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PROFITABILITY, SOLVENCY AND SELF-FINANCING OF THE FOOD AND BEVERAGE SECTOR IN COLOMBIA BETWEEN 2012-2015

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ABSTRACT:

To analyze the behavior of profitability, solvency and self-financing in the Colombian food and beverage sector, a balanced and refined database of 2,639 companies was built in the period 2012-2015 that make their accounting reports annually before the Information and Information System Business Report - SIREM. By mathematical transformation, six indicators were generated (debt ratio, current liabilities, gross margin, return on assets - ROA, return on equity - ROE, and solvency). In general terms, the food and beverage sector are profitable, with a higher profit margin on its assets for the food business, which allows reinvestment and growth of the sector over time.

1. INTRODUCTION:

The food and beverage sector integrates various economic activities responsible for the production, transformation, processing, packaging and preservation of food and beverages for human and animal consumption; in addition, it includes the tasks of reception, storage, transport and processing of materials of animal and vegetable origin (Marín, 2015). This sector is of great importance for the competitiveness of a country and social welfare; In the case of Colombia, 3.55% of the country's sources of employment are generated by the food sector (Integrated Contribution Settlement Plan, 2017), DANE (2017) also reports a contribution to GDP led by economic subsectors by processing and preserving meat, fish, crustaceans and molluscs (4.35%), followed by Other food products (5.19%), and by Manufacture of dairy products (3.39%). Regarding sales of the food and beverage sector, Portafolio (2018) indicated fund-raising of 13.2 billion dollars in 2017, 80% concentrated in the subsectors of milling, bakery and confectionery, flour, etc. and 20% in dairy products and mainly bottled beverages.

However, under the current situation of economic recession due to the health emergency caused by Covid-19, it has generated a decrease in the per-capital income of nations (World Bank, 2020), which leads to concentrating efforts on the recovery of the profit margins, solvency and entrepreneur self-financing. Amat (2005) defines profitability as productive efficiency in the use of business assets for a defined time. The growth and investment potential of a company and its sector is restricted by not having access to the financial resources of the environment (Tybout, 1983; Nabi 1989; Georgellis et al., 2005), and its growth over time is subject to liquidity in the short and medium term (Ramírez, 2009).

To know the trends in sector performance and make recommendations for improvement, indicators are analyzed that intervene in the availability of working capital that allows the employer to operate efficiently in response to their payments for a year (Domínguez, 2015), added to the reinvestment of utilities (Albornoz, 2013). Authors such as Hirsch, et al., (2014) pointed out the size of the company and the concentration of the industrial sector as driving forces for the profitability of the European food sector, while the financial risk and the age of the company slow it down. In terms of self-financing, Sánchez (2002) highlights that an adequate analysis of business profitability allows to prevent the risk of financial insufficiency to meet credit and operational obligations.

Consequently, the purpose of this study was to analyze the behavior of profitability, solvency and self-financing for the Colombian food and beverage sector during the 2012-2015 period.

2. METHODOLOGY:

The study was explanatory, not experimental, for the construction of six financial indicators for the Colombian food and beverage sector. Table 1 shows the description of all the subcategories or economic activities that make up the sector based on the International Standard Industrial Classification of All Economic Activities - ISIC (Revision 4.)

Table 1. Classification of food and beverage manufacturing activities

Group	Class	Description
		Preparation of food products
101		Processing and preserving of meat, fish, crustaceans and molluscs
	1011	Processing and preserving of meat and meat products
	1012	Processing and preservation of fish, crustaceans and molluscs
102	1020	Processing and preserving of fruits, legumes, vegetables and tubers
103	1030	Manufacture of oils and fats of vegetable and animal origin
104	1040	Manufacture of dairy products
105		Manufacture of mill products, starches and products derived from starch
	1051	Manufacture of mill products
	1052	Manufacture of starches and starch products
106		Manufacture of coffee products
	1061	Coffee threshing
	1062	Decaffeination, roasting and grinding of coffee
	1063	Other coffee derivatives
107		Manufacture of sugar and panela
	1071	Manufacture and refining of sugar
	1072	Manufacture of panela
108		Manufacture of other food products
	1081	Manufacture of bakery products
	1082	Manufacture of cocoa, chocolate and confectionery products
	1083	Manufacture of macaroni, noodles, couscous and similar farinaceous products
	1084	Preparation of prepared meals and dishes
	1089	Manufacture of other food products n.e.c.
109	1090	Manufacture of prepared animal feed
		Preparation of beverages
110		Manufacture of beverages
	1101	Distillation, rectification and mixing of alcoholic beverages
	1102	Manufacture of non-distilled fermented beverages
	1103	Production of malt, brewing of beer and other malted beverages
	1104	Manufacture of non-alcoholic beverages, production of mineral waters and other bottled waters

Source: CIIU Rev. 4.

For the selection of the sample, the reports of the Financial Statements and the Interest Expenses made by the companies were consulted before the Business Information and Reporting System - SIREM with cut-off on December 31. From there, the food and beverage manufacturing sector were selected with a total number of 2,748 companies; followed by a purification of the atypical data for the consolidation of an unbalanced sample of 2,639 companies in the period 2012-2015 and that comply with the conditions that make the data comparable (Montegut et al., 2002). Only those departments of the country whose food and beverage companies do not report to the SIREM (Arauca, Guainía, Guaviare, San Andrés y Providencia, Vaupés and Vichada) were left out.

Six (6) financial indicators were selected as the dependent variable (Debt Ratio, Current Liabilities, Gross Margin, return on assets - ROA, Return on equity - ROE and Solvency). These variables according to Amat, 2005; Martínez et al., 2020; Melgarejo and Simon-Elorz, 2019, allow to know and analyze indebtedness, profitability and business and sector solvency, identify opportunities for improvement in management and propose strategies to increase competitiveness. Below is a description of each indicator that was part of the study and its way of obtaining it by mathematical transformation:

The ratio of indebtedness and indebtedness in the short term with suppliers allows to know the financial risk that the shareholders of the company and its creditors run from the degree of indebtedness existing in the study period.

Table 2. Financial Debt Ratios

Ratios	Definición	Fórmulas
Debt Ratio	It allows to measure the percentage of participation of creditors within the company.	Total Debt / Total Assets
Current Liabilities	Indicates the financing that the company has through suppliers in a period of less than one year.	(CP Suppliers / Total Current Assets) x 100

The Profitability indicator is made up of the Operating Margin, Return on Assets - ROA and Return on Equity - ROE; this aims to measure the business performance generated by the investments made annually and during the study period stipulated in the financial analysis.

Table 3. Financial Profitability Ratios

Ratios	Definición	Fórmulas
Gross Margin	Indicates the sales revenue a company retains after incurring the direct costs associated with producing the goods it sells, and the services it provides.	(Gross Profit / Operating Income) x 100
Return on Assets - ROA	It allows to measure the profits of the company from the use it gives to its assets.	(Net Income / Total Assets) x 100
Return on Equity - ROE	Measures the performance of the shareholders' investment, in relation to the profit obtained in a period.	(Net Income / Mean Shareholders' Equity) x 100

Solvency is an indicator that expresses the financial capacity to pay of the company to meet its obligations in the short term (period of time less than one year), it also accounts for the resources available to cover such obligations. It is calculated by dividing the Total Assets / Total Liabilities.

3. RESULTS AND DISCUSSION:

The study sample is equivalent to 96.03% of the total companies in the food and beverage sector in Colombia that are subjected to inspection and surveillance by the Superintendency of Companies of Colombia; per year, the company number varies: 2012 (733), 2013 (684), 2014 (669), 2015 (567). Regarding regional representation, Bogotá Capital District concentrates

31.67% of the companies in the food and beverage sector, followed by the department of Antioquia with 15.21% and Valle del Cauca with 12.58%.

Table 4. Annual descriptive statistics of the main balance sheet accounts

Year	N° Comp.	Total Active		Total Passive		Total Equity		Gross Profit		Operational Utility	
		Food	Beverage	Food	Beverage	Food	Beverage	Food	Beverage	Food	Beverage
2012	733	43903261	148836238	18008082	36783301	25895179	112052938	11497894	62751000	2707868	20960515
2013	684	51654813	152242102	22434194	34465775	29220620	117776326	12988341	61180416	2747867	18683261
2014	669	57740084	165847975	26230765	40373332	31509318	125474644	15095514	66705831	3286807	22677845
2015	567	23196867	10748023	11018270	5746907	12178597	5001116	6491384	3876891	1535595	1300731

* The amounts expressed are represented in thousands of Colombian pesos (COP).

Table 4 shows for 2014 the best performance of the food and beverage sector during the study period: a) in the acquisition of goods and rights (titles, intellectual property rights, machinery, equipment, land, etc., that are owned by the company represented in the total assets; b) although the debts that are the obligation of the company reflected in the total liabilities are increased in that same year; c) while the capital stock, legal reserves and accumulated profits or losses during the year are also increased in 2014 for the two economic activities.

Table 5. Financial Indicators for Food Sector companies

Indicator	2012	2013	2014	2015
Current Liabilities	25.7	29.9	25.7	26.4
Debt Ratio	50.0	48.3	50.7	52.9
Gross Margin (%)	22.1	27.9	25.9	26.7
Return on Assets (ROA) (%)	7.1	7.7	5.6	6.9
Return on Equity (ROE) (%)	9.8	31.9	11.8	23.0
Solvency Ratio	3.6	3.3	3.2	2.9

The values in Table 5 show in 2013 the food sector financed 29.9% of its business operations through annual payment loans with external creditors, an aspect that is related to the debt ratio (52.9%) of participation from creditors within the company. In this same year, the sector acquired a higher operating margin (25.9%), by making better use of the company's tangible and intangible assets (ROA of 7.7%), which led to an increase in investment of its shareholders (ROE 31.95%). Finally, it can be deduced that in 2013 the food sector in Colombia was the most profitable for national and foreign investment, and which allowed greater solvency to meet its financial obligations in the short term (De La Hoz et al., 2008; Amat, 2005).

Table 6. Financial Indicators for Beverage Sector companies

Indicator	2012	2013	2014	2015
Current Liabilities	13.7	15.2	17.1	31.2
Debt Ratio	40.8	40.8	45.5	53.8
Gross Margin (%)	-92.7	39.7	40.4	34.1
Return on Assets (ROA) (%)	5.7	-1.5	3.9	4.5
Return on Equity (ROE) (%)	10.9	1.7	5.2	-3.7
Solvency Ratio	6.0	5.5	6.4	2.5

Table 6 shows a greater range of annual indebtedness with suppliers for 2015 (31.2%), hence, for this same year, creditors have the highest participation within companies in the beverage sector (53.3%). In 2012, a negative operating margin can be seen that allows inferring a deficit in the income from direct sales of the sector, which makes it non-profit for investors (-92.7%), although in the following years there is a recovery behavior According to Hirsch, et al., (2014) it merits a differential inquiry (size, concentration, age and risk). The beverage sector is profitable in the use of its assets except for 2013 (ROA of -1.5); Also, for this same year, a greater reinvestment of the company's own funds and greater payment capacity of the sector is deducted, except in 2015 (with ROE of -3.7% and reduced solvency 2.6%). Finally, according to Albornoz, 2013 and Hirsch, et al., (2014) it is deduced that the Colombian beverage sector does not have increasing profitability over time, which limits its sustainability over time and the opening of new international markets.

4. CONCLUSIONS:

The study of the profitability, indebtedness and solvency indicators for the Colombian food and beverage sector for the period 2012-2015, showed a good use of productive assets, with a higher debt ratio higher in the beverage activities. Food production is the most profitable activity in the sector, with a greater margin for growth due to reinvestment by shareholders and financial solvency. In this sector it is necessary to investigate the future, in terms of agglomeration, location and differential behavior due to economic sub-activities.

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