RPRD 802
Fall 2016

Exercise Sheet 1:

1. Consider a two date Arrow Debreu economy with investments, consumers and firms.
   (a) Assuming the special case where all assets are riskless, show that the introduction of a bank will add no value to the equilibrium of the economy. (Hint: See F and R Ch.2.)
   (b) Generalize the economy in (a) to include risky assets. Can you show that the result in (a) is still true? Why?
   (c) Does the result still hold if the assets include defaulting bonds? Explain.
   (d) Does regulations on capital ratios improve welfare in the AD economy? Explain.

2. Set out the structure of the Diamond-Dybvig model. (See F&R Ch.2)
   (a) Derive the allocation for autarky.
   (b) Derive the allocation and prices for the economy where there is a riskless bond.
   (c) Derive the Optimal allocation for the economy.
   (d) Show that a financial intermediary with demandable deposits can satisfy the optimal allocation. Is it the only Nash equilibrium for this game? Explain.
   (e) What institutional structures can be introduced to rule out the inefficient run equilibria?
   (f) Is there another institutional arrangement that can support the efficient allocation? Is it plausible empirically?

3. Set out the the structure of the Diamond (1984) Delegate Monitoring model. (F&R Ch, 2 Section 2.4)
   (a) Prove Result 2.4.
   (b) The model is said to imply that the bank is a natural monopoly. Can the model be altered to limit the size of the bank?
   (c) What does the latest empirical evidence imply for economies of scale in banking?

4. Outline the Monti-Klein model for an oligopoly banking industry (F&R Ch.3 Section 3.2.1, 3.2.2).
   (a) How do the Lerner indices impact on interest rate spreads between borrowing and lending rates? Prove your assertion.
   (b) Are the results of the model consistent with the empirical evidence.

5. F&R Section 3.6. Section 3.6.1 outlines a simple model of monopoly information that can exploited by a lender in relationship banking.
   (a) Demonstrate the properties of a competitive relationship banking system.
   (b) Does competition threaten relationship banking? What does the empirical literature tell us?
   (c) If the bank is a monopolist, what does that imply about the allocation?
   (d) If there are credit rating agencies, and other providers of credit information, what role could they play on the allocation of credit?