

SIMON FRASER UNIVERSITY
Department of Economics

Econ 305
Intermediate Macroeconomic Theory

Prof. Kasa
Spring 2011

PROBLEM SET 4
(Due April 8)

1. China currently has a fixed exchange rate against the U.S. dollar. Many people argue that it should instead allow its exchange rate to float, and be determined by market forces, as in the U.S. and Canada. Using the Mundell-Fleming model, describe under what conditions China's economy would be more stable under a fixed exchange rate, and under what conditions its economy would be more stable under a flexible exchange rate. Use graphs to illustrate your answers.
2. Consider the following modification of the Diamond-Dybvig model discussed in class and in Chapter 15. There are three periods: 0, 1, and 2. The economy consists of a large number, N , of consumers, each endowed with one unit of a good in period 0. This good can be used as an input in production, but the production process is 'illiquid' in the following sense: If one unit is invested in period 0 then $1 + r$ units of the good are produced in period 2. In class we assumed that if the production process is interrupted in period 1, then 1 unit is produced in period 1, and nothing more is produced in period 2. Now assume instead that the illiquid project cannot be interrupted, in the sense that if you do interrupt it, you get back nothing in period 1. However, assume that now that consumers can invest in a 1-period liquid asset that returns 1 unit of goods next period for each unit invested this period.

As before, consumers have random needs for cash. In particular, with probability t each consumer may need to consume in period 1. With probability $(1 - t)$ a consumer is patient, and will only need to consume in period 2. Initially, in period 0, when investment decisions are made, consumers do not know which type they will be. They do not discover this until period 1. Remember that before, when the project could be interrupted, it was a dominant strategy to invest everything in period 0, and to then interrupt the project in period 1 if you needed (or wanted) cash in period 1. Now the consumer's decision is not so clear, as he may not want to invest everything in the illiquid project, since he can't get his money back. Instead he may choose to put some in the liquid project.
 - (a) Suppose there is no banking system. Graph the consumer's lifetime budget constraint. Compare it to the budget constraint that applies when consumers can interrupt the project. Illustrate the optimum for an early consumer and a late consumer.
 - (b) Now suppose there is a banking system. Illustrate the bank's intertemporal budget constraint. Describe the optimal deposit contract. Are consumers better off with a banking system?
 - (c) Is this economy susceptible to bank runs? Why or why not?
3. Consider the job search model discussed in class and in Chapter 16. In this model, suppose a new website is created that facilitates the matching between workers and firms, so that p , the probability of receiving a job offer, increases. Describe what happens to the reservation wage. Describe what happens to the equilibrium unemployment rate. Use the appropriate graphs to illustrate your answer.