

# **Economic-Financial Indicators Applied to the B3 Industrial Machinery and Equipment Sector**

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## **Abstract**

*In the business context, the Analysis of Financial Statements is an important tool to understand the economic and financial situation of companies, in addition to assessing the results obtained by corporations. This study analyzes the financial statements of companies that manufacture industrial machinery and equipment, using economic and financial indicators to understand the variations that occurred in the sector between the years 2013 to 2018. The segment was chosen because it is included in the Capital Goods, which has a significant influence on the world economy. The study was characterized as a quantitative documentary research using information published by organizations in B3. Among the results, it appears that the sector has high levels of indebtedness, expressing dependence on third party capital to operate. It is also noted that the return of companies fluctuates during the period, characterizing the time of economic instability in the country.*

*Key words: Analysis of Statements. Economic indicators. Management accounting. B3.*

## **1. INTRODUCTION**

In the current conjuncture of Brazil, the industry is responsible for a slice of 22% of the Brazilian GDP and for each R \$ 1.00 produced in the secondary sector, R\$ 2.40 is generated in the economy as a whole, while agriculture and trade and services generate R\$ 1.66 and R\$ 1.49 respectively (PORTAL DE INDUSTRIA, 2019).

According to the IBGE in 2018, Transformation Industries advanced 1.3% per year, influenced by the growth in volume of the Added Value of the manufacture of automotive vehicles, paper and cellulose, pharmaceuticals, metallurgy and machinery and equipment.

It is well known that industry plays an important role for the national economy, which is why it is important to monitor and understand the changes undergone by the sector over time.

The analysis of the financial statements is of paramount importance for providing indices and indicators that are extremely important for companies, and for bringing internal and external users to the company's situation, as well as for recognizing the positive and negative points.

To understand the results presented by the industry, the analysis of the balance sheets and income statements of the main companies in the country is one of the tools available to users, since the investigation can clarify the variations incurred in the sector of industrial machines and equipment.

This work will analyze the industrial sector directed to the manufacture of machines and equipment using the companies of the segment which are registered in Brazil Bolsa Balcão<sup>1</sup>, namely: Bardella SA Industrias Mecânica, Electro Aço Altona SA, Industrias Romi SA, Inepar SA Industria e Construções, Kepler Weber SA, Metalfrio Solutions S.A.

In order to study the equity situation of the companies, the general, current, dry and immediate liquidity indexes will be compared. General indebtedness indices, level of indebtedness, indebtedness composition index and fixed assets will also be opposed.

To analyze the profit and return of the companies, the economic indicators of return on equity, return on INVESTMENT, operating and net margin will be analyzed.

EBITDA indicators (Earning Before Interests, Taxes, Depreciation and Amortization) will also be compared as a way to assess the valuation of companies.

The definition of the research question took into consideration the identification of the changes undergone by the companies in the sector and will assess quantitatively whether these changes were positive or

negative during the analyzed period. Based on the delimitation of the proposed research theme, the research question for the study is: What changes occurred in the economic and financial indicators in the Industrial Machinery and Equipment sector classified in B3 in the period from 2013 to 2018?

## **2 THEORETICAL FRAMEWORK**

### **2.1 ACCOUNTING**

According to the researched literature, it is reported that only in the 15th century, with the institution of the double-entry method, does accounting start to take shape to become what it is today, say Lacombe and Ribeiro (2013). About Luca Pacioli, responsible for exposing and explaining the double-entry method, Iudícibus (2015) calls him “the father of accounting authors”.

### **2.2 MANAGEMENT ACCOUNTING**

Accounting is divided into two aspects, Financial and Managerial Accounting. Coutinho et al. (2015) conceptualizes Financial Accounting as general accounting, used by all companies and mandatory for tax purposes.

According to Alves (2013, p.3) "Managerial Accounting will be responsible for generating the data for a reading and consequent production of information essential to the management of any company". And its purpose is “To coordinate the optimization of economic performance aiming at the growth of the company's wealth. (CORONADO, 2017, p.25)

In summary, Coronado (2017) presents the list of the main functions attributed to managerial accounting, namely: Managing the management process; Support performance and result evaluation; Manage the economic and financial information systems; Meet market agents (shareholders, government, banks)

### **2.3 ANALYSIS OF FINANCIAL STATEMENTS**

The correct information in the financial statements is essential. For this, it is necessary to carry out a detailed analysis of the main reports structured by accounting.

According to Lins and Filho (2012, p.129) the analysis of the statements is divided into two distinct natures: retrospective and projective. The retrospective provides fundamental feedback on the analysis of the effectiveness of decisions made previously and the efficiency with which they were made. On the other hand, the projective allows to imagine scenarios and expectations related to the future economic and financial performance, indicating probable risks and difficulties to which the company may be subject.

#### **2.3.1 Economic-financial indicators**

For Júnior and Begalli (2015, p.313), the use of indicators represents one of the main methods for assessing the economic and financial performance of institutions.

The indicators consist of numbers and percentages extracted from various associations made between the elements distributed in the balance sheet and income statement. (BENEDICTO; PADOVEZE, 2011, p.147)

#### 2.3.1.1 Liquidity Indicators

According to Assaf Neto (2015, p.187), liquidity indicators are used to demonstrate the financial situation of an institution in view of its financial obligations. However Benedicto and Padoveze (2011) explain that liquidity ratios measure the ability of assets and rights to settle liabilities. This study will have the application of four liquidity indices: the General Liquidity Indicator, which makes the direct relationship between current assets and realizable in the long term with the total obligations of the company due in the short and long term (MARION; RIBEIRO, 2017).

The purpose of this indicator is to understand the company's long-term financial health and was chosen because it will be used in order to understand, in general, the net situation of the companies analyzed; Current Liquidity Ratio, which indicates how much the company has current assets for short-term liabilities, that is, current liabilities (NETO, 2015). Express how much of current assets there is for each \$ 1.00 of current liabilities. It serves to analyze the short-term liquidity capacity of companies; Dry Liquidity Index, which Ribeiro (2015) defines as the quotient that expresses the company's net capacity to meet its short-term obligations, that is, how much resource the company has in the short term, disregarding inventories in order to settle its Liabilities Current. It serves to analyze the solvency of companies in the short term if they cannot count on the stock to perform the settlement of their obligations; Immediate Liquidity Index, which for Assaf Neto (2015).

#### 2.3.1.2 Indebtedness Indicators

The main objective of these indicators is to identify the participation of important groups in the balance sheet as a percentage and to measure their presence in relation to shareholders' equity. They also show what participation of assets has been financed with equity and third party capital and whether it is dependent on their resources. (BENEDICTO; PADOVEZE, 2011).

For Junior and Begalli (205), the General Indebtedness Indicator, evidences the participation of the capital of third parties present in the Total Assets of the company. The closer to 1, the higher is the percentage of the Capital of Third Parties applied in the Assets.

According to Marion and Ribeiro (2017) the Indebtedness Composition Indicator reveals how much of the organization's short-term liabilities represent of its total liabilities, that is, for each \$1.00 of the total liabilities, how much the company owes in the short term. The ratio is inversely proportional, the lower the index, the longer will be the time for the company to obtain resources in order to pay off the obligations in their entirety.

When the Indebtedness Level Indicator is used, the objective is to verify the existing proportion between the Capital of Third Parties and the Equity. (RIBEIRO, 2015).

The Fixed Assets Indicator has the objective of exposing the slice of Equity applied in Fixed Assets, both in its acquisition and in the maintenance of the assets. (LINS; FRANCISCO FILHO, 2012, p.161).

By analyzing this indicator it is possible to verify if the company can maintain its Fixed Assets with its own capital, or if there is a need for external capital to do so. (RIBEIRO, 2015).

The Equity Fixed Asset Indicator, aims to expose the share of Equity invested in Fixed Assets, both in their acquisition and in the maintenance of the assets. (LINS; FRANCISCO FILHO, 2012, p.161).

Analyzing this indicator, it is possible to verify if the company is able to maintain its Fixed Assets with its own capital, or if there is a need for external capital for this.

### **- Profitability and Profitability Indicators**

Profitability Indicators help to measure the economic capacity of the organization, showing the final result obtained by the capital invested in the company. (RIBEIRO, 2015, p.171)

According to Iudícibus (2017) the use of the Profitability Indexes is justified because it could not express the Return in absolute values since they present a limited informative utility, since comparing values of companies of different sizes will not show which one was more efficient in the search for results .

Return on Equity: Martins, Diniz and Miranda (2017, p.206) consider the most important profitability indicator precisely because it demonstrates the company's ability to remunerate the capital invested by the partners, since the company that manages to remunerate its associates according to their expectations, fulfilled its obligation with investors who believed in the potential

Rate of Return on Investment: Francisco Filho and Lins (2012) attribute to this indicator the function of demonstrating the ability to generate profits for each \$ 1 invested, that is, relating the Result to the Total Assets and the greater the result, the greater the return obtained by the investment of the company.

Operating margin: it is a profitability indicator used to indicate the share of Operating Profit in Net Revenue. In other words, it demonstrates, after the appropriation of operating expenses, how much Operating Income represents from net sales. (PEREZ JÚNIOR; BEGALLI, 2015, p.327)

Net Margin: quotient similar to the Operating Margin, however the relationship analyzed is the share of Net Profit in Net Sales. Indicates the percentage of net income obtained in the year. (RIBEIRO, 2015, p.172)

EBITDA: (Earnings Before Interest, Taxes, Depreciation and Amortization), which means Earnings Before Interest, Rates, Depreciation and Amortization, has achieved a lot of prominence in recent years, so much so that Martins, Diniz and Miranda (2017) define it as “ a God in the world of evaluations ”. Benedicto and Padoveze (2011, p.246) define the concept of capacity to generate Gross Operating Profit by adding to operating profit expenses with Depreciation Amortization.

### 3. METHODOLOGY

With regard to technical procedures, the study will use bibliographic and documentary research seeking to expand knowledge about the topic, clarify concepts in relation to the research problem and obtain a database for the preparation of the study. Documentary research based on Brasil Bolsa Balcão will be used in order to obtain the data to be analyzed.

The data collection procedure will take place through documents published on the website of Bolsa Brasil Balcão, where are the companies that trade their shares on the Brazilian stock market. Specifically, these are the Balance Sheets and the Statements of Income for the Year, which constitute the consolidated financial statements of the companies object of the study during the periods from 2013 to 2018.

The companies chosen for the study are listed in the Industrial Goods sector, Machinery and Equipment sub-sector and Industrial Machinery and Equipment segment, which represent 75% of the total population.

#### 4.1 CONTEXTUALIZATION OF COMPANIES

It is important to note that all the information in this topic was extracted from the email address of each of the organizations, that is, the entire text was written by the companies themselves.

**Bardella Mechanical Industries SA:** The company established and consolidated its position as a leader in the supply of equipment to the Metallurgy, Energy, Oil, Gas, Material Handling, Service, Drawn Steel and Rolled Steel sectors, with its own technology or supported by technology agreements with foreign companies world-renowned.

**Electro Aco Altona SA:** Paul Werner was a German engineer full of ideas who did not hesitate at the invitation to install the first telephone exchange in Blumenau. Thus, in 1923 he left Germany for the then small city in southern Brazil. In Blumenau, he met Ersnt Auerbach, a blacksmith located in Bairro Altona (now Itoupava Seca). From entrepreneurship and the desire to develop solutions, Auerbach & Werner emerged on March 8, 1924.

Starting from household and agricultural utensils, the company grew, incorporating steel in 1933 under the name Electro Aço Altona SA, becoming the symbol of pioneering spirit and the courage to innovate.

**Indústrias Romi SA:** Institutional. It started its activities in 1930 with a car repair shop founded by Américo Emílio Romi, in Santa Bárbara d'Oeste - SP - Brazil. Today, it is an internationally renowned company, whose products and services are consumed in the national market and exported to all continents.

**Inepar Industry and Construction SA:** IESA / INEPAR has been operating for more than 60 years in the development of Brazil's industry and infrastructure, with emphasis on energy, oil and gas, process equipment, material handling, reactive compensation and mass transportation. In Brazil, IESA / INEPAR manufactured turbines and generators that account for more than ¼ of the energy generated daily; operated

in 100% of Petrobras' 15 refineries and participated in the construction of 7 oil exploration platforms; delivered approximately 3,000 overhead cranes to a variety of industries at home and abroad; produced the largest ore handling machines in operation; produced more than 30% of reactive compensation in large transfers of power generation to transmission lines; developed most of the high and extra high voltage transmission lines; performed repair, maintenance, supply and manufacture in more than 200 locomotives; is on telecommunications was a pioneer in cable television, CDMA cell phones and wireless.

**Kepler Weber SA:** With factories in Rio Grande do Sul and Mato Grosso do Sul, Kepler Weber operates in the agribusiness sector, in the post-harvest stage of the grain production chain. The Brazilian company manufactures equipment for the storage, processing and handling of bulk materials, specializing in the development of complete storage solutions for its customers. Our product portfolio consists of metal silos, horizontal and vertical conveyors, dryers and grain cleaning machines.

**Metalfrío Solutions SA:** The history of Metalfrío is intertwined with the very emergence and development of the commercial refrigeration industry in Brazil. The company was created in 1960 to produce refrigeration system components, but soon changed its focus to meet the specific demand of beverage and ice cream manufacturers, who until then had each manufactured their own equipment.

The company is a market leader in Latin America. Through direct selling or through its distributors and sales representatives, located in 74 countries on five continents, Metalfrío supplies its products to customers who are among the largest global manufacturers of beverages and foods.

To facilitate viewing and reading the results, organizations will be identified by the following legend:

Table 1 - Legend of Representation of Companies

COMPANY	SUBTITLE
Bardella Mechanical Industries SA	THE
Electro Aco Altona SA	B
Indústrias Romi SA	Ç
Inepar Industry and Construction SA	D
Kepler Weber SA	AND
Metalfrío Solutions SA	F

### 3. ANALYSIS OF RESULTS

#### 3.1 LIQUIDITY INDICATORS

Below, the results obtained by calculating the net worth of the companies studied will be presented in order to understand the ability to honor their debts, according to the concept presented.

Figure 1 - Results of Liquidity Indicators

<b>BARDELLA SA (A)</b>					<b>ELECTRO ACO ALTONA SA (B)</b>				
	<b>LG</b>	<b>LC</b>	<b>LS</b>	<b>LI</b>		<b>LG</b>	<b>LC</b>	<b>LS</b>	<b>LI</b>
<b>2013</b>	0.91	1.01	0.68	0.05	<b>2013</b>	0.48	1.81	1.35	0.17
<b>2014</b>	0.89	1.20	0.87	0.11	<b>2014</b>	0.48	1.74	1.14	0.30
<b>2015</b>	0.85	1.02	0.73	0.01	<b>2015</b>	0.52	2.15	1.47	0.29
<b>2016</b>	0.62	0.91	0.61	0.01	<b>2016</b>	0.47	1.70	1.02	0.12
<b>2017</b>	0.49	0.95	0.54	0.02	<b>2017</b>	0.62	0.97	0.57	0.01
<b>2018</b>	0.44	0.78	0.47	0.01	<b>2018</b>	0.66	0.97	0.60	0.29

  

<b>INDUSTRIAS ROMI SA (C)</b>					<b>INEPAR SA (D)</b>				
	<b>LG</b>	<b>LC</b>	<b>LS</b>	<b>LI</b>		<b>LG</b>	<b>LC</b>	<b>LS</b>	<b>LI</b>
<b>2013</b>	1.40	1.90	1.24	0.26	<b>2013</b>	0.46	0.51	0.34	0.02
<b>2014</b>	1.46	2.06	1.31	0.41	<b>2014</b>	0.28	0.22	0.09	0.00
<b>2015</b>	1.59	2.84	1.76	0.58	<b>2015</b>	0.46	0.40	0.25	0.00
<b>2016</b>	1.60	2.14	1.23	0.42	<b>2016</b>	0.31	0.29	0.17	0.00
<b>2017</b>	1.73	2.11	1.25	0.43	<b>2017</b>	0.26	0.24	0.15	0.00
<b>2018</b>	1.67	1.92	1.09	0.28	<b>2018</b>	0.17	0.13	0.12	0.00

  

<b>KEPLER WEBER SA (E)</b>					<b>METAL FRIO SOLUTIONS SA (F)</b>				
	<b>LG</b>	<b>LC</b>	<b>LS</b>	<b>LI</b>		<b>LG</b>	<b>LC</b>	<b>LS</b>	<b>LI</b>
<b>2013</b>	1.40	1.79	0.91	0.06	<b>2013</b>	0.92	1.27	0.99	0.37
<b>2014</b>	1.66	1.72	1.06	0.05	<b>2014</b>	0.84	1.16	0.88	0.38
<b>2015</b>	1.21	1.63	1.13	0.04	<b>2015</b>	0.73	0.92	0.72	0.35
<b>2016</b>	1.60	1.52	1.20	0.10	<b>2016</b>	0.79	1.36	1.10	0.34
<b>2017</b>	1.54	1.34	1.00	0.06	<b>2017</b>	0.79	1.03	0.79	0.35
<b>2018</b>	1.66	1.55	1.01	0.03	<b>2018</b>	0.80	1.09	0.85	0.20

### 3.1.1 General Liquidity (LG)

“This indicator reveals liquidity, both in the short and long term. Of every \$ 1 that the company holds in debt, how much rights and assets are in current assets and long-term assets ”. (ASSAF NETO, 2015, p.188)

Analyzing the indicator throughout the period, it can be seen that companies A, B, D and F never obtained an index higher than 1, with company D having, in 2018, only 0.17 being the lowest overall liquidity index of the companies analyzed. On the other hand, companies C and E have always been above 1, where



company C reached the highest indicator among all companies, presenting 1.73 in 2017.

It can be noted how much companies C and E have higher indexes than the others in the analyzed period, with company C concluding the period with a positive variation of 19% and company E with a variation of 18.5%. Between 2013 and 2018 company A showed a relatively large drop of approximately 52%. In contrast, company B increased its General Liquidity by 38%. Company D presented the biggest negative variation, ending the period with an indicator 64% lower than that calculated in 2013. Finally, company F showed a 14% decrease in LG over the period.

Analyzing the data, it is also possible to state that 50% of the companies (B, C and E) ended the period studied, 2018, with greater general liquidity than when they started in 2013. With the other half (A, D and F) occurred the opposite situation, ended with a lower index than they started.

### 3.1.2 Current Liquidity (LC) and Dry Liquidity (LS)

Following the results obtained in the LG index, company C is the one with the best levels of LC and LS, keeping the LC greater than 2 in practically the entire period and the LS has remained above 1 in all years, highlighting that this fact was not repeated by any other company.

When it comes to LC, all companies at some point reach an index greater than 1 except company D, which does not exceed 0.51. By changing the focus to LS, company A, like D, is unable to reach an indicator greater than 1.

Company E maintained a positive prominence in the results achieved because, in addition to maintaining an LC index always greater than 1, only in 2013 did it record LS less than 1. Company B achieved similar results in relation to LS, where it maintained rates above 1 for much of the period, but scored 0.57 and 0.60 in 2017 and 2018.

After calculating the average LC and LS in the period, the following numbers were obtained:

Table 2 - LC and LS indicators

Companies	LC	LS
THE	0.98	0.65
B	1.56	1.02
Ç	2.16	1.31
D	0.30	0.19
AND	1.59	1.05
F	1.14	0.89

It is noticed that, again, the negative highlight was the responsibility of company D, which obtained results far below the others. In addition to companies C and E, which had already presented high numbers of LG, it is possible to highlight company B with high levels of LC and LS for the analyzed range in comparison to the others.

### **3.1.3 Immediate Liquidity (LI)**

As Immediate Liquidity considers only cash and cash equivalents, usually cash, bank and short-term financial investments, this indicator reveals the percentage of short-term debt that can be settled immediately.

When analyzing the results, what draws attention is the fact that all companies present LI well below 1. This finding is explained by Assaf Neto (2015, p.187) when he comments on the companies' lack of interest in maintaining monetary resources excess cash, as this asset has low profitability.

Although all companies have a low LI index justified by Assaf Neto's argument, it is still possible to observe two extremes in the organizations studied. Company C continues to have the highest liquidity ratios while company D has extremely low values, where the highest value is only 0.02. The arithmetic mean was determined, which are as follows: A: 0.03 | B: 0.20 | C: 0.40 | D: 0.01 | E: 0.06 | F: 0.33<sup>2</sup>,

Thus, it is possible to visualize the difference between companies, where C and F presented the best results while A and D the worst, it should be noted that organizations do not have the practice of using nominal values in cash.

## **3.2 CAPITAL STRUCTURE INDICATORS**

Junior and Begalli (2015) mention that they are indicators that demonstrate the participation of the capital of third parties in the company, it allows to identify that the greater the participation of capital of third parties in the company, the greater the indebtedness.

### **3.2.1 Indebtedness Level (NE)**

Assaf Neto (2015), recommends that this indicator demonstrates how much the company sought third-party resources compared to equity capital.

Regarding the interpretation of this indicator to state whether the level is good or bad, Junior and Begalli (2015) emphasize that this statement depends directly on the cost of obtaining the resources and also on the return achieved in their applications.

It should be noted that company D has an Overdraft Liability, that is, the total liabilities to third parties is greater than the total assets (negative equity), to obtain the real results the formula had to be adapted by adding once the value of the PL in the calculation. As the Third Party Capital is greater than the total assets, consequently the level of indebtedness is quite high, reaching numbers such as 10.93 in 2013 and 8.54 in 2015.

Another company that stands out when analyzing the results is company F, which starts the period with 3.51, reaches 31.22 in 2015 and ends 2018 with 14.88. As previously mentioned, the merit of this analysis

of the Level of Indebtedness is not qualitative, but it can be said that, compared to the other companies, company F presented a high index.

The other companies remained constant during the period without showing significant increases or decreases. Company E showed results less than 1 in all years, this is similar to company C, which only in 2013 and 2014 obtained results greater than 1. In 2018, the index of company A diverged in relation to the other years.

### **3.2.2 Debt Breakdown (CE)**

“This quotient reveals the ratio between short-term and total obligations, that is, how much the company will have to pay in the short term for each real of the total of existing obligations”. (MARION; RIBEIRO, 2017)

Thus, this indicator shows the share of short-term liabilities in the composition of total liabilities. Results will be between 0 and 1.

In this regard, most companies concentrate their fundraising in the short term. Contact is made more clearly when looking at the averages for this indicator, given that the index is greater than 0.50 for five of the six companies.

A: 0.63 | B: 0.37 | C: 0.58 | D: 0.66 | E: 0.72 | F: 0.67

In general, the only company that has short-term resources to a lesser extent than long-term resources is company B, achieving an interesting result if based on Marion's thinking, in such a way that, in case of financial difficulties, the company has more time to settle your commitments. All other companies experience a percentage of Short Term Liabilities greater than 50%.

### **3.2.3 General Indebtedness (EG)**

This indicator makes it possible to observe the predominant source of funds invested, whether third party capital or own capital. The higher the value of this index, the greater the company's dependence on third party capital.

There are two distinct movements on the part of organizations: the group of companies formed by A, D and F increase their level of EG over the period, making the Third Party Capital have a large participation in Total Assets. On the other hand, companies B, C and E have a negative variation, that is, they decrease the index making the participation of Equity predominate in the composition of Total Assets.

### **3.2.4 Fixed assets (IPL)**

“This indicator shows how much the company invested in fixed assets in relation to shareholders' equity. In other words, how much of its own resources was allocated to maintaining and / or expanding the company's productive capacity”. (LINS; FILHO, 2012).

When comparing this concept with the results obtained, it is possible to state that companies A, C and E maintain their Fixed and Intangible assets with their own resources throughout the period. In turn, companies B, D and F have high levels of Third Party Capital in the composition of Fixed / Intangible. The highest index registered is under the responsibility of company F, where in 2015 it registered an IPL of 9.50. It means that the company used, in addition to all its own capital, an additional 8.50 times ( $9.50 - 1 = 8.50 \times 100 = 850\%$ ) Third Party Capital to maintain and / or expand the company's productive capacity. It appears that, of the six companies analyzed, four of them show a decrease in the level of fixed assets. Given this fact, it is possible to assume that there is an interest in reducing the index by companies.

### **3.2.5 Profitability and Profitability Indicators**

For Lins and Filho (2012), "These indicators seek to demonstrate, in general, the return of the company in the period analyzed in order to enable the assessment of the efficiency of operational activities".

### **3.2.6 Return on Equity (RPL)**

"It indicates the return on the capital invested by the shareholders, shareholders and owners". (JÚNIOR; BEGALLI, 2015, p.325)

Regarding their interpretation, Júnior and Begalli (2015) also comment that this indicator represents the return on each \$ 1.00 invested in equity and that measuring whether the result is good or bad depends on the investor's expectation and the general result of the sector.

When observing the results obtained by the companies, it appears that the companies present both positive and negative results with the exception of company D, which presents only negative RPL during the entire period. It is noteworthy that the negative results are repeated more than the positive ones.

The lower result of company F in 2015 is due to the loss earned in the period, which was very high when compared to the other years combined with the reduction of the PL in the same year.

### **3.2.7 Rate of Return on Investment (TRI or ROI)**

For Marion, Ribeiro (2014), considers it the most relevant quotient for management, as it is an instrument used by organizations to identify their performance.

Ribeiro (2015) comments that this indicator shows the capacity to generate net profit for each \$ 1.00 invested.

Company A, presented only a positive result in 2014, where it reached 1% profitability on assets. On the other hand, in companies B and C, positive results dominated over the years, with negative returns only in 2016, where they obtained -1% and -4%.

Company D, repeating the results of the RPL, presented only negative numbers, having 2016 as its worst year, failing to generate a return of 32% of its investment. The companies E and F showed different situations between themselves, where company E, in general, had a higher ROI with 2014 as its best year,

16%, and company F showed in its best year, 2016, a return of only 3% of your assets.

### **3.2.8 Operating Margin (MO)**

According to Júnior and Begalli (2015), this index demonstrates the representativeness of Operational Profit in relation to the Net Revenue generated by the company.

Company A presented negative MO in all years except in 2014, where Operating Profit was 1% of Net Revenue. Company B obtained a positive result in 2017, reaching 25%. Company C had the best index in 2018, when it showed 11% OM.

Analyzing company D, it continues with negative results as in all years, being the worst result of Operating Margin 2016, where it obtains negative MO in 874%. An extremely bad result due to the drop in Net Revenue and a significant increase in Operating Loss.

Looking at the results of company E, it is noted that 2014 was the year in which there was the highest OM, reaching 15%. The lowest result occurred in 2016, with -8%. When analyzing the OM of company F, a fact diverges from what has already been observed: all companies have negative value in 2016, except company F, as it manages to reach its highest Operating Margin this year, obtaining 4%.

### **3.2.9 Net Margin (ML)**

"The quotient reveals the profitability margin obtained by the company due to its sales, that is, how much the company obtained from Net Profit for each \$ 1 sold". (RIBEIRO, 2015, p. 172).

When analyzing the results of company A, it is noted that ML was low for the entire period, with a negative emphasis on the result of 2018 when it reaches a Net Loss of 102% of Net Revenue. Its best year was 2014 when Profit is 2% of Revenue.

Companies B and C get better results in percentage terms for ML, where B reaches 18% in 2017 and C at 11% in 2018, repeating the result of MO. The worst year for both companies was 2016, when they presented the only negative value for this indicator: -1% for B and -7% for C.

Company D, which has already shown negative results for all previous profitability indicators, again presented values below zero. The highest resulting number was -0.38 (loss of 38% of Net Revenue) in 2013 and the lowest was -9.05 in 2016.

When checking the results of company E, it is found that its best ML index was in 2014, when the organization demonstrates a 15% Profit on Revenue. The worst mark was in 2017 presenting -6%. When the focus is on the results of company F, the highest value was found in 2016 with 3% and the lowest was in 2015 with -10%.

### **3.2.10 EBITDA - Profit before Interest, Taxes, Depreciation and Amortization**

It is observed in the results of company A that its performance was negative in four of the six years analyzed, which reached positive values only in 2014 with 0.07 and 2015 with 0.08. Company B, on the other hand, presented positive EBITDA in the entire period, obtaining its best result in 2017, reaching 0.34.

When portraying the results of company C, it is noted that the company generated positive results after five of the six years analyzed, excluding only the year 2016 when the company culminated in the result of -0.02. Exposing the results of company D, it is verified again only the presence of negative indicators, confirming the poor financial and economic health of the organization.

Finally, EF companies present results consistent with the other analyzed indicators. As for company E, positive results occur in most of the temporal sample, reaching two negative peaks followed in 2016 and 2017 when registering -0.05 and -0.02. The values presented by company F point to an increasing variation composed only of positive records, since it starts the study in 2013 with 0.03 and ends 2018 with 0.10.

## **4. FINAL CONSIDERATIONS**

Economic-financial indicators are one of the main tools for assessing certain aspects of companies' performance (PEREZ JÚNIOR; BEGALLI, 2015). Through the use of indicators, the development of the study presented made it possible to verify the changes incurred in the economic and financial indicators in the sector of Industrial Machinery and Equipment classified in B3 in the period from 2013 to 2018.

With these numbers, it means that companies with the best results in the segment are able to commit a low percentage of their own capital to third party capital and raise little external capital to finance their operations. Another interesting point is to highlight that companies are able to keep their fixed assets with equity.

Regarding the return and profit performance, the sector - in general - does not present expressive results. The period starts with reasonable profitability, going through a decrease between 2015 and 2016. In 2013 no company achieved prominence in ROI, however 2014 was characterized as the best year for the companies Bardella SA (A) and Kepler Weber SA (E). Corporations reached 1% and 16% respectively for the indicator in the year.

Of the six companies studied, three had their worst numbers in 2016, being Electro Aço Altona SA (B) with -1%, Indústrias Romi SA (C) comprising -4% and Inepar SA (D) reaching -32% . Only Metal Frio Solutions SA (F) achieved its best result in 2016, showing 3%, thus establishing a recovery after going through its worst year.

At the end of the analysis, the year of 2018 promoted a positive highlight only for Indústrias Romi SA (C), which showed an index of 7%.

From the figures presented, it is noted that the sector's performance was not regular during the period and the companies achieved different results over the years. The return on capital invested in the sector took place in a distributed way, so it is not clear which was the best year for the segment.

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