Comparison of Liquidity Risk in Stock Market Return: A Study of Companies of Chile and Peru

Comparación del riesgo de liquidez en la rentabilidad bursátil: un estudio de empresas de Chile y el Perú

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Abstract

A comparative analysis of liquidity risk and stock return risk was conducted using data from January 2015 to March 2023 for a sample of 78 companies in Chile and 29 in Peru. The research employed a quantitative, descriptive, correlational, and non-experimental design. Five liquidity risk measures were estimated, and the regression analysis was based on an unbalanced panel data model. The feasible generalized least squares (FGLS) method was applied, which allowed for correcting issues of heterogeneity, contemporary correlation, heteroscedasticity, and autocorrelation. As a result, a liquidity risk premium was found in both countries, and significant differences in the relative quoted spread (RQS) were observed, with a higher liquidity risk for Chile.

Keywords: *liquidity risk, liquidity risk indexes, Chile, Peru.*
JEL Classification: *G11, G12, G32.*

Resumen

Se hizo un análisis comparativo del riesgo de liquidez y del riesgo de rentabilidad de acciones en una muestra de 78 empresas en Chile y 29 en Perú, con datos correspondientes al período de enero de 2015 a marzo de 2023. La investigación fue cuantitativa, descriptiva, correlacional y no experimental. Se estimaron cinco medidas de riesgo de liquidez y el análisis de regresión se basó en un modelo de datos de panel no balanceado. Se aplicó la metodología de mínimos cuadrados generalizados factibles (MCGF), lo que permitió corregir problemas de heterogeneidad, correlación contemporánea, heterocedasticidad y autocorrelación. Como resultado, se encontró una prima de riesgo de liquidez en ambos países, así como diferencias significativas en el diferencial relativo de cotización (RQS), con un mayor riesgo de liquidez para Chile.

Palabras clave: *riesgo de liquidez, índices de riesgo de liquidez, Chile, Perú.*
Clasificación JEL: *G11, G12, G32.*

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1. Introduction

The development of Latin American stock markets has sparked growing interest in academia. In this context, Cardona Montoya (2024) presents a literature review on five key aspects of the Latin American Integrated Market (MILA): financial integration, portfolio structuring, the efficient market hypothesis, the determinants of stock returns, and corporate governance, as well as integrated reporting. This review concludes that, in integrated markets, company characteristics and financial risk are key factors influencing stock returns. However, due to the limited number of studies in this area, further research is recommended to explore the impact of risk on financial performance.

Further, since the publication of the seminal works by Amihud and Mendelson (1986b) and Pástor and Stambaugh (2003), several studies have analyzed the relationship between liquidity risk and stock returns in developed markets, while other research has focused on Latin American emerging markets (De Carvalho et al., 2022; Vasquez-Tejos & Lamothe Fernandez, 2021; Vasquez-Tejos & Pape-Larre, 2022; Vasquez-Tejos et al., 2019). These studies have underlined the significance of considering liquidity as a key factor in price formation and investment decision-making. In this regard, it is essential to continue the research on the relationship between liquidity risk and stock returns, especially in emerging markets. Stock liquidity influences market efficiency, affects price volatility, and can generate additional risk premiums for investors. Understanding these dynamics is crucial for developing investment strategies and formulating policies that promote more efficient and resilient markets.

Understanding liquidity risk is particularly relevant within the broader context of investment risk, as it directly affects an investor's ability to buy or sell assets without causing significant price fluctuations. Investors allocate resources to various investments, including purchasing stocks, but their profitability expectations are not always met. This uncertainty is tied to the concept of risk, which can be interpreted differently based on research or perspective. According to Rincón (2012), risk refers to the potential occurrence of various events of interest and their associated consequences, typically implying a loss. Another definition of risk is the likelihood of encountering an unfavorable event (Brigham & Erhardt, 2017/2018).

Liquidity risk is a key factor in the profitability and financial stability of capital markets, especially in developing economies such as those of Chile and Peru. This risk means

the capacity of an asset to be easily sold without generating a significant change in its closure price in the markets where it is traded. Liquidity risk may directly affect the profitability of investments since a low capacity for selling assets may result in higher trading costs and a high price variability of financial assets.

Market liquidity risk is defined as the probability for an agent to suffer a loss due to the low trading volume of a market, which prevents unwinding positions without losses or generates a significant rise in the gap between prices of purchase and sale. In these cases, unwinding or taking a position could cause losses.

On the one hand, Amihud et al. (2005) define market liquidity as the presence of offerors and requestors available to trade a certain quantity of financial assets at an established price without delay. On the other hand, Brennan et al. (2012) describe stock market liquidity as the capacity to absorb high volumes of financial assets at low cost and in a short time without significantly affecting the prices.

Therefore, understanding liquidity risk in the stock market is fundamental for investors, as it reflects the ease of purchasing or selling stocks without affecting their price. Low liquidity may limit the ability to sell quickly, exposing investors to losses during sensitive periods. On the contrary, high liquidity provides flexibility and reduces uncertainty. Understanding this risk enables investors to make informed decisions, adjust their investment strategies, and mitigate potential financial losses.

In recent years, Chile and Peru have experienced ongoing economic growth and a significant development of their capital markets. However, these do not share the same structure and regulatory framework, which may affect the liquidity of their stock markets. For example, with higher capitalization and negotiation volume, the Chilean stock market could exhibit liquidity features distinct from those of the smaller and less diversified Peruvian market. These differences provide an appropriate context for conducting a comparative analysis of the liquidity risk and its impact on the returns of the stocks in both markets. The selection of Chile and Peru as the focus of this study is based on the fact that both are emerging economies with active stock exchanges, and are at different stages of economic development. A comparative analysis of these markets can provide empirical evidence of the impact of liquidity on stock returns, considering markets with varying degrees of financial maturity.

This study aims to estimate various measures of liquidity risk in the stock markets of Chile and Peru. Additionally, it seeks to determine whether a liquidity risk premium can be found in both markets. Finally, the study will compare the results to evaluate

if there are significant differences in liquidity risk between the Chilean and Peruvian stock markets.

The article intends to answer three key questions regarding the relationships between stock profitability and liquidity risk in the stock markets of Chile and Peru. First, it will examine the potential relationship between stock return and liquidity risk in the Chilean stock market. Next, it will also search for the presence of this relationship in the Peruvian stock market. Finally, the significant differences between Chile and Peru's relevant liquidity risk indexes will be analyzed.

The results of this research can provide valuable information for investors, regulators, and other market stakeholders who can use these findings to enhance their investment strategies and inform the development of policies in similar contexts.

2. Theoretical Framework

Liquidity risk has been a topic of interest for academia for the past 50 years, since the 1970s, when it started to stand out implicitly in the pioneering research of Black (1971a, 1971b). Later, in the 1980s, the first studies linking liquidity risk to stock profitability were published, utilizing analysis of price spreads and trades (Amihud & Mendelson, 1986a, 1986b). With the advent of the new millennium, this type of research expanded to stock markets worldwide, based essentially on the works of Acharya and Pedersen (2005) and Amihud (2002).

However, there is no consensus yet on how to measure liquidity nor on the existence of a premium associated with this risk. Generally, companies are motivated to maintain high liquidity in their shares since this facilitates the provision of funds to finance their growth and development opportunities (Abidin et al., 2022). Notwithstanding, in the case of those companies with low free float and a high concentration of ownership in controller groups, the availability of stocks for trading in the market is limited. This structure reduces the trading volume and, in theory, may increase the liquidity risk by hindering the sale or purchase of stocks without affecting their price.

Similarly, recent studies suggest that the concentration of ownership has a direct impact on market liquidity. The research by Abidin et al. (2022) concludes that there is an inverse and significant ratio between ownership concentration and market liquidity, which highlights the importance of this factor in markets with disparity

between majority and minority shareholders. In these cases, the concentrated control limits the number of stocks in circulation, restricting negotiation opportunities for minority investors and creating a situation where liquidity risk becomes increasingly significant.

During periods of financial crisis, significant changes typically occur in the liquidity of markets. For example, one study carried out during the COVID-19 pandemic, which included emerging economies (such as Vietnam and South Africa) and developed ones (such as Germany, Australia, China, Spain, the United States, and the United Kingdom), showed a considerable lack of liquidity in these markets (Enow, 2023).

Due to the multidimensional nature of liquidity risk in emerging economies, it remains a topic of interest for several studies, as suggested by the work of Naik and Reddy (2021), which also explores the interrelation between developed and emerging markets.

On the other hand, studies in specific markets provide relevant evidence. In Pakistan's market, the work by Husnain et al. (2021) uses three liquidity risk indicators—the Amihud index, the average value of traded stocks, and volume—and finds that long-term market volatility has a positive ratio with liquidity.

The study by Amihud et al. (2015) on the liquidity return premium in 45 countries, including Chile and Peru, shows that this average premium is positive and significant, particularly in less integrated markets. Likewise, Vasquez-Tejos and Lamothe Fernandez (2021) found that Amihud's measure was significant for Chile but not for Peru in an analysis of the leading emerging economies of Latin America between 1998 and 2018.

Further, French and Taborda (2018) conclude that liquidity risk is a less relevant factor in Latin America, making this study important for a better understanding of the impact of liquidity risk in emerging countries such as Chile and Peru, where the availability of information and mechanisms to manage this type of risk may be limited.

Likewise, institutional investors usually—and especially—value liquidity and risk in their investments (Fuenzalida et al., 2008). In Chile and Peru, improved liquidity could encourage investors to accept lower returns due to reduced trading costs (Mongrut et al., 2011).

Ultimately, stock liquidity not only attracts investors but also has a positive impact on a country's economic growth. In this sense, Naula Sigua et al. (2019), in a study of

eleven countries in the region, state that market liquidity contributes to economic growth, as the asset turnover ratio has an inverse relationship with growth. In addition, García et al. (2018) identify Brazil as the market with the highest liquidity, Peru as the market with the highest expected return, and Chile as the safest stock market with the highest capitalization, alongside Mexico.

3. Methodology

The research is quantitative, descriptive, correlational, and non-experimental. The non-probabilistic sample comprises 78 companies from Chile and 29 from Peru, selected for maintaining an average stock market presence of over 50% between February 2015 and March 2023. Stocks with lower market presence often lack continuous quotations, which significantly impact liquidity risk. Therefore, the study analyzes the most liquid stocks in each market, allowing for a more precise evaluation of the relationship between liquidity and returns. Companies with lower market presence were excluded. In total, 117,569 daily transactions for Chile and 38,307 for Peru were analyzed during the study period.

Primary sources were used to collect registry data from the stock markets of both countries. Days without all the required indicators were excluded from the final series, which explains the higher quantity of observations for Chile compared to Peru.

Five risk measures were calculated to answer the questions raised. The risk measures were estimated based on statistics of negotiation activities, i.e., on executed trades. The bid-ask spread was not used as a liquidity risk measure due to the lack of access to the necessary statistical data for its estimation. The selected indicators correspond to the ones used in the research by Monga et al. (2023). Later, a panel data model was presented to measure the ratio between stock return and liquidity risk. Finally, a test of two samples was conducted, with a 5% significance level, to evaluate whether there is a significant difference in liquidity risk between companies from both countries. Below, the measures for liquidity risk and the corresponding model are presented.

The most commonly used liquidity risk measure in several studies is the Amihud (2002) measure, which assesses the profitability impact on traded volume.

$$AIR = \frac{|R_{it}|}{V_{it}} \tag{1}$$

This measure is considered one of the most effective to assess the impact of prices (Ahn et al., 2018). The measure is intended to determine the market's width, which means the capacity of the market to facilitate the trade of a quantity of shares without significantly impacting their prices. In this formula, $|R_{it}|$ is the absolute value of the daily return of the share (i) on day t, and V_{it} is the volume traded on day t of the share i.

The share turnover measure (ST) is used to estimate the market's depth and is calculated as follows:

$$ST = \frac{V_{it}}{N_{it}} \tag{2}$$

Where N_{it} represents the number of shares issued and outstanding for stock I on day t, and V_{it} denotes the trading volume of stock i on day t.

To measure the market's tightness, we use a relative quoted spread, adapted for the data on executed trades:

$$RQS = \frac{Max_{it} - Min_{it}}{(Max_{it} + Min_{it})/2} \tag{3}$$

Where Max_{it} and Min_{it} represent respectively the maximum and minimum price traded on day t of the share i. This measure has been widely used in liquidity risk studies (Handa et al., 2003; Fang et al., 2009).

To measure the market's immediacy, we use the Coefficient of Elasticity of Trading (CET), calculated as follows:

$$CET = \frac{\%\Delta V}{\%\Delta P} \tag{4}$$

Where $\%\Delta V$ and $\%\Delta P$ are the percentage change in daily volume and the percentage change in the share price, respectively. The work done by Datar (2000) used this measure for the first time to assess liquidity risk, and Wanzala (2018) has most recently employed it.

To measure the market's resilience—its capacity to adjust to price variations—we use the Coefficient of Efficiency of the Market along the same lines as Jha et al. (2018).

$$CEM = \frac{Long\ term\ return}{T^{*}Short\ term\ return} \tag{5}$$

We considered long-term return, the profitability for five days, and short-term return, the daily one. In this study, T is set to 5. The expected value in liquid and efficient markets is 1; however, significant deviations indicate a lack of liquidity.

The following model was used to determine whether there is a liquidity risk premium in the stock markets of Chile and Peru.

$$R_{it} = \alpha + \beta_1 R_{m,t} + \beta_2 AIR_{i,t} + \beta_3 ST_{i,t} + \beta 4 RQS_{i,t} + \beta_5 CEN_{i,t} + \beta_6 CEM_{i,t} + \varepsilon \quad (6)$$

In this model, the dependent variable is the share return, while the independent variables are the monthly return from the market portfolio and the five abovementioned liquidity indicators. This approach follows the methodology of Leirvik et al. (2017), who previously applied it to study the liquidity risk premium in Norway's market.

In the model, R_{it} represents the return of day t of share i, β_1 and $R_{m,t}$ is beta and the market's return, β_n is beta of the liquidity risk indexes, ε_1 is the model's error. To estimate the market's return, we use IPSA, the most representative stock index of the Santiago Exchange for Chile, and S&P/BVL for Peru.

Estimators are used through the feasible generalized least squares (FGLS) method to mitigate issues of heterogeneity, contemporary correlation, heteroscedasticity, and autocorrelation. Finally, Table 1 shows the research technical sheet (see Table 1).

In this study, normalization or standardization was not applied to the variables used in the model, as the chosen methodology does not require variables to be on the same scale to ensure estimation stability and validity. Maintaining the original scale allows for a more direct economic interpretation of the coefficients and their impact on liquidity and returns. Additionally, extreme values were not automatically excluded, as they may contain relevant information about periods of crisis or episodes of illiquidity in the Chilean and Peruvian markets.

Table 1. Research Technical Sheet

Feature	Description
Population	Companies of Chile and Peru.
Measurement variables	Related to the prices of company shares, returns, and liquidity indexes.
Sample selection	Non-random sample for convenience.

Feature	Description
Size of sample(s)	78 companies in Chile and 29 companies in Peru. Chile's sample comprised 117,569 daily records of share prices, and Peru's sample consisted of 38,307 daily records.
Composition of the sample	Companies of Chile and Peru trading their shares in the respective stock exchanges with an average stock market presence of over 50%.
Trust and error level	A non-random sample was used. The Z test of two samples was performed using a significance level of 5%.
Measurement tool	Data were collected from primary sources, i.e., the stock exchange.
Period of analyzed data	January 2015 to March 2023.
Tool for records and analysis	STATA statistical software and MS Excel.
Type of statistical analysis	Descriptive, correlational, panel data regression, and two-sample test.

Source: Prepared by the authors.

4. Results

The main descriptive statistics for Chile, presented in Table 2, indicate that the stock return (R) exhibits both an average and a standard deviation, which are superior to those of the market return (Mr). This suggests that individual stocks exhibit higher volatility than the general index, which may be attributed to the specific risks associated with each company. The average profitability is low, but the elevated standard deviation in the stock return indicates a risk-significant level in the Chilean stock market (see Table 2).

Liquidity indicators also show a wide variability. Notably, the Amihud index and the coefficient of elasticity of trading (CET) exhibit extreme values, which suggests alternating episodes of high and low liquidity in the market. The share turnover measure (ST) and the relative quoted spread (RQS) reflect a low volume of trades and certain inefficiency in price adjustment, likely influenced by factors such as ownership concentration and the limited free float of some companies. These results underline the relevance of studying liquidity risk, as it may affect investment decisions and trading costs in Chile's market.

Table 2. Descriptive Statistics (Chile's Variables)

Variable	Obs	Mean	Std. Dev.	Min	Max
R	117,569	0.0003112	0.0244649	-1.237044	1.40395
Mr	117,569	0.0002223	0.0125207	-0.1521555	0.0925075
AIR	117,569	0.2334447	37.28748	2.59E-11	11004.62
ST	117,569	0.0008567	0.0064855	1.97E-11	1.242392
RQS	117,569	0.0203239	0.0245305	0	1.548983
CET	117,569	3952.754	5490667	-1.20E+09	7.79E+08
CEM	117,569	0.8583764	189.7818	-13329.18	56856.91

Source: Prepared by the authors.

The main descriptive statistics of Peru, as shown in Table 3, indicate a daily average return (R) of 0.0007226 for the shares, which is slightly higher than the average return of the market (Mr) of 0.0002717. The standard deviation of share returns is also higher than that of the market, which indicates higher volatility in individual shares compared to the general index. This level of volatility may indicate a significant risk, particularly characteristic of Peru (see Table 3).

Regarding the liquidity indicators, the Amihud index—also known as the Amihud Illiquidity Ratio (AIR)—and the share turnover measure (ST) exhibit low average values, suggesting that the Peruvian market experiences less trading activity and limited market depth. The coefficient of elasticity of trading (CET) has a negative average value and shows significant variability, with extreme values that may indicate low liquidity episodes or difficulties adjusting prices quickly. Finally, the coefficient of efficiency of the market (CEM) exhibits significant dispersion, reflecting variable market conditions and potential inefficiencies. These results underline that Peru's market could face more significant liquidity and trading costs challenges than more liquid and diversified markets.

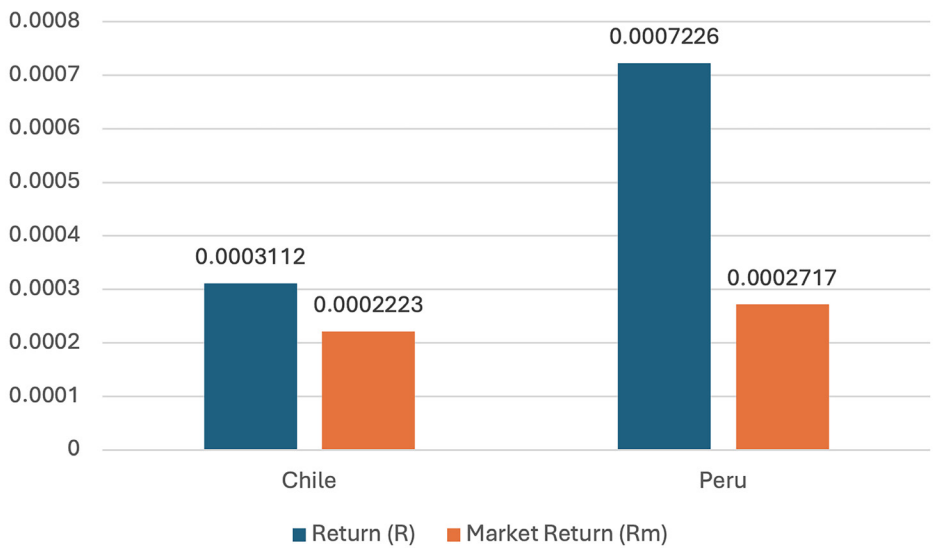
Table 3. Descriptive Statistics (Peru's variables)

Variable	Obs	Mean	Std. Dev.	Min	Max
R	38,307	0.0007226	0.0267067	-0.408239	0.5117332
Rm	38,307	0.0002717	0.011447	-0.1100875	0.0826084
AIR	38,307	0.0008883	0.0029688	4.89E-09	0.11502
ST	38,307	0.0006025	0.0167899	1.06E-07	2.132136
RQS	38,307	0.0141543	0.0197575	0	0.5454545
CET	38,307	-2942.852	541793	-1.05E+08	8111954
CEM	38,307	0.2556012	8.679943	-525.2546	499.4687

Source: Prepared by the authors.

When analyzing the returns exclusively, Figure 1 compares returns (R) and market return (Mr) in Chile and Peru (see Figure 1).

Figure 1. Returns in Chile and Peru



Source: Prepared by the authors.

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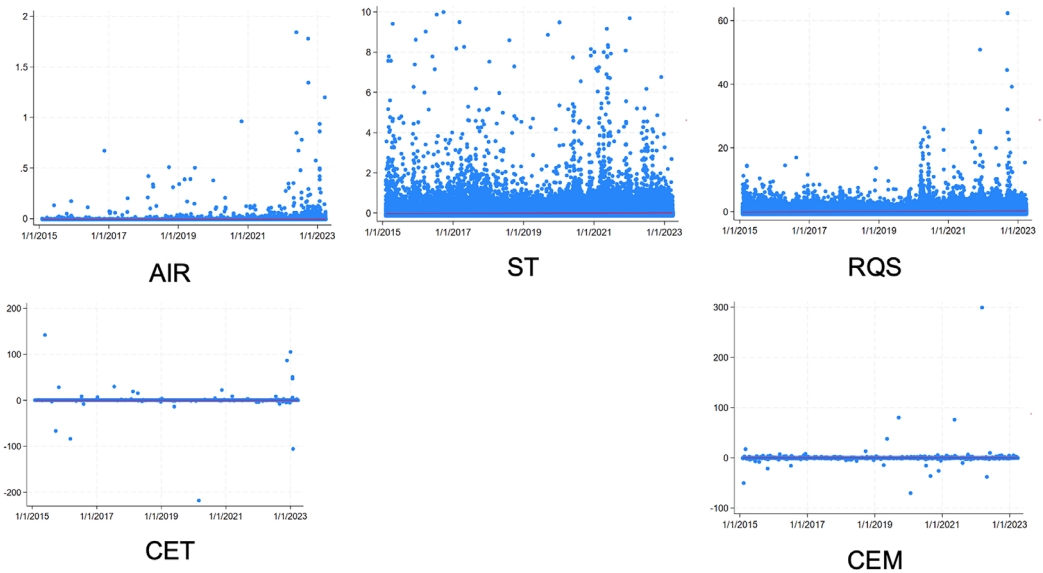
Figure 1 shows that the average return of Chile's sample is lower than that of Peru (0.0003112 against 0.0007226). The same happens when comparing each country's market return (Mr) (see Figure 1).

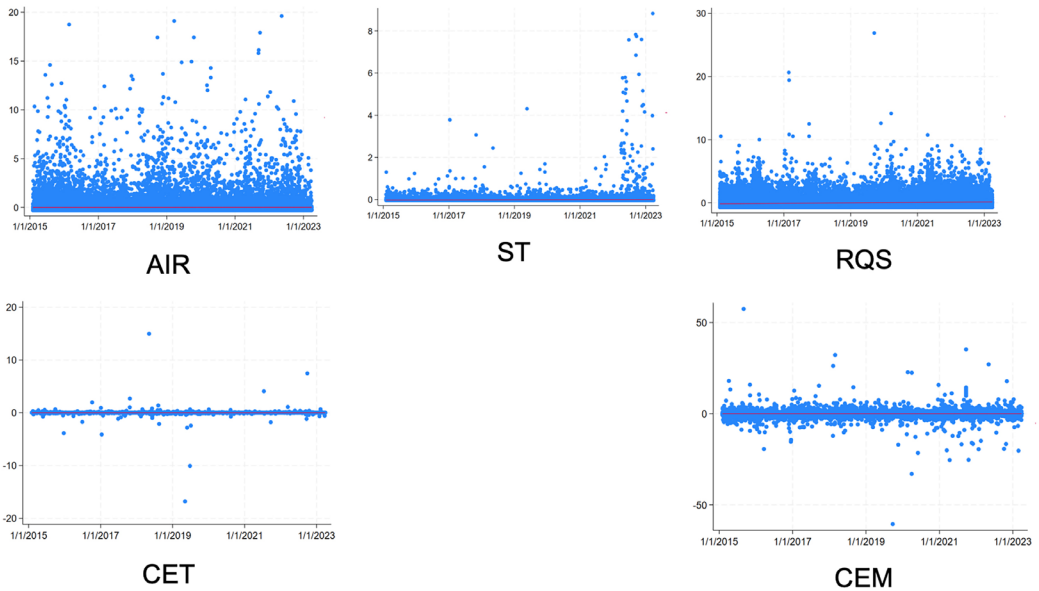
Figures 2 and 3 show the dispersions of liquidity risk measures in Chile and Peru, standardized to facilitate comparison. For the Chilean case, extreme values were eliminated in AIR measures (12 observations) and ST measures (41 observations). For Peru, the same process was applied to AIR measures (10 observations), ST measures (10 observations), and CET measures (2 observations) (see Figure 2 and Figure 3).

Figure 2. Dispersion of Liquidity Risk Measures in Chile



Source: Prepared by the authors.

Figure 3. Dispersions of Liquidity Risk Measures in Peru



Source: Prepared by the authors.

The figure analysis reveals patent differences between the two countries. In Peru, AIR, RQS, and CEM measures exhibit higher dispersion than their Chilean counterparts, indicating more significant variability in these liquidity risk indicators within Peru's market. Conversely, the ST measure shows less dispersion in Peru than in Chile, suggesting that Peru's market exhibits higher stability in share turnover. Furthermore, the dispersion of the CET measure is quite similar in both countries, suggesting consistency in the trading elasticity between Chile and Peru's markets.

The results of the correlational analysis among the different variables studied are presented in Tables 4 and 5, corresponding to Chile and Peru, respectively. A low correlation is observed among the variables in both matrices, suggesting relative independence in their behavior. However, the positive ratio between the returns (R) and the market return (Mr) stands out, with coefficients of 0.3472 for Chile and 0.4111 for Peru, indicating that, although the share returns are influenced by the overall performance of the market in both countries, the connection is stronger in Peru (see Table 4 and Table 5).

On the one hand, in the matrix of Chile's correlation, the correlation between R and AIR is very low (0.0009), which indicates that liquidity risk does not significantly impact share returns. Likewise, the correlation between share turnover (ST) and AIR is also low (0.0069) (see Table 4). On the other hand, Peru's matrix shows that the correlation between R and AIR is slightly higher (0.0059), which strengthens the idea that the connection between liquidity and returns is weak in both contexts (see Table 5). Regarding share turnover, the correlation with R in Peru is also low (0.0097), suggesting that the trading activity does not imply significant profitability.

Table 4. Matrix of Correlations (Chile's Variables)

	R	Mr	AIR	ST	RQS	CET	CEM
R	1						
Rm	0.3472	1					
AIR	0.0009	-0.0001	1				
ST	0.0069	0.005	-0.0008	1			
RQS	0.0259	-0.0309	-0.0052	0.1109	1		
CET	0.0025	-0.0056	0	0.0075	0.0005	1	
CEM	0	-0.001	0	-0.0004	-0.0015	-0.0034	1

Source: Prepared by the authors.

Table 5. Matrix of Correlations (Peru's Variables)

	R	Mr	AIR	ST	RQS	CET	CEM
R	1						
Rm	0.4111	1					
AIR	0.0059	-0.0218	1				
ST	0.0097	0.0099	-0.009	1			
RQS	0.0975	-0.0055	-0.037	0.0248	1		
CET	0.0009	0.0012	0.0016	-0.001	0.0042	1	
CEM	0.0013	-0.0117	-0.0018	-0.0002	0.0005	-0.0107	1

Source: Prepared by the authors.

In addition, the correlation of historical returns (RQS) with R is higher in Peru (0.0975) than in Chile (0.0259), suggesting that the price spread has greater relevance in Peru's context. The market's immediacy and resilience measures, represented by CET and CEM, show very weak correlations in both matrixes, suggesting that these factors are not decisive in share profitability in any of the countries.

In short, the observed low correlation between different variables in both countries is a good sign for the model to be tested because it suggests that the variables are primarily independent and could provide unique information for the analysis. However, the analysis also reveals significant differences in the market behavior of each country, especially regarding the ratio between profitability and liquidity risk.

Table 6 presents the results of the model applied to determine a liquidity risk premium in Chile and Peru's stock markets, using panel data and the feasible generalized least squares (FGLS) method (see Table 6).

Table 6. Results of Regression Panel Data (Feasible Generalized Least Squares)

Variable	Chile	Peru
Mr	0.68066608***	0.96138531***
AIR	7.57E-07	0.16740814***
ST	0.00388633	0.00527001
RQS	0.03646706***	0.13569834***
CET	1.97E-11	-9.59E-13
CEM	4.96E-08	0.00001892
_cons	-0.00058486***	-0.001616***
N	117569	38307

Legend: * p<0.05; ** p<0.01; *** p<0.001

Source: Prepared by the authors.

Market return (Mr) shows a positive and significant ratio in both countries, being more pronounced in Peru (0.961) compared to Chile (0.681). This ratio suggests that Peru's market reacts more solidly to fluctuations in market return, which could indicate higher sensitivity or a more dynamic market.

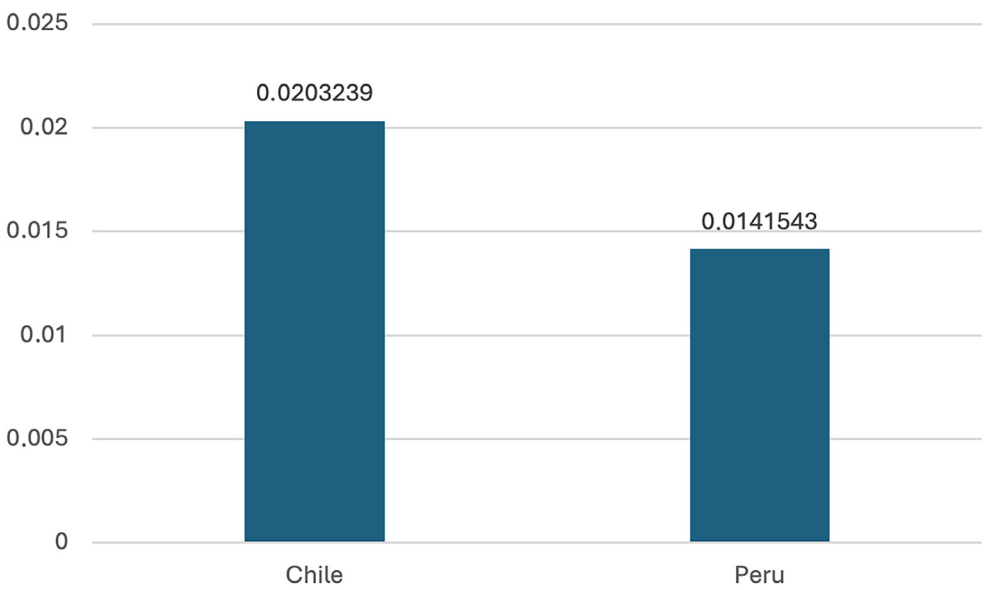
Regarding liquidity risk, the relative quoted spread (RQS) is a significant indicator in both Chile and Peru, with coefficients of 0.036 for the former and 0.136 for the

latter. This finding suggests that, as RQS rises, so does the share return, which means that investors are rewarded by assuming a higher liquidity risk. However, the Amihud index (AIR) only becomes significant in Peru (0.167) because it shows that this liquidity indicator would have no effect in Chile.

Also, the indicators of market depth (ST), the coefficient of elasticity of trading (CET), and the coefficient of efficiency of the market (CEM) do not show relevance to Chile or Peru. This fact suggests that, in contrast to RQS, these other indicators do not appropriately cover liquidity risk in the dynamics of both countries' markets.

To summarize, the relative quoted spread (RQS) stands out as a fundamental indicator affecting both markets, while the remaining indicators show mixed outcomes. Since the RQS is Chile and Peru's only significant liquidity measure, the following figure compares the results for each country (see Figure 4).

Figure 4. RQS Comparison of Chile and Peru



Source: Prepared by the authors.

The figure above shows that the RQS index of companies in Chile is higher than that of companies in Peru (0.0203239 > 0.0141543), indicating a higher liquidity risk in

the Chilean market (see Figure 4). Regarding question 3, a Z test of two samples was conducted with a significance level of 5%. The hypotheses raised were the following:

H0: RQS risk index average in Chile is the same as RQS risk index average in Peru.

H1: RQS risk index averages are different in both countries.

The results are presented in Table 7 (see Table 7).

Table 7. Results of Z Test with Two Samples

	Chile	**Peru**
Average	0.02032388	0.01415433
Variance (known)	0.00060174	0.00039035
Observations	117569	38307
Hypothetic difference of averages	0	
Z	49.8644744	
P(Z<=z) one-tailed	0	
z critical value (one-tailed)	1.64485363	
z critical value (two-tailed)	0	
z critical value (two-tailed)	1.95996398	

Source: Prepared by the authors.

In Table 7, the empirical statistical Z is notably high (Z = 49.86), leading to the rejection of the null hypothesis (see Table 7). This implies that the liquidity risk averages measured through the RQS index differ significantly between the two countries.

To summarize, in response to questions 1 and 2 of the research, the results indicate evidence of a liquidity risk premium, as reflected in both countries through the relative quoted spread (RQS). However, the Amihud index (AIR) is also significant in Peru.

Regarding the first question: Is there any connection between share return and liquidity risk in the Chilean stock market? The answer is affirmative, as there is a link between share return and the RQS index.

Regarding the second question: Is there any connection between share return and liquidity risk in Peru's stock market? The answer is likewise affirmative, given the link with the RQS index and also with the Amihud index (AIR).

Finally, in reply to question 3 of the research, the conclusion is that using the RQS index, the averages of the liquidity risks are not comparable. Chile shows a higher liquidity risk and a higher average profitability (0.0203 > 0.0142).

5. Conclusions

Investors need to be aware of the liquidity risk in the stock markets of Chile and Peru. The significant connection between share return and the relative quoted spread (RQS) in companies of both countries, as well as with the Amihud index (AIR) in the case of Peruvian companies, proves the presence of this risk.

In addition, the test of two samples showed that the measures of liquidity risks, using the RQS index, are not comparative between both countries. Chile shows a higher liquidity risk but also shows a higher average return. This finding highlights the importance of the consideration given by investors not only to profitability but also to liquidity risk when making investment choices.

This research provides an innovative view when analyzing the financial risks of the shares of companies in Chile and Peru from data traded daily instead of monthly, as usual in similar studies. This approach allows us to find more accurately the variations and volatilities presented in the short term, offering a more detailed and sensitive view of liquidity risks that affect the stock market in both countries. A more effective approach to real dynamics is achieved by working with daily data, which contributes to a deeper and more up-to-date understanding of the risk factors and their impact on share returns. This strengthens the basis for designing financial strategies for investment and public policies to reply more effectively to the fluctuating nature of the stock market.

However, the research shows limitations. A total of 78 companies were analyzed in Chile and 29 in Peru. It would be beneficial to consider a larger sample size to obtain more representative results. The analysis covered data from January 2015 to March 2023, so extending this period could further enhance the findings. It is also important to note the challenges of obtaining information and its limited availability in emerging markets, particularly regarding the books on supply and

demand for stocks. As a result, many studies on liquidity risk in these economies have focused primarily on data from publicly traded companies.

For future lines of research, it is recommended to expand the study to include more countries, extend the time frame, and incorporate new risk indicators. Additionally, it would be valuable to examine the impact of the COVID-19 pandemic, as it may have influenced the reduction of liquidity risk due to fund withdrawals and affected domestic stock markets.

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