



Creditworthiness Assessment In The Coal Sector In A Border Context

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Abstract

The present investigation was framed in a Colombian-Venezuelan border department, with the purpose of financially reviewing the coal sector, for the present investigation the objective was - To evaluate the solvency in the coal sector of the Norte de Santander Department period 2006-2009, for which a descriptive-quantitative methodology was proposed, where the calculations of financial indicators are framed in the studied population in order to reach the proposed goal, as a result it was found that all the profitability indexes of the sector deteriorated as of the year 2006. It is recommended to follow up on the management of short-term variables. To deepen and internalize the concepts of Working Capital (FM), Operating Necessities of Funds (NOF), Spontaneous Resources and Short Term Negotiated Resources. To audit the factors that define the operation of the company, among them: Information systems, planning skills, management control, analyze the bargaining power with suppliers and customers, review production policies and supply policies, collection systems, and the management of the company.

Keywords: Coal sector, contexto fronterizo, solvency indicators

1. Introduction

The strategic management of operating finances, also called short-term finances, is fundamental to the survival of any business, large or small, without it the company will undoubtedly go bankrupt. (Henry Orlando, Marvin Vladimir, et al., 2022)

Operating cash represents the amount of cash that is considered adequate for the company's ordinary operating needs.(Henry Orlando, Marvin Vladimir, et al., 2022; Henry Orlando, Wlamyr, et al., 2022).

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1.1. Difference between working capital (actual cash flow) and operating cash flow (desired cash flow)

Operating working capital includes "accounts receivable surpluses" resulting from poor collection management and other reasons.

"Excess stock" due to poor stock management.

Therefore, a company may have a high Operating Need For Funds (NOF) but poor management.

1.1.1. Short-term operating liabilities:

It is everything that is obtained automatically by having a business in operation. For this reason they are also called "spontaneous resources", as opposed to "negotiated resources".

1.1.2. Spontaneous Resources

Suppliers, taxes or social security contributions payable, provisions for liabilities, etc.

Short-term resources from a bank loan would not be considered as operating. Nor would supplier credit in excess of the agreed terms, resulting from the company's failure to make payments, be considered operational (González Mendoza et al., 2022)

It is a deadline. For example: arranging with the supplier when to pay the debts.

If there are many negotiated resources, the company is in "financial difficulties".

They are usually obtained from financial entities in the form of credits or loans whose amount, cost and term must be negotiated with the entity providing such resources.

There is no additional cost to obtain them They are given by mere operation of the company.

It is the difference between days of maturities and days of payments (Albornoz Silva et al., 2017)

The NOF does not arise directly from accounting (unlike the Working Capital Fund (FM)), since the accounting NOF can be very different from the actual NOF. In situations of liquidity stress, the accounting NOF are usually lower than the real ones because the cash flow is much lower than desired, we always refer to real NOF (Montoya et al., 2010)).

NOF can be defined as the net investment in current assets derived from the company's operations. Net investment is because current assets are covered, in part, by operating liabilities that are spontaneously obtained.

The concepts of NOF and FM are complementary, although radically different in nature:

FM represents the volume of long-term resources (in excess of fixed assets) that we have available to finance operations, i.e., it is a liability concept related to the basic financing structure of the company. The NOF represents the volume of net investment generated by operations, i.e. it is an operational concept not linked to structural considerations. The numerical magnitude of the NOF does not necessarily coincide with the numerical magnitude of the FM.

1.2. *Razón de Fondo de Maniobra:*

Measures net investment in current resources in relation to total gross investment.

Working Capital Ratio = Working Capital / Total Assets

2. Method

In relation to the methodological framework, this chapter defines the level and type of research, the universe or population, the sample, the instruments and techniques for data collection and analysis. Al respect (Balestrini, 2002) states that "the methodological framework is intended to situate in the research language, the methods and instruments that will be used in the proposed research, from the location about the type of study and the research design" (p.126).

2.1. *Research Level*

The level of research indicates the degree of depth with which the study will be carried out and indicates that it may be exploratory, descriptive or explanatory. For (Arias, 2006) "descriptive research consists of the characterization of a fact, phenomenon, individual or group, in order to establish its structure or behavior", the author also indicates that correlational research is to determine the degree of relationship or association (non-causal) existing between two or more variables.

For the reasons described above, the research was framed as a descriptive and correlational research, since it will relate the operational finances, solvency and profitability of the coal sector of the Norte de Santander Department in Norte de Santander.

2.2. *Research Design*

Research design is defined as the approach and strategy adopted by the researcher to develop the work and achieve the objectives set.

According to (Arias, 2006), the research design is classified as follows: Documentary Research, Field Research and Experimental Research (Documentary research refers to those investigations in which "it is a process based on the search, recovery, analysis, criticism and interpretation of secondary data, i.e., those obtained and recorded by other researchers in documentary sources: printed, audiovisual or electronic" (p.27).

He also explains that field research is (Hernández Sampieri et al., 2019) "that which consists of collecting data directly from the subjects under investigation, or from the reality where the facts occur (primary data), without manipulating or controlling any variable, i.e. the researcher obtains the information, but does not alter the existing conditions." (p.31).

According to the above, the research was proposed as a documentary research for the analysis of financial and field information, requesting the support of experts in the area to know their opinions regarding the analysis of the environment that impacts the coal sector of the Norte de Santander Department of Norte de Santander.

2.3. *Population*

For (Estupiñan Roa et al., 2022) "a population is determined by its defining characteristics, that is, it is the totality of the phenomenon to be studied in which the population units have a common characteristic, which is studied and gives rise to the research data" (p.92). (p.92). While for Arias (2006), "the population is a finite or infinite set of elements with common characteristics for which the conclusions of the research will be extensive. This is delimited by the problem and the objectives of the study" (p.81).

The population in this study was determined by the companies in the coal sector in the department of Norte de Santander, which report to the Superintendence of Companies attached to the Ministry of Industry and Commerce of the Republic of Colombia and which are related to the Association of Coal Entrepreneurs of Norte de Santander (ASOCARBON).

2.4. *Sample*

Since the population is small, a sample is not selected and we work with the entire population, i.e. a census will be applied. The census is by definition a procedure that allows obtaining primary information and covers all population units, it can be periodic, sporadic or one-time, it is used for different populations, both human, animals and objects.

2.5. *Data Collection Techniques and Instruments*

For (Hernández Sampieri et al., 2019) when referring to this point they indicate that collecting data involves three activities closely linked to each other: First, selecting a measurement instrument from those available in the study of behavior or developing one they point out that the instrument must be valid and reliable, because otherwise it should not be based on its results. The second step is to apply that measurement instrument and finally to prepare the measurements obtained so that they can be analyzed correctly.

Arias (Arias, 2006) mentions that "data collection techniques are the procedures or particular ways of obtaining information" (p.67).

To analyze the financial information, tables were designed to classify the companies' data. This information was considered as a primary source, and the information provided by state entities or the sector's guilds was taken as secondary sources.

For the field study, the survey technique was used, using the questionnaire as an instrument.

2.6. *Data Processing and Analysis Techniques*

The research was supported by the documentary analysis technique with the purpose of knowing and investigating the relationship between operating finances, solvency and profitability of the coal sector in the Department of Norte de Santander.

Afterwards, the data was classified and organized and a descriptive analysis was carried out in order to characterize the behavior of the variables. For the analysis and data processing, the tools of the Microsoft Office® Excel program were used, which allowed calculating the statistical correlation relations between the variables under study.

Supported by the opinion of the sector's businessmen, we inquired about financial management in order to develop the proposal and provide financial guidelines that are expected to help optimize financial management in the sector under study.

3. Results

Table 1. Financial indices for the coal sector in the Department of Norte de Santander

INDICES	2006	2007	2008	2009	FÓRMULA	EXPLANATION	LIMITS	ALERTS
TREASURY	0,40	0,24	0,16	0,49	<u>DISPON. + REALIZABLE</u> CURRENT LIABILITIES	Ability to meet short term payment obligations without carrying inventories	>0,50	* * * *
LIQUIDITY	1,89	1,29	1,10	1,82	<u>CURRENT ASSET</u> CURRENT LIABILITIES	Ability to meet short-term obligations based on the realization of current assets	>1,50	* *
AUTONOMY	0,69	0,45	0,26	0,30	<u>NET WORTH</u> TOTAL ASSETS	Financial autonomy indicating level of self-financing	>0,40	* *
ENDEBTMENT INDEBT	0,31	0,55	0,74	0,70	<u>DEBTS</u> TOTAL LIABILITIES AND EQUITY	If it is low, it indicates financial autonomy; if it is high, it indicates a risky structure. risky	<0,6	* *
STABILITY	0,69	0,72	0,74	0,63	<u>NON-CURRENT ASSETS</u> PATRIM+PASIV NO CTE	Fixed asset financing structure	<1	
WORKING CAPITAL (MILLIONS)	2.31	1.62	1.77	10.96	PATR. NETO+PAS NO CTE MENOS NON-CURRENT ASSETS	Working capital. The portion of current assets financed with long-term resources. term.	>0	

3.1. Treasury.

Table 2 and Figure 1 show the performance of the cash flow index.

Table 2. Cash flow index	
cash ratio	
2006	0,4

2007	0,24
2008	0,16
2009	0,49

Figure 1. Treasury index for the coal sector in the Department of Norte de Santander



It is observed that during the period analyzed it was below the reference value of 0.5 indicated in the theory. This means that during this period the sector was not able to meet its short-term obligations without having to liquidate inventories.

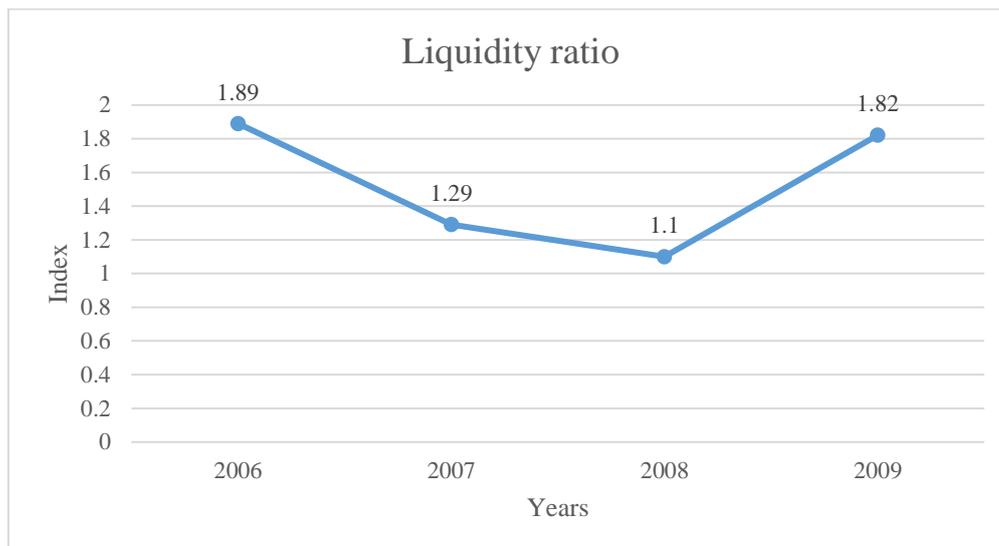
3.2. Liquidity

Table 3 and Figure 2 nine show the liquidity index.

Table 3. Liquidity ratio

Liquidity ratio	
2006	1,89
2007	1,29
2008	1,1
2009	1,82

Figura 2. Índice de liquidez sector carbón del Departamento Norte de Santander.



Taking as a reference the value of 1.5 recommended in the financial analysis theory, it was observed that only in 2006 and 2009 it was above that value, while in 2007 and 2008 it presented problems to meet its short-term obligations by liquidating current assets.

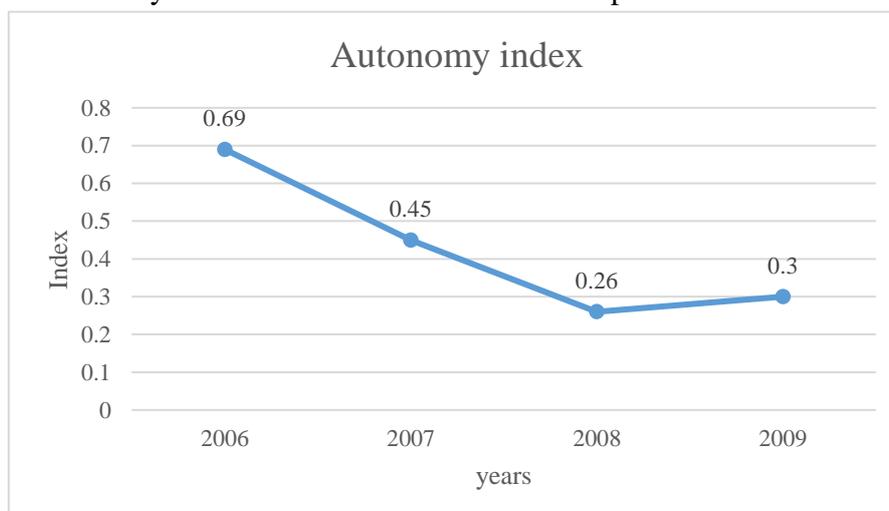
3.3. *Autonomy*

Table 4 and Figure 3 show the behavior of the autonomy index for the coal sector in the Department of Norte de Santander in the years of study.

Table 4. Autonomy

Autonomy	
2006	0,69
2007	0,45
2008	0,26
2009	0,3

Figure 3. Autonomy index for the coal sector in the Department of Norte de Santander



It is detailed how the autonomy index has deteriorated since 2006 and reached values below the benchmark of 0.40. This means that the level of self-financing decreased due to the decrease in the weight of equity in the financing structure.

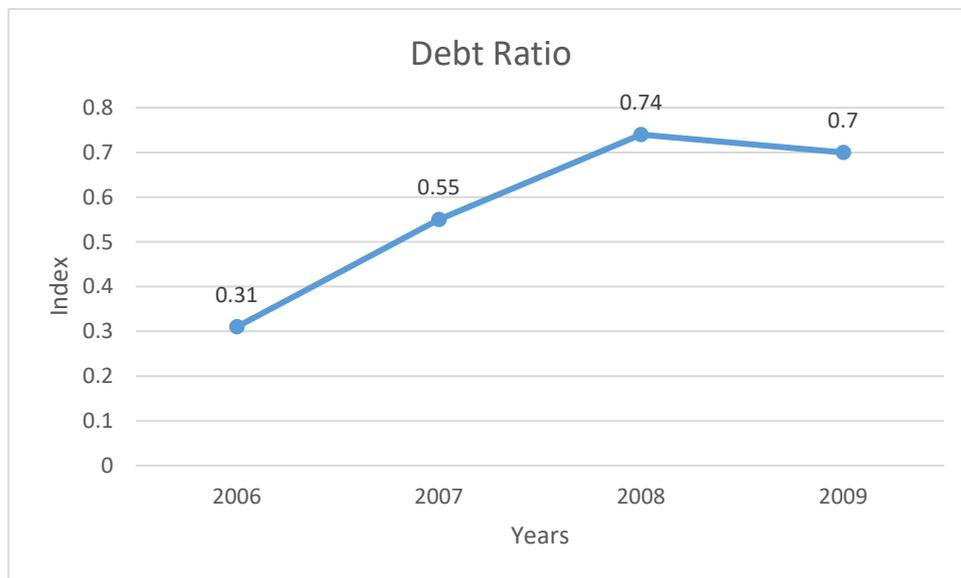
3.4. *Indebtedness*

With respect to indebtedness, Figure 4 and Table 5 show how this index behaved during the period analyzed.

Table 5. Debt Ratio

Indebtedness	
2006	0,31
2007	0,55
2008	0,74
2009	0,7

Figure 4. Indebtedness index of the coal sector in the Department of Norte de Santander.



The reference value is less than 0.6; it was observed that the indicator has been increasing year by year, indicating that the debt structure has become risky, increasing the risk perception towards the companies in the sector.

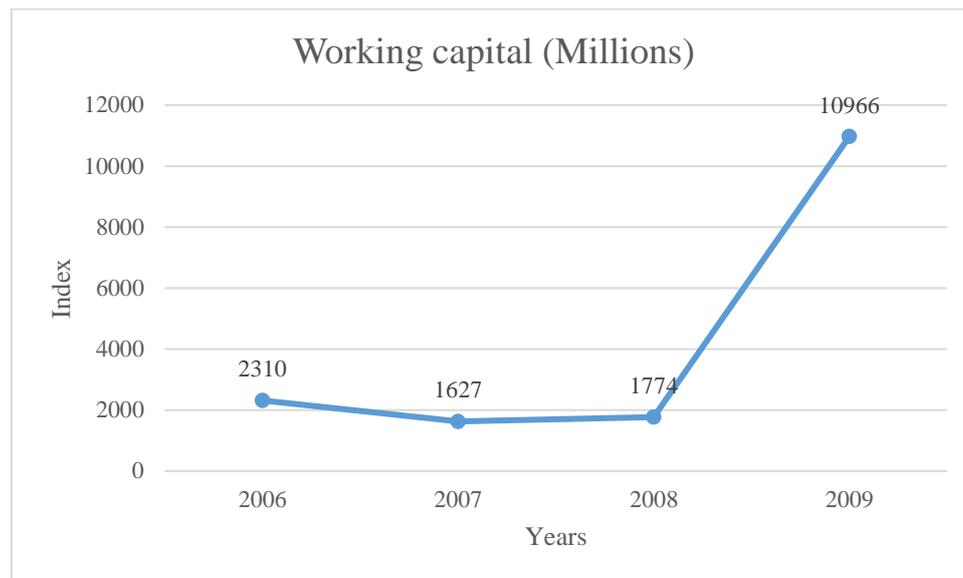
3.5. *Working capital*

Figure 5 and Table 6 show the results of the working capital for the years under study.

Table 6. Working Capital

Working capital (Millions)	
2006	2310
2007	1627
2008	1774
2009	10966

Figure 5. Working Capital Fund for the coal sector in the Department of Norte de Santander



It is worth noting the increase in the Working Capital Fund in 2009, when it practically multiplied by five the average value that had been managed in the years 2006 to 2008, due to the increase in inventories.

4. Discussion and conclusion

When evaluating the solvency of the coal sector in the Department of Norte de Santander, it was determined that the solvency index showed deterioration in 2007 and 2008 when it was below the reference value of 1.5, in 2009 its value reached 1.82; this means that for that year the companies in the sector could meet their short-term commitments with the available current assets.

The cash flow index showed that during the period analyzed it was below the reference value of 0.5. On the other hand, the autonomy index has deteriorated since 2006 and reached values below the benchmark value of 0.40. This means that the level of self-financing decreased due to the decrease in the weight of equity in the financing structure. The indebtedness indicator showed an increase year by year, which means that the indebtedness structure became risky, increasing the risk perception towards the companies in the sector.

Regarding the profitability indexes, it was determined that all the sector's profitability indexes deteriorated as of 2006, which evidences critical factors to pay attention to in the sector's financial management.

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