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The Nexus between Financial Performance and Equilibrium: Empirical Evidence on Publicly Traded Companies from the Global Financial Crisis Up to the COVID-19 Pandemic

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Abstract: Financial performance and financial equilibrium are two key aspects that should be monitored by any business manager interested in passing the test of time and overcoming unpredictable events such as economic crises. The organic link between financial performance and financial equilibrium has rarely been studied in the long run for companies listed on the stock market. The present article fills this gap in the literature by examining the degree to which financial performance influenced long-term financial equilibrium using data from 34 major companies publicly traded on the New York Stock Exchange and operating around the world in a wide variety of industries and sectors. The period of analysis spread over a decade (2007Q1–2020Q3) in order to cover two major crises that have marked the dawn of the third millennium and occurred relatively close to one another: the 2008 financial meltdown and the COVID-19 pandemic crisis. By means of panel data modelling, the study showed that the short-term and long-term financial equilibria of these public companies measured by current ratio, quick ratio and debt to equity ratio were significantly impacted by different financial performance indicators. The study addresses various implications of the empirical results and lays out avenues for future research.

Keywords: liquidity; solvency; performance; stock market; crises

1. Introduction

Throughout recent history, economic markets have experienced several notable economic and financial crises that impacted at regional or global level, starting with the 1929 Wall Street Crash followed by the "Great Depression" and ending up with the 2000 tech bubble, 2008 global financial crisis, 2010 sovereign debt crisis in Europe and the current health crisis.

Philip McGraw, a worldwide famous American health professional and media personality, stated once that individuals should not wait to end up in a crisis situation in order "to come up with a crisis plan". Transposing this statement to the current ever-changing business environment, companies should indeed be proactive and prepare different financial strategies that aim to offer them safeguards against financial crises. Such a proactive behavior would be essential for a company's survival on the ground that modern economic theory offers no standard prescriptions of how economic markets and economic agents should act when facing uncertain events (Tanzi 2011, 2017, 2020). For that matter, random events such as the 2008 financial meltdown or the current COVID-19 pandemic have revealed numerous inconsistencies, hesitations and lack of coordination in governments' responses in the aftermath of these crises (Chang et al. 2020; Gunay et al. 2021; McAleer 2020; McMaster et al. 2020; Thorbecke 2020).

Within this context, the present study aimed to examine how 34 publicly traded companies, which ranked first on the New York Stock Exchange (NYSE), managed to keep their economic activities in balance and navigate a period of over a decade filled with uncertainties. Hence, the following research question has been addressed: To what degree does financial performance shape financial equilibrium of public companies in

times of crisis? This study focused particularly on the time frame 2007Q1–2020Q3 in order to integrate the 2008 and 2019 aforementioned crises. Therefore, using financial data from a dynamic environment such as NYSE a *dynamic analysis* was conducted—a term used by financial analysts to designate a long-term examination.

The financial equilibrium of a company can be determined for different time horizons: the short-term, which focuses on economic activities that must be concluded in less than one year; the long-term, which regards economics activities spanning for a period of over one year (Adalsteinsson 2014; Soprano 2015). The short-term financial equilibrium is expressed through liquidity indicators (i.e., current, quick and cash liquidity) that measure the company's capacity of covering short-term liabilities based on its current assets. A company that registers high liquidity indicators gives solid signs of growth in the market.

The long-term financial equilibrium is expressed through solvency indicators that measure the company's capacity of covering long-term liabilities based on its net assets. Ideally, managers should monitor solvency levels in order to avoid situations in which companies contract more loans than they can ever repay. An efficient management of solvency states can steer a company away from unfavorable situations such as insolvency or bankruptcy.

In line with the aim of the research study, financial performance is defined as the capacity of a company to generate profit from its economic activities, after subtracting all related costs. It goes without saying that generating a consistent long-term profit margin strengthens a company's image on the market and opens up new development opportunities. Once they enter the market and start building their reputation, companies that fail to consistently pass the break-even point often face liquidity or solvency issues, which ultimately makes them withdraw from the market.

The finance literature gives account of numerous studies focused on the impact that financial equilibrium has on financial performance (Batrancea 2020; Borges Junior and Fernandes Malaquias 2019; Li et al. 2020; Schaub and Schmid 2013; Yang et al. 2017). Yet, little or no ground is given to the impact of financial performance on financial equilibrium, which is the perspective of the present study. The relationship between company performance and equilibrium resembles a two-way street since they are organically connected for at least two reasons. On the one hand, companies with adequate levels of liquidity and solvency are viable and able to continue their economic activities at a normal pace, develop strong relationships with suppliers, banks, clients, market their goods and services and register sales revenue, meet financial obligations in due time and ultimately generate profit. On the other hand, financially performant companies (especially those publicly listed), which generate profit, attract eager investors, suppliers, banks, clients who strengthen their liquidity and solvency states, thus allowing companies to perpetuate this cycle ad infinitum. Financial performance and financial equilibrium indicators can be regarded as signs that a company is solid, prosperous and can provide all the parties involved in its activities what each expects: dividends for shareholders; high quality goods and services for clients; reliable contractual terms for suppliers; on-time paid salaries for employees; on-time paid interest for banks; taxes paid and remitted to tax authorities. Since performance cannot be achieved without a solid financial equilibrium state and vice-versa, investigating the relationship from the proposed perspective will elicit important insights. Moreover, although it is important that a company generates profit, it is even more important that the company has enough financial resources in order to cover due payments. In other words, a "financially balanced" company increases investors' trust in the capacity of the company management team to navigate efficiently in times of crises.

Hence, the novelty of this research endeavor is that it examined the degree to which performance drove financial equilibrium over the long run for the 34 public companies in the sample. For the purpose of this study, financial performance was measured via five different ratios: gross profit margin; operating margin; earnings before interest, taxes, depreciation and amortization margin; earnings before taxes; net profit margin. Financial equilibrium was captured via three indicators: current ratio; quick ratio; debt to equity

ratio. The variables of interest selected to capture financial performance are less used in the financial analysis literature. At the same time, all indicators included in the econometric analyses convey important information for stock market investors, reason for which they are publicly disclosed for each company listed on NYSE.

The remainder of the article is the following. Section 2 includes various sources in the literature tackling the link between financial equilibrium and financial performance, while Section 3 gives details on the company sample, stock market, selected time frame and variables of interest, which represent the core of the study. Section 4 introduces the three research hypotheses and reports on the empirical results estimated via panel data models. Section 5 discusses the most relevant results of the study. Section 6 comprises concluding remarks on the relationship between financial performance and financial equilibrium, study limitations, implications of the results and potential research directions deriving from the current study.

2. Literature Review

Financial performance and financial equilibrium are two very important concepts in the finance literature that have been often scrutinized either being taken together or separately. Consequently, investigations have unraveled that they also share common factors of influence, one of which is taxation. Depending on the tax system, tax rates and fiscal facilities offered by public authorities, company financial performance may be higher or lower (Batrancea and Nichita 2015; Batrancea et al. 2012, 2018; Nichita et al. 2019). In turn, financial equilibrium also falls under the impact of tax-related aspects such as fiscal pressure. Batrancea (2021) conducted an analysis on 88 companies operating in the energy industry (electricity, gas, oil) and listed on the New York Stock Exchange. The empirical analyses covering almost 16 years (2005Q1–2020Q3) revealed that the short-term and long-term financial equilibrium of electricity and oil companies was more influenced by fiscal pressure than the equilibrium of gas companies.

As previously mentioned, the relationship between financial performance and company equilibrium is a two-way street, therefore insights from both perspectives should be addressed more often.

The existing literature delves constantly into the factors influencing financial performance and singles out liquidity, working capital (Akgün and Memiş Karataş 2020), corporate governance (Abdo and Fisher 2007; Coleman and Wu 2020) or environmental sustainability commitment (Dzomonda and Fatoki 2020), to mention but a few. For instance, El-Ansary and Al-Gazzar (2020) examined the degree to which net working capital drove company profitability for 134 companies operating in 12 countries from Middle East and North Africa (MENA) during the period 2013–2019. According to their results, profitability measured by return on assets established a non-linear relationship with net working capital.

When considering the impact of liquidity, the literature offers numerous examples. Pucheta-Martinez and Gallego-Alvarez (2020) studied how board characteristics such as board size, compensation and independence, CEO duality and female managers influenced performance for a sample of 10,314 companies from 34 countries during the period 2004–2015. Results showed that all predictors except for board compensation had a significant positive impact on company performance measured via Tobin's Q.

Using data from 120 companies listed on the Malaysian Stock Exchange for the period 2012–2014, Alarussi and Alhaderi (2018) examined how variables such as company sales, working capital, assets turnover ratio, current liquidity ratio, debt to equity ratio and leverage ratio shaped company profitability. Empirical results showed that profitability was positively influenced by sales, working capital, assets turnover ratio and negatively influenced by solvency ratios. In their case, current liquidity ratio played no particular influence.

Lim and Rokhim (2020) also focused on what drove the profitability of ten pharmaceutical companies listed on the Indonesian Stock Exchange during the period 2014–2018.

Among the many predictors they considered (e.g., firm size, firm growth, company efficiency, market power), liquidity measured via current ratio had a positive influence on company profitability. In the same vein, Eljelly (2004) investigated the impact of the same liquidity measured by the current ratio and the cash conversion cycle on profitability for 29 companies traded on the Saudi Stock Exchange during the time span 1996–2000. According to estimates, the impact of liquidity was negative and the cash conversion cycle component had a stronger influence over profitability than current ratio.

Nguyen and Nguyen (2020) focused on the factors driving the financial performance of 1343 companies publicly traded on the Vietnamese stock exchanges during the time span 2014–2017. For the purpose of their study, financial performance was measured with the indicators return on assets (ROA), return on equity (ROE) and return on sales (ROS). In the category of predictors, authors included firm size, financial leverage and financial adequacy, liquidity and solvency. Empirical analyses revealed that liquidity exerted a positive influence over ROA and ROE, yet a negative influence over ROS. In turn, solvency established a negative link with ROE and a positive link with the other two performance indicators.

When analyzing the impact of financial performance on financial liquidity, the extant literature offers scarce and rather mixed results on this research direction. For instance, with data from Vietnamese publicly traded companies for the period 2008–2019, Dang (2020) investigated liquidity measured by current ratio under the impact of numerous internal and external factors such as firm size, capital adequacy, profitability, leverage ratio, economic activity, interest rate etc. Empirical results showed a negative relationship between profitability and liquidity.

Scrutinizing the liquidity of 37 commercial banks listed on the Bombay Stock Exchange during the period 2008–2017, Al-Homaidi et al. (2019) took into consideration microeconomic (e.g., bank size, return on assets, return on equity, capital adequacy ratio) and macroeconomic variables (e.g., interest rate, exchange rate). Interestingly enough, return on equity had a negative impact on liquidity, while return on assets had a positive impact. Moreover, based on panel data analysis conducted for the period 2010–2016, Al-Homaidi et al. (2020) examined financial data from 2154 Indian companies and found that return on assets had a positive impact on liquidity, just as in the previous study.

In the light of the abovementioned, the degree to which performance yields changes for company liquidity needs further investigations and this study tries to close this gap in the literature.

3. Materials and Methods

The sample included the first 34 companies publicly traded on the New York Stock Exchange according to their market capitalization values (see Appendix A for company names) and was considered also in Batrancea (2020). The chosen companies operate in a wide range of economic industries and sectors, namely: apparel and footwear; automotive manufacturing; banking services; beverages; cloud-based and computer software; consumer goods; e-commerce; financial services; healthcare and pharmaceutical services; improvement services; mass media and entertainment; retail and wholesale discount stores; semiconductors; telecommunications; visual computing. Moreover, the sample numbers both regular businesses and family-owned businesses, as defined by the PricewaterhouseCoopers and the European Commission (i.e., a family owns at least 25% of the voting rights via the share capital, at least one family member is part of the company board of directors) (PricewaterhouseCoopers 2014).

The time frame 2007Q1–2020Q3 was chosen for at least two reasons. In the first place, this offered the possibility of examining the impact of financial performance on company equilibrium before, during and after two major global downturns such as the 2008 financial crisis and the ongoing pandemic. In this sense, the insights provided by data from major economic actors may assist like-companies and also smaller businesses to better anticipate the effects of similar disruptive circumstances in the future. In the second place,

covering minimum one decade seemed beneficial because it would reveal the dynamics of the relationships. As it is generally known and expected, a company cannot become performant overnight, it needs to pass the test of time in order to be regarded as strong and performant. From this perspective, all the companies included in the sample have proved their strength and profitability over time.

To provide an answer to the research question, I considered the following financial equilibrium indicators as the dependent variables:

- Current ratio (*CR*), computed by dividing current assets to current liabilities. The indicator serves as a valuable tool for assessing the company efficiency in managing its resources;
- Quick ratio (*QR*), computed by dividing near-cash assets (i.e., receivables, short-term investments) to current liabilities. Hence, the financial indicator shows the amount of cash a business generates through the cash conversion cycle;
- Debt to equity ratio (*DE*), computed by dividing total debts and company equity. The ratio captures the degree to which a company can repay outstanding debts using its shareholder equity. In other words, this indicates whether a company can use its own financial sources to reimburse external financial support. In this case, the lower the *DE* ratio, the more capable is the company of meeting its long-term obligations.

The first two indicators capture company liquidity (i.e., short-term financial equilibrium), while the third indicator captures company solvency (i.e., long-term financial equilibrium).

Moreover, I took into consideration the following financial performance indicators as the independent variables:

- Gross profit margin ratio (*GM*), computed by dividing the gross profit (i.e., difference between sales revenue and cost of goods sold) to sales revenue. Namely, this indicator shows the profit registered by a company after paying the cost of goods sold;
- Operating margin ratio (*OPM*), computed by dividing operating income to sales revenue;
- Earnings before interest, taxes, depreciation and amortization margin ratio (*EBIT-DAM*), computed by dividing EBITDA to sales revenue. EBITDA is determined by adding up net income, interest, taxes, depreciation and amortization;
- Earnings before taxes ratio (*EBT*), computed by dividing earnings before taxes to sales revenue. EBT is determined by subtracting operating expenses from sales revenue. This indicator expresses the yearly company growth because it captures the intrinsic value generated by a business;
- Net profit margin ratio (*NPM*), computed by dividing company net profit to sales revenue. In other words, this financial indicator quantifies how much net profit is generated by every monetary unit of sales revenue registered by the company.

Financial indicators were retrieved from the financial statements (i.e., balance sheet, income statement) of the companies listed on the stock exchange. Hence, for the purpose of this study, I used secondary data.

In terms of statistical packages, I chose EViews version 9.0 as a workhorse for investigating the relationships between financial performance indicators on the one side and financial equilibrium indicators on the other side.

4. Results

In order to examine the relationship between the abovementioned financial indicators retrieved from the 34 top companies listed on NYSE, I considered a battery of methods of analysis that could secure strong empirical results. Therefore, the next paragraphs will detail on descriptive statistics, correlation analysis and econometric analysis of panel data.

The first method consisted in computing descriptive statistics in order to grasp the characteristics of the data and their distribution.

Table 1 displays the mean, median and standard deviation for all eight variables considered in this study. Starting from the values of the standard deviation, which captures the

fluctuation of time series, it was concluded that debt to equity ratio had the largest volatility, followed by current ratio and quick ratio, while operating margin ratio had the smallest volatility. Skewness values indicated that seven variables were skewed to the right and only one was skewed to the left. Similarly, since the kurtosis of seven variables was above 3, their distributions were leptokurtic, while only one variable had a platykurtic distribution. The Jarque-Bera test checked whether data were normally distributed. According to its null hypothesis, a series is normally distributed if the probability associated with the test would be higher than the chosen significance level (i.e., 1%, 5% or 10%). In this case, the Jarque-Bera test showed that all variables of interest were non-normally distributed at 1%.

Table 1. Descriptive statistics for the variables of interest.

	CR	QR	DE	GM	OPM	EBITDAM	EBT	NPM
Mean	1.7025	0.9738	1.8603	0.5601	0.1989	0.2724	0.2100	0.1540
Median	1.3000	0.7900	1.2400	0.5598	0.1911	0.2597	0.1902	0.1374
Maximum	11.9100	9.7000	42.6000	1.0000	0.7860	0.9329	0.8321	0.7360
Minimum	0.0000	0.0000	−154.0200	0.0663	−0.4036	−0.3655	−0.3864	−0.2997
Std. Dev.	1.3424	1.1992	5.05603	0.2167	0.1303	0.1733	0.1499	0.1116
Skewness	3.1943	2.3104	−16.2567	0.2143	0.8248	0.7436	1.0815	0.7542
Kurtosis	17.4321	11.1071	508.3084	2.3893	5.0449	3.8029	4.9796	4.3704
Jarque-Bera	19,066 ***	6664 ***	1,962,480 ***	42 ***	526 ***	213 ***	657 ***	317 ***
Observations	1837	1837	1837	1835	1830	1794	1835	1835

Note: *** denotes significance at the 1% level.

The second method entailed a correlation analysis to control for multicollinearity problems regarding the relationships between predictors, which might bias econometric estimations.

Table 2 displays the correlation matrix for the sample of 34 companies analyzed during the period 2007Q1–2020Q3.

Table 2. Correlation matrix.

	CR	QR	DE	GM	OPM	EBITDAM	NPM	EBT
CR	1							
QR	0.638 **	1						
DE	−0.137	−0.134	1					
GM	0.146	−0.073	0.096	1				
OPM	0.254	0.102	−0.039	0.562 *	1			
EBITDAM	0.237	0.104	−0.157	0.377	0.728 **	1		
NPM	0.316	0.191	−0.081	0.507 *	0.807 ***	0.642 **	1	
EBT	0.254	0.076	−0.056	0.569 *	0.806 ***	0.717 **	0.810 ***	1

Note: *, **, *** denote statistical significance at the 10%, 5% and 1% levels.

According to the results in Table 2, the highest correlation of the independent variables was registered between *EBT* and *NPM* ($r = 0.81$), while the lowest correlation was registered between the variables *NPM* and *GM* ($r = 0.51$). Since none of the significant correlations among the independent variables exceeded the threshold of 0.85, it was concluded that multicollinearity would not bias econometric estimations.

The empirical research was based on the following hypotheses:

Hypothesis 1 (H1). *There is a significant dependence between current ratio (CR) and financial performance indicators.*

Hypothesis 2 (H2). *There is a significant dependence between quick ratio (QR) and financial performance indicators.*

Hypothesis 3 (H3). *There is a significant dependence between debt to equity ratio (DE) and financial performance indicators.*

The general form of the econometric model is the following:

$$Y_{it} = a_0 + a_1 X_{1it} + a_2 X_{2it} + a_3 X_{3it} + a_4 X_{4it} + a_5 X_{5it} + \delta_i + \theta_t + \varepsilon_{it}$$

where,

- a_0 denotes the intercept;
- a_i denotes the coefficient of the predictor, taking values from 1 to 5;
- X denotes the predictor, taking values from 1 to 5;
- i denotes the company's activity, taking values from 1 to 34;
- t denotes the time frame (2007Q1–2020Q3), taking values from 1 to 17;
- δ_i denotes the fixed effects controlling for the time-invariant company-specific factors;
- θ_t denotes the fixed effects controlling for common shocks, such as the 2008 global financial crisis and the COVID-19 pandemic crisis;
- ε_{it} denotes the error term.

Company-specific unobserved effects were considered in order to compensate for the omission of other factors influencing financial equilibrium. In addition, because dependent variables tend to be influenced by common shocks with the passing of time, econometric models were estimated with and without time fixed effects, in light of the global financial crisis and the pandemic crisis (see Table 3).

Table 3. Econometric models corresponding to the dependent variables *CR*, *QR* and *DE* for the selected companies.

	Model A $CR = a_0 + a_1 GM + a_2 OPM + a_3 EBITDAM + a_4 NPM + a_5 EBT + \delta_i + \theta_t + \varepsilon_{it}$		Model B $QR = a_0 + a_1 GM + a_2 OPM + a_3 EBITDAM + a_4 NPM + a_5 EBT + \delta_i + \theta_t + \varepsilon_{it}$		Model C $DE = a_0 + a_1 GM + a_2 OPM + a_3 EBITDAM + a_4 NPM + a_5 EBT + \delta_i + \theta_t + \varepsilon_{it}$	
Constant	1.1554 *** (6.3602)	0.9588 *** (5.2018)	0.5704 *** (4.9519)	0.5738 *** (4.6881)	1.4691 *** (4.2274)	2.7746 ** (2.2785)
GM	0.4089 (1.4418)	0.5444 * (1.9410)	0.6946 *** (3.6867)	0.6984 *** (3.7046)	3.5141 *** (5.3525)	−2.7901 (−1.2136)
OPM	−0.1499 (−0.5628)	0.0049 (0.0160)	−0.4371 * (−1.9592)	−0.6426 ** (−3.0130)	8.2961 *** (3.4112)	−0.2179 (−0.0742)
EBITDAM	0.7579 *** (3.0524)	1.1982 *** (4.0817)	0.2133 ** (2.0199)	0.1402 (1.2848)	−7.5355 *** (−7.3365)	3.6912 (1.5486)
NPM	1.2868 *** (4.9997)	2.2730 *** (7.6296)	1.2702 *** (4.4037)	1.2926 *** (4.1327)	−7.6834 *** (−3.3699)	0.1679 (0.0602)
EBT	−0.1292 (−0.4690)	−0.9982 *** (−3.5961)	−0.6295 (−2.3379)	−0.3823 (−1.4638)	0.0664 (0.0314)	−1.5002 (−0.4726)
Cross-section effects	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	No	Yes	No	Yes	No	Yes
Prob. > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
R²	0.7324	0.7513	0.7170	0.7231	0.0802	0.2121
Adjusted R²	0.7266	0.7379	0.7108	0.7082	0.0489	0.1695
F-statistic	126.3992	55.8606	116.9906	48.2929	2.5627	4.9784
Observations	1794	1794	1794	1794	1794	1794

Note: Robust *t*-statistics are indicated in parentheses. *, **, *** show statistical significance at the 10%, 5% and 1% levels. Prob. > *F* indicates the probability of not existing fixed effects. The hypothesis of multicollinearity was tested with the variance inflation factor (VIF). In all cases, since the VIF values were lower than 4, the conclusion was that the risk of multicollinearity was low. Based on the Harvey test, the null hypothesis of heteroskedasticity was rejected.

In **model A** without time fixed effects, empirical results showed that 72.66% of the variance in current ratio was triggered by the performance indicators *EBITDAM* and *NPM* ($F = 126.40$, $p < 0.001$). Namely, a one-unit rise in *EBITDAM* and *NPM* would augment the current ratio by 0.76 units and 1.29 units, respectively.

When considering *time fixed effects*, most of the variance (i.e., 73.79%) in *CR* was explained by the predictors *GM*, *EBITDAM*, *NPM* and *EBT* ($F = 55.86$, $p < 0.001$). The independent variables *GM*, *EBITDAM* and *NPM* exerted a positive influence over current ratio, while *EBT* had a negative influence on the short-term financial equilibrium. In other words, a one-unit increase in *GM* would be followed by a 0.54-unit rise in current liquidity. Similarly, if *EBITDAM* and *NPM* increased by one unit, *CR* would improve by 1.20 units and 2.27 units, respectively. Last but not least, a rise of one unit in *EBT* would result in almost a one-unit decrease in *CR*.

According to **model B** and no time fixed effects, 71.08% of the variance in quick ratio could be explained by the variables of interest *GM*, *OPM*, *EBITDAM* and *NPM*, $F = 116.99$, $p < 0.001$. When *GM* rose by one unit, quick ratio would increase by 0.69 units. Moreover, should *OPM* augment by one unit, *QR* would decrease by 0.44 units. At the same time, a one-unit increase in *EBITDAM* and *NPM* would be followed by a positive trend with changes of 0.21 units and 1.27 units, respectively.

In the presence of *time fixed effects*, 70.82% of the variance in *QR* was explained by the chosen predictors, $F = 48.29$, $p < 0.001$. According to the empirical estimations, a one-unit rise in *GM* would be mirrored by a 0.70-unit increase in *QR*. At the same time, should *OPM* improve by one unit, *QR* would mitigate by 0.64 units. In the event that *NPM* increased by one unit, quick ratio would also improve by 1.29 units.

When analyzing **model C**, which considers no time fixed effects, empirical results showed that 4.89% of the solvency variance was due to financial performance indicators ($F = 2.56$, $p < 0.001$). That is, should *GM* increase by one unit, *DE* would improve by 3.51 units. Likewise, a rise of one unit in *OPM* would be mirrored by an increase of 8.30 units in *DE*. On the other hand, *EBITDAM* and *NPM* yielded negative effects on company solvency. Namely, should *EBITDAM* and *NPM* increase by one unit, company solvency measured via *DE* would mitigate by similar amounts, i.e., 7.54 units and 7.68 units, respectively. When estimating model C in the presence of *time fixed effects*, none of the performance indicators had a significant influence on company solvency.

5. Discussion

With regards to company performance, the American investor and mutual fund manager Peter Lynch used to state the following: "What makes stocks valuable in the long run is not the market. It is the profitability of the shares in the companies you own. As corporate profits increase, corporations become more valuable and sooner or later, their shares will sell for a higher price". As Peter Lynch clearly illustrates, company performance is vital especially for businesses aiming to attract capital flows from the stock market. Needless to say, when a solid company performance withstands the test of time it makes the business appear stronger in the eyes of investors, public authorities and the general public. Moreover, a solid performance positively reflects over all aspects of the business, including its financial equilibrium state.

The empirical results estimated for a period of over a decade supported the first research hypothesis formulated in Section 4. That is, liquidity measured by the *current ratio*, which is one expression of the company short-term financial equilibrium, was significantly influenced by financial performance. In this sense, the independent variables gross profit margin ratio, earnings before interest, taxes, depreciation and amortization margin ratio and net profit margin ratio exerted a positive influence on current ratio. A possible explanation for these empirical results could be that the rising profit triggered an increase in liquidity, cash receipts and the company's payment capacity. Only the predictor earnings before taxes ratio yielded a negative impact. This result could be explained by the fact that financial

expenditures (i.e., interest for bank loans) were quite high, which generated a cash output from these businesses.

With regards to liquidity measured by *quick ratio* (another expression for the short-term financial equilibrium), the second research hypothesis (H2) was also supported. Namely, as in the case of current ratio, quick ratio was also positively impacted by predictors such as gross profit margin ratio, net profit margin ratio and earnings before interest, taxes, depreciation and amortization margin ratio. In addition, one variable that proved to be relevant for quick ratio was operating margin ratio, which had a negative influence. An explanation for the negative impact might be that companies registered losses from their operating activity during the crises, which decreased cash receipts. Consequently, cash was tied up in stock and receivables and companies faced more cash outflow than cash inflow through commercial credits from their suppliers.

The results concerning the connection financial performance-liquidity are in line with the outcomes reported by Dang (2020) and Al-Homaidi et al. (2019, 2020). For that matter, Dang (2020) also found that current ratio was significantly influenced by profitability measured via return on assets and return on equity. Al-Homaidi et al. (2019, 2020) showed that liquidity was positively driven by financial performance measured via return on assets. At the same time, authors revealed a negative impact of return on equity.

In terms of company solvency (i.e., long-term financial equilibrium) measured via the *debt to equity ratio*, estimates revealed a significant positive impact of the predictors gross profit margin ratio and operating margin ratio. The result could be due to the fact that interest rates decreased in the long run and were followed by a cash input from long-term debts. In addition, debt to equity was negatively influenced by the earnings before interest, taxes, depreciation and amortization margin and by the net profit margin ratio. From an economic standpoint, *DE* decreased because companies registered profit from their operating and overall activities. Therefore, the third research hypothesis was also confirmed. The results from this study are in line with the ones reported by Baker and Wurgler (2002) or Fama and French (2002), who also revealed a strong connection between profitability and debt leverage.

6. Conclusions

The present study investigated the degree to which financial performance shaped financial equilibrium for a sample of 34 publicly listed companies, ranking first on the New York Stock Exchange (NYSE) according to their market capitalization values. Although the literature featured numerous studies on how financial equilibrium shapes financial performance, almost no room is granted for the impact of financial performance on financial equilibrium in the long run, especially for public companies. The present study aimed to close this gap in the literature by focusing on investigating the relationship for publicly traded companies.

The sample included renowned companies operating in a wide variety of industries and sectors from apparel and footwear, banking services to telecommunications and visual computing. The analyzed time frame was 2007Q1–2020Q3, which was chosen in order to control for the impact of disruptive events such as the 2008 global financial crisis and the COVID-19 pandemic crisis.

The reasons for which the focus was on NYSE were at least twofold. In the first place, NYSE is by far the most famous and the largest stock market in the world in terms of companies' market capitalization. Second, famous performance barometers such as the Dow Jones Industrial Average (DJIA), the NYSE Composite Index or the S&P 500 Index, which include companies listed on this stock exchange, were among the first gauges that reflected the impact of the two aforementioned crises. For that matter, whenever a crisis broke out in recent decades, stock markets were among the first to acknowledge a financial meltdown.

I opted for the statistical package EViews version 9.0 to estimate the strength of the relationship between performance and equilibrium using secondary data retrieved from

company financial statements (i.e., balance sheet, income statement). As for methodology, the study favored a multimodal approach comprising descriptive statistics, correlation analysis and panel data models in order to obtain strong empirical results.

This research study showed that company financial performance significantly impacted short-term and long-term financial equilibrium measured through liquidity and solvency indicators. The implications of the empirical results are numerous. First and foremost, increasing the profit generated by total assets and operating activities represents a strategic direction that could augment cash and yield additional funds for covering short- and long-term liabilities. Moreover, obtaining an excess of cash represents a fundamental goal for company managers because, from an economic standpoint, cash ensures company equilibrium in the short and long run. In addition, the fact that the managers of the 34 companies overcame these crises by means of an efficient management of performance and debt obligations may serve as an example for other publicly traded companies interested in registering such positive results, despite all economic adversities.

As any empirical endeavor, the research study is subject to some limitations. First, the sample included only the top 34 companies listed on the New York Stock Exchange. Future studies might consider testing the relationship on a larger NYSE sample (e.g., the top 100 companies) or focusing on other major stock markets in North America, Europe or Asia. Second, financial equilibrium was measured with indicators such as current ratio, quick ratio and debt to equity ratio, while financial performance was captured by gross profit margin ratio, operating margin ratio, earnings before interest, taxes, depreciation and amortization margin ratio, earnings before taxes ratio and net profit margin ratio. Other studies could tackle this research question by quantifying performance and equilibrium through other financial ratios. Third, the relationship was tested in the case of large financially sound corporations, which operate on various economic markets and serve millions of customers around the world. Upcoming research might examine the link between performance and equilibrium also for samples of smaller companies, which are not publicly traded.

Overall, this empirical investigation brings to the foreground the importance of efficiently using performance outcomes to ensure that a company is able to meet its short- and long-term financial obligations, especially when unpredictable events such as financial crises play havoc with the world economy. For that matter, maintaining the right balance between running profitable economic activities and covering debt obligations in due time should be a constant concern for managers of both large and small companies, publicly traded or not. Especially in times of crisis and also after financial meltdowns, portions of company profits accumulated prior to such disruptive events (for instance, retained earnings) may be reinvested back into the company in order to keep activities running and maintain company indebtedness to a manageable level.

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Abbreviations

The following abbreviations are used in the manuscript:

CR	Current ratio
DE	Debt to equity ratio
DIJA	Dow Jones Industrial Average
GM	Gross margin ratio
EBITDAM	Earnings before interest, taxes, depreciation and amortization margin ratio
EBT	Earnings before taxes ratio

MENA	Middle East and North Africa
NPM	Net profit margin ratio
NYSE	New York Stock Exchange
OPM	Operating margin ratio
QR	Quick ratio
Q1	First quarter of the fiscal year
Q3	Third quarter of the fiscal year
ROA	Return on assets
ROE	Return on equity
ROS	Return on sales
S&P 500 index	Standard & Poor's 500 index
VIF	Variance inflation factor

Appendix A

The sample analyzed in this study comprises the following companies: Abbott, Adobe, Alibaba, Alphabet, Amazon, Apple, AT&T, Bank of America, Berkshire Hathaway, Coca Cola, Comcast, Disney, Home Depot, Intel, JP Morgan Chase & Co, Johnson & Johnson, Mastercard, Merck, Microsoft, Netflix, Nike, Novartis, Nvidia, PepsiCo, Pfizer, Procter & Gamble, Salesforce, Taiwan Semiconductor and Manufacturing, Thermo Fisher Scientific, Toyota, UnitedHealth Group, Verizon, Visa, Walmart.

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