

Economics 712-004  
Search Theory and Applications  
Spring 2019

**Instructor:** Ben Lester

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**Class Schedule:** Wed, 6:00 - 9:00 pm.

**Office Hours:** TBA.

**Textbook:** There is no textbook for the course. The course will be based on published and working papers.<sup>1</sup>

**Content and Objective**

Search-theoretic models of exchange have proven extremely useful in understanding certain markets and phenomena that are difficult — if not impossible — to understand within the traditional, frictionless Walrasian paradigm. This course will introduce the fundamental tools and models that are used in search theory, and explore applications in several key areas of research.

The first application we will cover is that of long-term relationships in frictional markets, with the leading example being the labor market. The primary objective in this section of the course is to understand the optimal behavior of workers looking for a job, the optimal contracts that firms offer, and the implied equilibrium dynamics. We will consider a variety of models, and address topics such as unemployment duration, wage dispersion, the equilibrium level of unemployment, worker flows, and mismatch.

The second topic that we will cover focuses on spot trades in decentralized markets, with the leading example being over-the-counter financial markets. The primary objective in this section of the course is to understand the types of intermediaries and financial institutions that arise to overcome frictions in the exchange of assets, and how these trading arrangements affect asset prices and liquidity. We will consider several different model specifications, and address topics such as asset pricing, liquidity, and market microstructure.

The last topic that we will cover is the introduction of asymmetric information into environments with search frictions. Again, we will consider several different model specifications, and study how information frictions distort trade in frictional markets, and how certain policies can either ease or exacerbate these distortions.

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<sup>1</sup>Some of the material will borrow from notes by Randall Wright. See <https://sites.google.com/site/randallwrightecon/teaching>.

# Course Outline

## The basics

- The basic job search model:  
    McCall (1970)
- Price posting and the Diamond paradox:  
    Diamond (1971)
- Some short notes on Poisson processes and bargaining theory.

## Benchmark models in labor search

- Random search and bargaining:  
    Mortensen and Pissarides (1994), Hosios (1990), Shimer (2005b)
- Price posting, wage dispersion, and on-the-job search  
    Burdett and Judd (1983), Burdett and Mortensen (1998), Postel-Vinay and Robin (2002)
- Competitive/directed search models  
    Moen (1997), Burdett et al. (2001), Menzio and Shi (2011)
- Other potential topics include:  
    Stock-flow matching models: Coles and Smith (1998)  
    Wage-tenure contracts: Burdett and Coles (2003), Shi (2009)  
    Sorting and matching: Shi (2001), Shimer (2005a), Eeckhout and Kircher (2010)  
    Joint search: Guler et al. (2012)

## Benchmark models in finance

- Pure decentralized markets:  
    Duffie et al. (2007), Hugonnier et al. (2015)
- Semi-centralized markets:  
    Duffie et al. (2005), Hugonnier et al. (2018)
- Other potential topics include:

Quantitative models and applications to specific OTC markets: Gavazza (2011), He and Milbradt (2014), Afonso and Lagos (2015)

Endogenous intermediation: Farboodi et al. (2017), Chang and Zhang (2016)

Housing markets: Head et al. (2014), Hedlund (2016), Lester et al. (2017)

### **Asymmetric information in frictional markets**

- Random search environment:

Chiu and Koepl (2016)

- Competitive search environment:

Guerrieri et al. (2010), Guerrieri and Shimer (2014)

- Semi-competitive environment:

Lester et al. (2018)

- Other potential topics include:

Learning in OTC markets: Golosov et al. (2014), Lauer mann and Wolinsky (2016), Kim (2017),

Labor markets with adverse selection: Carrillo-Tudela and Kaas (2015), Jarosch and Pilossoph (2018)

## References

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