The Effect of Leverage and Liquidity on Profitability: Study of The KBW NASDAQ Financial Technology Company for the 2017-2022 Period

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Abstract. This study aims to examine the impact of leverage and liquidity on profitability and to determine the specific effects of leverage and liquidity on profitability in KBW NASDAQ Financial Technology companies from 2017 to 2022. The research adopts a descriptive and verification approach, utilizing a quantitative method with a total sample of 15 companies within the KBW NASDAQ Financial Technology index. The data analysis technique employed is multiple regression analysis using EViews 12 software. The findings indicate that leverage has no significant effect on profitability, whereas liquidity has a positive impact on profitability. Based on these results, it is recommended that companies optimize asset utilization to enhance profitability by increasing sales, improving cost efficiency, and expanding market share. Effective leverage management is also crucial to prevent excessive financial burdens, ensuring the optimal use of funds to maintain financial stability and sustain long-term growth.
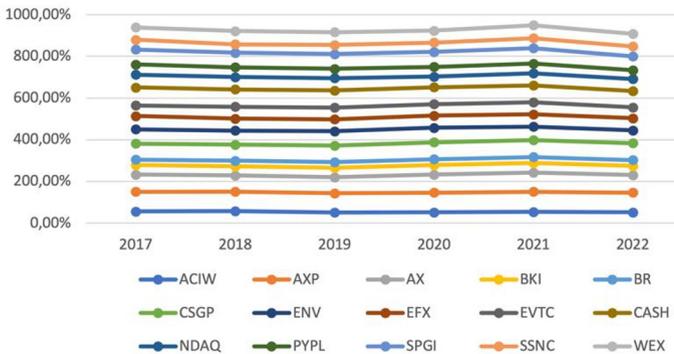
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1 Introduction

Profitability is a central objective of financial management, as it directly reflects the overarching goal of maximizing shareholders' wealth. Among the various dimensions used to assess a company's development, financial indicators play a critical role in evaluating the appropriateness and effectiveness of corporate policies. Financial instability and eventual bankruptcy often stem from inadequate attention to key financial factors, which underscores the importance of sound financial management in sustaining business health [1].

Numerous studies have identified a range of financial ratios as standard measures of corporate profitability. These include Net Profit Margin (NPM), Return on Assets (ROA), Gross Profit Margin (GPM), Operating Profit Margin (OPM), Return on Equity (ROE), Return on Investment (ROI), and Earnings Per Share (EPS) [2 – 7]. In the present study, Gross Profit Margin (GPM) is employed as the primary indicator of firm profitability.

The NASDAQ (National Association of Securities Dealers Automated Quotations) is a major stock exchange in the United States, particularly recognized for its focus on technology-oriented companies, including those in the financial technology sector. Figure 1 illustrates the gross profit margins of 15 companies listed under *The KBW NASDAQ Financial Technology* index over the period from 2017 to 2022. The data reveal a noticeable decline in gross profit margins across all companies in the year 2022, following a generally stable or slightly upward trend in the preceding years. This downturn may reflect increasing challenges faced by the financial technology sector, potentially driven by macroeconomic pressures, rising operational costs, or declining revenues. Notably, even firms with consistently high profit margins such as AX and SPGI experienced a reduction in 2022, suggesting that the adverse conditions affected a broad spectrum of companies regardless of their historical performance. This pattern highlights a sector-wide contraction in profitability, underscoring the need for further investigation into the underlying causes.

Source: Author's work

Fig. 1. Gross profit margin (2017 - 2022).

Based on Figure 1, it can be inferred that all 15 companies included as samples in this study experienced a decline in gross profit margin in 2022, indicating a reduction in overall profitability. A decline in profitability often reflects a weakening financial condition, which may trigger negative market reactions and ultimately lead to a lower evaluation of the company's performance [8].

Profitability ratios serve as key indicators of a company's ability to generate earnings and reflect the combined effects of liquidity, asset management, and leverage [9]. Accordingly, these three factors—liquidity, asset utilization, and financial leverage—are crucial determinants of profitability. Notably, high leverage must be supported by the company's capacity to meet its debt obligations, which in turn depends on the adequacy of its assets. Therefore, leverage and liquidity should be considered interdependent components of financial health.

Liquidity is typically measured using financial ratios such as the quick ratio, current ratio, and cash ratio, all of which assess the relationship between a company's current

assets and its liabilities. These indicators provide insight into the firm's short-term solvency and its ability to meet immediate financial obligations.

In light of the observed fluctuations in profitability and the theoretical significance of leverage and liquidity in shaping firm performance, a deeper investigation into their effects is warranted, particularly within the financial technology sector—an industry characterized by rapid innovation and evolving market dynamics. Although prior studies have explored various determinants of profitability, limited attention has been given to how capital structure and short-term financial resilience interact to influence gross profit margins in the fintech context. Therefore, this study aims to rigorously examine the extent to which leverage and liquidity affect profitability, using panel data from companies listed in The KBW NASDAQ Financial Technology Index over the period 2017–2022. By doing so, the research seeks to provide empirical evidence that can inform strategic financial management decisions and contribute to the broader discourse on financial performance in technology-driven financial markets.

2   Methods

This research was conducted to determine the effect of leverage and liquidity on profitability. The variables studied are leverage and liquidity as independent variables and profitability as the dependent variable. The objects of this research are financial technology companies listed on The KBW NASDAQ Financial Technology Index for the 2017–2022 period. This study was carried out within a period of less than one year, from January to June 2023. The variables used in this research are quantitative in nature. Quantitative research involves the use of numerical data from the stages of data collection, interpretation, to the presentation of results [10].

This study uses a time series design because it aims to determine the stability and clarity of conditions that are uncertain and inconsistent [11]. A time series design is used to describe financial report data across a specific period [12]. The sampling technique applied in this research is purposive sampling, resulting in a total sample of 15 companies. The data used are secondary data obtained from the annual financial reports of the selected companies.

The analytical method employed in this study is panel data regression using the EViews 12 program. Prior to the regression analysis, model selection tests were conducted, including the Chow test to determine whether the Fixed Effect Model (FEM) or Common Effect Model is more appropriate, followed by the Hausman test to choose between the Fixed Effect Model and the Random Effect Model. Based on the test results, the Fixed Effect Model was selected as the best-fit model for this research. This method allows for more accurate estimation by controlling for unobserved heterogeneity across companies.

3   Results and Discussion

Panel data is formed from a combination of time series and cross-section data. According to [13], panel data regression is a regression model that uses panel data and has

several advantages. First, panel data can produce a greater degree of freedom because it combines time series and cross-section data to provide more data. Second, panel data can overcome the problem of omitted variables due to combining information between time series and cross-section data. The time series data in this research is 8 years (2014-2021) with a cross-section of 6 companies. Before the analysis, the best regression model is selected through the Chow, Hausman, and Langrage Multiplier tests. In the Chow test, the model chosen is the Fixed Effect Model, and model testing will continue with the Hausman test. In the Hausman test, the model chosen is the Fixed Effect Model (FEM), so there is no need to continue with the Lagrange Multiplier test.

As show in Table 1, the fixed effect model panel regression results show that only the Current Ratio (CR) has a statistically significant impact on the dependent variable, with a coefficient of 0.006837 and p-value of 0.0056, indicating that a one-unit increase in CR is associated with approximately a 0.007 unit increase in the dependent variable. In contrast, the Debt-to-Equity Ratio (DER) has no statistically significant effect (p-value = 0.6968), while the constant term exhibits high statistical significance (p-value = 0.0000) with a coefficient of 0.600971.

The model demonstrates exceptional explanatory power with an R-squared value of 0.980675, indicating that approximately 98.07% of the variation in the dependent variable is explained by the included variables and fixed effects. This is further supported by the highly significant F-statistic (231.5362, p-value = 0.000000), while the Durbin-Watson statistic of 1.842398 suggests minimal autocorrelation in the residuals. The cross-section fixed effects approach effectively controls for unobserved heterogeneity across entities, enhancing the reliability of the estimated relationships.

Table 1. Panel regressions results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.600971	0.007790	77.14789	0.0000
DER	0.000573	0.001463	0.391219	0.6968
CR	0.006837	0.002395	2.854896	0.0056
R-squared	0.980675			
Adjusted R-squared	0.976440			
F-statistic	231.5362			
Prob (F-statistic)	0.000000			

3.1   The Effect of Leverage on Profitability

Leverage is a company's ability to meet its long-term obligations. This research measures leverage by the Debt Equity Ratio (DER) indicator on the KBW NASDAQ financial technology. The debt-to-equity ratio indicator is a ratio that measures four levels of a company's leverage, which is calculated by dividing the company's total debt by its total capital (equity). Companies with high leverage levels can reduce profitability because the more debt the company has will reduce the profits earned. On the other hand, if the level of leverage is low, the level of profitability will increase because companies with higher profitability will use relatively little leverage and will tend to use their internal funds.

The results of testing the hypothesis of the effect of leverage on profitability show that the calculated t result for the leverage variable (DER) is 0.391219. In contrast, the t table value with $\alpha = 0.05$ and df = (nk), df = 1.66256 which means that the t- sta5s5c value is smaller than t table (0.391219 < 1.66256). If you look at the probability value, it is 0.6968, which is greater than 0.05, so H 0 is accepted. H 1 is rejected and this shows that the leverage variable (DER) does not influence the profitability variable (GPM). It can be seen that the results of this research prove that leverage does not affect profitability due to the company's high level of liquidity.

The leverage condition of the KBW NASDAQ financial technology for the 2017-2022 period experienced fluctuations, which tended to decrease. Leverage that is down or low is certainly a sign that the company has a smaller risk of loss.

3.2   The Effect of Liquidity on Profitability

Liquidity is a company's ability to meet its short-term obligations. This research measures leverage using the Current Ratio (CR) indicator on the KBW NASDAQ financial technology. The current ratio indicator is a ratio that measures a company's liquidity, which is calculated by dividing total current assets by current liabilities.

Based on the results of testing the hypothesis of the effect of liquidity on profitability, it shows that the calculated t result for the liquidity variable (CR) is 2.854896. In contrast, the t table value with $\alpha = 0.05$ and df = (nk), df = 1.66256 which means that the t- sta5s5c value is greater than t table (2.854896 > 1.66515), then if you look at the probability value, which is 0.0056, which means it is smaller than 0.05, this shows that the liquidity variable (CR) has a positive influence on the profitability variable (GPM).

The liquidity conditions of the KBW NASDAQ financial technology for the 2017-2022 period experienced fluctuations, which tended to decrease. Decreasing or low liquidity will cause the company difficulty paying its short-term debt.

4   Conclusions

This study aimed to analyze the influence of leverage and liquidity on the profitability of financial technology companies listed in the KBW NASDAQ Financial Technology Index over the 2017–2022 period. Using panel data regression with the Fixed Effect Model (FEM), the study reveals two key findings. First, leverage, as measured by the Debt-to-Equity Ratio (DER), does not have a significant effect on profitability (Gross Profit Margin). This suggests that the companies' ability to meet long-term obligations through debt did not directly enhance their profitability, potentially due to effective internal financing or the mitigating effect of high liquidity. Second, liquidity, as measured by the Current Ratio (CR), has a significant and positive effect on profitability. This indicates that companies with better short-term financial health tend to achieve higher profitability levels.

The implication of these findings highlights the importance for financial technology firms to maintain adequate liquidity levels to support profitability while managing leverage efficiently to avoid financial distress. As such, companies are recommended to

improve cost control, increase operational efficiency, and ensure prudent liquidity management as part of their long-term strategic financial planning.

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