

Econ 105, Spring 2008
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Problem set 3
Due: In class, May 15, 2008

1. Using the idea of adverse selection, explain why rationing might exist in credit markets (be sure to explain what you mean by rationing).
2. Consider the example of bank runs used in class: notation and assumptions follow the class presentation. Each investor's expected utility is

$$\frac{1}{4} \left[1 - \left(\frac{1}{r_1^d} \right) \right] + \frac{3}{4} \left[1 - \left(\frac{1}{r_2^d} \right) \right]. \quad (1)$$

If investors put \$100 into the bank, which the bank invests in the illiquid asset ($r_1 = 1$, $r_2 = 2$), the bank will need to sell $25r_1^d$ at $T = 1$ to meet withdrawal demand by the type 1 investors. It will have $(100 - 25r_1^d)$ left in its portfolio. This pays off $2(100 - 25r_1^d)$ and this is available to payout to the type 2 investors at $T = 2$. So

$$r_2^d = \frac{2(100 - 25r_1^d)}{75}. \quad (2)$$

- (a) Using (2) and (1), find expected utility as a function only of r_1^d .
 - (b) What value of r_2^d maximizes the expected utility of investors?
3. Explain why a bank run can occur in the Diamond-Dybvig model.
 4. Briefly explain what is meant by the financial accelerator?