TW3421x - 2.2 – Internal-Rating Based Approaches

Hi there, welcome back.

So, in the last class, we have seen something more about the Standardized approach.

In this class we discuss Internal-Rating Based methods, or approaches.

The acronym is IRB: internal-rating based, and I am sure that you remember from last week that we have two major approaches in this field. The foundation Internal-rating based approach, and the advanced internal rating-based approach.

In order to use these approaches - both approaches - banks need to meet some minimum requirements. And you will find more information about minimum requirements on the course platform.

It's essentially a list of definitions and laws, so - I know- nothing very exciting, but it is something that we have to know, in order to correctly approach credit risk.

So, we have these two approaches. What is the main difference between these two approaches?

The main difference is that, under the Foundation IRB, banks are supposed to compute a quantity called PD, probability of default, and they are free to compute this quantity using the method they like, and we will see some methods in Week 4, 5, and 6.

Once they have this quantity, they plug in this quantity into some formulas, and these formulas will give the usual quantity we are interested in at the end of the game, that is to say RWA.

Ok, here we have, some formula.

For the moment, we cannot enter into much detail, because we need to specify and to introduce new tools for that.

For what concerns the A-IRB approach, this is the approach in which banks have the largest freedom. In this approach, banks compute different quantities: the PD (the probability of default), EAD (exposure at default), LGD (loss given default).

All these quantities are computed by banks using some models - some proprietary models. And, at the end of the game, again in this case, they obtain the RWA.

Once they have the RWA, you know by now better than me, that we have this times 0.08, or this times 0.08, and these are our capital requirements.

Now, banks have the possibility of choosing between the foundation and the advanced approach, within the IRB class.

Typically banks choose this approach, if they don't have very complex research units, because under this approach they simply have to compute the probability of default, and then all formulas are provided by the regulator.

So you see the difference between the standardized approach, in which everything is provided by the regulator, and banks simply have to make - if you want - silly computations. In the Foundation IRB approach, compute the PD, which is much more sophisticated than, for example, the computations you can have under the standardized approach, but once they have this guy, they just plug in the probability of default within some formula, which is provided by the BCBS, and that's it. They have the RWA, 8%, credit risk…ehm sorry… capital requirements for credit risk.

And, under the Advanced IRB approach, on the contrary, banks have much more freedom: they can compute many different quantities, and on the platform you will find the definition of all these quantities. These quantities are essentially computed through proprietary models, and once they have these quantities, they can compute the RWA. And given the RWA computed under the advanced approach, 8%, capital requirements for credit risk.

We will see both methods in more detail, but obviously we need to introduce some more sophisticated statistical tools, in order to really understand.

For the moment, just remember, IRB, two different possibilities.

Foundation: computation of PD, plug in the probability of default into some formulas, RWA.

Under the Advanced approach, banks are free to compute more quantities, this is much more difficult, but for banks - we will see - that has obviously some advantages, in terms of the capital they have to keep in terms of capital requirements, and RWA, 8%…

Naturally, if you choose to use this approach, the more advanced one, don't assume that you are totally free to do whatever you want.

The regulator, the national regulator, will always want to check all your computations, to be sure that the models you are using are reliable.

So, now, it is your turn. Go on the course platform and read carefully all the materials you can find for this class.

See you next time.