Topics
Measurement, Analysis, and Design of Financial Systems - First Principles as a Foundation for Policy.

Course Logistics

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Lectures: Tu Th 1:00-2:30 pm E51-372
Recitations: Fr 1:00-2:30 pm E51-376
Office hours: Mon 10:00-11:30 am E52-548

Course Overview

This course will cover several topics related to liquidity and financial intermediation. The focus of the course is on the design of financial contracts and markets, efficiency and policy interventions in a general equilibrium context. Special topics include innovations made possible by new technology, e-money and e-platforms.

Lecture 1: Design, Regulation, and Policy with respect to Payment Systems and Financial Infrastructure: Bitcoin and FinTech as examples of Technological Innovation, with Implications for Money and Financial Intermediation, begging issues of What is Optimal

Lecture 2: Ledgers and Data Base Management, Integrated Financial Statements, and an Application to Distributional and Regional Accounts

Lecture 3: E-money, Infrastructure and Liquidity Shortages, Financial and Trader Centrality, and Optimized Liquidity Injections as Monetary Policy

Lecture 4: Encryption and Validation Protocols for E-messages Versus Smart Contracts and Mechanism Design
Lecture 5: Vision for Optimized Design of Financial Infrastructure using Distributed Ledger Technology: Scrambling of Information and Partitioned Ledgers, Delegation to the Contract, Limiting Access to the Outside Market, Single and Multiple-Colored Tokens as Decentralized Partitioned Ledgers, Commitment to Optimized Sequential Service to Mitigate Runs


Lecture 8: Payment Systems: Problems and Issues to be Considered in Alternative Designs

Lecture 9: The Information Problem of Decentralized Monetary Exchange and of Equilibria with High-Velocity Circulating Private Debt: Regulation using Distributed Ledger Technology

Lecture 10: Money, Crypto Currency, and Public Debt as Bubbles: Implications for Indeterminacy, Fiscal Policy, Liquidity Pricing and the Interest Rate


Requirements

The grade will be based on class participation (15%), two problem sets (40%) and referee report / research proposal (45%), which should discuss in detail at least one of the papers marked with $.

The discussion should consist of a thorough critique of a paper or topic, as in a well written self-contained referee report, and ideally would give ideas about how to build on that, as in a research proposal.

The research proposal should be presented on Friday, March 13 and Tuesday, March 17. Each presentation will be allocated a 30-min slot. The time constraint will be strictly enforced. The write up should extend the discussion and be 10 to 12-page long. A write-up is due on March 29.

Required readings are marked with an asterisk (*).

LECTURE 1:

Design, Regulation, and Policy with respect to Payment Systems and Financial Infrastructure – Bitcoin and FinTech as examples of Technological Innovation, with Implications for Money and Financial Intermediation, begging issues of What is Optimal


Chicago Board of Trade (1982). “Grains, Production, Processing, Marketing.”


LECTURE 2: Ledgers and Data Base Management, Integrated Financial Statements, and an Application to Distributional and Regional Accounts


LECTURE 3: E-money, Infrastructure and Liquidity Shortages, Financial and Trader Centrality, and Optimized Liquidity Injections as Monetary Policy


Jaramillo et al. (2012), An Empirical Study of the Mexican Banking System Network and Its Implications for Systemetic Risk


**LECTURE 4: Encryption and Validation Protocols for E-messages Versus Smart Contracts and Mechanism Design**


**LECTURE 5:**
Vision for Optimized Design of Financial Infrastructure using Distributed Ledger Technology: Scrambling of Information and Partitioned Ledgers, Delegation to the Contract, Limiting Access to the Outside Market, Single and Multiple-Colored Tokens as Decentralized Partitioned Ledgers, Commitment to Optimized Sequential Service to Mitigate Runs


**LECTURE 6:**
Needed Financial Infrastructure: Innovations in Emerging Markets and Guidelines from Theory for Optimal Infrastructure Design


**LECTURE 8: Payment Systems: Problems and Issues to be Considered in Alternative Designs**


LECTURE 9: The Information Problem of Decentralized Monetary Exchange and of Equilibria with High-Velocity Circulating Private Debt: Regulation using Distributed Ledger Technology


LECTURE 10: Money, Crypto Currency, and Public Debt as Bubbles: Implications for Indeterminacy, Fiscal Policy, Liquidity Pricing and the Interest Rate


