

Equilibrium Theories of Banking and Financial Intermediation

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Introductory remarks and general references

This course presents some recent and current theoretical research concerning financial intermediation. Rather than attempting survey this extensive field, we will examine closely the logic and structure of some of the principal theories. The topics that we intend to cover are listed below, together with some readings that will be covered directly. The selection of readings is not intended to be representative, and it emphasizes recent contributions rather than classical ones (or even modern classics). The bibliographies of these articles, however, collectively provide more adequate sample of the scientific literature.

The following four books may be of interest, although they are not assigned readings for the course. The first two provide historical and factual background, while the second two are widely read expositions of recent theoretical models.

Some Factual Background

Sprague, O. M. W., *History of Crises Under the National Banking System*. U.S. Government Printing Office, 1910 (reprint ed., Augustus M. Kelley, 1968).

Demirgüç-Kunt, Asli, and Ross Levine, eds., *Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development*. MIT Press, 2001.

Recent Graduate-Level Lectures/Textbooks

Dewatripont, Matthias, and Jean Tirole, *The Prudential Regulation of Banks*. MIT Press, 1994.

Freixas, Xavier, and Jean-Charles Rochet, *Microeconomics of Banking*. MIT Press, 1997.

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The course grade will be based on a final examination.

Problem sets will be periodically assigned and corrected. These will not be factored directly into a student's grade, but will be helpful preparation for the final examination. Students are welcome to discuss the assigned problems together, but will get the greatest learning benefit by writing answers individually after such discussion has concluded.

Course Description

1. Introduction and review

- (a) General equilibrium models, rational expectations equilibrium, and Pareto efficiency
Radner, Roy. 1979. "Rational expectations equilibrium: generic existence and the information revealed by prices," *Econometrica*, 47, pp. 655–78.
- (b) Efficiency in environments with private information
- (c) Miller-Modigliani theorem and its extension to intermediaries' asset portfolios (A role for intermediation implies failure of some neoclassical condition for GE.)
Stiglitz, Joseph. 1974. "On the irrelevance of corporate financial policy," *American Economic Review*, 64, pp. 851–66.
- (d) Representing a financial-intermediary firm as a production function is problematic.

2. Some basic models of intermediation

- (a) Insuring "liquidity risk"
Diamond, Douglas; and Philip Dybvig. 1983. "Bank runs, deposit insurance, and liquidity," *Journal of Political Economy*, 91, pp. 401-19.

Wallace, Neil. 1988. "Another attempt to explain an illiquid banking system: The Diamond-Dybvig model with sequential service taken seriously," *Quarterly Review of the Federal Reserve Bank of Minneapolis*, 12(4), pp. 3-16.
<http://minneapolisfed.org/research/qr/qr1241.html>

Wallace, Neil. 1996. "Narrow banking meets the Diamond-Dybvig model," *Quarterly Review of the Federal Reserve Bank of Minneapolis*, 20(1), pp. 3-13.

- (b) Providing an efficient contract when enforcement of debt repayment is costly, and when there is private information about idiosyncratic risks

Townsend, Robert. 1979. "Optimal contracts and competitive markets with costly state verification," *Journal of Economic Theory*, 21, pp. 417-25.

Green, Edward; and Soo-Nam Oh. 1991. "Can a 'credit crunch' be efficient?" *Quarterly Review of the Federal Reserve Bank of Minneapolis*, 15, pp. 3-17.
<http://minneapolisfed.org/research/qr/qr1541.pdf>

- (c) Delegated monitoring of borrowers

Diamond, Douglas. 1984. "Financial intermediation and delegated monitoring," *Review of Economic Studies*, 51, pp. 393-414.

Krasa, Stefan; and Anne Villamil. 1992. "Monitoring the monitor," *Journal of Economic Theory*, 57, pp. 197-221.

- (d) *Ex ante* screening of borrowers

Chiang, Yeong-Yuh; and Edward Green. 2001. "Financial-intermediation regime and efficiency in a Boyd-Prescott economy," *Carnegie-Rochester Conference Series on Public Policy*, 54, pp. 117-29.
http://www.chicagofed.org/workingpapers/papers/wp2000_19.pdf

3. Topics

- (a) Do bank runs exemplify indeterminacy of equilibrium?

Green, Edward; and Ping Lin. 2003. "Implementing the efficient allocation in a model of financial intermediation," *Journal of Economic Theory*, 109, pp. 1-23.
<http://econwpa.wustl.edu/eprints/fin/papers/9610/961006.pdf>

Peck, James; and Karl Shell. 2003. "Equilibrium Bank Runs," *Journal of Political Economy*, 111(1), pp. 103-123.

- (b) Banking and economic development

Greenwood, Jeremy; and Boyan Jovanovic. 1990. "Financial development, growth and the distribution of income," *Journal of Political Economy*, 98, pp. 1076-1107.

Bencivenga, Valerie; and Bruce Smith. 1991. "Financial intermediation and endogenous growth," *Review of Economic Studies*, 58(2), pp. 195-209.

- (c) Role of central banks

Green, Edward. 1997. "Money and debt in the structure of payments," *Bank of Japan Monetary and Economic Studies*, 15, pp. 63–87.

<http://minneapolisfed.org/research/qr/qr2322.pdf>

Skeie, David. 2004. "Money and Modern Bank Runs," Federal Reserve Bank of New York.

http://www.ny.frb.org/research/economists/skeie/4595_Skeie_MMBR.pdf

- (d) Aggregate risk, prudential regulation of financial intermediaries, and transmission of macroeconomic shocks

Hellwig, Martin. 1994. "Liquidity provision, banking, and the allocation of interest rate risk," *European Economic Review*, 38(7), pp. 1363–89.

Repullo, Rafael. 2004. "Capital requirements, market power, and risk-taking in banking," *Journal of Financial Intermediation*, 13, pp. 156–82.

Allen, Franklin; and Douglas Gale. 2004. "Financial intermediaries and markets," *Econometrica*, 72, pp. 1023–61.

Bernanke, Ben; and Mark Gertler. 1989. "Agency costs, net worth, and business fluctuations," *American Economic Review*, 79, pp. 14–31.

Green, Edward. 2005. "Heterogeneous firms facing common shocks: an overlapping generations example," Pennsylvania State University.