


**RELATIONSHIP OF CASH MANAGEMENT TO PROFITABILITY OF CEMENT COMPANIES LISTED ON THE LIMA STOCK EXCHANGE**

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ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p><b>Received</b> 31 January 2023</p> <p><b>Accepted</b> 24 March 2023</p>	<p><b>Purpose:</b> The general objective was to determine the relationship of cash on hand (COA) management on profitability in cement companies listed on the LSE from 2017 to 2021.</p>
<p><b>Keywords:</b></p> <p>Management; Profitability; Liquidity; Turnover; Efficiency.</p>	<p><b>Theoretical framework:</b> The theoretical foundations found and cited in this work, allowed to know at a global level the behavior of cash management in companies and how it is related to profitability.</p>
	<p><b>Design/methodology/approach:</b> A quantitative, longitudinal, basic, descriptive, and correlational methodology was used. Also, the financial positions of cement industry companies listed on the LSE for the period 2017-2021 are examined.</p> <p><b>Findings:</b> The findings revealed that overall liquidity, acid test, working capital, net working capital over total assets, accounts receivable turnover, inventory turnover and fixed asset turnover are related to ROA and ROE. In contrast, the ratios that are least related to the business because they reached a value above 0.05 are working capital, net working capital over total assets, inventory turnover and accounts receivable turnover.</p> <p><b>Research, Practical &amp; Social implications:</b> cement companies were able to cope despite the significant challenges they faced before, during and after the pandemic; some needed additional capital, while others decided to obtain financial assistance.</p> <p><b>Originality/value:</b> It is essential that the organization's available cash is used and distributed correctly, according to the real needs that the company must cover in a specific period to pay its debts in a timely manner.</p> <p>Doi: <a href="https://doi.org/10.26668/businessreview/2023.v8i4.1616">https://doi.org/10.26668/businessreview/2023.v8i4.1616</a></p>

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## RELAÇÃO ENTRE A GESTÃO DE CAIXA E A RENTABILIDADE DAS EMPRESAS DE CIMENTO LISTADAS NA BOLSA DE VALORES DE LIMA

### RESUMO

**Finalidade:** O objetivo geral era determinar a relação entre a gestão de caixa e a rentabilidade nas empresas de cimento listadas na BVL de 2017 a 2021.

**Marco teórico:** Os fundamentos teóricos encontrados e citados neste trabalho nos permitiram compreender o comportamento global da gestão de caixa nas empresas e como ela se relaciona com a rentabilidade.

**Desenho/método/abordagem:** Foi utilizada uma metodologia quantitativa, longitudinal, básica, descritiva e correlacional. Ela também examina a posição financeira das empresas da indústria cimenteira listadas na BVL para o período 2017-2021.

**Resultados:** As conclusões revelaram que a liquidez geral, teste ácido, capital de giro, capital de giro líquido para o ativo total, rotatividade de contas a receber, rotatividade de estoques e rotatividade de ativos fixos estão relacionados ao ROA e ROE. Em contraste, os índices que estão menos relacionados aos negócios por terem atingido um valor acima de zero ponto zero, zero cinco são capital de giro, capital de giro líquido sobre o ativo total, giro de estoque e giro de contas a receber.

**Pesquisa, implicações práticas e sociais:** As empresas de cimento foram capazes de lidar com os desafios significativos enfrentados antes, durante e depois da pandemia; algumas precisaram de capital adicional, enquanto outras optaram por obter assistência financeira.

**Originalidade/valor:** É essencial que o dinheiro disponível da organização seja utilizado e distribuído corretamente, de acordo com as necessidades reais que a empresa deve atender em um período específico, a fim de pagar suas dívidas em tempo hábil.

**Palavras-chave:** Gestão, Rentabilidade, Liquidez, Faturamento, Eficiência.

## RELACION DE LA GESTIÓN DEL EFECTIVO DISPONIBLE CON LA RENTABILIDAD DE LAS EMPRESAS CEMENTERAS QUE COTIZAN EN LA BOLSA DE VALORES DE LIMA

### RESUMEN

**Propósito:** El objetivo general fue determinar la relación de la gestión del efectivo disponible (GED) sobre la rentabilidad, en empresas cementeras que cotizan en la BVL del 2017 al 2021.

**Marco teórico:** Los fundamentos teóricos encontrados y citados en este trabajo, permitieron conocer a nivel global el comportamiento de la gestión de efectivo disponible en las compañías y como este se relaciona con la rentabilidad.

**Diseño / metodología / enfoque:** Se utilizó una metodología cuantitativa, longitudinal, básica, descriptiva y correlacional. Asimismo, se examinan las posiciones financieras de las empresas de la industria cementera que cotizan en la BVL para el período 2017-2021.

**Resultados:** Los hallazgos revelaron que liquidez general, prueba ácida, capital de trabajo, capital de trabajo neto sobre el total de activos, rotación de cuentas por cobrar, rotación de inventario y rotación de activo fijo están relacionados con el ROA y el ROE. A diferencia de, los ratios que menos se relacionan con los negocios por haber alcanzado un valor superior a cero punto cero cinco son el capital de trabajo, capital de trabajo neto sobre el total de activos, rotación de inventario y rotación de cuentas por cobrar

**Investigación, implicancias prácticas y sociales:** las empresas cementeras pudieron salir adelante a pesar de los importantes desafíos que enfrentaron antes, durante y después de la pandemia; algunos necesitaban capital adicional, mientras que otros decidieron obtener asistencia financiera.

**Originalidad / valor:** Es fundamental que el efectivo disponible de la organización se utilice y distribuya correctamente, de acuerdo con las necesidades reales que la empresa debe cubrir en un período de tiempo específico para pagar sus deudas en tiempo y forma.

**Palabras clave:** Gestión, Rentabilidad, Liquidez, Rotación, Eficiencia.

## INTRODUCTION

According to López et al. (2020) management is a crucial part of any successful business. To remain competitive, companies need a financial management model that enables

them to maximize profits and increase the efficiency of their working capital. This position requires executives with unique skills to make investment and financing calls in uncertain and high-risk environments.

Kiran et al. (2022) mention that including human capital management in companies helps to increase the productivity and efficiency of employees, since it provides a global approach to manage the recruitment process and the control of competencies of each one, guiding them to a field where they can deploy all their capabilities, allowing to create an environment where they can develop significantly and provide better performance with respect to the objectives of the organization.

Gajdosikova et al. (2022) note that several models have been developed around the world to help track companies that artificially inflate their earnings. These earnings management methods help companies improve their economic utility and gain a competitive advantage. Armijos et al. (2020) mention that a small company in Ecuador faces financial problems related to its profitability linked to incorrect decision making; it is unquestionable then that it is urgent that this type of organizations have management tools that help to avoid making incorrect decisions that affect the mission, vision and goals that were set.

Likewise, Yang and Liu (2022) as they point out that investment strategies and financial literacy play an important role in a firm's profitability. There are many elements that make a firm's profitability uneasy, such as the interests of its stakeholders (both internal and external), the returns on its investments, the quality of its corporate decision making, and more.

Riyadh et al. (2022) consider that the firm's financing decisions are linked to its access to capital. Equity and debt are two potential venues for obtaining financial support. Here, management can set the amount of how much debt and equity financing to use, and investors can base their decisions accordingly. The cost of capital, in turn, is set by the financing structure and serves as the basis for establishing the required rate of return.

In addition, Durana et al. (2021) argue that there is more pressure on financial management and the need to show strong financial performance as economic conditions deteriorate and expectations decline. In conjunction, Mujiatun et al. (2021) state that capital structure is a description of how a firm is permanently financed, which can include both long-term debt and internal resources. Capital structure decisions are influenced by profitability and other factors such as financial management.

In Peru, Apaza et al. (2020) the growth of MSEs is slowed by factors such as informality, lack of access to adequate financial data, and the requirements of banks and other financial

institutions. As a result, MSE debt continues to increase despite the high interest rates charged by financial institutions such as banks and savings and loan associations. Also, Villafuerte et al. (2021) mentions the effects abroad can be seen when companies have problems in obtaining financing and do not adequately protect their assets. Due to all the above, the assets and profitability of companies have been damaged in different aspects, which is why the study of internal control and management is of interest.

After analyzing the EEFF of the five companies of the cement sector listed on the LSE for the periods 2017-2021, it was found that the paralysis of commercial activities worldwide due to the pandemic generated the lack of raw material necessary to produce cement, likewise, the purchase of such material decreased since Peruvian families decided to use their monetary resources to safeguard the lives of their parents, since most of those who contribute economically to the households lost their jobs. But this was gradually recovering, which is why in some companies there is a growth in their liquidity, inventory turnover, accounts receivable and fixed assets, which has had a positive impact on the recovery of their profitability, specifically in their ROA and ROE indicators. These are the reasons that encourage us to study this type of companies.

The objective was: To determine the relationship of available cash management on the profitability of cement companies listed on the LSE, 2017-2021. Therefore, it was considered as a hypothesis: There is a significant relationship of available cash management on the profitability of cement companies listed on the LSE, 2017-2021.

## **LITERATURE REVIEW**

Bai et al. (2022) found when comparing the profitability of different industries, focusing solely on profit margin can be misleading as it does not take into account variations in asset utilization efficiency and volatility of returns, two key factors that could lead to an incomplete assessment. Also, Atabay and Çalıyurt (2022) as they showed that financial services companies fared better than a in terms of profitability, although there was a noticeable gap between sectors. However, companies operating in the transportation, telecommunications and warehousing industries showed the lowest profitability.

Likewise, Aguilar et al. (2020) because management is deficient, exceeding 70% compliance. In addition, it lacks solvency, and its directly collected funds are not invested in public works; its collected revenues are not deposited the same day, which represents a risk to its cash flow; and neither its assets nor its liabilities are evaluated for debt collection purposes

if the debtor is a legal entity. Similarly, Yoza et al. (2020) because the possibilities of error classification and cost-benefit analysis functions are calculated to assist in decision making on the most crucial elements of financial and fiscal management.

In contrast, Colina et al. (2021) who found that the demand, sales, productivity, and R of the companies studied have decreased, suggest that the impact has been negative. Also, Reyna et al. (2021) noted that the level of relationship between financial management and loan recovery is significant. This shows that, if effective financial management is in place, it is possible to recover loans made to clients. Similarly, Aguirre et al. (2020) since the indicators analyzed present a normal probability distribution, as shown by the results with a positive return on equity (ROE) and sufficient distortion to be a good financing option, the results for the period are encouraging in general. Although the return on assets (ROA) was low, it also showed a low distortion, which serves as motivation for the organization to follow a strategy to increase profitability.

Finally, Montaña et al. (2020) decreed that the management exercised by the institutions analyzed was inadequate, which prompted reflection on these practices because they are the means by which decisions are made regarding monetary flows in order to achieve an optimal inflow and outflow of capital or financial resources. The approaches considered in the management of available cash was the cash cycle theory since it highlights that if companies achieve efficiency in operating margins, innovation, and labor productivity they will have sufficient economic resources to meet their obligations to third parties in the short term that they have assumed (Juichia et al. 2022; Zhang et al. 2022).

Also, the cash flow theory was considered where Huan and Tarkom (2022) and Islam et al. (2021), who state that this approach reveals that when the organization has a stable and solid cash flow over time, it is because it has achieved efficiency in the management of its monetary resources, which allows it to obtain a better financial performance in times of uncertainty, thus increasing the value of its shares or keeping them stable in the market.

Management according to Villafuerte et al. (2021) is an organizational process whose objective is to examine, evaluate, acquire, and put to good use the company's financial assets. In contrast, Abad et al. (2021) states that in an entity it is related to the work that is in charge of profits, expenses, cash and credit, so that it has the most satisfactory means to achieve its objective, which is to increase the value of the entity for its shareholders. Huacchillo et al. (2020) mention that it also refers to the process of acquiring, safeguarding, and allocating cash to achieve objectives that allow determining parameters in remuneration or allocation of



financial assets, both assets and liabilities. Similarly, Basyith et al. (2021) mention that efficient financial decisions, profitable investment choices and appropriate payment options contribute to maximizing the value of a company.

According to Sensini and Vasquez (2021) they mention that decisions regarding the active and passive forms of working capital fall within the scope of "current capital management policies". The accounts receivable rotation allows the organization to avoid difficulties by creating billing cycles for third parties and improve the timely fulfillment of its commercial obligations through the rotation of billing cycles, which allows it to overcome future difficulties with financial stability (Mantilla & Huanca, 2020).

The average accounts receivable is the collection of subsidiary accounts that figure the amounts owed to users for services and sales according to the direction in which the organization is developing the business with which it is related, and likewise to shareholders and employees for loans requested, and because they are related to financial decisions (Morales & Carhuancho, 2020). Inventory turnover is a measure of how many times in a year a given inventory investment is brought to market and how many times it is replenished. (Cedeño, 2020). The average inventories according to Arroba et al. (2018) the term "inventory" refers to stocks of commodities, intermediate and finished goods, it also refers to transport vehicles located at various points along a company's logistics management chain.

Cost of sales is a record of what was made on goods sold during the accounting period. The costs associated with a company's product include not only the raw materials and machinery used in its production, but also the labor invested to manufacture it (Gutierrez & Tapia, 2020). Fixed asset turnover for Vazquez et al. (2017) the concurrence of liquidity and profitability can occur if sales can be maintained through higher fixed asset turnover and if investment in current assets is reduced.

Fixed assets are those that a company owns and uses in its operations to generate income, they correspond to the core of the organization that, properly ordered, can be generated; however, if the management is not properly recorded when this happens, the budget of allocated physical assets becomes obsolete (Zambrano & Murillo, 2020). Total asset turnover aims to quantify the company's sales activity, or the number of times it can distribute among its users a cost equitable to the financing provided; in other words, a higher turnover rate indicates a more efficient use of assets and a higher overall productivity, which translates into higher profits (Cedeño, 2020).

Total assets are those that measure a company's ability to reinvest and reflect its financing strategy. The available cash of cement companies is measured by their liquidity (Bermeo & Armijos, 2021). The general liquidity for Nolazco et al. (2020) The term "liquidity", which refers to the cash available to a company to pay its short-term debts, is an excellent example of how financial metrics can be used. The acid test according to Vásquez et al. (2021) this ratio shows how well an organization can pay its short-term debts using only its liquid assets (minus its inventory).

Working capital for Cotrina et al. (2020) the optimization of working capital in economic environments is fundamental; that is, a company's operations can only be successful if its inventory, accounts receivable and accounts payable are managed efficiently, allowing for an optimal profit/loss ratio. The net working capital over assets for Gámez et al. (2021) investments in short-term assets are what we understand by "working capital", conceiving that the management of these assets is what ultimately determines the company's position. The approach considered for profitability was classical economic theory, where Cole (2022) states that it is extremely essential to take into account in all business processes factors such as profit margins, financial mechanisms and, above all, the investment-demand ratio, because it is these factors that make it possible to know whether the business is or will be profitable over time.

In addition, the pecking order theory was considered, where Jansen et al. (2022) and Su et al. (2022) who point out that in order to achieve an optimal structure, the debt advantage must be balanced with the value of bankruptcy costs, meaning that the organization's shareholders must know the exact moment when they must liquidate the company, otherwise they will not be able to meet their obligations to creditors. An organization's profitability measures its ability to pay dividends to shareholders after deducting expenses and taxes; it also shows the profit earned on net sales for principal currency exchange and incidental costs; and it predicts future earnings (Álvarez & Pizarro, 2022).

The R according to Caiza et al. (2020) define it as a measure of the performance of an organization's activities during a specific period that is not related to its ability to repay a loan. Aguirre et al. (2020) profitability, a broad and globally significant metric, allows an organization to estimate its capacity to generate profits, which allow it to finance its operations as part of its financial analysis.

The gross margin for Párraga et al. (2021) The "gross margin" or "bottom line" of the organization is the amount earned after paying all operating costs and taxes, but before paying employees, means the value of the financial management indicators used to determine whether

or not a company is financially stable. Gross profit according to Ordoñez et al. (2021) gross profit refers to the final selling price of a product; profits are expressed as a percentage of sales; and a correlation between profit margin and expenses is determined. Profit margin is the one that classifies as a measure of profitability; its value is calculated by subtracting the company's operating expenses from its total revenues (Barrera, 2020).

Net income is the amount generated after all expenses and costs have been deducted from an organization's earnings during an accounting period (net profit). This figure is wrapped in the profit and loss account of the organization whenever it is lower than the first one (Paredes, 2020). Return on assets determines how well management has put its assets to work producing profits. Margin increases the efficiency with which resources are used to produce profits. While debt is an important consideration, increasing utility margins or increasing asset turnover can improve the return on investments (Rodriguez, 2020).

Assets are high quality liquid assets that can be converted to cash quickly and with minimal loss of value. The degree to which an activity can be quickly converted to cash is affected by several factors, including the underlying stress scenario, the amount of activity to be converted, and the time horizon considered (Parrales & Castillo, 2018). Return on equity is a financial ratio used to measure the return on investment for shareholders. An increasing return on equity (ROE) indicates that the company is efficiently creating value for its shareholders without the need for more financing (Rodriguez, 2020). Equity for Gómez and Cirvini (2022) Heritage assets are a resource whose reuse helps to conserve their material and cultural values, which in turn helps to conserve them, and even extends their useful life and ensures their continued incorporation into the present.

## **DATA AND METHODOLOGY**

It was basic, because such work already exists in the theoretical field and is aimed at examining practical problems. According to Villanueva (2020) basic research is that whose main objective is to improve scientific knowledge based on theory. According to Arroyo (2020) the study is longitudinal because it is based on establishing a pattern in the behavior of a population sample over time with respect to the selected independent variables.

It is a descriptive study, with the research phenomenon as the only criterion. According to Guevara et al. (2020) define it as the description of certain essential characteristics of groups of homogeneous phenomena using systemic criteria that make it possible to establish the structure or behavior of the phenomena under study. Since the intended scope of this work is



limited to establishing the degree of connection between variables, it will be a correlational study. As Villanueva (2020) the objective is to determine whether there is a positive or negative correlation between a set of events, categories, or variables. The study consisted of the EEEFFs of five companies in the cement sector listed on the LSE, 2017-2021. Hernandez and Mendoza (2018) is the sum of all the instances that consume a trial bond.

The data were obtained from the financial statement reports submitted by the companies and a documentary analysis was carried out using Excel software. Ponce and Pasco (2018) “argue that in the quantitative method, research is carried out in stages, with special emphasis on a thorough literature review at the beginning, formalization of hypotheses, work demonstrates on a large scale, application of numerical measurement tools and statistical data analysis” (p.45). For the data, the documentary analysis guide was considered, then they were worked with Microsoft Excel to calculate and analyze the company's data, as well as its financial ratios. Gómez et al. (2020) point out that a content analysis and a comparative methodology formed the basis of the methodology used in the present study.

## **RESULTS AND DISCUSSIONS**

Table 1 shows that the descriptive results of company 1 have a general liquidity of one sol and forty cents to three soles and thirty-one cents for each monetary unit of debt. This reveals that the organization has sufficient monetary resources to face its debts of less than one year, even though this company should reinvest its assets creating new headquarters or in new projects, otherwise it will not achieve good results in the long term, since it would have too many idle assets that would not be generating new economic income.

On the other hand, if we remove the inventories from the calculation of its liquidity, this company has fifty-six cents to one sol with fifty-seven cents for each sol of debt, which means that, despite discounting its inventories, the company has sufficient resources to cover its obligations with third parties in the shortest possible time. Regarding the TC and CTNTA, the company does have the money to cover the daily needs for the proper functioning of its activities, since it has more than one hundred thousand soles and 20% for such emergencies.

The inventory turnover achieved shows that efficiency is the word and the objective that this company knows best, since they went from 19 times to 31 times a year, in recovering the accounts receivable that their customers had pending, since even though the pandemic generated several inconveniences, they were able to recover due to the immediate actions that the shareholders and manager took at the time. All this has allowed the company to improve its

inventory turnover up to 226 times per year, its fixed asset turnover up to 98 times per year and its total asset turnover up to 61 times per three hundred and sixty days, which has had a positive impact on the profitability of the organization, since they went from 2% to 5% (ROA) and from 4% to 13% (ROE).

Also, it can be seen that company two had a general liquidity of up to one sol and fifty-two cents for each sol of debt, demonstrating that in some periods this entity did not have the necessary resources to assume its commitments in the established terms due to the closing of businesses in times of social confinement, but after that, it has been recovering.

But when taking away its inventories and applying the acid test, the company reached up to eighty-seven cents for each sol of debt, this shows that in these last five accounting periods, the company did not have enough money to face its current liabilities that it had at the time. The CT and CTNTA ratios show a maximum of more than five hundred thousand soles, and 0.07%, which shows that although it had the necessary capital, the excessive short-term debts could have caused irreversible damage to the financial situation of this company.

The CCR reached a maximum of 64 times per year, the IR reached a maximum of 147 times per year, the total assets turnover reached 0.38 times per year, being these the reasons that although the company did not have liquidity at the time, it was able to overcome these obstacles because the maximum ROA achieved was 44% and the maximum ROE was 9%, these data have allowed the organization to continue achieving economic benefits that allow it to continue operating in this competitive market. Likewise, it is certain that company 3, achieved in the last five accounting periods, a maximum general liquidity of one sol and fifty-two cents, in addition, it reached a maximum acid test of eighty-seven cents for each sol of debt, this reveals that the closing of the businesses in the first semester of 2020 and the post-pandemic caused that it does not have enough economic resources to cover its debts assumed with suppliers and with the commitments it had with its workers.

On the other hand, the maximum TC it had available was greater than five hundred thousand soles and the CTNTA had a maximum of 0.07%, which shows that this organization was continuously affected by the absence of sales in 2020 and by the loss of the market in previous periods. After these periods of reduced income, the shareholders made the right decisions, which allowed them to increase their CCR up to 64 times a year, increased their IR to 147 times and their fixed asset turnover to 0.38%, which improved their ROA from 3% to 7% and their ROE from 1% to 9%.

In addition, it is noted that company four had a maximum LG of one sol and fifty-five cents for each monetary unit of debt and an acid test of ninety-four cents for each sol of debt, which shows that the management decisions taken before, during and after the pandemic allowed this company to have sufficient monetary resources to assume its commitments to its creditors. Likewise, it is observed that the TC exceeded five hundred thousand soles and the CTNTA had a maximum of 8% per year. Also, its CCR improved from 18 times to 51 times a year, likewise, its IR went from 43 times to 147 times a year, even its RAF went from 17% to 54%, followed by its ARR which went from 10% to 38%, this shows that the efficiency and effectiveness achieved during these periods allowed the company to obtain a maximum ROA of 6% and an ROE of 9%, being the factors that have allowed this company to continue increasing its economic benefits year after year.

Likewise, the data obtained from company five is detailed, indicating that it had a maximum LG of one sol and forty-three cents for each sol of debt and a maximum acid test of eighty-nine cents for each monetary unit of debt assumed, revealing that this entity did present in various periods a lack of payment capacity of its short-term debts, thus, its TC was negative in more than one hundred thousand soles as a minimum, but in spite of this, it improved reaching a maximum of more than five hundred thousand soles, this also happened with the CTNTA that went from minus one percent to seven percent.

On the other hand, its CCR went from 45 times to 72 times per year, its IR went from 76 times to 123 times per year, its RAF went from 41% to 50% per year, and its ARR went from 33% to 39%, thus revealing that little by little the company managed to improve its results, which was evidenced in its ROA since it achieved a maximum of 36% and a maximum ROE of 69%. In view of this, it is important to consider Bai et al. (2022) because they demonstrated by comparing the profitability of different industries, focusing only on profit margin is misleading as it does not take into account variations in asset utilization efficiency and volatility of returns. In addition, Atabay and Çalıyurt (2022) who mentioned that financial services companies fared better than in terms of profitability, although there was a noticeable gap between the sectors.

Table 1 Descriptive statistics of variables and company dimensions: company 1 and 2

	N	Minimum	Maximum	Media	Standard Deviation	Variance	Asymmetry		Kurtosis	
							Statistic	Error	Statistic	Error
LG	5	1.32	1.52	1.4140	.07127	.005	.412	.913	1.899	2.000
PA	5	.63	.87	.7960	.09788	.010	-1.719	.913	2.997	2.000
CT	5	306580	561830	429201.40	107819.831	11625116036.800	.336	.913	-2.234	2.000
CTNTA	5	.04	.07	.0560	.01342	.000	.166	.913	-2.407	2.000
RCC	5	50.00	64.00	55.8000	5.21536	27.200	.982	.913	1.655	2.000
RI	5	104	147	121.40	16.532	273.300	.926	.913	1.005	2.000
RAF	5	.51	.70	.6360	.07765	.006	-1.314	.913	1.818	2.000
RAT	5	.28	.38	.3520	.04087	.002	-2.070	.913	4.416	2.000
ROA	5	3.00	44.00	12.0000	17.90251	320.500	2.227	.913	4.969	2.000
ROE	5	1.00	9.00	6.4000	3.28634	10.800	-1.434	.913	2.094	2.000
N	5									

Source: Prepared by the authors based on SPSS Version 26(2022).

	N	Range	Minimum	Maximum	Media	Standard Deviation	Variance	Asymmetry		Kurtosis	
								Statistician	Error	Statistician	Error
LG	5	.20	1.32	1.52	1.4140	.07127	.005	.412	.913	1.899	2.000
PA	5	.24	.63	.87	.7960	.09788	.010	-1.719	.913	2.997	2.000
CT	5	255250	306580	561830	429201.40	107819.831	11625116036.800	.336	.913	-2.234	2.000
CTNTA	5	.03	.04	.07	.0560	.01342	.000	.166	.913	-2.407	2.000
RCC	5	13.73	50.30	64.03	55.7300	5.13946	26.414	1.204	.913	2.154	2.000
RI	5	43	104	147	121.40	16.532	273.300	.926	.913	1.005	2.000
RAF	5	.19	.51	.70	.6360	.07765	.006	-1.314	.913	1.818	2.000
RAT	5	.10	.28	.38	.3520	.04087	.002	-2.070	.913	4.416	2.000
ROA	5	4.00	3.00	7.00	4.8000	1.48324	2.200	.552	.913	.868	2.000
ROE	5	8.00	1.00	9.00	4.8000	3.63318	13.200	-.202	.913	-2.593	2.000
N	5										

	N	Range	Minimum	Maximum	Media	Standard Deviation	Variance	Asymmetry		Kurtosis	
								Statistician	Error	Statistician	Error
LG	5	.22	1.33	1.55	1.4460	.08173	.007	-.274	.913	.458	2.000
PA	5	.30	.64	.94	.8240	.11502	.013	-1.199	.913	1.620	2.000
CT	5	270800	314315	585115	457861.80	111636.777	12462769915.700	-.216	.913	-1.784	2.000
CTNTA	5	.04	.04	.08	.0600	.01581	.000	.000	.913	-1.200	2.000

RCC	5	18.00	33.00	51.00	39.2000	7.04982	49.700	1.593	.913	2.665	2.000
RI	5	43	104	147	121.40	16.532	273.300	.926	.913	1.005	2.000
RAF	5	.17	.37	.54	.4720	.06419	.004	-1.090	.913	1.699	2.000
RAT	5	.10	.28	.38	.3500	.04062	.002	-1.865	.913	3.543	2.000
ROA	5	5.50	.50	6.00	3.5000	2.00000	4.000	-.586	.913	1.395	2.000
ROE	5	8.00	1.00	9.00	6.0000	3.08221	9.500	-1.281	.913	2.000	2.000
N	5										

Source: Prepared by the authors based on SPSS Version 26 (2023).

	N	Minimum	Maximum	Media	Standard	Variance	Asymmetry		Kurtosis	
							Statistician	Error	Statistician	Error
LG	5	.90	1.43	1.0560	.21870	.048	1.808	.913	3.212	2.000
PA	5	.42	.89	.5800	.19196	.037	1.347	.913	1.476	2.000
CT	5	-145493	585115	66424.80	305624.669	93406438447.200	1.751	.913	2.910	2.000
CTNTA	5	-.01	.07	.0100	.03464	.001	1.925	.913	3.667	2.000
RCC	5	45.00	72.00	57.2000	11.18928	125.200	.398	.913	-1.750	2.000
RI	5	76	123	98.20	17.050	290.700	.359	.913	1.207	2.000
RAF	5	.41	.50	.4500	.04062	.002	.149	.913	-2.408	2.000
RAT	5	.33	.39	.3600	.02236	.001	.000	.913	.200	2.000
ROA	5	1.00	36.00	8.6000	15.33949	235.300	2.220	.913	4.941	2.000
ROE	5	2.00	69.00	17.2000	29.01207	841.700	2.215	.913	4.924	2.000
N	5									

Source: Prepared by the authors based on SPSS Version 26 (2023).

Table 2 shows that firm five is the firm with the highest correlation with the liquidity and G ratios, seven out of eight reached a bilateral sigma of less than zero point zero five, thus demonstrating that the LG, acid test, CT, CTNTA, RCC, RI and RAF are related to ROA and ROE.

On the other hand, the company that achieved parametric results with seven ratios is number four, since the sigma reached was higher than zero point zero five, demonstrating that it does not maintain a significant relationship with the LG, acid test, CT, CTNTA, RAF, and the RCC in ROA, but, in the ROE it achieved a sigma lower than zero point zero five, demonstrating that there is a significant relationship, likewise, the RAT reached a p value lower than zero point zero five with the ROA and ROE, which demonstrates that they maintain a significant and almost perfect correlation.

Of the L ratios, the least related to the companies for having achieved a p value greater than zero point zero five, are the TC, the CTNTA, the RI, and the RCC, indicating that there is no significant connection with the R on assets and with the return on equity.

It is important to consider Nolzco et al. (2020) pointed out that available cash must be considered to meet the payment of those economic commitments that the company assumed at the time. In other words, a company's operations can only be successful if its inventory and outstanding accounts are managed efficiently, allowing an optimal relationship between profits and losses (Cotrina et al. 2020).

Through this, Mantilla, and Huanca (2020) externalize that the organization through efficiency and effectiveness manages to avoid difficulties by creating billing cycles for third parties and improving the timely fulfillment of its commercial obligations through the rotation of billing cycles. In this sense, Alvarez, and Pizarro (2022), point out that this allows the company to measure its ability to pay dividends to shareholders after deducting expenses and taxes; it also shows the profits obtained from net sales by change of main currency and incidental costs; and predicts future profits.



Table 2 Relationship of liquidity and management ratios to the profitability of companies in the cement sector listed on the LSE, 2017-2021

		E1		E2		E3		E4		E5	
		ROA	ROE	ROA	ROE	ROA	ROE	ROA	ROE	ROA	ROE
LG	Pearson	-.901*	-.924*	-.739	.120	-.244	-.219	-.444	-.357	.947*	.953*
	Sig.	.037	.025	.154	.848	.692	.723	.454	.555	.015	.012
	N	5	5	5	5	5	5	5	5	5	5
PA	Pearson	-.827	-.686	-.937*	-.499	-.047	-.121	-.522	-.762	.882*	.878*
	Sig.	.084	.201	.019	.392	.941	.847	.367	.135	.048	.040
	N	5	5	5	5	5	5	5	5	5	5
CT	Pearson	-.668	-.603	-.634	.199	-.278	-.316	-.294	-.216	.940*	.948*
	Sig.	.218	.282	.250	.748	.651	.605	.631	.727	.018	.014
	N	5	5	5	5	5	5	5	5	5	5
CTNTA	Pearson	-.711	-.669	-.666	.215	-.509	-.512	-.316	-.103	.960**	.965**
	Sig.	.178	.217	.220	.728	.382	.378	.604	.870	.010	.008
	N	5	5	5	5	5	5	5	5	5	5
RCC	Pearson	-.038	-.447	.043	-.796	.394	.426	-.647	-.966**	.707	.701
	Sig.	.952	.451	.945	.107	.512	.475	.238	.007	.032	.038
	N	5	5	5	5	5	5	5	5	5	5
RI	Pearson	-.042	-.437	.059	.645	-.373	-.354	-.155	.554	.824	.829
	Sig.	.946	.462	.925	.240	.536	.559	.803	.332	.006	.002
	N	5	5	5	5	5	5	5	5	5	5
RAF	Pearson	.641	.899*	.007	.880*	-.888*	-.902*	.613	.733	.710	.726
	Sig.	.244	.038	.991	.049	.044	.036	.271	.159	.029	.043
	N	5	5	5	5	5	5	5	5	5	5
RAT	Pearson	.768	.962**	.215	.942*	-.968**	-.948*	.785	.938*	.036	.058
	Sig.	.029	.009	.728	.017	.007	.014	.016	.018	.954	.926
	N	5	5	5	5	5	5	5	5	5	5

Source: Prepared by the authors based on SPSS Version 26 (2023).

Where: LG: General liquidity; PA: Acid test; TC: Working capital; CTNTA: Net working capital over total assets; RCC: Accounts receivable turnover; RI: Inventory turnover; RAF: Fixed asset turnover; RAT: Total asset turnover; E: Enterprise.

## CONCLUSIONS

The analysis of the financial information of the five companies studied shows that the liquidity and G ratios will be related to profitability if there is evidence of an increase or decrease in the same accounting period.

For this reason, it is extremely necessary that the available cash available to the organization must be used and distributed correctly, according to the real needs that the company must have in a certain period of time to cover its short-term debts, since this allows improving the efficiency and effectiveness of the efforts made in the CCR, in the IR, in the RAF and in the RAT, since this consciously maintains the positive TC and an effective L that allow performing and executing each one of the activities programmed in the company, bringing as a result, increase its RAT, in the IR, in the RAF and in the RAT, since this consciously maintain the positive TC and an effective L that allow to carry out and execute each one of the programmed activities in the company, bringing as a result, to increase its R in its ROA and ROE indicators.

Some had to inject additional capital, others decided to obtain financial leverage, while others were able to take advantage of their own resources without over-indebting the company, but all of them achieved an R in accordance with the needs of their organization. For this reason, it is important that management and the board of directors maintain assertive and direct communication, as this allows them to know in a timely manner the risks that arise at a given time, to take viable actions for the benefit of the company and each of its employees.

It is unavoidable that undergraduate and graduate students worldwide study these variables and indicators in different companies, even, it is necessary to consider other financial ratios to delve deeper into the subject, since this allows to know the economic progress of companies at exact moments that allow them to demonstrate the restrictions that are generating decreases in ROA and ROE.

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