Credit risk in corporate decision making

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Abstract

Objectives

1. To make known the importance and application of credit risk in a company, in order to deal with this subject in more depth.
2. To analyze the different models that allow us to analyze and even quantify credit risk in companies.
3. Identify the formulae for calculating credit risk, which are specific and simple to understand.

Methodology: This research was carried out thanks to the quantitative method approach since it seeks to provide an accurate and measurable research regarding statistical data and resolutions of problems that may arise in a company or entity. Being this, the results obtained the analysis that will allow us to lead to an expected result, being this negative or positive for the company, in this case, it will always be possible to make an analysis that will allow us to evaluate the financial health of the company.

Contribution: This research is expected to be of prevention so that companies and / or entities take more into account the credit risk and with them, make the best decision for their financing or they can also use it as an investment method, but that does not affect their assets, and thus this liability becomes a financial decision.

Figure 1

Introduction

The purpose of the research presented below is to provide information on everything that makes up credit risk, as well as models that will be used to calculate and analyze credit risk. It is considered important, since companies always resort to this type of financing but do not know their risk, nor how to determine or find it. That is why we must clearly know its definition, characteristics, methods, as well as its importance.

Risk, as we know financially, is inevitable, since the decision-making processes in general and the investment processes in particular will always have this factor that depending on each situation, business line, place, etc., there will always be a risk of any kind. In finance, the concept of risk is related to the potential losses that can be suffered. So, credit risk is the possibility of suffering a loss as a result of a default by our counterparty in a financial transaction, i.e., the risk of not being paid. Credit risk is the possibility of suffering a loss as a result of a default by our counterparty in a financial transaction, i.e. the risk that it will not pay us. Credit risk is a variation in the financial results of a financial asset or investment portfolio following the bankruptcy or default of a company. It is therefore a way of measuring the probability that a debtor (right to pay) has against a creditor (right to collect) of meeting its payment obligations, either during the life of the financial asset or at maturity.

It is important because the banking sector is one of the main economic engines of a country, since it acts as a distributor of economic resources between surplus and deficit agents, playing an important role in mobilizing depositors' funds and granting loans, thus channeling resources for investment and savings. Also, given the increasing globalization and changes in the financial market, it leads to improve regulatory mechanisms that seek to reduce risk in all senses. Models that could be used to calculate risk will be presented, as well as some aspects that make them up, from their characteristics to formulas with which we can make use of these models that were created by companies that need to know and have a clear understanding of the risk that a loan entails. In which they are identified by having or discovering two variables:

The expected loss and the economic capital.

Materials and methods

Figure 2

Once credit risk is known and its importance from the economic level of a country to that of a company, it is necessary to know the methods with which the risk can be calculated, in order to better understand its importance and make use of these models with the purpose of knowing how to identify them and which model could be used in a credit risk situation.

Next, we will show some models that were relevant for this research, since they are the most basic and are a transformation of the classic models, which have been modified by companies that have resorted to them because of the need to know the risk they were facing.

According to the Author; Carlos García Cabrero who showed in his book Análisis del Riesgo de Crédito (2014), the most common models that are currently used in companies are the following, which, as mentioned, have been modified for the sake of a more accurate result and to convenience depending on the company.

1) CREDIT RISK PREMIUM

This model allows us to estimate the probability of default based on the premium with the risk-free bond, the risk-free interest rate and the recovery rate.

- An advantage of this model is that it takes into account the risks borne by the lender (default, negative migration and expected losses).
- To obtain a basic calculation of this model, the following formula can be obtained: $sT=RT-rT$

Results

As can be seen in the models previously discussed, there are models that are more basic than others, for example, the credit risk premium model, which allows us to see the probability of default of the borrower and thus each of these models leaves us with different characteristics:

- The risk premium model is a much more theoretical model by assuming perfect markets as one of its assumptions. Meanwhile, Altman proposes to use the historical default rate to make its estimates, which detracts from its reliability.
- Altman proposes to use the historical default rate to make his estimates, which detracts from its reliability.
- Merton's model, as we have mentioned, seeks to find the point of bankruptcy according to the value of the company's assets and liabilities, which makes it have a good financial basis behind it. However, this model also has some restrictive assumptions such as the non-existence of refinancing or restructuring possibilities. In addition the estimation of the possible value of assets over time is complicated.
- The CreditRisk model is a default model that allows the expected loss distribution function to be obtained. It is a simple model to apply, compared to later models, but it does not incorporate either migration risk or market risk.
- The CreditMonitor model also seeks to find the distribution function of default losses based on the Merton (asset value) model. It is an easy model to apply to listed companies. It also allows to detect changes in the credit situation even faster than that of the rating agencies. However, it is very difficult to apply it to unlisted companies.

Figure 3

Analyzing these methods from the basics to a higher level, gives us as a result to know how to choose the most accurate option that can be coupled to the type of company that is being managed, therefore, we can obtain an analysis as accurate as possible. To raise the variables and possible effects that could give us a different result, is also part of the research and determine the environment in which the risk is being managed.

Conclusions

Figure 4

The objective of this research, as mentioned at the beginning, is informative but with a preventive approach to the risk that can be derived from a loan. Now, as leverage is one of the first options that are frequently used, however, if the credits are not used correctly or even if they do not end up being as expected, for the company it starts to be a risk for its capital.

On the other hand, if we analyze the current models of credit risk analysis, we can conclude that the first three (Credit Risk Premium, Altman and Merton) are more basic models, whose study is important to understand the subsequent models, but that the company should not rely only on them. For this reason, new, more advanced models were created. The CreditRisk model, as we have seen, has the weakness of not considering migration and market risk, which makes it less comprehensive than the later models. Nevertheless, it is an easy model to apply

These models, as already mentioned, have been edited by companies that at the time needed or inquired more on the subject of risk, and the risk will always have different scenarios, which will always lead to innovate in the variables for its calculation, however, it is sought at all times to reach the most assertive point to avoid making a bad financing decision.
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And as a conclusion that we can draw from this research, is that these are highly recommended models for the analysis of credit risk in the company. Some have the difficulty of the large amount of information needed and others have the difficulty of predicting unlisted companies, so depending on the situation of the analyst should opt for one or the other.

Future of research

En México, hasta el día de hoy la cultura financiera esta demasiada baja, por ejemplo, al momento de buscar un tipo de financiamiento se llega a pensar que no será posible pagarlo o que bien, no se sabe medir el riesgo y adquirimos cualquier tipo de crédito sin medir este, trayendo con esto una deuda y hasta la perdida de algún patrimonio.

Es por ello, que esta investigación servirá como guía para hacer mas consciencia sobre el riesgo en los créditos, o bien, también para calcularlo y tenerlo en cuenta a la hora de tomar alguna decisión financiera, con lo cual nos llevara a grandes resultados que nos ayudaran a que mas empresas cumplan sus objetivos y sigan creciendo. Además, se busca dejar en claro que el riesgo de crédito no es malo, simplemente, se debe de conocer y tener en cuenta a la hora de la toma de decisiones financieras, en nuestros planes estratégicos debe de estar siempre presente este tipo de calculo financiero.

Ahora, como investigación que servirá dentro de esta universidad tenemos que se entiende como motivación para que se siga investigando sobre el riesgo de crédito, ya que es parte del esquema de finanzas corporativas que se lleva acabo dentro de esta línea que corresponde al perfil de Ingeniería Financiera- como estudiantes se deberá llevar acabo la practica mas a profundidad de estos modelos, aplicar y seguir comparando los modelos actuales con los modelos clásico, para poder innovar e incluso mejorarlos.

Figure 5

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