

Introduction and Course Overview

ECON 70428: Advanced Macro: Financial Frictions

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Spring 2021

Readings

Literature review: [Claessens and Kose \(2017\)](#)

Toy models and conceptual overview: [Quadrini \(2011\)](#)

This Course

The course will focus on two related areas: **financial frictions** and **quantitative easing** (unconventional monetary policy)

Will do so studying DSGE model with financial frictions

Need some kind of financial frictions for QE to make any sense

Conventional policy: altering short-term policy rates to influence economically relevant long-term rates

QE: impacting long term rates without affecting short-term rates

But need more than one interest rate for this to make sense and some mechanism by which balance sheet variables matter \Leftrightarrow financial frictions

Standard Macro Models

Financial sector is a veil

Indeed, the people borrowing are the same as the people lending

There are no financial intermediaries (banks), or if they are there, they are uninteresting

To get interesting financial issues, need some kind non-trivial heterogeneity

- ▶ This is “hard”
- ▶ We will typically make assumptions (sometimes odd) to get things to nevertheless aggregate well

Agency and Enforcement Frictions

Typically assume some kind of **agency friction** or **enforcement friction**: a principal gives funds to the agent to invest

Agency Frictions (ex-ante):

- ▶ Principal has difficulty determining type of agent (adverse selection) or monitoring her behavior (moral hazard)
- ▶ This gives rise to an **external finance premium**

Enforcement Frictions (ex-post):

- ▶ Principal cannot perfectly enforce terms of contract
- ▶ This gives rise to borrowing/leverage constraints that bind

Need restrictions to ensure that agents need external finance – extra discounting or exogenous death – so that they don't “outgrow” need for external funds

Demand Side vs. Supply Side

Agency frictions can plague both the **demand side** as well as **supply side** of finance (Claessens and Kose 2017)

Demand side: balance sheet condition of borrowing firms matters for how much funds they can raise

Supply side: balance sheet condition of banks matters for how much credit they can extend

Demand Side vs. Supply Side II

Much of the literature, and much of the course, focuses on the demand side (e.g. Bernanke Gertler 1989; Carlstrom and Fuerst 1997; Kiyotaki and Moore 1997; and Bernanke, Gertler, and Gilchrist 1999)

- ▶ This literature is focused on **financial accelerator**: good times improve balance sheet condition of borrowers, making it easier for them to obtain credit, leading to a virtuous cycle

For the supply side, we take similar frictions but apply them to intermediaries: intermediary balance sheets affect their ability to extend credit. QE can affect the health of bank balance sheets

Net Worth / Balance Sheet Conditions

Net worth = assets minus liabilities

Demand side: the more net worth borrowers have, the lower are agency frictions, and the easier their access to credit

Supply side: the more net worth banks have, the easier it is for them to supply credit

This makes asset prices particularly relevant for fluctuations: increases in asset prices improve balance sheet conditions (potentially of both demand and supply side)

- ▶ Potentially both a source of business cycles (impulse)
- ▶ As well as an amplification/propagation mechanism (financial accelerator)

Why Does Net Worth Matter?

The central implication is that more net worth allows better access to credit (demand side) or provision of credit (supply side)

Why?

1. “Skin the game”: ameliorates moral hazard problems
2. “Screening”: way to signal type (adverse selection problems)
3. Easier enforcement: if project fails, easier to get funds back

Two Basic Approaches in the Literature and Frictions in This Course

There are two basic approaches to introducing financial frictions on the demand side:

- ▶ Costly State Verification (CSV), based on Townsend (1979); Bernanke and Gertler (1989); Carlstrom and Fuerst (1997); Bernanke, Gertler, and Gilchrist (1999); Christiano, Motto, and Rostagno (2014); Carlstrom, Fuerst, and Paustian (2016)
- ▶ Limited enforcement: Kiyotaki and Moore (1997); Iacoviello (2005); Jermann and Quadrini (2011)

On the supply side, we are going to take the limited enforcement approach – Gertler and Karadi (2011, 2013); Carlstrom, Fuerst, and Paustian (2017); Sims and Wu (2020, 2021); Sims, Wu, and Zhang (2020)

Outline

Will work through about 15 papers

Four parts:

1. Overview (Claessens and Kose 2017 and Quadrini 2011)
2. CSV and financial accelerator (Bernanke and Gertler 1989; Calstrom and Fuerst 1997; Bernanke, Gertler, and Gilchrist 1999; Christiano, Motto, and Rostagno 2014; Carlstrom, Fuerst, and Paustian 2016)
3. Collateral constraints and credit shocks (Kiyotaki and Moore 1997; Iacoviello 2005; Jermann and Quadrini 2011)
4. Term premium, QE, and unconventional policy (Rudebusch and Swanson 2012; Gertler and Karadi 2011, 2013; Carlstrom, Fuerst, and Paustian 2017; Sims and Wu 2019, 2020a, 2020b)

Requirements

Class is lecture-based

You are required to submit replications of three papers (papers and due dates on syllabus)

- ▶ Typed notes detailing model derivation
- ▶ Quantitative simulations (IRFs and moments)
- ▶ No estimation or robustness

Open-note, take-home final (May 14-15)

Structure

I will be using Sakai

I will have slides but these will sparing; much of work will be on the board

I will also post detailed derivation notes for some subset of papers

I will not post codes up front