LIQUIDITY AND PROFITABILITY OF COMPANIES LISTED ON THE LIMA STOCK EXCHANGE IN THE CONTEXT OF THE COVID19 PANDEMIC

José Luis Chirinos Mendoza
Universidad Privada de Tacna
Tacna, Perú
josechirinosm92@gmail.com

Reception date: 11/09/2023 – Approval date: 12/05/2023
DOI: https://doi.org/10.36995/j.visiondefuturo.2024.28.02.006.en

ABSTRACT

The research objective was to determine the relationship between the liquidity and profitability variables of the companies listed on the Lima Stock Exchange during the years 2020 and 2021, to demonstrate the prevalence of the problems of said variables in the various sectors as an effect of the covid 19 pandemic. The research was carried out with the deductive process, with a retrospective cross-sectional non-experimental design, applying a documentary analysis sheet to collect the required data from the audited financial statements of the companies under study. The results revealed that a high percentage (more than 30%) of the companies studied either had liquidity less than 1 or greater than 2 and negative profitability. It was demonstrated that the liquidity problem is directly and significantly related to the profitability problem in the evaluated ratios.

KEYWORDS: Liquidity, Profitability, Pandemic, COVID, Stock market.

INTRODUCTION

In normal contexts of economic stability and absence of fortuitous events, the liquidity problem has been present in various companies, generating worrying consequences, for example, inability to meet financial obligations, limitations for reinvestment and expansion, dependence on expensive loans, distrust of suppliers, distrust of business partners and risk of bankruptcy (Claeys, et al., 2023; Nishihara & Shibata, 2021).

So, in contexts of crisis, economic recessions, inflation, natural disasters or epidemics such as Covid 19 (fortuitous events), the problem of liquidity and profitability is expected to be more frequent in companies (Roca et. al. 2020). It is undeniable that the Covid 19 pandemic generated significant changes throughout the world, at a social, political, economic, technological and logistical level (ECLAC, 2020). These changes affected the functioning of companies, since they were forced to adapt without having had a prior plan (Puican, 2021).

In that same sense, not all companies have the ability to adapt efficiently to changes in the environment to continue operating in the market. Particularly in the covid 19 pandemic (year 2020 -2021), many companies could not adapt to the new turbulent environment characterized by mandatory quarantine for residents, where they worried about surviving by limiting themselves to buying the basics. During the pandemic, demand for products and

services fell significantly, causing many companies to stop operating due to decreased sales, limited profitability and liquidity (Smolje, 2020; Zareen et al., 2022).

The aforementioned situation has been observed in different parts of the world, as is the case in the United States of North America, a company in the food sector faced significant liquidity losses due to the blockades of the COVID-19 pandemic. . In this situation, the company had to deal with the negative consequences of the absence of external financing, accumulated expenses, pending lease payments, and extension of accounts payable to suppliers (Almeida, 2020).

In companies in China, the pandemic also caused a loss of short-term liquidity, leading to a decrease in demand for goods and services and affecting the ability of companies to operate normally (Aperjis et al., 2023; Gofran et al. al., 2022). In the same way, in a hardware company in Ecuador, the impact of the pandemic and consumer requirements caused a major liquidity problem, since a lot of stock was obtained, and the amount of merchandise took time to sell. (Parrales & Ramírez, 2022).

Peruvian companies were not immune to liquidity problems during the Covid 19 pandemic. According to Ramos (2021), sales problems had a negative impact on the liquidity of companies in Metropolitan Lima. Likewise, liquidity problems gave rise to companies having limitations in accessing working capital and assets, affecting the normal development and performance of their activities.

In the Huancayo region of Peru, microbusinesses also had liquidity problems during the pandemic. These problems were generated by the increase in rescheduled credits, merchandise paralyzed in warehouse (for more than four months), increase in debts with third parties, decrease in sales income and inability to control operating expenses as a consequence of the cancellation of consecutive salaries of the workers (Espinoza, 2021).

Ramírez and Maldonado (2020) state that liquidity and profitability problems are related and mutually influence various aspects of companies' financial management. Maintaining an adequate level of liquidity is essential to ensure short-term solvency, maintaining good profitability is essential for long-term success and sustainability.

Reschiwati et al. (2020) agree with what is indicated by Ramírez and Maldonado (2020), since they affirm that liquidity is directly related to the profitability of companies. According to Reschiwati et al., a high level of liquidity means that the company has a greater capacity to obtain financing; When the company has a good liquidity situation, lenders perceive it as less risky, so loans can be in large quantities and at low costs, ultimately directly impacting profitability.

Along the same lines as the previous ones, Chaudhary and Raja (2021) mention that a profitable company usually has a better capacity to generate cash from its operations, thus

generating greater liquidity. These authors state that if a company is profitable, it has the ability to generate sufficient cash flow to meet its obligations and, at the same time, invest in growth opportunities.

Contradicting the above, other authors affirm that there is no significant relationship between liquidity and profitability in companies. For example, Laura and Phala (2021) conducted a study in a private school over a period of time, finding that these variables did not are significantly related. Velarde (2018) also conducted a study on the liquidity and profitability of a transportation company in Lima, in which she concluded that there is no significant relationship between both variables.

Low or limited profitability in companies has also been a frequent problem in stable environments, so it is logical to think that the problem is more prevalent in turbulent environments such as the Covid 19 pandemic. The profitability problem implies that the company has less income than it needs to cover its operating costs and expenses, limited capacity to make new investments and high risk of ceasing to operate in the market (Medina et al., 2021).

Syed et al. (2022) state that companies in South Asia had profitability problems during the Covid-19 pandemic. The authors clearly showed the financial situation of several companies before and after the epidemic, demonstrating the negative effects on profitability. Reschiwati et al. (2020) also demonstrated profitability problems in companies listed on the Indonesian stock exchange; The authors provided insight into the specific ways this issue influenced business growth, company size, and value.

In Peru, Cueva et al., (2021) carried out a study in a private company in the Jaén area, demonstrating evidence of profitability problems on assets and equity. Similarly, Chilón (2020) found low profitability in a company in Chota province due to poor internal management.

On the Lima – Peru Stock Exchange (BVL), approximately 188 companies are listed per year, from various sectors: Banks and Financial Companies, Industrials, Public Services, Insurance, Mining, Agriculture, other institutions, AFP and various companies. These companies were not immune to the difficult environment generated by the covid 19 pandemic in the years 2020 and 2021, an environment characterized by social isolation, low credit supply, drop in sales, limitations in accessing supplier supplies; an environment to which companies had to adapt to continue existing in the market.

To help companies, the Peruvian government approved the program called “Reactiva Perú”, created by Legislative Decree 1455, and modified by Legislative Decree 1457; This was an unprecedented program in Peru, which aimed to provide a quick and effective response to the liquidity needs that companies face due to the impact of Covid-19. The aim was to ensure continuity in the payment chain, providing guarantees to micro, small, medium and large

companies so that they can access working capital credits, and thus be able to meet their short-term obligations with their customers. workers and suppliers of goods and services.

Although the “Reactiva Perú” program was implemented, it is unknown, in the scope of investigations, what was the liquidity and profitability situation of the companies listed on the Lima stock exchange in the context of the covid19 pandemic (years 2020, 2021), that is, if they really had liquidity and profitability problems, what was the prevalence of these problems and their relationship. For this reason, an investigation was carried out to determine the liquidity and profitability of these companies during the years 2020 and 2021, since from these results we seek to demonstrate the number of companies (for each sector) that had problems in these variables and also demonstrate how the relationship between these problems has been.

DEVELOPMENT

Liquidity is a fundamental concept that refers to the ability of an asset or financial instrument to be quickly converted into cash without incurring significant losses. In other words, liquidity represents the ease and speed with which an asset can be bought or sold in the market without substantially affecting its price (Quiroz et al., 2010).

Liquidity is essential for a company, economy or financial market, as it allows the fluid exchange of goods, services and financial assets (Mori et al., 2021). In a broader sense, according to Díaz (2012), liquidity can also refer to the availability of cash or liquid assets that a person or entity has to meet its financial obligations.

The importance of liquidity lies in its relationship with solvency and financial stability. A company or financial institution that lacks sufficient liquidity may face difficulties in meeting its payment obligations, which could lead to insolvency and financial collapse (Nava, 2010). Therefore, proper liquidity management is essential to ensure the long-term viability of a company and its ability to face contingencies and take advantage of opportunities in the business environment.

There are different theories and approaches developed by various authors that address the liquidity of a company from different perspectives. For this study, John Maynard Keynes' liquidity preference model is taken into account.

According to Novelo (2016) Keynes postulates that people have an innate preference for liquidity, that is, they have a tendency to maintain their wealth in the form of cash or liquid assets easily convertible into cash. This preference is based on the need to have easily available resources to face future contingencies or take advantage of unforeseen opportunities (Martín, 2020).

Furthermore, the author mentions that the preference for liquidity affects people's spending and saving decisions because, in periods of economic uncertainty or pessimism, the

preference for liquidity tends to increase, leading to a greater desire for liquidity. keeping money in cash instead of investing it in other assets or spending it on goods and services (Rísquez, 2006).

In the business environment, the preference for liquidity is related to the need to have sufficient liquid resources to meet obligations and maintain financial stability. Companies need to have cash and liquid assets available to cover operating expenses, make payments to suppliers and meet other financial obligations (Posada, 2014).

In this sense, Keynes' liquidity preference model in companies is related to working capital management and financial planning (Airout et al., 2022). Companies must evaluate their liquidity needs, consider expected cash flows and make decisions about the most efficient way to maintain an adequate level of liquidity, so this may involve inventory management, customer credit policies and structuring. of its financial liabilities and assets (Culham, 2019).

Liquidity can be analyzed and evaluated from different dimensions that help understand and measure the ability of an asset or an entity to meet its financial obligations in a timely manner. In this sense, Gutiérrez and Tapia (2020) present the following key dimensions of liquidity:

General liquidity. It is a financial indicator that measures a company's ability to meet its short-term obligations, mainly its debts, using its short-term assets. This indicator provides a measure of the company's financial solvency in the short term.

$$\text{General liquidity} = \frac{Current\ active}{Active\ passive} \qquad \text{[Ec. 1]}$$

Acid liquidity. Also known as acid test ratio or quick ratio, it is a financial indicator that measures a company's ability to meet its short-term obligations using its most liquid assets, but excluding inventories.

$$\text{Acid liquidity} = \frac{Current\ active - inventories}{Active\ passive} \qquad \text{[Ec. 2]}$$

Defensive liquidity. It is a financial indicator that measures the degree of coverage of cash accounts, banks and marketable securities in relation to a company's current liabilities. In addition, it is used to evaluate a company's ability to meet its short-term obligations using only the most liquid assets that are easily convertible into cash.

$$\text{Defensive liquidity} = \frac{Cash\ and\ banks}{Current\ liabilities} \qquad \text{[Ec. 3]}$$

On the other hand, profitability is a fundamental concept that refers to the ability to generate profits or benefits from an investment or economic activity. That is, it is a key indicator

to evaluate the efficiency and performance of a company, a project or an investment (Contreras, 2015).

According to Aguirre et al. (2020) profitability is essential for business and financial decision making because a profitable company or project can generate greater profits, attract investors and access additional financing. Furthermore, high profitability indicates efficient management of resources and a greater ability to meet challenges and take advantage of opportunities in the business environment.

However, it is important to keep in mind that profitability should not be considered in isolation, but in conjunction with other factors, such as the risk assumed, long-term sustainability and the company's strategic objectives. It is necessary to analyze and understand the context and specific characteristics of each situation to adequately evaluate profitability and make informed decisions (Zambrano-Farías, 2021).

There are also different theories and models developed by various authors that address the concept of profitability in the financial and business field. For this work, the theory of compensation, also known as trade off in English, is taken into account.

Trade-Off theory in the financial field focuses on the relationship between a company's capital structure and the benefits and costs associated with debt. According to this theory, managers must seek a balance between the benefits offered by the use of debt, such as tax shields and financial leverage, and the costs and risks associated with bankruptcy (Arévalo et al., 2022).

In general terms, debt involves assuming a financial burden in the form of interest and payment obligations. On the other hand, financing through the issuance of shares implies sharing the ownership and profits of the company with shareholders (Ramírez et al., 2019).

Likewise, Hengjie et al. (2021) indicate that this theory suggests that there is an optimal point of debt where the benefits derived from the use of debt, such as the use of financial leverage and tax-deductible interest, exceed the associated costs, such as interest payments and financial restrictions imposed by creditors.

In this sense, the Trade-Off theory (compensation) highlights the existence of exchanges and compromises between different objectives or desirable variables in business decision-making. It involves finding the appropriate balance between these variables, considering the existing restrictions and limitations, so understanding the trade-offs helps companies make more efficient and effective decisions that maximize overall results (Zambrano & Acuña, 2013).

Profitability can be analyzed and evaluated from different dimensions. Gutiérrez and Tapia (2020) and other authors support the following:

Financial profitability (ROE). Financial profitability is a key indicator that evaluates business performance and the ability to generate profits for shareholders. Furthermore, this indicator is obtained by dividing the company's net profit by its net worth.

$$\text{Financial profitability} = \frac{Net\ profit}{Patrimony} \qquad \text{[Ec. 4]}$$

Economic profitability (ROA). Economic profitability, also known as return on assets, is a financial indicator that measures the effectiveness of using a company's assets to generate profits without taking into account the cost of financing. Likewise, this indicator relates the company's net profit to the investment made in assets, without distinguishing whether the resources are its own or those of third parties.

$$\text{Economic profitability} = \frac{Earnings\ before\ taxes\ and\ interest}{Total\ active} \qquad \text{[Ec. 5]}$$

Return on sales (ROS): It is an indicator that measures the efficiency and performance of a company to obtain profits through sales or income generated. It is calculated by dividing net income by total revenue and shows what percentage of revenue is converted into profit.

$$\text{Return on sales} = \frac{Net\ profit}{Total\ sales} \qquad \text{[Ec. 6]}$$

Panigrahi (2019) raises an interesting theoretical point regarding the relationship between liquidity and profitability. Theoretically, a company must maintain a level of liquidity that does not compromise its profitability. Various empirical tests have shown a negative correlation between liquidity and profitability; However, it is important to highlight that a company cannot operate without liquidity in order to maximize its profits. Typically, companies seek to maximize their profitability while maintaining a desired level of liquidity. However, it is important to recognize that increased profitability leads to a reduction in companies' liquidity and vice versa.

According to the research carried out by Al-Qadi and Khanji (2018) in the business services sector in Jordan, there is a significant relationship between current ratio and quick ratio, and return on assets (ROA). The authors indicate that liquidity has a significant impact on the profitability of business enterprises in Jordan.

In a case study conducted in Pakistan Standard Bank, Ahmad (2016) points out that there is a positive relationship between profitability and liquidity. Furthermore, a positive relationship was observed between the quick ratio and profitability. Other authors who support the significant relationship between liquidity and profitability are Kajola et. to the. (2018) examined liquidity management and the impact it has on the profitability of banks, ensuring

that it is significantly related and that excess liquidity must be invested in various investments, to generate profits and thus improve the level of profitability. Mohanty and Mehrotra (2018), in the analysis of SMEs in India, show the significant effect of liquidity and profitability management, specifying the importance of there being an optimal balance for the maintenance of SMEs. Madushanka (2018) in his study found a positive and significant relationship with company profitability among listed manufacturing companies in Sri Lanka, indicating that more attention needs to be paid on liquidity statements to maintain an optimal state of profitability. .

So, in this work, the following general hypothesis is proposed:

Liquidity is related to the profitability of companies listed on the Lima Stock Exchange, 2020-2021.

Likewise, the following specific hypotheses:

a. General liquidity is related to the financial profitability of companies listed on the Lima Stock Exchange, 2020-2021.

b. General liquidity is related to the economic profitability of companies listed on the Lima Stock Exchange, 2020-2021.

c. General liquidity is related to the profitability on sales of companies listed on the Lima Stock Exchange, 2020-2021.

d. Acid liquidity is related to the financial profitability of companies listed on the Lima Stock Exchange, 2020-2021.

e. Acid liquidity is related to the economic profitability of companies listed on the Lima Stock Exchange, 2020-2021.

f. Acid liquidity is related to the profitability on sales of companies listed on the Lima Stock Exchange, 2020-2021.

g. Defensive liquidity is related to the financial profitability of companies listed on the Lima Stock Exchange, 2020-2021.

h. Defensive liquidity is related to the economic profitability of companies listed on the Lima Stock Exchange, 2020-2021.

i. Defensive liquidity is related to the profitability on sales of companies listed on the Lima Stock Exchange, 2020-2021

METHODOLOGY

This research was carried out with the deductive process, with a scope, in principle descriptive, by obtaining the results of the study variables (liquidity and profitability) independently. Finally, the scope of the research was correlational, by obtaining the correlation coefficients from the results of each of the study variables.

To contrast the proposed hypotheses, the non-experimental retrospective cross-sectional design was used; design that aligns with the proposed approach and level of research. This design allowed the collection of results of the study variables (in a longitudinal timeline) in the natural context of the population, without controlling or manipulating other variables that were not of interest (Hernández et al., 2018).

The study population consisted of the financial ratios generated during the 2020-2021 period of 188 companies from all sectors classified by the Lima Stock Exchange.

The documentary analysis sheet was the instrument that helped in collecting the results of the study variables (liquidity and profitability) for the period 2020-2021. All the accounting information of the companies listed on the Lima Stock Exchange was available, the key accounts were selected to obtain the results of the liquidity and profitability indicators (Eq. 1, 2, 3,4,5 and 6).

RESULTS

Banking and financial sector

The pandemic had a negative effect on the general liquidity of companies belonging to this sector, the average value of the sector was 3.37 for the year 2020 and 1.29 for the year 2021. The individual results showed that 50% of the companies did not They had the ability to pay their debts before maturity (General liquidity less than 1) and only 12% had an amount of idle current assets (General liquidity greater than 2).

This situation was also found in acid liquidity, an average value of the sector equal to 3.37 for the year 2020 and 1.29 for the year 2021 was obtained. 50% of companies did not have the capacity to assume short-term liabilities having as means of payment to their most liquid assets (Acid Liquidity less than 1) and only 12% of the companies had an amount of idle liquid assets (Acid Liquidity greater than 2).

The average defensive liquidity of the sector was a value of 0.88 for the year 2020 and 0.58 for the year 2021. 91% of companies did not have coverage of accounts such as cash, banks and marketable securities with respect to current liabilities, excluding all assets current that cannot be immediately converted into cash (defensive liquidity less than 1) and only 4% of companies had a quantity of these assets idle (defensive liquidity greater than 2).

Financial profitability was also a problem, the sector average was a value of -2% for the year 2020 and 23% for the year 2021, 29% (on average) of companies had a negative financial profitability. The situation was similar with economic profitability, the sector average was a value of -1% for the year 2020 and 0% for the year 2021, 29% (on average) of companies had a negative economic profitability. Finally, the sector obtained an average profitability on sales of 4% in 2020 and -12% in 2021, 29% (on average) of companies had a negative profitability on sales.

Industrial companies sector

In this sector, the pandemic also affected general liquidity, the average liquidity value of this sector was 1.62 for the year 2020 and 1.43 for the year 2021. The individual results showed that 36% of the companies have not had the capacity to pay their debts before the due date (liquidity less than 1) or 21% had an amount of idle current assets (liquidity greater than 2).

This situation was also found in acid liquidity, an average value of the sector equal to 0.91 for the year 2020 and 0.76 for the year 2021 was obtained. 71% of companies have not had the capacity to assume short-term liabilities, having as means of payment to their most liquid assets (acid liquidity less than 1) and only 2% of the companies had an amount of idle liquid assets (acid liquidity greater than 2).

The average defensive liquidity of the sector was a value of 0.23 for the year 2020 and 0.25 for the year 2021. 95% of companies did not have coverage of accounts such as cash, banks and marketable securities with respect to current liabilities (excluding all assets current that cannot be immediately converted into cash) (defensive liquidity less than 1) and none of the companies had an amount of these assets idle (defensive liquidity greater than 2).

Financial profitability was also a problem in the industrial sector, the sector average was a value of 4% for the year 2020 and 7% for the year 2021, 22% (on average) of companies had a negative financial profitability. The situation was similar with economic profitability, the sector average was a value of 3% for the year 2020 and 7% for the year 2021, 17% (on average) of companies had a negative economic profitability. Finally, the sector obtained an average profitability on sales of -56% in 2020 and -104% in 2021, 22% (on average) of companies had a negative profitability on sales.

Sector of companies that provide public services

The general liquidity of companies that provide public services was also a problem during the year 2020 and 2021, the average value of general liquidity of this sector was 1.93 for the year 2020 and 1.61 for the year 2021. The individual results showed that 42 % of companies have not had the capacity to pay their debts before the due date (liquidity less than 1) or 29% have idle current assets (liquidity greater than 2).

This situation was also evident in acid liquidity, an average value of the sector equal to 1.81 for the year 2020 and 1.49 for the year 2021 was obtained. 50% of the companies have not had the capacity to assume short-term liabilities considering means of payment to their most liquid assets (acid liquidity less than 1) and 26% of the companies had an amount of idle liquid assets (acid liquidity greater than 2).

The average defensive liquidity of the sector was a value of 0.69 for the year 2020 and 0.53 for the year 2021. 82% of companies did not have coverage of accounts such as cash, banks and marketable securities with respect to current liabilities (excluding all assets current that cannot be immediately converted into cash) (defensive liquidity less than 1) and only 8% of companies had a quantity of these assets idle (defensive liquidity greater than 2).

Financial profitability was a relative problem, the sector average was a value of 9% for the year 2020 and 10% for the year 2021, 11% (on average) of companies had a negative financial profitability. The situation was similar with economic profitability, the sector average was a value of 8% for the year 2020 and 10% for the year 2021, 5% (on average) of companies had a negative economic profitability. Finally, the sector obtained an average profitability on sales of 15% in 2020 and 16% in 2021, 11% (on average) of companies had a negative profitability on sales.

Insurance company sector

In this sector, the average general liquidity was 1.66 for the year 2020 and 1.67 for the year 2021. The individual results showed that 17% of companies have not had the capacity to pay their debts before the due date (lower liquidity to 1) or 22% had an amount of idle current assets (liquidity greater than 2).

This situation was also found in acid liquidity, an average value of the sector equal to 1.66 for the year 2020 and 1.67 for the year 2021 was obtained. 17% of companies have not had the capacity to assume short-term liabilities, taking as means of payment to their most liquid assets (acid liquidity less than 1) and only 22% of companies had an amount of idle liquid assets (acid liquidity greater than 2).

The average defensive liquidity of the sector was a value of 0.65 for the year 2020 and 0.52 for the year 2021. 83% of companies did not have coverage of accounts such as cash, banks and marketable securities with respect to current liabilities, excluding all assets current that cannot be immediately converted into cash (defensive liquidity less than 1) and only 3% of companies had a quantity of these assets idle (defensive liquidity greater than 2).

Financial profitability was also a relative problem, the sector average was a value of 10% for the year 2020 and – 3% for the year 2021, 25% (on average) of companies had a negative financial profitability. The situation was similar with economic profitability, the sector average

was a value of 7% for the year 2020 and 4% for the year 2021, 42% (on average) of companies had a negative economic profitability. Finally, the sector obtained an average profitability on sales of 8% in 2020 and 3% in 2021, 25% (on average) of companies had a negative profitability on sales.

Mining companies' sector

Almost a third of the companies in this sector presented general liquidity problems, the average value of the sector was 1.98 for the year 2020 and 1.57 for the year 2021. The individual results showed that 27% of the companies did not have the capacity to pay their debts before maturity (General liquidity less than 1) and 37% had an amount of idle current assets (general liquidity greater than 2).

This situation was also found in acid liquidity, an average value of the sector equal to 1.67 for the year 2020 and 1.34 for the year 2021 was obtained. 37% of companies did not have the capacity to assume short-term liabilities having as means of payment to their most liquid assets (acid liquidity less than 1) and 30% of the companies had an amount of idle liquid assets (acid liquidity greater than 2).

The average defensive liquidity of the sector was a value of 0.77 for the year 2020 and 0.67 for the year 2021. 67% of companies did not have coverage of accounts such as cash, banks and marketable securities with respect to current liabilities, excluding all assets current that cannot be immediately converted into cash (defensive liquidity less than 1) and only 7% of companies had an amount of these idle assets (defensive liquidity greater than 2).

In this sector, the financial profitability was relatively low, the sector average was a value of 17% for the year 2020 and 7% for the year 2021, 40% (on average) of companies had a negative financial profitability. The situation was similar with economic profitability, the sector average was a value of -1% for the year 2020, but it was 16% for the year 2021, 40% (on average) of companies had a negative economic profitability. Finally, the sector obtained an average profitability on sales of -25% in 2020 and 9% in 2021, 47% (on average) of companies had a negative profitability on sales.

Agricultural sector

The agricultural sector was not immune to the liquidity problems of the previous sectors described, the average value of the sector was 2.06 for the year 2020 and 2.21 for the year 2021. The individual results showed that 33% of the companies did not have the ability to pay their debts before maturity (General liquidity less than 1) and 17% had an amount of idle current assets (general liquidity greater than 2).

Acid liquidity was also a problem, an average value of the sector was obtained equal to 1.85 for the year 2020 and 2.11 for the year 2021. 42% of companies did not have the capacity

to assume short-term liabilities using as means of payment their most liquid assets (Acid Liquidity less than 1) and 13% of the companies had an amount of idle liquid assets (Acid Liquidity greater than 2).

The average defensive liquidity of the sector was a value of 0.17 for the year 2020 and 0.29 for the year 2021. 92% of companies did not have coverage of accounts such as cash, banks and marketable securities with respect to current liabilities, excluding all assets current that cannot be immediately converted into cash (defensive liquidity less than 1) and none of the companies had a quantity of these assets idle (defensive liquidity greater than 2).

The average financial profitability of the sector was a value of 2% for the year 2020 and 5% for the year 2021, 29% (on average) of companies had a negative financial profitability. The situation was similar with economic profitability, the sector average was a value of 3% for the year 2020 and 6% for the year 2021, 21% (on average) of companies had a negative economic profitability. Finally, the sector obtained an average profitability on sales of -145% in 2020 and -7% in 2021, 29% (on average) of companies had a negative profitability on sales.

Sector of other institutions

In the case of other institutions listed on the BVL, the average general liquidity value was 3.38 for the year 2020 and 8.68 for the year 2021. The individual results showed that none of the companies had the capacity to pay their debts before of maturity (General liquidity less than 1) and that 70% had an amount of idle current assets (general liquidity greater than 2).

Regarding acid liquidity, an average value of the sector was obtained equal to 3.38 for the year 2020 and 8.68 for the year 2021. None of the companies had the capacity to assume short-term liabilities using their most liquid assets as means of payment. (Acid liquidity less than 1) and 70% of the companies had an amount of idle liquid assets (acid liquidity greater than 2).

The average defensive liquidity of the sector was a value of 1.07 for the year 2020 and 3.84 for the year 2021. 40% of companies did not have coverage of accounts such as cash, banks and marketable securities with respect to current liabilities, excluding all assets current that cannot be immediately converted into cash (defensive liquidity less than 1) and only 50% of companies had a quantity of these assets idle (defensive liquidity greater than 2).

The average profitability of the sector was a value of 3% for the year 2020 and 0% for the year 2021, 30% (on average) of companies had a negative financial profitability. The situation was similar with economic profitability, the sector average was a value of 1% for the year 2020 and 3% for the year 2021, 40% (on average) of companies had a negative economic profitability. Finally, the sector obtained an average profitability on sales of -87% in 2020 and -60% in 2021, 30% (on average) of companies had a negative profitability on sales.

Pension Fund Administrators Sector (AFP)

In this sector, the average general liquidity was 2.26 for the year 2020 and 1.55 for the year 2021. The individual results showed that none of the companies had the capacity to pay their debts before maturity (General liquidity less than 1) and the 50% had an amount of idle current assets (general liquidity greater than 2).

The average acid liquidity of the sector was 2.26 for the year 2020 and 1.55 for the year 2021. None of the companies had the capacity to assume short-term liabilities using their most liquid assets as means of payment (Acid liquidity less than 1) and 50% of the companies had an amount of idle liquid assets (acid liquidity greater than 2).

The average defensive liquidity of the sector was a value of 1.14 for the year 2020 and 0.94 for the year 2021. 30% of companies did not have coverage of accounts such as cash, banks and marketable securities with respect to current liabilities, excluding all assets current that cannot be immediately converted into cash (defensive liquidity less than 1) and only 20% of companies had a quantity of these assets idle (defensive liquidity greater than 2).

The average profitability of the sector was a value of 17% for the year 2020 and 26% for the year 2021, none of the companies had a significant negative financial profitability. The situation was similar with economic profitability, the sector average was a value of 17% for the year 2020 and 25% for the year 2021, none of the companies had a high economic profitability. Finally, the sector obtained an average profitability on sales of 36% in 2020 and 45% in 2021, none of the companies had a high negative profitability on sales.

Diverse business sector

The pandemic negatively affected the general liquidity of the diverse company's sector, with the average value in 2020 being 4.68 and for 2021 at 3.88. Likewise, 21% did not have the ability to pay their debts before maturity and only 43% had idle current assets. In acid liquidity, an average of 4.51 was obtained for the year 2020 and 3.74 for 2021, 31% of companies could not assume short-term liabilities and only 40% of companies had idle liquid assets. In defensive liquidity, there was an average of 2.48 for 2020 and 2.14 for 2021, 67% of companies did not have account coverage regarding current liabilities, excluding all current assets that cannot be converted into cash and only the 20% had idle assets. In financial profitability, the average was -5% for 2020 and 3% for 2021, 29% of companies had negative profitability. In economic profitability, the average was 4% for 2020 and 6% for 2021, 26% had negative profitability. Finally, in sales profitability there was an average of 10% in 2020 and -53% in 2021, 29% of companies had negative profitability.

Relationship between liquidity and profitability

The following table shows the results of the correlational tests that prove the proposed hypotheses. As can be seen, the p value shows a significant relationship between the liquidity ratios and the profitability ratios of the companies listed on the BVL, except for the relationship between acid liquidity and financial profitability in 2021. That is, Of the research hypotheses proposed, only the following are rejected:

Acid liquidity is related to the financial profitability of companies listed on the Lima Stock Exchange, 2020-2021.

Table 1

Correlation coefficients between liquidity ratios and profitability of companies listed on the Lima Stock Exchange, 2020-2021

Liquidity		Cost effectiveness					
		Financial (ROE)		Economic (ROA)		About sales (ROS)	
		r	Amount p	r	Amount p	r	Amount p
General	2021	0.168	0.022	0.321	0.000	0.277	0.000
	2020	0.168	0.021	0.256	0.000	0.295	0.000
Acidic	2021	0.101	0.169	0.191	0.009	0.299	0.000
	2020	0.209	0.004	0.223	0.002	0.335	0.000
Defensive	2021	0.232	0.001	0.254	0.000	0.363	0.000
	2020	0.232	0.001	0.215	0.003	0.340	0.000

Note. *Own elaboration*

DISCUSSION

During the covid 19 pandemic (2020-2021), companies listed on the Lima Stock Exchange experienced liquidity and profitability problems. The results of this research showed that a high percentage (more than 30%) of companies of the different sectors went through these problems. Furthermore, it was demonstrated that the liquidity problem is directly and significantly related to the profitability problem in the ratios evaluated. That is, the proposed research hypotheses are accepted, except for the relationship between acid liquidity and financial profitability for the year 2021. Several authors support these results, for example, Ramírez and Maldonado (2020), Kajola et. to the. (2019), Al-Qadi & Khanji (2018), Hossain & Alam (2019), Madushanka & Jathurika (2018), Ibrahim (2017), Ahmad (2016), Khati (2020) and Jaworski & Czerwonka (2021).

On the other hand, there are authors who differ, especially regarding the relationships of the variables, for example, Hossain & Alam (2019) demonstrated that the liquidity conversion cycle is negatively related to profitability indices (NPM, ROA and ROE).) in a cement company, Gutiérrez & Tapia (2020) also supports this statement. Along the same lines as indicated, Gutierrez & Tapia (2020) and Svitlik & Poutnik (2016) deny a significant relationship between general liquidity and profitability on sales. Also, several authors affirm that there is no significant relationship between acid liquidity and economic profitability, among these authors are Hossain & Alam (2019), Akinleye & Ogunleye (2019) and Panigrahi et al. (2018).

The authors mentioned in the previous paragraph could differ with the results of this research due to the differences in the study population, specific conditions of the companies that make up the population and due to the differences in the context of said companies (a context characterized not necessarily by a pandemic).

CONCLUSIONS

This research demonstrated prevalent liquidity and profitability problems experienced by companies listed on the Lima Stock Exchange in the context of the covid19 pandemic (years 2020, 2021), the results showed that a high percentage (more than 30%) of the companies in the different sectors either had liquidity less than 1 or greater than 2 and negative profitability. Furthermore, it was demonstrated that the liquidity problem is directly and significantly related to the profitability problem in the ratios evaluated. That is, the proposed research hypotheses were accepted, except for the hypotheses that mention the relationship between acid liquidity and financial profitability for the year 2021.

REFERENCES

Please refer to the articles in Spanish Bibliography.

BIBLIOGRAPHICAL ABSTRACT

Please refer to articles Spanish Biographical abstract.