Week 16
Deposit insurance

After finishing the discussion of Repo Runs, we turn to deposit insurance, which was commented upon already in last week’s handout. Here it is again:

As it was mentioned in the discussion of bank runs, one of the ways of avoiding bank panics is to have a system of deposit insurance, and we look into this in some more detail. The main problems arising are: (1) who should pay and how much, and (2) are there side effects of deposit insurance?

We begin the treatment of (1) with the Merton approach, seeing the deposit insurance as a put option – the bank can “sell” its assets (loans) at some date $T$ at the price $De^{rT}$ (value of deposits plus interest payment on deposits). This makes it possible to use option pricing to assess the value of the insurance, and in this way one gets a proposal for what should be paid. The idea is more important than the formula, since anyway the BS formula depends on its assumptions, in particular that the assets follow a geometric Brownian motion, which is not a good description of reality.

The general approach to (1) is the idea of a fair premium, which may be estimated as above or in some other way, but in (2) we shall see that this may cause some problems. The formalism is quite simple, and so is the intuition – if the losses of the bank are covered by some outside agent, then the bank may be more – and perhaps too – willing to take risk.

In the rest of the chapter we consider some more sophisticated models involving deposit insurance. If time permits we treat the model dealing with correlated investments of banks: After these introductory considerations we look at a slightly more complex situation, where banks may or may not choose correlated investments. If they do, the deposit insurance will have to cover the losses of both banks in case of failure, whereas in the case of uncorrelated investments, in most cases only one of the banks will fail, so that it may be taken over by the other bank (here we assume that banks can do better than outsiders in getting as much as possible out of the assets). This leads to the setting up of an incentive compatible insurance contract which should guide the banks towards uncorrelated investments, once more showing that the problem of fixing the right payment for deposit insurance is by no means trivial.

We then consider a model which looks at deposit insurance from a very different angle: If banks are better at preventing losses than individual investors (this may be explained by the monitoring approach to banking, but it could also be due to deposit insurance), and if society wants as many and as successful investments as possible, then those not using banks (and losing more on investments) should be encouraged to use banks instead, and this could be done by taxing non-bank investors, that is financing the specific cost of the banks by general taxes. This means that the cost of deposit insurance should be carried not only by banks and their costumers, but also by the general public.

In the model, taxes obtained from banks, depositors and non-depositors are used
for investment, so that they are put into the bank system, and the repayment on these
investment are among by the private depositors. Since the use of banks (provided
that they do not fall into moral hazard) is better than not using them, deposits
are rationed, and the arrangement amounts to forcing some depositors out while
securing the remaining depositors a better outcome (losses are covered by the public
investments). In other words, it is a somewhat strange form of deposit insurance,
and its main advantage is that it does allow for banking activity on a larger scale than
before (also meaning that more depositors can be served).

**We read:** Chapter 15.