518), as well as field courses in Advanced Macroeconomic Theory (ECO 521), Introduction to Macro-Finance (ECO 507), and Financial and Monetary Economics (ECO 529). In the second year, I'm pursuing advanced field courses including Asset Pricing (ECO 525), International Trade (ECO 551), and International Monetary Theory and Policy (ECO 553), while also conducting independent research under faculty supervision. I earned A+ grades in both Macroeconomic Theory and Financial and Monetary Economics.

RESEARCH INTEREST

My research focuses on production networks and trade, with a particular interest in how information and behavioral frictions propagate through interconnected firms and sectors. I am currently working on a project that uses machine learning techniques to solve models featuring infinite-dimensional state variables in production networks. This approach allows for a global solution of equilibrium dynamics in complex supply chains, where firms' expectations, delays, and coordination frictions shape aggregate fluctuations and trade patterns.

ACADEMIC RESEARCH

- **Working Papers:**
  - "The Bullwhip: Time-to-Build and Sectoral Fluctuations", with Leng, Yan and Liu, Ernest and Tsyvinski, Aleh, NBER Working paper, April, 2024.

    We develop a theory of sectoral fluctuations driven by the propagation of demand shocks along supply chains with heterogeneous time-to-build production. We solve the model in closed form. Downstream producers respond directly to current demand. Upstream producers, due to time-to- build delays, respond to anticipated future demand. Consequently, hump-shaped demand shocks to downstream goods propagate and amplify along the supply chain, generating pronounced volatility in upstream sectors and creating the bullwhip effect. Empirically and quantitatively, we show that the bullwhip is significant across downstream sectors that are important for final consumption.

  - "Qing or Qin", with Keyu Jin and Tao Jin, Working paper, London School of Economics and Political Science, October 2023 **(**Presented in Princeton)

    We explore a new political economy where local governments play an important role in taxing firms, providing industrial lands and providing service. We consider the endogenous choices of local governments and firms and focus on how three revenues of local governments, natural resources revenue, land revenue and tax income, interact with each other. First, we provide some interesting facts about this economy that local governments in resources-abundant regions are not friendly and corrupt. We explain this fact by introducing natural resources market friction that affects relationship between firms and governments in China into the political economy model. In our tractable model, we find that this friction constrains the industry in resources-abundant regions by affecting two choices by local government: (1) more tax burden on industry and (2) less industrial land provided for industry than resources-scarce

regions. This friction is the cause of "curse of resources" effect. When this friction is higher, resources-abundant regions will inhibit the local industry more in terms of more tax burden and less industrial land. Second, we show that land revenue and natural resources revenue collected by local governments are complementary in the data, which is also consistent with the predictions of our new political economy model. Plus, we find the complementary role among three local governments' management tools: tax, industrial land provision and government service.

- "Quantitative Measurement of Monetary Policy—Relationship between Central Bank Shrinking Balance Sheet and "Monetary Loosening", with Xianshuang Wang and Jinfan Zhang (First Prize of Excellent Paper in the 7th National Economics Postgraduate Academic Annual Conference in 2021, Presented in 18th Chinese Finance Annual Meeting)
  In China, Central bank asset expansion is monetary easing, and central bank asset contraction is monetary tightening. To understand and explain this phenomenon, we construct an indicator—potential currency ceiling growth rate (PMCYOY)—to measure the degree of the central bank's monetary policy expansion. We find that the PMCYOY has a Granger leading role in major monetary intermediary indicators, including the growth rate of social finance, the growth rate of M2, the 3-month Shibor rate and the 7-day repurchase rate. Compared with other commonly used indictors, PMCYOY has significantly better predictability for major monetary intermediary indicators. Based on this indicator, the paper further analyzes the transmission effects of monetary policy and observes that credit expansion in China leads to a relatively slow but stable response to monetary policy, while financial market interest rates react rapidly but may experience overshooting.

- **Work in progress:**
  - "Endogenous time-to-build in supply chain", with Liu, Ernest and Stephen J. Redding