

TW3421x - 2.1 - The Standardized Approach

Hi there, welcome back. In this class we introduce the standardized approach.

Or, to be more exact, we analyze in some little detail the standardized approach that, as you know, is the simplest approach banks can use to assess and hedge credit risk, under the Basel framework.

We know that the standardized approach is essentially a simple approach, in which banks are supposed to compute the risk weighted assets, using simple formulas, in which they sum up different risk exposures.

So, in this class, we will define risk-weighted assets in more detail, and then we can see how we can compute risk-weighted assets under the standardized approach. So, let's start.

Risk-weighted Assets are a very important quantity in risk management.

Risk-weighted Assets are easy to define from an intuitive point of view, especially in the case of simple approaches as the standardized one.

In basic terms, that are a weighted sum of on-balance and off-balance sheet items, which are weighted using some specific risk weights. In the standardized approach, all weights are provided by the regulator.

In the case of off-balance sheet items, we need to introduce a quantity called credit equivalent amount.

The credit equivalent amount is a measure used to quantify credit risk for off-balance sheet instruments, such as interest rate derivatives. It is, once again, prescribed by the regulator.

What is an off-balance sheet item?

It is simply an asset or debt that does not appear on a company's balance sheet.

Usually it is an item in which the company does not have legal claim.

If you are a bank, a loan is clearly an item you keep on your book. However, if this loan is securitized and sold off as an investment (essentially what happens with CDOs), the securitized debt is no longer kept on your book, thus becoming off-balance. A very common off-balance sheet item is an operating lease.

The goal of the credit equivalent amount is therefore to translate the value of off-balance sheet items into risk equivalent credits.

It is computed as the current replacement cost plus an add-on factor, which varies from instrument to instrument (e.g. 0.5% for a 1-5 year interest rate swap). The add-on factor is set by the regulator.

So... this is the formula we can use to compute risk-weighted assets.

As you can see we have two big components. A summation in i , and a summation in j .

The summation in i is related to on-balance items. In this case, their principal amounts are multiplied by specific risk weights, which depend on the nature of the different items.

Then we have the summation in j , which concerns off-balance sheet items. In this case we sum the products of credit equivalent amounts and risk weights.

The computation of the credit equivalent amount requires a good knowledge of financial instruments such as derivatives.

And I cannot assume that all of you are familiar with those instruments. So, we cannot enter into much detail in this introductory course to credit risk management.

In the Standardized Approach, risk weights are set by the regulator and banks are simply required to compute their RWA using the previous formula.

Risk weights are defined for classes of items, ordered according to credit ratings.

As you can read in the course syllabus, credit ratings are the topic of Week 4.

As said in Week 1, capital requirements for credit risk are then equal to 8% of RWA.

How do the risk weights look like?

The table you can see on your screen contains an example of risk weights under the standardized approach.

Please notice that these weights are constantly updated by the regulator, therefore they can vary over time.

I do not want you to learn them by heart. It is completely useless.

What you have to understand is how to use them. Stop.

Looking at the table, we see that a BBB-rated government bond has a risk weight of 50%, or 0.5. This is the quantity we have to multiply by the principal amount.

A loan to a AAA-rated corporation has a risk weight of 20%, and so on.

Again, all those AAA and BB will become clearer in Week 4.

Notice the following: very often the risk weight for unrated items is lower than that of worst rated items. This may seem a contradiction. And it is often one of the points of criticism for the standardized approach.

In reality, the reason of a similar choice is due to the desire of the regulator to avoid that an excessive use of the principle of prudence may constraint the activities of financial companies too much.

In the documents regulators publish periodically, we can find many other and different risk weights. For example, for residential mortgages, the risk weight is usually around 35%.

Ok, let's consider an application. At the end of this course, I want you to be able to use most of the things we see together in practice.

Assume we are a bank. Our assets include: 120 million euros of loans to A-rated corporations, 10 million of AA-rated government bonds, and 60 million euros of residential mortgages.

What is the value of our RWA? What is our capital requirement for credit risk?

Ok, we start from the loans to A-rated corporations. The principal amount is 120 million euros. We just write 120.

What is the risk weight?

Going back to the previous table, we discover that the risk weight for A-rated corporations is 50%, or 0.5 in decimals.

Hence we multiply 120 by 0.5 and we get 60 million euros.

Then we consider government bonds. In this case, the risk weight for AA bonds is 0%. Hence 10 times 0 is 0.

Finally we have 60 million euros times 0.35, the risk weight for residential mortgages. The result is 21 million euros.

Now, we sum up 60, 0 and 21 and we get 81, that is the value of our risk-weighted assets in this exercise.

Obviously the computation in real life includes many more items, often very difficult to assess precisely, but the idea is exactly the same!

What are the capital requirements for credit risk in this case?

We simply multiply 81 by 0.08, or 8%. The result is 6.48. This is our capital requirement.

Well done, risk managers!

Ok, so, we are done for the moment. I strongly suggest you to read carefully all the materials that you can find online on the platform.

So, see you next time, goodbye.