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**ABSTRACT**

**Purpose:** The aim of this research is to investigate the association between financial leverage, firm liquidity, and firm size with the performance of companies in China.

**Design/Methodology/Approach:** The study adopted a quantitative approach and gathered secondary data from 2010 to 2022 from firms listed on the China Stock Exchange via the wind database. Using a fixed effect model, we empirically tested our hypotheses.

**Findings:** The study's outcomes indicate that firm liquidity and firm size significantly affect a company's performance in China. Moreover, the study claims that financial leverage also plays a significant role in influencing firm performance.

**Conclusion:** In conclusion, findings indicate the importance for corporate managers, policymakers, and investors to consider factors such as financial liquidity and firm size when making decisions related to firm performance, particularly in an emerging stock market.

**Implications/Originality/Values:** These findings have important implications for corporate managers, policymakers, and investors. Corporate managers, investors, and policymakers should focus on policies that promote financial stability and economic growth. Overall, this study provides valuable insights into the factors that influence firm performance in China

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**Introduction**

The nexus between liquidity and the firm’s performance has been a topic of debate in the field of corporate finance. The primary objective of corporate finance is to increase the wealth of shareholders by boosting the market price of shares, while also ensuring that the firm has enough liquidity to meet its obligations as they become due (Lazaridis & Tryfonidis, 2006). The success of a company is determined by how effectively it utilizes its assets and meets the expectations of stakeholders. It is reflected in the performance of the firm, which encompasses the returns...
generated from its various assets (Froko, 2017). Additionally, the performance of a firm indicates the distribution of claims to its assets, including both equity and liabilities (Froko, 2017).

For a long time, scholars have been debating the concept of achieving optimal firm performance, which remains a common challenge faced by organizations. Many researchers have attempted to identify the determinants that are essential to the financial success of firms, such as Armada et al., (2011). The primary objective of firms is to maximize the value of their shareholders, who are the true owners of the company. Profit generation is a crucial means of adding value to shareholders, either by distributing dividends or investing in the firm to enhance share value (Mathuva, 2015).

Inappropriate firm performance can lead to financial distress and various problems for businesses. One of the common causes of financial difficulties is financial leverage, which firms use to gain tax benefits and leverage effect. The adoption of this strategy results in an increase in the firm's equity and improves its return on equity, but it also introduces the risk of potential insolvency. Conversely, decisions related to working capital management, particularly those concerning inventory and receivables, have a direct impact on the firm's operational cash flows (Jacob, 2018; Tiwari et al., 2017). In China, the firm’s performance is influenced by a multitude of factors, including the government and market-based economy, fluctuations in the stock market, limited capital expenditure for investment, and high costs associated with leverage. These factors can pose challenges to firms in terms of their profitability and overall survival in the market (Blair & Christine, 2013).

The objective of this study is to examine the impact of financial leverage, firm liquidity, and firm size on the firm’s Performance in China. Specifically, the study aims to investigate the nexus between firm liquidity and financial leverage in relation to firm performance. Numerous studies have investigated the impact of operating liquidity and financial leverage on firm performance. However, there is a lack of research on this topic in the context of the Chinese economy. This industry encompasses numerous publicly listed companies and is a significant contributor to the country's gross domestic product and total workforce. It is crucial to conduct research on this topic in China to provide managers with recommendations to enhance firm performance. This study aims to examine the influence of firm liquidity, firm size, and financial leverage on the Firm’s Performance operating in China and contribute to the existing literature review. These findings have important implications for corporate managers, policymakers, and investors. Corporate managers should focus on maintaining adequate liquidity and ensuring that their firms are not too large. Policymakers should focus on policies that promote financial stability and economic growth. Investors should focus on investing in firms with high liquidity and small size. In addition, this research can also provide new insights into the factors that influence firm performance in China. Previous studies on this topic have mainly focused on developed markets. This research fills a gap in the literature by providing empirical evidence on the impact of financial leverage, liquidity, and size on firm performance in China.

**Literature Review**

**Firm Liquidity and Firm Performance**

The trade-off theory of capital structure suggests that companies with high liquidity may be more likely to take on additional debt, as they can repay their debts. This suggests a positive correlation between liquidity and leverage. Studies have shown that liquidity can have a significant impact on equity valuation. For example, research by Stoll and Whaley (1983); and Amihud and Mendelson (1986) found that illiquid stocks tend to have higher required rates of return, due to the higher transaction costs associated with trading them. Previous research has examined the nexus between liquidity and firm performance. Lipson and Mortal (2009) hypothesized that companies with higher liquidity are more likely to prefer equity financing to improve their performance. They found that
companies with higher liquidity tend to have lower debt levels, which could be due to their preference for equity financing.

Other studies have found that the nexus between liquidity and firm performance may vary with the business cycle. For example, Omorogie et al. (2019) found that liquidity and debt ratios are negatively correlated during recessions. This suggests that during economic downturns, companies with lower liquidity may be more likely to experience financial distress. Booth et al. (2001) discovered that variables influencing firm performance exhibit similarities across both developing and developed countries, although differences may arise due to institutional characteristics specific to financial market organizations. Developing countries often have less advanced trading systems in their stock exchanges compared to more developed financial markets, as observed by Sheikh and Wang (2011). In summary, the nexus between liquidity, leverage, and firm performance is subject to different theoretical perspectives. While the trade-off theory suggests a positive association between liquidity and leverage, the pecking order theory argues for a negative nexus.

Financial Leverage and Firm’s Performance
Raheman et al. (2007) determine the nexus between financial leverage and a firm’s performance. According to the result of their study, they found that the companies with high profits have no impact on their performance. Pouraghajan et al. (2012) find a positive nexus between financial leverage and a firm’s performance. Aivazian et al. (2005) investigates the impact of financial leverage and investment in the context of Canadian companies. The results of their study indicate that financial leverage negatively impacts investment and this nexus is stronger in those companies that have low growth as compared to higher growth companies. Tobin’s Q was used to measure growth. Cheng and Tzeng (2011) find that the companies that have higher financial leverage rates had more value in the market as compared to those companies that have lower leverage. Additionally, their study also revealed that financial leverage’s impact on a firm’s performance is based on the financial performance of a company. Hurme (2010) investigated those companies in the US that have low-q have a negative nexus between leverage and future growth. Shao and Bao (2010) indicate that companies with higher levels of leverage and growth have a positive impact on the performance of the firm. The nexus between financial leverage and firm performance is not straightforward. Different studies have found different results, and the nexus is likely to be influenced by several factors. These factors include profitability, equity return, capital size, efficiency of finances, firm size, and industry competition.

Firm Size and Firm Performance
Firm size is often used as a proxy for performance measures in empirical studies. Larger firms are typically associated with greater resources, economies of scale, and market power, which can positively influence their performance. Conversely, smaller firms may have greater agility, flexibility, and ability to adapt to changing market conditions, potentially leading to superior performance. The nexus between firm size and performance, however, is complex and depends on various contextual factors. Many recent studies support the positive nexus between the size of a firm and its performance. For example, Delis et al. (2020) conducted a comprehensive analysis of the banking sector and found that larger banks tend to have higher profitability, efficiency, and market value. Similarly, Cheng et al. (2021) investigated a sample of manufacturing firms in China and revealed a positive association between firm size and financial performance. Han et al. (2022) examined a sample of Taiwanese listed firms and found that larger firms experience diminishing returns to scale, resulting in lower profitability and efficiency. Moreover, Verwaal and Donkers (2021) explored the Dutch manufacturing sector and discovered a negative nexus between firm size and innovation performance, indicating that smaller firms exhibit higher levels of innovation. Based on the above discussion following hypotheses are developed.

$H_1$: Firm Liquidity has a positive effect on the performance of the firm.

$H_2$: Financial Leverage has a positive effect on the performance of the firm.
H3: Firm Size has a positive effect on the performance of the firm.

Methodology
This study used a quantitative research design. The main objective of the research is to investigate the nexus between financial leverage, firm liquidity, firm size, and firm performance in China. The data is collected from secondary sources, specifically from the financial statements of listed firms in China. The wind database is used to get data for this study. The study covers twelve years from 2010 to 2022. The sample for this study consists of non-financial firms listed on the China Stock Exchange. Only firms with complete financial data for the period under consideration are included in the sample. Firm performance is the dependent variable, which can be measured using return on equity (ROE). Financial leverage, firm liquidity, and firm size are the independent variables. Debt-to-equity ratio, current ratio, and logarithm of total assets are the measurements of leverage, liquidity, and size. The rest of the variables are used as control variables such as assets turnover, inventory turnover, capital expenditure, age of firm, and research and development expenditure.

Estimation Method
In this research, descriptive statistical analysis was used to check the normal distribution of the dataset, and Pearson’s correlation analysis was employed to check the multicollinearity between variables. To account for the issue of independent observations across different firms over time, we employ a three-panel regression approach. Subsequently, I employ the Hausman test to identify the most effective estimator between random effects and fixed effects models. Consequently, the hypotheses are assessed using both random effects and fixed effects regressions, while simultaneously controlling for unchanged, firm-specific effects over time. We employ the statistical software STATA to carry out this analysis.

Econometric Model
In the provided equation, POF represents the Firm’s Performance i during the time period t. The equation aims to estimate the nexus between POF and several explanatory variables. $\beta_0$ demonstrates the intercept term, which is the value of POF. $\beta_1$ reveals the coefficient for the variable LEV, which measures the financial leverage of the firm. $\beta_2$ shows the coefficient for the variable SI, which denotes the firm size. $\beta_3$ determines the coefficient for the variable LIQ, which measures firm liquidity. $\beta_4$ to $\beta_8$ represents the coefficient for the control variables such as age, research and development expenditure, etc. $\varepsilon$ represents the error term. By estimating the coefficients $\beta_1$ to $\beta_8$, I can assess the impact of each variable on firm performance, controlling for other factors, and gain insights into the nexus between firm size, financial leverage, liquidity, and performance.

\[
P_{OF_{it}} = \beta_0 + \beta_1 LEV_{it} + \beta_2 SI_{it} + \beta_3 LIQ_{it} + \beta_4 Age_{it} + \beta_5 R&D_{it} + \beta_6 AT_{it} + \beta_7 CE_{it} + \beta_8 IT_{it} + \varepsilon_{it}
\]

Result and Discussion
Descriptive Statistics
Table 1 provides summary statistics for the variables in the dataset. The column 1 describes the names of the variables being analyzed in the dataset. Number of observations available for each variable in column 2. In this case, there are 4,420 observations for all the variables. The mean (average) value of each variable is displayed in column 3. For example, the mean ROE is 0.101, LIQ is 1.425, FS is 9.136, and so on. Furthermore, column 4 shows the standard deviation of each variable. For instance, the standard deviation of ROE is 0.303, LIQ is 1.365, FS is 0.836, and so forth. Columns 5 and 6 represent the minimum and maximum value of each variable. The summary statistics presented in the table offer a comprehensive view of the variable distribution and value range. They assist in gaining insights into the central tendency, variability, and the minimum and maximum values observed in the dataset. These statistics serve as an initial step for conducting further analysis and interpreting the data.
Table 1: Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>4420</td>
<td>.101</td>
<td>.303</td>
<td>-1.008</td>
<td>2.899</td>
</tr>
<tr>
<td>LIQ</td>
<td>4420</td>
<td>1.425</td>
<td>1.365</td>
<td>.1</td>
<td>9.91</td>
</tr>
<tr>
<td>FS</td>
<td>4420</td>
<td>9.136</td>
<td>.836</td>
<td>6.574</td>
<td>16.54</td>
</tr>
<tr>
<td>LEV</td>
<td>4420</td>
<td>.421</td>
<td>.159</td>
<td>1</td>
<td>.7</td>
</tr>
<tr>
<td>AGE</td>
<td>4420</td>
<td>.671</td>
<td>.869</td>
<td>.007</td>
<td>9.86</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>4420</td>
<td>.295</td>
<td>.311</td>
<td>.011</td>
<td>1.681</td>
</tr>
<tr>
<td>AT</td>
<td>4420</td>
<td>.571</td>
<td>.713</td>
<td>0</td>
<td>5.618</td>
</tr>
<tr>
<td>CE</td>
<td>4420</td>
<td>.524</td>
<td>.313</td>
<td>.073</td>
<td>.991</td>
</tr>
<tr>
<td>IT</td>
<td>4420</td>
<td>.491</td>
<td>.278</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: The above table displays descriptive statistics for a sample of 4420 observations of firm-level variables, including ROE (return on equity), LIQ (liquidity), FS (firm size), LEV (financial leverage), AGE (age of the firm), R&D (research and development), AT (assets turnover), CE (capital expenditure), and IT (inventory turnover). The table includes five columns: variable name, number of observations, mean, standard deviation, minimum value, and maximum value.

Correlation Matrix

Table 2 presents a correlation matrix that examines the nexus between nine variables: ROE (Return on Assets), LIQ (Liquidity), FS (Firm Size), LEV (Financial Leverage), AGE (Firm Age), R&D (Research and Development Expenses), AT (Asset Turnover), CE (Capital Expenditure), and IT (Inventory Turnover). Each cell in the table represents a correlation coefficient ranging from -1 to 1. A correlation coefficient of 1 signifies a perfect positive correlation, -1 indicates a perfect negative correlation, and 0 suggests no correlation between the two variables. For instance, the correlation coefficient between ROE and LIQ is 0.088, indicating a weak positive correlation. Similarly, the correlation coefficient between LEV and AGE is 0.052, representing a weak positive correlation. Overall, the table displays the correlation coefficients for all possible pairs of variables, providing valuable insights into potential nexus among the variables and guiding further analysis.

Table 2: Correlation

<table>
<thead>
<tr>
<th>Variables</th>
<th>ROE</th>
<th>LIQ</th>
<th>FS</th>
<th>LEV</th>
<th>AGE</th>
<th>R&amp;D</th>
<th>AT</th>
<th>CE</th>
<th>IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIQ</td>
<td>0.088</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FS</td>
<td>0.224</td>
<td>-0.015</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEV</td>
<td>0.035</td>
<td>-0.182</td>
<td>0.027</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGE</td>
<td>-0.119</td>
<td>-0.365</td>
<td>-0.097</td>
<td>0.052</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R&amp;D</td>
<td>0.138</td>
<td>0.322</td>
<td>-0.053</td>
<td>-0.012</td>
<td>-0.277</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AT</td>
<td>0.284</td>
<td>0.273</td>
<td>0.131</td>
<td>-0.057</td>
<td>-0.156</td>
<td>0.202</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CE</td>
<td>-0.009</td>
<td>-0.007</td>
<td>0.012</td>
<td>0.009</td>
<td>0.451</td>
<td>-0.220</td>
<td>0.004</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td>0.020</td>
<td>0.013</td>
<td>0.033</td>
<td>-0.023</td>
<td>-0.042</td>
<td>0.021</td>
<td>0.034</td>
<td>-0.009</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Note: The above table shows a correlation matrix for nine variables, including ROE (Return on Equity), LIQ (Liquidity), FS (Firm Size), LEV (Financial Leverage), AGE (Firm Age), R&D (Research and Development Expenses), AT (Asset Turnover), CE (Capital Expenditure), and IT (Inventory Turnover). The table has 9 columns and 9 rows, with each cell showing the correlation coefficient between the variables in the corresponding row and column.

Regression Result

Table 3 represents the results of a three-stage regression analysis examining the nexus between the performance of a firm and several independent variables. The dependent variable in all three stages is the performance of the firm, while the independent variables differ across the three stages. In the first stage, the independent variable is leverage, and the coefficient for this variable is 0.269 at the 1% level. This suggests that there is a positive nexus between leverage and the performance of the firm. In the second stage, the independent variable is size, coefficient for size is 0.025 at the 5% level. This suggests that there is a positive nexus between the size of the firm and its performance. The coefficients for the control variables age, R&D, and AT are also statistically significant at various levels, indicating that these variables have an impact on the performance of the firm as
well. In the third stage, the independent variables are liquidity, and the control variables are age, R&D, AT, and CE. The coefficient for liquidity is 0.382 at the 1% level. This suggests that there is a positive nexus between liquidity and the performance of the firm. The coefficients for the control variables age, R&D, AT, and CE are also statistically significant at various levels, indicating that these variables have an impact on the performance of the firm as well. Some previous studies that found different results Le and O’Brien (2010) found that financial leverage has a positive impact on firm performance in China. Salim and Yadav (2012) investigated that financial liquidity has a positive impact on firm performance in Malaysia. Detthamrong et al. (2017) found that firm size has a positive impact on firm performance in Thailand.

<table>
<thead>
<tr>
<th>Table 3: Regression Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable: Firm’s Performance (ROE)</td>
</tr>
<tr>
<td>Stage 1</td>
</tr>
<tr>
<td>Coefficient</td>
</tr>
<tr>
<td>Lev</td>
</tr>
<tr>
<td>Size</td>
</tr>
<tr>
<td>Liq</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>R&amp;D</td>
</tr>
<tr>
<td>AT</td>
</tr>
<tr>
<td>CE</td>
</tr>
<tr>
<td>IT</td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Hausman test statistic</td>
</tr>
<tr>
<td>R2</td>
</tr>
<tr>
<td>Adjusted R2</td>
</tr>
</tbody>
</table>

*** p<.01, ** p<.05, * p<.1

Note: The above table explains the results of regression analysis. The table 4 rows and multiple columns which explain the impact of independent variables on dependent variable. This table presents the results of a regression analysis that examines the impact of firm size, leverage, liquidity, and other control variables on the performance of the firm. The table has three stages, each with different independent variables added to the regression model. The dependent variable is the performance of the firm, and the coefficients represent the nexus between each independent variable and the dependent variable.

**Robustness Check**

<table>
<thead>
<tr>
<th>Table 4: Robustness Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable: Firm’s Performance</td>
</tr>
<tr>
<td>Stage 1</td>
</tr>
<tr>
<td>Coefficient</td>
</tr>
</tbody>
</table>
Lev  |  0.002***  
    |  (0.019)   
Size |  0.025**   
    |  (0.008)   
Liq |  0.001     
    |  (0.041)** 
Age |  0.094*    
    |  (0.000)   
R&D |  0.048**   
    |  (0.000)   
AT  |  0.002***  
    |  (0.051)   
CE  |  0.021**   
    |  (0.017)   
IT  |  0.007***  
    |  (0.039)** 
Constant |  0.055*    
        |  (0.000)   
N   |  4420      
Hausman test statistic |  6.58 (0.025)  
R2  |  0.108     
Adjusted R2 |  0.009   
        |  0.025     

Note: The above table explains the results of regression analysis. The table 4 rows and multiple columns which explain the impact of independent variables on the dependent variable. This table presents the results of a regression analysis that examines the impact of firm size, leverage, liquidity, and other control variables on the performance of the firm. The table has three stages, each with different independent variables added to the regression model. The dependent variable is the performance of the firm, and the coefficients represent the nexus between each independent variable and the dependent variable. The standard errors of the coefficients are in parentheses.

Conclusion
In conclusion, this research aimed to investigate the impact of firm size, leverage, and liquidity on firm performance. Through the use of a quantitative approach and fixed effect model, this study analyzed panel data from firms listed on the China Stock Exchange between 2010 and 2022. Our findings revealed that all three variables, namely financial leverage, firm size, and liquidity, had a significant impact on firm performance. Specifically, we found that larger firms tend to have better performance, while firms with higher financial leverage and lower liquidity tend to have poorer performance. In conclusion, this study provides valuable insights into the impact of firm size, leverage, and liquidity on firm performance. Findings suggest that these factors are important considerations for corporate managers, policymakers, and investors, and highlight the need for firms to maintain healthy levels of financial leverage and liquidity to ensure long-term success. As such, this research has the potential to contribute to a more informed and strategic decision-making process for firms, policymakers, and investors alike.

These results have important implications for corporate managers, policymakers, and investors. Corporate managers should be aware of the impact of these factors on firm performance when making strategic decisions, such as financing and investment decisions. Policymakers may also want to consider policies that encourage firms to maintain healthy levels of financial leverage and liquidity, as this can have a positive impact on overall economic growth. For investors, these
findings can inform investment decisions, as they provide insight into the factors that drive firm performance. It is worth noting that our study has several limitations that should be considered when interpreting the results. First, the sample is limited to the which may not be generalizable to other countries. Second, this study only considers three variables and does not account for other potential factors that may impact firm performance, such as management quality and market competition. Future studies may want to consider a wider range of variables and industries to provide a more comprehensive understanding of the factors that drive firm performance.

References


