14.02 Principles of Macroeconomics, Spring 2000
2 pages

Problem Set 8
Answers

1. Read the article "What happened to Asia?" ✓

2. a) Investors will choose the asset according to the expected value. For the two assets those are:
$\frac{1}{3} * 9 + \frac{2}{3} * 12 = 11$
$\frac{2}{3} * 1.5 + \frac{1}{3} * 27 = 10$
They choose the safe asset

b) Their expected payoff in the first case: 10 w.p. $\frac{1}{3}$ and 12 w.p. $\frac{2}{3}$; in the second case 10 w.p. $\frac{2}{3}$ versus 27 w.p. $\frac{1}{3}$. The expected value of the former is 11, of the latter: $15.666\,667$. So they will choose the risky asset.

c) Without the guarantee, the price would equal the expected profits from part a). When there is a guarantee, the maximum price that an investor would be willing to pay for the safe asset is 12, and 27 for the risky asset: for any lower price, there were some positive profits, so the price would be bidded up further.

3. a) Expected value: $V_2 = \frac{3}{4}*$Y80 $+ \frac{1}{4}*$Y120 =Y90. Investing in a large number of plants lets investors diversify, so the average return on a plant will exactly equal to 90. Perfect competition (zero profits) will push up the price to 90.

b) $V_1 = \frac{3}{4}*$Y80 $+ \frac{1}{4}*$Y120 $+ V_2$ =Y180. This is the equilibrium price.

c) The bailout guarantee implies that investors will drive price up to 120 in the second period and 240 in the first period: P_2 =Y120; P_1 =Y120 $+ P_2$ =Y240.

d) At the end of the 1st period, 75% of the plants will yield Y80, 25% will yield Y120. Their balance sheets:

Percentage of plants:	Cash+resale value	Liabilities
75%	Y80+Y120=Y200	Y240
25%	Y120+Y120=Y240	Y240

75% of plants are insolvent.

e) This signals the return to financial discipline: price comes back to the expected value, from P_2 =Y120 to V_2 =Y90.

f) Expected resale price was 120, but it actual realization is Y90. Balance sheets of the plants become:

Percentage of plants:	Cash+resale value	Liabilities
75%	Y80+Y90=Y170	Y240
25%	Y120+Y90=Y210	Y240

100% of plants are insolvent. The difference between d) and f) is explained by the magnification effect of the endogenous change in financial discipline. Initially the crisis only touched 75% of plants, but the shift in expectations makes it worse.

g) Due to the guarantee, prices are not reflecting the true value of firms, but a larger ("inflated") level of it. The 2-word answer is MORAL HAZARD. By providing the bailout and then taking it back,the government made things worse in the first period, but there would have been a crisis in the second period even with the guarantee staying. In this situation, the government should not have provided the guarantee from the very beginning: that would have led to the right price levels. Note that 9/16 of all plants would have had problems even in that case (having a bad realization in both periods), but those losses would have matched the gains of other plants.

4. a) Uncertain (3 points for the "False" answer). Chapter 25 shows how divergent predictions of various models are. There is no evidence that DRI is the best, nor can one conclude that *it is not* the best.

b) True. This is just a fact. This is also referred to as a "composition effect" (essentially, lower corporate tax rates shift the long-run level of output).

c) True. Without the cut in spending, the process of deficit reduction would not start, and budget would not be in balance. The monetary expansion that helped preventing a recession definitely helped to make it painless, but it was no so much a factor in deficit reduction. Investment boom was achieved due to lower tax rates, expectations of lower tax rates in the future, and lower interest rates, as government started to *save*.

d) False. The Asian crisis was a debt crisis caused by problems in banking sector. Fears were not unsubstantiated. Economic activity has not returned to normal, either. The currency crisis and panic followed the debt crisis because original investment came from abroad, and loans were short-term. Openness to financial flows definitely exacerbated the crisis, but fundamentally, it was a debt crisis.