

Approximation Of Risk Valuation In The Catatumbo Region For Attracted Investment Capital

Mauricio Rodrigo Alvarez Casallas¹, Marta Milena Peñaranda Peñaranda ², Sir-Alexci
Suárez Castrillón³

^{1,2} Administrative and Economic Sciences Faculty. University Francisco de Paula Santander
Ocaña, Colombia.

³ Faculty of Engineering, GRUCITE Research Group, University Francisco de Paula
Santander Ocaña, Colombia.

ABSTRACT:

This is qualitative research with an exploratory approach and its objective is to define the variables of regional risk for the financial evaluation of investment capital attracted to the Catatumbo region. This research is developed from the combination of risk models such as the CAPM and the country risk, making an adaptation of these two to the financial regions of the region, where we can see that there are countries with political risks similar to that of the region and their investment percentage is very low. Data provided by the Chamber of Commerce of Ocaña show that the industrial investment of attracted capital is minimal or almost null, unlike the commercial sector where this investment is reflected to some extent, as can be seen with the nationally known supermarkets. Concluding that the regional risk of the industrial sector in the Catatumbo region is of little interest to investors and that the factors involved are very high and make the return on capital very costly, this being the risk premium and at the same time not being attractive for attracted investments.

Keywords: Variables, risk, financial evaluation, Region.

INTRODUCTION

The financial evaluation of investment projects is based on the fundamental principles of financial management, which from any perspective that is studied, will be influenced by the risk-return premise, in such a way that the above premise will be taken as a measure of analysis concerning the risk, for which an approximation will be made, to the evaluation made by financial managers to the country risk, extrapolating the variables of the aforementioned methodology, to make an analysis of the risk in the Catatumbo region, and in this way make a bibliographic review of the factors that must be estimated for the valuation of such risk and also evaluate the parameters of the CAPM model (Capital Aseet Pricing model) to have a vision of this methodology in the evaluation of risk in investment projects. Moosa (2002) defines Country Risk as "the exposure to economic loss in transactions between nationals, caused by events in a particular country that are, at least to some extent, under the control of the

government, but definitely not under the control of private companies or individuals". Taking into account Moosa, the extrapolation of variables will be carried out under the risk to be evaluated, which is the region risk, and the variables with which the investors will evaluate in a better way, the exposure to the region risk, contemplating traditional methods and also an approximation to the CAPM methodology, model for the evaluation of the region risk, derived from the investment of attracted capital, in the region of Catatumbo, will be observed.

For the present research it is necessary to have several references that denote the relevance of measuring the variables in the adaptation that will be made of the methodology risk region, and the variables of the CAPM model, to evaluate the competitiveness of the Catatumbo region, and the ability to attract investment capital from regions that provide social development and economic sustainability, considering Manzano - Durán, O., Peñaranda - Peñaranda, M. M., & Luna - Quintero, J. C. (2021). "Sustainable development has specifications that make it a somewhat complex process, because the concept is oriented to the harmonization and social and economic growth of societies with their ecological environment", so that sustainable development must take into account the harmonization with the ecological environment, which in the methodology to be developed are not factors to be taken into account for this reason this reference is made to involve an important factor for the region which is ecological sustainability.

The impact of external capital (investment capital coming from the different regions of the country), in the development of the regions is fundamental, since the impact on important factors such as employment, technological development, competitiveness, and new leadership concepts, as evidenced in the concept of González - Castro, Y., Manzano - Durán, O., & Torres - Zamudio, M. (2021). "Brings multiple elements in the order of human development and are among others: Self-development, social responsibility, shared vision, power sharing and the elevation of expectations of the subalterns". These visions that emerge from the implementation and development of the attracted investment capital, which not only share the capital, but also bring with the entrepreneurial construction new theories and ways of evidencing the management of the ventures in the region, as can be visualized in the example of leadership and the other development factors.

According to Rafat & Farahani (2017), "after evaluating various country risk factors in Iran, they found that in external conflict, socio-economic conditions, ethnic, military and religious tensions, significantly affected FDI in Iran". For the present research the FDI (foreign direct investment) will be taken as the investment attracted from regions other than the Catatumbo region, so that the factors raised by Rafat & Farahani are fundamental and of important referencing, for the measurement of risk Catatumbo region, and that in multiple valuations is not taken into account by the quantitative difficulty and subjectivity in the valuation, but that can be determining factors in the validation of the capital investment of regions other than Catatumbo.

Holton (2004), "the notion of risk is commonly understood as comprising two components: exposure and uncertainty" for this article exposure is a determining factor in the valuation of regional risk and is not subject to the perception of probabilities, in this sense it is important to take into account the variables concerning regional risk with political risk determinants, taken as a risk associated with regional risk, which takes up the variables that can be identified in the

qualitative valuation of the determinants of country risk, even though these should be valued qualitatively, focused on concepts that are present in the region derived from the political characteristics and particular factors of violence present in the region, in which the risk will be determined for the present case the Catatumbo region, for Nordal (2001), "the country risk is in connection with the investor's perspective, so it speaks of a unique risk for each specific country".

For the present article the region risk derived from the exposed references, will be understood as the qualitative valuation of the factors that determine the capital investment coming from different departments of the country to the region of Catatumbo and to give a solidity and robustness to the valuation of the region risk the methodology of the CAPM model will be used, to contextualize objective and economic variables.

As for the CAPM model of (Jhon Litner, William Sharp, Jack Treynor), which will allow calculating a rate of return to be demanded by investors derived from the calculation of the beta of the model, for the present article the variables and the calculation variables with which an investor or a financial manager will determine the viability of the investments in the region of Catatumbo will be presented, with the purpose of proposing rates of return that attract investment capital in the construction of enterprises, the capital derived from regional exports of raw materials, etc., is not valued. As mentioned, León - Castillo, M. F., & Pongutá - Santos, S. (2020). "Since the decrease in commodity prices in turn influenced the decrease in investment flows to the Colombian territory". That capital that extrapolates to the region that enters from the sale of raw materials, is not attracted capital nor is it necessary to evaluate the investment risk since it is simply traded capital of national and international placement that is influenced by market variables.

METHODOLOGY

The research is of a qualitative nature, which seeks to determine the variables that characterize regional risk, as a determinant to evaluate the risk-return relationship in the investment of attracted capital from different regions of Colombia (for example, the central region of the country), in order to establish whether the Catatumbo region offers guarantees to the attracted capital. It is important to carry out this research since it is observed that the growth of the industrial sector in the region is almost null, which makes one think that the decision to invest in productive industrial projects in the region of Catatumbo is not viable, in such a way that a determining factor may be the valuation of regional risk, which implicitly makes investments in attracted capital in the region of Catatumbo financially unviable.

The research will be developed based on the adaptation of the country risk methodology, determining the factors that make possible the investment in the Catatumbo region, also establishing the region risk parameters based on the CAPM model, in order to support in a more objective way, the determinants of the region risk, the objective is to establish the risk variables that will determine the investment of attracted capital, invested specifically in the real sector of the Catatumbo economy, emphasizing the investments in the industrial sector of Catatumbo, to conclude the feasibility of attracting investment capital in the region.

RESULTS

The first result to highlight is the one derived from the CAPM model, since as mentioned above, the factors to be analyzed have a character, which we could define more objectively, and the basis of the model is highlighted by the financial premise that the higher the risk, the higher the utility of the investment, since the methodology estimates the systemic risk, product of the comparison of an investment with minimum risk, This is also influenced by the risk factor which for the model in question is denoted by β beta which ultimately defines the risk exposure of the investment, so that the basis for determining the risk through the CAPM model is described by its structure denoted by the following general formula:

$$: E(R_e) = r_f + \beta [E(r_m) - r_f]$$

Where:

$E(R_e)$ = It is the expected rate of return on invested capital derived from its risk.

r_f = Yield on minimum risk assets.

β = is the risk factor that measures the return on investment of the attracted capital versus the return on the minimum risk investment.

$[E(r_m) - r_f]$ = the higher return on investment derived from the Risk Premium.

$[E(r_m)]$ = market performance.

As the objective of this article is to evaluate the risk of investing capital attracted in the region of Catatumbo, especially in the real economy and directed to investments in the industrial sector of the region, from the previous formulation the following approximation can be made, with which clearing the beta which is the factor that is to be established under the parameters that financial managers will analyze to determine the level of risk that is exposed in investments of capital attracted in the industrial sector in the region of Catatumbo, it is important to remember that this capital is of entrepreneurship, that is to say, the investment to be analyzed is of an entrepreneurial nature, and not as determined by the investment model that analyzes it is of portfolio, therefore the model will have the following transformation and the determinants of the model will be as follows:

$$(r_j) = r_f + [r_m - r_f] \beta$$

Considering that the market under analysis is shallow and not very diversifiable, the following are the adaptations of the model, which are the determinants with which financial managers and investors will evaluate the region's risk:

r_f = The minimum risk rate of a country is referred to the bonds issued by the country of origin, which is a good measurement option since they implicitly entail risks associated with the country; U.S. treasury bonds will not be taken since they are not related to the risk measurement to be obtained, in that order of ideas it is pertinent to think of an interbank rate for fixed term investments of local banking entities.

r_m = It is the market return and it will be obtained by estimating the return on average capital investments of the real sector in which the attracted capital will be invested, in this case the industrial sector of Catatumbo.

The estimation of beta, requires having an appropriate data base, in this type of predictions, the more data you have the better the prediction will be, it is to take into account that, in the region of Catatumbo, the industrial sector is shallow but sufficient for the calculation of beta, and is developed mathematically as the value of the slope in the relevant regression of the data of the equation.

On the other hand, the estimation of the beta taking into account the volatility of the sector can be expressed as follows:

$$\beta = \frac{\text{Covarianza de } (r_f, r_m)}{\text{varianza } (r_m)}$$

The beta is the measure of risk, this measure has the components of the local market, with which it implicitly has the variations of the market, therefore the region risk is configured for the investment of capital in the industrial sector of the Catatumbo region, however this measure does not integrate important factors that reinforce this measure, such as political, social, geographic factors etc. However, it is a measure that expresses market factors, seen this as the measure of return on capital invested in the industrial sector that denotes the risk faced by the capital originated in the region, in addition to other factors as delimited by Fonseca&Carreño (2019) "The determination of the critical points, the participatory exercise allows knowing the conditions of the production systems, from the socioeconomic and environmental perspective, where the diagnosis was used". Other factors that can be incident in the risk assessment since to environmental and socioeconomic factors can be taken into account in obtaining the risk region.

In order to have another perspective of risk valuation, the country risk methodology will be used, in an adaptation to that corresponding to the region risk, in an adjustment to the risk of the Catatumbo region, as a measure of risk valuation, for the capital attracted for investment in the industrial sector of the region, denoting the variables contemplated by this methodology, extrapolating it to the factors of the region. (Mascareñas, 2008). "This definition applies to business risk in general; but in the context of international investments, we would no longer speak in terms of the sector in which the company operates, but of the foreign country that acts as the recipient of the FDI". Taking into account Mascareñas, the investment he refers to as international capital, for this article refers to the capital attracted from different regions of the country, and the Catatumbo region will be the region that attracts the investment capital.

The country risk methodology defines the risk derived from its economic, social, political and geographic conditions, as determinants for the attracted capital investments, and it is evaluated according to the knowledge that each investor or financial analyst has of the determinants mentioned above, in this case the risk is referred to a region, in which an investor seeks to place the investment capital, without speculating on the profitability that he expects to obtain for the

investment placed in the region, but analyzing the region risk factor to estimate not only the risk premium of the real sector of the investment, but also taking into account the region risk factors already mentioned, for this reason the financial manager who will evaluate the investment must know all the factors first hand, since he must evaluate objectively, each of the factors to determine the rate of return with which he would be willing to invest in that region. Although in the country risk methodology the probability of default is related to the region risk methodology, only the real determinants will be taken into account.

To determine the minimum profitability that the investor will evaluate in investments in the Catatumbo region, derived from the country risk methodology, the following parameters will be used.

Given that the risk to be analyzed is the Catatumbo region risk and the parameters of the methodology are defined by concepts expressed by (Dumrauf);(Spinea et al 2003:54) "The cut-off rate implies an opportunity cost. It should reflect the minimum return that the investor expects to obtain from the project." As the methodology consists of comparing opportunity rates that can evaluate the investment in the region, the evaluation factors are (rate of the bonds issued by Colombia + the capital placement rate of the region) + the singular factors already mentioned for the present methodology, the factors derived from the unique characteristics of each region, such as politics, we will refer to the qualitative valuation given by PRS Group, a worldwide recognized political risk rating agency, which proposes a valuation of the political components, determined by:

POLITICAL RISK COMPONENTS		
Sequence	Component	Points (max.)
* A	Government Stability	12
* B	Socioeconomic Conditions	12
* C	Investment Profile	12
* D	Internal Conflict	12
* E	External Conflict	12
F	Corruption	6
G	Military in Politics	6
H	Religious Tensions	6
I	Law and Order	6
J	Ethnic Tensions	6
K	Democratic Accountability	6
L	Bureaucracy Quality	4
Total		100

Table 1: Fuente (PRS GROUP 2012)

The evaluator, according to his experience and knowledge of the factors of the region, assigns a score to each of the parameters proposed by PSR GROUPS and that valuation will be a factor that will be added to the valuation of the region risk methodology (Rate of bonds issued by Colombia + the rate of capital placement of the region) + the singular factors, the latter are those that are valued with the determinants of Table 1.

The valuation of regional risk, using these two methodologies, determines the placement of investment capital attracted to the Catatumbo region, the financial evaluation of investment projects in the real sector of the Catatumbo economy will have a tool that will allow financial managers to make the pertinent evaluations of the capital attracted. To determine the internal rate of return that investors from other regions of the country will evaluate as viable, it will be influenced by the valuation of the region risk rate, that once evaluated this is added to the rate of return of the investment, derived from the premise risk return, the higher the risk, the higher the internal rate of return since the latter is called the risk premium, the valuation in real terms, would be defined by the IRR of the project derived from the financial valuation of the investment capital plus the points provided by the valuation of the region risk.

CONCLUSIONS

Reviewing the methodologies of the region risk valuations, proposed as an approximation of the country risk methodology, using the parameters of the traditional methodology and also the methodology of the CAPM model, to have two points of view, which corroborate the valuation, however one does not exclude the other, Both valuations are relevant and can be performed in the evaluation of capital projects, it is evident that in the valuation of the returns of invested capital, attracted in productive projects of the industrial sector of the Catatumbo region, the risk evaluation weighs a lot, taking into account the economic study of the chamber of commerce in which the little growth is evidenced as follows: (Chamber of Commerce of Ocaña Economic Report year 2020) "As for the renewed if it presents a decrease, and this situation is a product of the pandemic, since it was necessary a general confinement in all municipalities, a situation that practically froze the economic activity in the region, likewise the number of canceled registrations also decreased, which allows to establish that this situation occurred due to not protocolize before the Chamber of Commerce to perform and pay the respective procedure, but it is waiting to know what could happen to reactivate", the local development is slow and derived from the valuations of the risk region the investment attracted in the industrial sector of the economy of Catatumbo is null, the variables that weigh in the valuation risk region that prevent the investment of attracted capital, since the rate of return of the capital is elevated, and derived from the financial premise that states that the higher the risk, the higher the return, it is evident that the points of the region risk valuation add to the financial valuation of the project, making the investment of attracted capital in the Catatumbo region unfeasible, especially the political factors and those that the country risk methodology denominates as specific to each region.

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