The Reaction of the Greek Stock Market to IFRS 16

Yunanistan Menkul Kıymetler Borsası'nın UFRS 16'ya Tepkisi

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ABSTRACT

In this paper, we examine if the implementation of the IFRS 16 about leases had an impact on the stocks traded on Athens Exchange. We use a sample of 79 listed companies to examine whether the prices and the risk of their stocks were affected by the new accounting standard. In doing so, we conduct an event study to estimate abnormal return and volatility of stocks around the publication dates of the sample's financial statements for year 2019. Similar estimates are prepared for year 2018, which is used as the control year. Afterwards, we compute three representative financial ratios concerning the companies' profitability, leverage and liquidity. Finally, we check the validity of three assumptions about the impact of IFRS 16 on stock performance and volatility; 1) higher profitability results in higher stock returns and lower volatility, 2) higher leverage ratios, leads to lower stock returns and increased risk, and 3) decreased liquidity results in lower stock returns and increased risk. The empirical findings do not verify these assumptions.

ÖZET

Bu çalışmada, kiralamalarla ilgili UFRS 16 uygulamasının Atina Menkul Kıymetler Borsası'nda işlem gören hisse senetleri üzerinde bir etkisi olup olmadığını incelenmiştir. Hisse senetlerinin fiyatlarının ve riskinin yeni muhasebe standardından etkilenip etkilenmediğini incelemek için borsaya kote 79 şirketten oluşan bir örneklem kullanılmıştır. Bunu yaparken, örneklemin 2019 yılı mali tablolarının yayınlanma tarihleri civarında hisse senetlerinin anormal getirisini ve oynaklığını tahmin etmek için bir olay çalışması yürütülmüştür. Kontrol yılı olarak kullanılan 2018 yılı için de benzer tahminler hazırlanmıştır. Daha sonra, şirketlerin karlılığı, kaldıracı ve likiditesi ile ilgili üç temsili finansal oran hesaplanmıştır. Son olarak, UFRS 16'nın hisse senedi performansı ve volatilite üzerindeki etkisine ilişkin üç varsayımın geçerliliğini kontrol edilmiştir; 1) daha yüksek karlılık, daha yüksek hisse senedi getirileri ve daha düşük volatilite ile sonuçlanır, 2) daha yüksek kaldıraç oranları, daha düşük hisse senedi getirileri ve artan riskle sonuçlanır ve 3) azalan likidite, daha düşük hisse senedi getirileri ve artan riskle sonuçlanır. Ampirik bulgular bu varsayımları doğrulamamaktadır.

1. INTRODUCTION

In the framework of the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB), there had been severe criticism over the years by academics, analysts and other practitioners that the International Accounting Standard (IAS) 17 - "Leases" allowed companies to keep significant future leasing payments off-books, based on whether a lease contract would be classified as an operating or a financial lease agreement. That discrimination between operating and financial leases frequently meant that a certain asset and the corresponding liability for its financing would or would not be written on the balance sheet depending on the type of the leasing agreement used. The main consequence of that accounting treatment was that the financial statements of two companies choosing different types of agreements for the lease of a certain asset were not comparable to each other.

To answer these voices and concerns, the IASB launched a new relevant accounting standard, that is the IFRS 16 – "Leases", which was effective for the annual periods beginning on or after the 1st of January 2019. This standard provides a new model for the accounting treatment of the operating leases on behalf of the lessee. More specifically, IFRS 16, more or less, ceased, the discrimination between financial and operating leases for the lessee, but not for the lessor, who still treats operating leases as they used to in accordance with IAS 17.

Under IFRS 16, all operating leases, excluding agreements with a duration of less than 12 months and of immaterial value (about 5,000 euros), must be recognized on the balance sheet of the lessee as rights-of-use assets, while a corresponding liability must be written too. Essentially, the IFRS 16 demands that all liabilities for leases be accounted for in books, and not just being disclosed in the notes to financial statements, as it was the case under IAS 17. In its turn, the capitalization of leases means that a relevant amortization cost concerning the rights-of-use assets must be recognized in the profit and loss statement along with a financial cost relating to the operating leasing liability. However, the rental payments, which were treated as expenses under IAS 17, are no longer included in the profit and loss statement as they are perceived as decreases in the operating leasing liability.

Along with the significant impact on the financial statements of the lessee, the IFRS 16 causes material changes in several financial ratios used for the evaluation of a company's financial performance, which is computed with the use of accounting data. For instance, the Earnings Before and Taxes (EBIT) and the Earnings Before, Taxes, Depreciation and Amortization (EBITDA) are expected to improve after replacing rental expenses, which affect the ratios, with amortization and financial cost, which do not affect these ratios. On the contrary, the interest coverage ratio is expected to weaken due to the increased interest expenses resulting from the new framework. At the balance sheet level, ratios relating to liquidity and leverage are affected by the new standard.

Along with the obvious implications of IFRS 16 for the financial statements of the lessee, one might wonder whether the new standard could bear influence on the pricing of the lessee's shares that are traded on a stock exchange. This paper seeks to answer this question by using data from a sample of 79 Greek companies listed on the Athens Exchange. The research focus is paid on the return and risk of these stocks.

In particular, we conduct an event study to estimate abnormal return and volatility of stocks around 21, 5 and 1 days before and after the publication dates of the Greek companies' financial statements for year 2019. We obtain similar estimates for year 2018, which is used as the control year in our study. In the next step, we calculate three financial ratios concerning the profitability, leverage and liquidity of the firms in the sample, which are the EBITDA to Turnover Ratio, the Leverage Ratio and the Current Ratio, respectively, and briefly discuss the impact of IFRS 16 on these ratios. Finally, by seeking to answer our key research question about the impact of IFRS 16 on the pricing of the Greek stocks, we assess the validity of three assumptions. The first assumption says that the higher the profitability is, after the implementation of the new standard, the higher the stock returns and the lower their volatility will be. The second assumption says that the increased leverage ratios resulted from the recognition of the operating lease liabilities, will lead to lower stock returns and higher risk estimates. The recognition of the operating lease obligations will contribute to lower liquidity ratios and, thus, our third hypothesis assumes that the lower the liquidity is, the lower the stock returns and the higher their risk will be. These assumptions are examined with relevant multifactor cross-sectional regression analysis.

At first, our empirical findings verify the expected significant impact of IFRS 16 on the accounting figures of the Greek firms. For the majority of the companies in the sample, operating profitability improves but the opposite is the case for leverage. When it comes to liquidity, the impact of the new standard seems not to be that significant.

With respect to returns, our results reveal an existing pattern, according to which the returns are positive one day

119

before the publication of financial statements but they become negative on the first day after the publication. However, this pattern applies both to 2018 and 2019 and, thus, it cannot be attributed to the application of IFRS 16.

As far as risk is concerned, the results show that the volatility of stocks on the day before the publication of financial statements is much lower than that on the day after the publication. One interesting additional finding is that over "longer" periods, that is over 21 days before and 21 days after the publication of financial statements, the average risk estimates are quite close to each other. Based on these results, we may conclude that the impact of IFRS 16 on the risk of the Greek stocks cannot be material.

In regard to the three key research assumptions examined, the results provide some weak evidence about a positive relationship between performance and leverage before the publication of financial statements. This relationship becomes negative after the publication of financial statements. However, this weak evidence concerns both years 2018 and 2019, and, thus, it cannot verify some sort of an impact exerted by the implementation of IFRS 16 on stock performance. Finally, some weak evidence on a constantly positive relationship between stock risk and financial leverage is obtained.

We deem our study as a significant contribution to the relevant literature. To the best of our knowledge, this is the first study to examine the impact of IFRS 16 on the pricing of stocks of the Greek-listed companies. Given that the stock exchange in Athens is considered to be an advanced emerging market, we believe that our findings may be reflected in other national capital markets with similar characteristics. If so, we could obtain a broader view of the impact that is possibly made by IFRS 16 on the pricing of stocks. Furthermore, there are just a few recent studies that focus on the implications IFRS 16 may have for shares traded on stock exchanges. Thus, our study seeks to fulfill this gap in the literature.

The rest of the paper is structured as follows: Next section discusses the main findings of the literature on the subject so far. Section three describes the research approach and the sample of our study. Section 4 provides the findings of our empirical analysis. Finally, section 5 summarizes the conclusions of the study.

2. LITERATURE REVIEW

The correlation between accounting data and stock returns has been acknowledged early in the literature. Ball and Brown (1968) say that net income is a figure of particular interest to investors, who form their investment choices, among other factors, on the basis of accounting data. As a result, the accounting information can be reflected in security prices. Beaver (1968) reports that both financial ratios, which are calculated with accounting numbers, and stock prices can be useful in assessing the probability of a company's future failure. In particular, the dramatic price decline in the final year before the failure of a company acts as if investors base their assessments on financial ratios and impound the ratio information into the prices of common stocks.

Fama & French (1992) employ accounting-based variables, i.e., the leverage, book-to-market equity, and earnings-to-price ratios, to capture the cross-sectional variation in average stock returns. More recently, Cai & Zhang (2011) document a negative and significant effect of a change in the leverage ratio of a firm on its stock prices. They add that the higher the leverage ratio of a company, the more negative the effect on its stock prices. Other representative studies examining the correlation between financial ratios and security prices are those of Johnson & Soenen (2003), Dimitrov & Jain (2008), Dimitropoulos & Asteriou (2009), Sivaprasad & Muradoglu (2009), Șărămăt et al. (2013), Katchova & Enlow (2013), Ligocká & Stavárek (2019), and Aliu et al. (2021).

On the influence of capitalizing leases on stock prices, there are several studies that have tried to evaluate the magnitude of this impact. Ro (1978) examines whether the decision of the Securities and Exchange Commission (SEC) at the time requiring the disclosure of information regarding noncapitalized financing leases had any influence on stock pricing. If capitalized lease data convey any new information relevant to investors, one could anticipate a market reaction to the disclosure of this data reflected in the prices of stocks. The empirical findings confirm these assumptions.

Bowman (1980) investigates the relationship between leases and the market risk of lessees. In doing so, he uses a multiple regression model with market risk (beta) as the dependent variable of the model and an accounting beta, debt-to-equity ratio and leases-to-equity ratio as the independent variables. The lease variable is significantly associated with market risk when tests free of the multicollinearity problem are applied.

Imhoff et al. (1991) examine the correlation between the long-term operating lease commitments and measures used for determining the risk and performance of a firm. They find that many firms do not capitalize operating leases. This policy results in lower reported assets and liabilities and higher operating profits. In addition, the leverage status of these firms is actually higher than that shown in their reported debt-to-equity ratios. The authors create a method to assess the effect of capitalizing leases on a company's risk and performance. This method indicates that the relevance and comparability of firm-specific measures of risk and performance increases with the capitalization of operating leases. In the same context, Imhoff et al. (1993) find that in the airline and grocery industries, the debt-to-equity ratios, which are adjusted for operating leases, are more highly correlated with equity risk than the ratios which are not adjusted for operating leases.

Ely (1995) tests whether equity risk is associated with the debt to equity and the return on assets ratios, which are adjusted for operating leases. To adjust for operating leases, the author uses the relevant information found in the disclosures to financial statements. A significant relation between equity risk and the debt-to-equity adjustment for operating leases is accentuated. The results suggest that investors evaluate the operating lease liability when assessing equity risk.

Arata (2010) investigates whether there has been any market reaction in Japan associated with the movement of the finance lease disclosures from footnotes to the body of financial statements. The findings show that, on average, the market did not react to this change in the accounting treatment of finance leases. The authors conclude that the results can also be relevant to the capitalization of operating leases.

Sengupta & Wang (2011) examine whether the public debt market evaluates information concerning operating leases remaining off-balance sheet. They find that the rating agencies do price off-balance sheet debt relating to operating leases. They also find that the coefficient on the off-balance sheet debt measure of operating leases is similar to that of capital leases that are written on the balance sheet.

Giner & Pardo (2018) assess whether capitalized operating leases are priced by market users. They employ a sample of Spanish-listed firms for which they collect data on operating leases disclosed in the notes to financial statements. This data is used to constructively capitalize the assets and liabilities resulting from operating leases. The findings indicate that investors in countries with less developed stock markets and low enforcement quality do not behave differently to those in countries with more developed markets and stricter enforcement policies. Investors value in the same manner the recognized debts and the operating lease liabilities resulting from information disclosed in the notes. Based on these results, the authors conclude that the capitalization of leases will not have a major impact on stocks.

Finally, Kedmi (2021) investigates how IFRS 16 can affect the risk pricing of Israelian firms, using corporate bonds traded on the Tel Aviv Stock Exchange. The empirical results reveal that on the first disclosure date regarding the expected impact of the new standard (2018: Q2) the yield spreads of the firms that were affected by the standard increased, compared to those of the firms that were not affected by the standard. These findings indicate that, because of the information provided by IFRS 16, the stock market adjusts the prices of traded debt instruments in a way that reflects more accurate pricing of the firm's risk of default.

3. RESEARCH METHODOLOGY

In this section, we describe our research approach towards the investigation of IFRS 16's impact on the performance and risk of the Greek listed companies.

3.1. Performance and Risk Evaluation

In this section we use an event study methodology to assess the performance and risk of the Greek-listed companies around the publication dates of their financial statements for years 2018 and 2019.[1]

In our analysis, we compute four alternative types of performance, that is, daily returns, cumulative daily returns, abnormal daily returns and cumulative abnormal daily returns. The estimation window considered ranges from 21 trading days before the publication date of financial statements to 21 trading days after the publication. The

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[1] Event studies have been extensively used to evaluate the response of investors to changes in the financial statements triggered by changes in the applicable accounting framework or other similar events [refer to Woolridge and Snow (1990), MacKinlays (1997), and Holthausen and Watts (2001)].

day of publication is added to this window and, thus, a total estimation window of 43 days is taken into consideration. Daily return is computed using the following formula (1):

$$Ret_{i,t} = \frac{P_t - P_{t-1}}{P_{t-1}} \qquad (1)$$

where, $R_{i,t}$ refers to the percentage return of the *ith* company on day t and $P_{i,t}$ refers to the close price of this company on day t. In our event study, we compute daily returns for seven different days, namely for the 21st and the 5th day before the publication of financial statements, the day before the publication date, the publication date, the first day after the publication, and the 5th and the 21st day after the publication of financial statements. The cumulative daily return is calculated as the sum of the daily returns obtained via formula (1) over these estimation windows.

In order to estimate abnormal returns, we follow the approach of Karolyi and Martell (2010). We first estimate the time series market model expressed in equation (2), via which the return of each company in the sample is regressed on the General Index of Athens Exchange:

$$R_{i,t} = \alpha_{i,t} + \beta_i R_{m,t} + \varepsilon_{i,t} \qquad (2)$$

where R_i is defined as above, R_m represents the return of the stock market index, and ε_i is the residual return of a firm not explained by the model. We run the market model to obtain the alpha and beta estimates of each company that we use to compute abnormal returns with the following model (3):

$$AR_{i,t} = R_{i,t} - \hat{\alpha}_i - \hat{\beta}_i R_{m,t} \qquad (3)$$

where, $AR_{i,t}$ is the abnormal daily return of the *ith* company on day t, computed as the difference between the actual return of the company and the expected return based on the market model.[2] $\hat{\alpha}_i$ and $\hat{\beta}_i$ are the estimated market model parameters. Model (3) is run over an estimation window ranging from 224 days to 22 days prior to the publication of each company's financial statements in 2018 and 2019. The cumulative abnormal daily return is calculated by summing the abnormal daily returns computed with equation (3) over the seven estimation windows described above.

When it comes to risk, we examine whether the Greek stocks become more or less volatile after the publication of financial statements of the Greek companies for years 2018 and 2019 trying to identify whether such a change in the risk profile of the companies can be attributed to the implementation of IFRS 16. The measure used to evaluate risk is the standard deviation of daily returns over the estimation windows considered in our analysis. This is a measure of a company's so-called "total risk". Similar standard deviations are calculated for abnormal daily returns.

3.2. Financial Ratios

We use the accounting information found in the published financial statements of the Greek companies for 2019, and the comparative figures for 2018, to compute three key financial ratios concerning the profitability, leverage and liquidity of these firms, respectively. The profitability ratio considered is shown in the following formula (4):

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[2] Model (2) is applied for each individual company under the assumptions about the existence of a linear relationship between the dependent and independent variables, homoscedasticity, that is the variables of the model must have equal or similar variances, no autocorrelation, that is no identifiable relationship exists between the values of the error term in the applied model. When needed, the results have been corrected for autocorrelation, by adding the necessary number of lags in the right side of the model, and for heteroskedasticity with the relevant corrective process of White.

$$\frac{\text{EBITDA}}{\text{Turnover}} = \frac{\text{Profit for the year + Income TAX + Interest Expense – Interest Revenue + Depreciation + Amortization}}{\text{Turnover}} \quad (4)$$

The leverage ratio examined is expressed via the following formula (5):

$$\text{Leverage Ratio} = \frac{\text{Net Debt}}{\text{Total Capital Employed}} = \frac{\text{Total Debt + Total Leasing Liability - Cash}}{\text{Total Debt + Total Leasing Liability – Cash + Equity}} \quad (5)$$

Finally, the liquidity ratio assessed is expressed in formula (6):

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}} \quad (6)$$

The ratios are calculated for both 2019 and 2018 trying to determine the impact of IFRS 16 on the accounting figures of the Greek companies. Moreover, we calculate the adjusted versions of the ratios for 2019. In particular, adjusted EBITDA in the first ratio is calculated by subtracting the amortization and interest expenses relating to the rights-of-use resulted from the operating leases from the non-adjusted EBITDA. The adjusted Leverage Ratio (Net Debt/Total Capital Employed) for 2019 is calculated after subtracting the operating leasing liability as of 31/12/2019 from the numerator and denominator of the ratio. Finally, the adjusted Current Ratio for 2019 is calculated after subtracting the current liability for operating leasing as of 31/12/2019 from total current liabilities.

3.3. Regression Analysis of Performance

In our analysis, we examine three hypotheses about the relationship between the stock performance of a company and its accounting profitability, leverage and liquidity.

The first hypothesis assumes that there is a direct and linear relationship between the profitability of a company and its performance in the stock market. Therefore, the higher the EBITDA to Turnover ratio is, the higher the stock returns will be. If this hypothesis is true, the profitability of the Greek companies in 2019 will be higher than that in 2018 due to the replacement of rental expenses, which affect EBITDA, with amortization and interest costs, which do not affect this ratio, and, thus, stock returns in 2019 will be higher than those in 2018.

The second hypothesis says that an increase in the leverage ratio of a company triggers a decline in its stock prices. As a result of the implementation of IFRS 16, an increase in the leverage ratios for year 2019 is expected, compared to those in 2018, due to the recognition of the operating lease liabilities on the balance sheet. According to the second hypothesis tested, the negative impact of the increased leverage on stock returns for year 2019 will be more significant than that for year 2018.

The recognition of the operating lease obligations in 2019 will also result in lower liquidity ratios relative to 2018. Consequently, our third hypothesis assumes that the lower the liquidity is, the lower the stock returns will be in 2019 compared to 2018 as a result of applying the new accounting model for leases prescribed by IFRS 16.

We combine these three assumptions to evaluate the relationship between the performance of Greek firms and their financial ratios separately for 2018 and 2019 by using the following cross-sectional regression model (7):

$$\text{Per} = \lambda_0 + \lambda_1\text{Profit} + \lambda_2\text{Lev} + \lambda_3\text{Liq} + u \quad (7)$$

where Per stands for the performance of the sample's stocks in 2018 or 2019, Profit stands for the EBITDA to the Turnover ratio in 2018 or 2019, Lev is the Leverage Ratio in 2018 or 2019, and Liq is the Liquidity Ratio in 2018 or 2019 of the firms examined. If our assumptions hold true, the coefficient λ_1 will be positive and significant

for both 2018 and 2019 but more significant for 2019, the coefficient λ_2 will be negative for both years but more negative for 2019, and the coefficient λ_3 will be positive and significant for 2018 and 2019 but less significant for 2019.

In order to isolate the impact of IFRS 16 on performance we run model (7) for 2019 twice by using both unadjusted and adjusted versions of the financial ratios. If the implementation of IFR6 16 is the driving force of stock performance over the estimation window considered in our event study, the coefficients of the model (7) with the adjusted financial ratios as the explanatory variables for 2019 will be more significant than those for 2018 or the unadjusted version of the model for 2019.

3.4. Regression Analysis of Risk

We evaluate three hypotheses about the relationship between the risk of a security listed on the Athens Exchange and the financial ratios of the corresponding company relating to accounting profitability, leverage and liquidity.

The first hypothesis says that there must be a negative correlation between the profitability of a company and the volatility in its stock prices. Based on this assumption, the higher the EBITDA to Turnover ratio is, the lower the stock risk will be. Therefore, if the profitability ratios of the Greek companies in 2019 are, as expected, higher than those in 2018, stock risk in 2019 will be lower than that in 2018.

The second hypothesis assumes that an increase in the leverage ratio of a firm results in increased volatility in its stock prices. Given that an increase in the leverage ratios for year 2019 is expected, compared to those in 2018, as a result of the first-time application of IFRS 16, the positive relationship between stock risk and leverage will be more significant in 2019 than that in 2018.

The third hypothesis concerns the relationship between a company's stock risk and its accounting liquidity. A lower liquidity level casts doubt to investors about the ability of the company to meet its obligations. This doubt is reflected in increased volatility in stock prices. As a consequence, the expected weaker liquidity ratios in 2019, resulted from the recognition of operating lease liabilities, will contribute to higher risk levels for this year relative to 2018.

The three assumptions are combined to assess the relationship between the risk of Greek firms and their financial ratios separately for 2018 and 2019 via the following cross-sectional regression model (8):

$$Vol = \lambda_0 + \lambda_1 Profit + \lambda_2 Lev + \lambda_3 Liq + u \tag{8}$$

where Vol is the risk of the sample's stocks in 2018 or 2019. All other variables are defined as above. If our assumptions hold true, the coefficient λ_1 will be negative and significant for both 2018 and 2019 but more significant for 2019, the coefficient λ_2 will be positive for both years but more positive for 2019, and the coefficient λ_3 will be negative and significant for 2018 and 2019 but more significant for 2019.

To isolate the impact of IFRS 16 on volatility, we apply the model (8) for 2019 twice by having unadjusted and adjusted versions of the financial ratios as the independent variables of the model. If IFR6 16 is the driving force of securities risk over the estimation window considered, the coefficients of the model (8) with the adjusted financial ratios as the explanatory variables for 2019 will be more significant than those for 2018 or the unadjusted version of the model for 2019.

3.5. Sample

The sample of our study includes 79 non-financial companies listed on Athens Exchange. The banking and insurance sectors of the Greek stock exchange, as well as investment and other companies from the financial sector, have been excluded from the sample. The main condition to be met in order for a company to be included in our sample was that the company has been affected by the application of IFRS 16 at the beginning of 2019. This means that the company must have had operating leases as of 1/1/2019 not recognized in its financial statements under the accounting model of IAS 17 but recognized, for the first time, in accordance with the requirements of IFRS 16. In addition, a company should have remained listed at the time of our study to be

included in the sample.[3] No criteria concerning the market capitalization or the turnover of the companies were set in the selection process.

Going further, we excluded a small number of companies which proceeded with an early adoption of IFRS 16 before the 1st of January 2019. Moreover, during the selection process, we found some companies, which, by using the provisions of IFRS 16, reclassified assets relating to financial leases, previously recognized under IAS 17, as rights-of-use. Those companies were included in our sample on the degree that they had other operating leases which were recognized, for the first time, as rights-of-use on 1/1/2019. In doing so, we separated the "genuine" rights from those relating to the reclassification of financial leases.

Table 1 presents the sample of the study. For each company, the table exhibits its name along with market capitalization (market cap) as of 31/12/2021 and accounting data as of 31/12/2019 and 31/12/2018, concerning assets (unadjusted and adjusted), equity, turnover, EBITDA (unadjusted and adjusted), profit before taxes (PBT), and profit after taxes (PAT). We note that all the unadjusted data have been found in the published financial statements for year 2019. In addition, the figures concern the stand-alone financial statements of the Parent Company and not the consolidated figures.

As shown in the table, the biggest company listed on Athens Exchange is the Hellenic Telecommunications Organization (OTE), with a market cap of 7.6 billion (bil.) euros. Moreover, the market cap of just nine companies exceeds one bil. euros. On average, the market cap of the Greek listed firms examined amounts to 462 million (mil.) euros. However, as indicated by the median term, the market cap for the majority of the firms in the sample approximates 67 mil. euros.

Average total assets as of 31/12/2019 amount to 632 mil. euros. The respective amount for 2018 is 597 mil. euros. In order to assess the impact of IFRS 16 on total assets, we compute the adjusted amount of assets as of 31/12/2019 by subtracting the current value of rights from operating leases as at 31/12/2019 from the assets found in the published financial statements for that year. Without rights, the average total assets figure as of 31/12/2019 drops to 617 mil. euros.[4] Based on these results, we conclude that the impact of IFRS 16 on average total assets is translated into a total increase of 2.5%. If we take the median term of the total into consideration, we see that there has been an increase in total assets for the majority of firms of 5 mil. euros in comparison to the previous year. However, the median term of the adjusted assets shows a minor increase of 0.3 mil. euros. These figures indicate that, overall, the increase in total assets as of 31/12/2019 can be actually attributed to the impact of IFRS 16.

Average equity in 2019 slightly increased relative to 2018 by 1.7%. This increase should not be attributed to IFRS 16. In fact, upon the recognition of assets and liabilities on the 1st of January 2019, there was an average difference of 0.6 mil. euros between the capitalized rights and operating lease liabilities which was recognized directly to equity.[5] If we exclude the impact of this accounting treatment, the increase in equity of the average Greek firm as of 31/12/2019 is 1.4%. Thus, it can be said that the impact of IFRS 16 on equity is only 0.3%.

The average turnover of the sample's companies in 2019 is slightly lower than that in 2018, being equal to 458 and 469 mil. euros, respectively. Obviously, this decrease in an average turnover of 2.4% is not related to IFRS 16. Moreover, on median terms, the sales of the majority of the Greek-listed firms in 2019 do not exceed 38 mil. euros, while the respective figure for 2018 was 40 mil. euros.

The average EBITDA and adjusted EBITDA in 2019 amount to 19 and 15 mil. euros, respectively.[6] The difference of 4 mil. euros (24.5%) between these figures represents the impact of IFRS 16 on this key accounting ratio.[7] In comparison to the previous year, the average unadjusted (adjusted) EBITDA in 2019 is much lower than that in 2018 (19 or 15 vs 38 million euros). The decrease in average EBITDA in 2019 relative to 2018 would be much

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[3] Two companies, which had been affected by IFRS 16 in 2019, voluntarily exited Athens Exchange in 2021 and, thus, they have been excluded from our sample.

[4] We have performed t-testing on the difference between unadjusted and adjusted assets as of 31/12/2019. The t-statistic obtained is 2.52 indicating that the difference between the two figures is significant at 5%.

[5] This accounting treatment has been followed by 16 companies in the sample.

[6] We note that, in several cases, our calculation of EBITDA differs from the EBITDA reported in the published financial statements. The differences are due to the policy followed by the respective firms not to take into consideration in the calculation of EBITDA "extraordinary" and one-off items. In our analysis, we have calculated EBITDA for all companies in the sample in the same way without allowing for extraordinary and other similar transactions.

[7] The t-test applied on the difference between unadjusted and adjusted EBITDA in 2019 indicated that this difference is significant at 5% (t-statistic=2.00).

stronger if had IFRS not been implemented in that year. however, when we look at the median terms of this figure, the EBITDA in 2019 of most of the companies in the sample, either the unadjusted or the adjusted one, is higher than that in 2018. This means that the decrease in EBITDA as of 31/12/2019 compared to the previous year can be attributed to the influence of outliers.[8]

Finally, the average EBT and EAT figures in 2019 are much lower than those in 2018. However, the average terms do not tell the exact truth. In median terms, the profitability of the majority of the firms in the sample, either before or after taxes, in 2019 is better than that in 2018. Overall, any decrease in profits before or after taxes cannot be a result of IFRS 16's implementation given that the replaced rental expenses, which do not affect the operating profitability of a company, have been recognized as depreciation and interest expenses, thus, affecting EBT or EAT.[9]

4. EMPIRICAL RESULTS

The results of our empirical analysis are reported in this section. We first discuss the return and abnormal returns of the Greek companies around the publication dates of their financial statements in 2018 and 2019 along with the corresponding risk estimates. We then focus on the impact of IFRS 16 on financial ratios. Afterwards, the results of the performance regression analysis on financial ratios are broken down. Finally, the regression results on the relationship between risk and financial ratios are analyzed.

4.1. Performance and Risk Evaluation

The four alternative performance estimates of Greek firms, that is daily returns, cumulative daily returns, abnormal daily returns and cumulative abnormal daily returns are presented in Table 2. The table presents returns over the seven estimation windows considered in our event study, namely over 21 days before the publication of financial statements of each company in the sample, 5 days before the publication date, the day before the publication, the day of the publication, the day after the publication, 5 days after the publication and 21 days day after the publication of financial statements. Finally, returns are presented for 2018 and 2019.

When it comes to daily returns in 2018, the average terms before the publication of financial statements are positive. Returns are negative on the publication day and the day after the publication and they revert to a positive territory on the 5th and the 21st day after the publication of financial statements. Abnormal daily returns in 2018 behave in the same way. In sum, returns in 2018 are positive five and twenty-one days before and after the publication of financial statements. In 2019, the average daily and abnormal daily returns display rather unsystematic behavior. However, the average daily returns one day before and one day after the publication behave similarly to those in 2018. In particular, returns are positive before the publication date and become negative after the publication.

Overall, this somehow persistent pattern in daily returns cannot be attributed to any impact by IFRS 16 given that it is observed in both years under study. This pattern could be interpreted as if investors are quite optimistic about the financial performance of the Greek companies before the publication of their financial statements. However, it seems that the information conveyed by the firms via their financial statements proves this optimism of investors wrong. In any case, this inference could be just a guess, and, thus, this validity and persistence should be tested with accounting and stock data of more than two years.

The cumulative daily returns mimic the average daily returns, both in 2018 and 2019 and, thus, no further inferences can be drawn from their analysis. Abnormal returns exhibit a pattern similar to that of daily returns. In both years, they are positive on the day before the publication of financial statements and become negative on the first day after the publication. This is also the case for cumulative abnormal returns. No other patterns are traced that can be attributed to any impact relating to the application of IFRS 16.

On the question of risk, the results in Table 3 reveal that the volatility in daily and abnormal daily returns on the day before the publication of financial statements is much lower than that on the 1st day after the publication. In particular, an average increase in the risk of about 40 basis points (bps) is observed on the first day after the

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[8] The most significant outlier is DEH- Hellenic Public Power Corporation, whose unadjusted (adjusted) EBITDA as of 31/12/2019 amounts to -1.78 (-1.80) bil. euros, whereas the respective amount as of 31/12/2018 was -213.92 mil. euros.

[9] As we could not find relevant information in the financial statements of all companies, we assume here that there is an one-to-one relationship between the rental expenses and the replacing depreciation and interest expenses or, alternatively, the difference between them is not significant.

publication of financial statements. This finding concerns both 2018 and 2019 and, thus, it cannot relate to any impact by IFRS 16.

If we combine this observation about risk with the behavior of returns over the day before and after the publication, we may infer that, due to the possible bad news conveyed by the published financial statements, investors tend to redeem some of their shares in the Greek companies. If this assumption is true, this nervousness of investors causes prices to decline with noise and, thus, returns decline and risk moves upwards.

One interesting additional finding is that over "longer" periods, that is over 21 days before and 21 days after the publication of financial statements, the average risk calculations are close to each other. In the case of daily returns, there is an average difference between the two risk estimates of 8 bps, both in 2018 and 2019. In the case of abnormal returns, this difference in volatilities is much lower (2 bps in 2018 and 3 bps in 2019). Based on these results, we may conclude that risk returns to a "normality" after the first days from the publication of financial statements. In addition, once again, we can verify that the application of IFRS 16 in 2019 did not affect the risk of Greek stocks in any way.

4.2. Financial Ratios

Table 4 presents the financial ratios of profitability, leverage and liquidity of the Greek companies in 2018 and 2019. For 2019, both unadjusted and adjusted versions of the ratios are presented. In addition, the ratios are reported in five classes, as well as for the entire sample. Classes 1 to 4 include 16 companies each. Class 5 includes 15 companies. Moreover, for each financial ratio, class 1 includes the 16 companies with the highest figures. Class 2 concerns the 16 companies with the second-best ratios, and so on.

On average, the ratio of EBITDA to Turnover for the entire sample in 2019 has deteriorated significantly in 2019 relative to 2018 (2019: -34 mil. euros and 2018: 5 mil. euros). This is also the case for the adjusted ratio, which is even worse than the unadjusted version of the ratio for 2019 (it amounts to -37 mil. euros). Given that the average turnover of the Greek companies has only slightly decreased in 2019 in comparison to 2018 (as shown in Table 1), this substantial decrease in the average EBITDA to Turnover ratio can be attributed to the significant decrease in the average EBITDA in 2019.

Besides the analysis of average ratios, we should point out that, with the exception of the bottom and the second bottom class, the median and the top two classes presents average EBITDA to Turnover ratios in 2019 which actually exceed the corresponding ratios in 2018. Furthermore, the median term of the ratio for the entire sample is higher in 2019 than in 2018 by 110 bps. These numbers show that, for many companies in the sample, the profitability ratio considered has improved in 2019 in comparison to 2018.

On the other hand, the median term of the adjusted version of the ratio in 2019 is lower than the ratio in 2018 by 71 bps. This element indicates that, overall, the improvement in 2019's unadjusted EBITDA to Turnover ratio can be attributed to the impact of IFRS 16. This finding is in line with the expectations of an improvement in the ratios of operating profitability after the implementation of the accounting model for operating leases prescribed by IFRS 16.

As far as the leverage of the Greek firms is concerned, the average leverage ratio in 2019 is substantially lower than that in 2018 (-0.6% vs 44.5%). Nevertheless, in median terms, the leverage ratio in 2019 is higher than that in 2018 by 1.3% (32.9% vs 31.6%). Furthermore, the median adjusted leverage ratio in 2019, which does include the liabilities for operating leases, is lower than the leverage ratio in 2018 by 477 bps. In addition, the median unadjusted leverage ratio in 2019 exceeds the adjusted one by 608 bps. The latter figure represents the effect of IFRS 16 on the leverage status of the Greek companies examined in our study. The increase in the leverage is also verified by the analysis of the average and median terms of the ratio in 2018 and 2019 of the first four classes considered.

When it comes to liquidity, the figures in Table 4 show that there has been a slight increase in the current ratios in 2019 compared to 2018. The average (median) current ratio of the sample in 2019 is 3.68, while the corresponding ratio in 2018 is 3.55. The adjusted current ratio in 2019 is a bit higher than the unadjusted ratio in the same year by 24 bps. If we focus on the individual classes considered, we obtain a similar behavior of current ratios for the first two classes. In the median class, the average current ratio and the average adjusted current ratio in 2019 are lower than the ratio in 2018 but, actually, there is no difference in median terms. This is also the case for the average ratios of the bottom class, while there are no significant differences in the average ratios of the

fourth class. Overall, we could conclude that the liquidity of the Greek companies has not changed significantly in 2019 in comparison to 2018, while the impact of IFRS 16 on liquidity just amounts to 0.24%.

4.3. Regression Analysis of Performance

The results of the cross-sectional regression model (7) on the relationship between the stock performance of the Greek firms and their financial ratios of profitability, leverage and liquidity are presented in Table 5. The model has been performed separately for 2018 and 2019 and over the seven estimation windows considered in our analysis, that is on the 21st day before the publication date of each company's financial statements, the 5th day before the publication, the day before the publication, the day of the publication, the day after the publication, the 5th day after the publication and the 21st day after the publication of financial statements. Finally, the model is run using each time as the dependent variable one of the four alternative stock performance measures considered, namely daily returns, cumulative daily returns, abnormal daily returns and cumulative abnormal returns. In each case, the independent variables of the model are the unadjusted and adjusted financial ratios computed with year-end accounting figures.

The results in Table 5 are not strong in statistical terms. Most estimates are statistically insignificant, irrespective of the performance measure used and no matter if the adjusted or unadjusted versions of the ratios are taken into account. This general comment applies to both years and, consequently, we cannot detect any significant relationship between stock returns and financial ratios that has been triggered by the implementation of IFRS 16 in 2019.

Besides this general inference, we can trace in Table 5 some weak evidence of a positive relationship between stock performance and leverage before the publication of financial statements. In particular, the models provide six cases of positive and statistically significant coefficients for leverage on the 5th or the 21st day before the publication of financial statements. Furthermore, in ten cases, the models give negative and significant estimates for leverage on the 5th or the 21st day after the release of financial statements. This negative relationship between stock returns and financial leverage, which seems to exist after the publication of financial statements, is in line with the findings of the literature on the subject, which have already accentuated that the returns of stocks are negatively affected by the leverage of the firms [e.g., Dimitrov and Jain (2008)].

One could interpret this weak evidence about a negative correlation between stock returns and leverage as if it was an outcome of IFRS 16 adoption in 2019 given that, as we showed in a previous section, the leverage ratios increased in 2019 relative to 2018. However, the significantly negative coefficients are observed both in 2018 and 2019. Consequently, we cannot attribute this relationship to IFRS 16. In addition, both the significant leverage coefficients and the R^2 of the models approximate zero. Therefore, we should be very careful when interpreting the results in Table 5.

4.4. Regression Analysis of Risk

The results of the regression model (8) on the correlation between stock risk and the financial ratios of profitability, leverage and liquidity are presented in Table 6. The model has been performed separately for 2018 and 2019 and over the several estimation windows considered in our analysis. The model is applied with either the volatility in daily returns or the volatility in abnormal daily returns as the dependent variable, while, in each case, the independent variables of the model are the unadjusted and adjusted financial ratios computed with year-end accounting data found in the published financial statements.

As it was the case for performance, the majority of the models' coefficients are not statistically significant, both in 2018 and 2019. Consequently, a strong relationship between the stock risk and the financial ratios of the Greek firms examined cannot be established. Therefore, we cannot claim that IFRS 16 has affected the risk of the stock traded on the Athens Exchange in any way.

Besides the general absence of strong results in statistical terms, there are six significantly positive coefficients for leverage and two which are significantly negative, either before or after the publication dates of financial statements. These results can be viewed as indicative, in some cases, of a positive relationship between stock risk and financial leverage, as we expected. Two points should be made here. The first one is that this positive relationship cannot relate to IFRS 16 as it is observed mainly in 2018, while the two significantly negative estimates for the leverage ratios are found in 2019. The second point is that the magnitude of the significant coefficients as well as R^2 are quite close to zero, thus, lacking any material economic significance.

5. CONCLUSION

The implementation of IFRS 16 – "Leases" for the first time in 2019 was expected to result in significant changes in relevant accounting figures, such as rights-of-use assets and liabilities for operating leases, since the new standard requires all leases, either financial or operating, be recognized on the balance sheet of the lessee. In addition, key profit and loss items, such as rental expenses and amortization and financial costs, were expected to be affected too. As a consequence of these changes, key financial ratios computed with such accounting data were reasonably certain to be influenced too by the new standard.

Along with the impact of IFRS 16 on accounting data, one could ask whether the new standard can affect the prices of stocks traded on stock exchanges. In other words, the question here is how the stock market can react to the implementation of the new standard and the changes it brings in the financial statements of lessees. This paper tries to identify this reaction, if any, with data from a sample of 79 companies listed in the Athens Exchange in Greece.

In our research, we use an event study methodology to estimate abnormal return and risk of the Greek stocks around 21, 5 and 1 days before and after the publication of their financial statements in 2019. We do so for 2018 too, which is the control year of our study. Along with returns and risks, we compute three financial ratios concerning the profitability, leverage and liquidity of the companies examined for year 2018 and 2018. These ratios are the EBITDA to Turnover Ratio, the Leverage Ratio and the Current Ratio. After all these calculations, we discuss the impact of IFRS 16 on these basic financial ratios and then we examine the relationship between stock return or risk with these financial ratios in years 2018 and 2019 with relevant multi-factor cross-sectional regression analysis.

The empirical results confirm that the impact of IFRS 16 on key accounting figures of the Greek firms in 2019 was significant. More specifically, for most of the firms in the sample, the ratio of operating profitability improves. The opposite is the case for the leverage of Greek firms. In regard to liquidity, the results indicate that the influence of the new accounting model for leases is not that significant.

When it comes to stock performance, our findings indicate that there is no material impact by IFRS 16. This inference applies unanimously to the several types of stock returns considered in our investigation. This finding contradicts the results of Ro (1978) who found that the capitalization of leases conveys relevant information to investors that is reflected in stock prices, as well as the results of Kedmi (2021), who also found a significant impact on risk. However, our results resemble those of Arata (2010) who show that the Japanese stock market did not react to changes in the accounting treatment of finance leases, a behavior that could be relevant to the capitalization of operating leases. Our results are also on the same page with the study of Giner and Pardo (2018).

Going further, our analysis revealed an interesting pattern, according to which average returns are positive on the day before the publication of financial statements but they become negative on the very first day after the publication. This trend concerns both 2018 and 2019 and, consequently, it cannot be attributed to IFRS 16.

On the question of stock risk, the results show that volatility is much lower on the day before the publication of financial statements relative to the first day after the publication. However, over longer periods, i.e. over 21 days before and 21 days after the publication of financial statements, the average risk measures approximate each other, both in 2018 and 2019. According to these results, we infer that the influence of IFRS 16 on stock volatility is not significant. This inference is not in line with the findings of Bowman (1980) who showed that the lease variable is significantly associated with market risk.

Finally, with respect to the relationship between stock performance or risk with the basic ratios of profitability, leverage and liquidity considered in our analysis, the results indicate that, actually, there are no strong such relationships. Nevertheless, the regression analysis showed that leverage can relate somehow to stock return and risk. More specifically, the few statistically significant results indicate that there may be a positive correlation between stock performance and leverage before the publication of financial statements, but this relationship becomes negative after the publication. Anyway, this weak evidence concerns both 2018 and 2019. Therefore, we

cannot claim that this sort of relationship is due to any impact of the application of IFRS 16 in 2019.

In the last step, our analysis provided some weak evidence of a positive relationship between stock risk and financial leverage, either before or after the publication of financial statements. This weak positive relationship concerns 2018. In 2019, the correlation between stock risk and leverage is significantly negative in limited cases. Once again, we cannot infer that IFRS affected the risk of Greek stocks in any material way.

Our results about the lack of a strong relationship between stock return and risk with the revised financial ratios after the capitalization of off-balance sheet leases contradict those of Imhoff *et al*. (1991 & 1993) and Ely (1995) who report significant relationships in this respect.

Overall, the conclusion drawn via our investigation is that, as expected, IFRS 16 affected the accounting figures of the Greek firms, especially, leverage and operating profitability. However, it seems that the stock market did not react to the accounting changes induced by the new standard. The performance and risk of the stocks traded on the Athens Exchange were not affected by IFRS 16 whatsoever.

Before concluding this paper, we should note that our research can be expanded in several ways. First, the financial statements of 2020, 2021 and 2022 could be examined for possible more long-run effects of IFRS 16 on stock return and risk. Comparative analysis between the Greek and other regional stock markets with similar characteristics could be performed too. Such an analysis would answer whether our results are country-specific or can have more international implications. Finally, other significant accounting changes, such as the implementation of IFRS 9 – Financial Instruments, should be examined.

AUTHORS' DECLARATION

AUTHORS' CONTRIBUTIONS

All sections are written by the author.

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Table 1. The Sample of the Study

No	Company	Market Cap[1]	Assets 2019	Adj. Assets 2019[2]	Assets 2018	Equity 2019	Equity 2018	Turnover 2019	Turnover 2018	EBITDA 2019	Adj. EBITDA 2019	EBITDA 2018	PBT 2019	PBT 2018	PAT 2019	PAT 2018
1	AUTOHELLAS	437.62	680.36	672.26	620.57	226.04	192.52	224.73	221.12	108.75	104.91	101.98	36.41	35.92	29.36	27.47
2	ALPHA ASTIKA AKINI	121.10	136.32	135.65	133.05	132.11	129.75	13.56	12.21	3.86	3.74	3.62	3.59	3.55	2.39	2.54
3	LAMDA DEVELOPMENT	1,268.97	1,016.11	1,015.27	373.41	824.56	192.44	1.43	3.59	-11.26	-11.93	-7.63	-20.68	-17.40	-20.77	-18.43
4	REDS	133.82	49.47	49.40	49.34	40.22	41.44	0.05	0.95	-1.17	-1.20	-1.45	-1.58	-1.93	-1.58	-1.92
5	TRASTOR	137.92	202.12	201.71	117.47	117.32	82.65	8.91	5.81	12.65	12.50	4.48	9.59	3.49	9.03	2.74
6	AEGEAN AIRLINES	453.54	1,141.77	801.81	620.13	230.21	209.08	1,049.45	959.58	209.56	76.74	85.57	67.67	73.78	49.01	50.84
7	ALUMIL	70.01	197.09	196.07	204.41	0.52	3.07	152.79	153.28	8.19	7.85	10.33	-2.30	0.65	-2.92	1.62
8	PIPEWORKS L. TZIRAKI	9.24	23.77	23.75	26.30	3.62	6.17	14.53	15.11	-0.23	-0.25	0.30	-1.31	-0.91	-1.86	-0.85
9	KORDELOY BROSS	10.36	50.39	50.34	52.05	15.86	16.83	37.55	40.54	1.09	1.05	2.04	-0.65	-0.16	-0.95	-0.24
10	ELASTRON	44.92	123.39	123.11	121.93	64.12	66.48	110.14	107.24	2.91	2.76	3.21	-1.75	-2.75	-2.32	-2.62
11	SIDMA	36.40	112.75	112.57	116.46	-8.79	-7.48	84.96	85.18	3.39	3.23	3.48	-1.02	-2.83	-1.29	-2.67
12	ELVAL HALKOR	703.95	1,514.49	1,512.29	1,458.53	727.43	705.91	1,429.92	1,486.97	100.29	99.49	114.65	46.42	53.95	32.92	47.34
13	FRIGOGLASS	66.82	90.74	89.75	93.99	26.57	22.55	39.97	42.07	7.39	6.86	4.85	3.96	-0.49	3.77	-1.27
14	MATHIOS REFRACTOR	4.81	19.04	18.02	19.91	5.64	5.78	16.76	13.93	1.31	1.13	0.61	-0.06	-0.94	-0.06	-0.96
15	IKTINOS HELLAS	84.60	101.36	100.85	96.43	43.88	43.88	40.59	53.17	11.29	11.13	21.58	6.04	18.51	4.37	12.05
16	MYTILINAIOS	2,146.23	2,439.65	2,405.34	2,343.35	1,069.25	1,049.03	1,569.31	1,226.12	203.18	196.26	217.03	104.93	151.11	97.48	134.91
17	ATTIKA PUBLICATION	6.61	32.41	32.34	33.07	15.22	15.21	13.90	16.46	1.06	0.75	0.68	0.21	0.22	0.06	0.08
18	XAIDEMENOS	5.46	30.77	30.61	31.76	17.83	18.34	17.52	19.68	1.13	1.03	1.91	-0.70	-0.58	-0.50	-0.36
19	FOURLIS	211.23	91.59	90.17	90.88	88.10	89.03	4.42	4.29	-1.22	-1.57	-1.40	4.53	3.53	3.20	3.45
20	MODA BAGNO	11.38	42.48	40.69	40.80	17.70	18.17	12.66	12.44	1.21	0.64	1.02	-0.18	0.05	-0.43	0.46
21	YALCO	1.32	13.61	13.59	17.16	-36.60	-31.79	7.58	11.09	-2.00	-2.03	-1.02	-4.79	-2.96	-4.79	-2.96
22	PLAISIO	87.64	197.58	164.81	154.21	94.87	94.62	309.62	302.74	13.24	7.47	9.41	2.97	6.04	1.91	3.80
23	SATO	2.61	15.16	11.99	16.37	-32.43	-24.95	13.40	10.63	-5.73	-6.44	0.61	-7.82	-0.85	-7.46	-0.47
24	KARELIAS	778.32	590.99	590.27	548.81	499.48	460.20	736.67	694.75	88.25	88.00	102.51	85.59	98.99	65.66	76.30
25	DEH	3,518.22	12,767.6	12,726.5	13,482.4	2,685.82	3,825.03	4,736.32	4,593.52	-1,783.4	-1,802.6	-213.92	-2,323.7	-802.48	-1,963.1	-874.69
26	TERNA ENERGEIAKH	1,547.82	708.52	707.37	653.96	308.03	290.23	84.05	98.30	14.73	13.71	20.73	21.46	21.83	20.29	21.04
27	MOTOR OIL	1,545.42	2,385.64	2,367.64	2,181.37	1,014.46	958.00	6,936.47	7,237.59	359.61	354.81	411.08	268.67	317.00	205.52	228.10
28	REVOIL	27.94	109.07	94.97	103.63	15.67	12.18	700.29	719.63	10.49	8.69	7.60	2.84	1.41	3.00	1.47
29	ELIN	39.55	208.57	198.25	200.86	51.59	50.45	1,926.89	2,186.49	15.37	12.77	12.42	3.47	3.94	2.70	2.67
30	HELLENIC PETROLEUM	1,934.67	6,473.45	6,441.36	6,376.40	2,238.84	2,146.68	8,023.56	8,967.70	416.10	408.34	618.73	350.09	669.58	316.36	523.39
31	EPSILON NET	278.72	24.47	23.66	21.13	12.55	11.59	13.65	12.41	2.63	2.37	1.96	1.02	0.71	1.05	0.71
32	LOGISMOS	5.02	8.89	8.70	8.97	6.48	6.69	2.56	2.39	0.54	0.48	0.65	-0.17	0.14	-0.21	0.04
33	QUALITY & RELIABILI	11.98	7.76	7.51	8.03	5.12	5.49	2.00	2.32	0.33	0.28	0.46	-0.19	0.01	-0.39	-0.18
34	QUEST HOLDINGS	682.65	82.64	82.07	94.68	80.26	93.15	0.00	0.00	5.45	5.33	0.49	5.26	0.47	-7.58	0.43
35	ENTERSOFT	168.00	15.80	14.18	14.31	10.80	9.87	12.41	11.34	3.44	3.00	2.78	2.32	1.87	1.80	1.47
36	ILYDA	12.34	8.31	8.27	7.92	3.81	3.87	2.79	2.16	1.29	1.27	0.98	-0.05	-0.24	-0.06	-0.19
37	INTRAKAT	113.34	322.55	311.17	341.21	75.22	71.33	272.32	217.58	18.53	16.51	15.61	5.45	6.65	3.54	3.13
38	AVAX	147.79	1,226.07	1,225.65	1,176.69	320.27	249.32	432.11	433.01	29.34	28.86	35.86	-2.55	-2.39	-7.92	-16.56
39	GEK TERNA	999.07	684.57	684.11	716.99	291.99	296.76	5.72	7.43	-7.07	-7.16	-7.61	-17.52	1.41	-12.21	-0.86
40	EKTER	13.61	23.77	23.72	28.52	17.61	19.57	20.11	22.76	-2.50	-2.55	1.77	-2.13	1.43	-1.52	0.60
41	I.KLOUKINAS-I.LAPPAS	26.54	82.33	67.83	72.29	48.61	51.56	24.52	25.27	3.64	1.53	1.89	-1.75	0.46	-1.41	0.24

42	AS KIDS COMPANY	27.83	36.06	35.68	34.24	29.75	27.83	22.15	25.61	3.69	3.58	4.83	3.84	4.16	2.81	7.09
43	MOTODYNAMIKI	57.92	44.77	42.14	39.65	21.79	10.90	60.21	54.70	4.25	3.53	2.59	1.92	1.25	1.29	0.90
44	NAKAS MUSIC	14.84	28.41	27.06	26.53	17.90	17.89	11.51	10.70	1.27	1.10	1.12	0.74	0.74	0.56	0.56
45	JUMBO	1,768.78	1,195.48	1,109.24	1,103.54	786.39	789.07	414.56	391.88	95.32	90.13	82.44	80.49	72.88	61.08	52.57
46	LAMPSA HOTEL	435.83	207.62	207.51	190.15	76.99	73.35	65.08	54.67	19.65	19.58	15.68	11.75	12.47	8.17	9.21
47	THRACE PLASTICS	293.51	88.26	88.08	87.21	70.74	70.45	4.99	4.90	-0.26	-0.41	0.08	2.30	0.68	2.27	0.45
48	CRETE PLASTICS	492.83	211.73	209.72	197.79	189.91	174.53	144.50	139.20	29.16	28.72	25.08	27.94	24.34	23.47	18.54
49	INTERTECH	7.67	18.06	17.92	16.58	8.39	8.32	21.13	19.57	-0.17	-0.25	0.03	-1.28	-0.83	-1.20	-0.94
50	INTERWOOD-XYLEMPO	9.40	49.02	48.72	49.00	13.26	13.03	27.40	27.51	2.14	2.07	2.04	0.22	0.09	0.25	0.17
51	VOGIATZOGLOU SYST	12.65	21.65	20.82	19.55	14.39	14.10	17.53	16.76	1.75	1.36	1.50	1.22	1.46	0.92	1.10
52	ELTON	49.18	77.31	76.53	75.20	48.47	46.85	86.68	85.68	5.75	5.46	6.01	4.31	4.74	3.25	3.28
53	GR. SARANTIS	604.44	302.34	297.74	207.97	196.55	125.96	149.95	135.58	85.19	83.53	9.20	78.48	3.89	78.50	4.21
54	ELVE	19.68	20.54	20.39	20.48	17.40	17.12	6.22	4.88	1.78	1.73	1.50	1.61	0.76	1.07	0.60
55	LANAKAM	5.91	11.78	11.16	11.87	8.09	9.81	1.70	2.02	-0.28	-0.41	-0.71	-0.52	-0.85	-0.51	-0.85
56	ATTICA	226.60	742.10	741.88	582.06	550.58	563.93	0.00	0.00	-1.32	-1.37	-1.26	7.40	1.37	7.40	1.37
57	ANEK	19.78	318.55	317.91	322.73	-5.43	-7.84	157.04	153.45	22.08	21.92	8.01	2.85	-13.07	2.66	-13.22
58	INTRACOM HOLDINGS	137.71	289.72	289.51	322.04	253.60	264.62	2.71	2.52	-9.65	-9.75	-0.53	-10.85	-1.87	-10.80	-1.63
59	OTE	7,577.30	6,371.50	6,101.10	5,836.20	3,154.60	2,888.90	936.10	916.80	708.70	645.30	651.80	706.50	308.20	635.00	196.30
60	SPACE HELLAS	62.63	67.91	66.57	57.22	15.39	14.42	69.60	62.82	5.29	4.75	4.45	1.61	1.53	1.23	0.98
61	OPAP	4,516.56	2,016.47	1,983.84	1,547.87	756.58	717.23	3,722.20	3,644.81	365.03	358.36	288.94	268.32	200.01	205.61	135.19
62	THES. WATER & SEWAG	166.98	218.13	217.06	209.52	182.86	172.81	72.69	73.03	25.90	25.52	25.14	20.62	20.61	14.64	13.66
63	ATH. WATER & SEWAG	820.05	1,563.12	1,559.52	1,533.82	951.38	949.43	323.74	322.40	107.66	106.76	100.76	84.05	80.31	58.11	47.95
64	AVE GROUP	70.01	100.10	97.92	79.05	6.23	15.00	1.68	1.69	-1.37	-1.70	-1.83	-12.12	-13.19	-13.08	-11.07
65	PORT OF THESSALONIK	247.97	224.51	182.39	213.18	161.24	149.89	68.98	58.53	29.75	26.72	28.95	23.03	23.73	16.45	16.40
66	PORT OF PIRAEUS	432.50	472.49	409.51	395.13	233.45	208.95	149.22	132.93	67.47	62.96	56.68	47.61	42.33	35.45	27.88
67	LAVIPHARM	29.37	76.14	75.89	71.62	31.69	26.37	20.17	21.08	4.81	4.72	6.87	2.12	0.61	5.45	-1.03
68	MEDICON HELLAS	22.63	26.69	25.54	26.35	9.91	9.51	11.86	12.25	1.75	1.46	2.56	1.22	3.38	0.59	1.75
69	ATHENS MEDICAL	148.32	373.43	361.00	367.28	75.29	70.66	190.67	176.62	23.66	20.80	21.32	6.93	5.73	4.73	7.81
70	FLEXOPACK	80.28	110.83	110.20	107.38	77.19	70.33	77.26	72.42	13.99	13.71	13.49	9.80	10.15	7.60	7.60
71	VIS	4.97	31.24	31.15	34.09	5.63	8.26	14.37	16.96	-0.98	-1.08	-1.14	-2.81	-2.91	-2.63	-2.57
72	SPIROU GROUP	6.14	34.58	34.20	37.80	5.47	6.15	12.55	11.64	0.86	0.66	-0.67	-1.20	-2.26	-0.65	-0.60
73	ELGEKA	28.82	74.59	74.05	74.54	10.85	9.95	64.52	65.22	3.79	3.51	2.45	1.62	-1.17	0.92	-1.45
74	KARAMOLEGOS	28.94	106.19	104.79	108.26	30.32	31.25	67.91	58.85	9.36	8.67	7.51	1.50	-0.38	0.67	0.40
75	KTHMA K. LAZARIDIS	31.89	42.80	42.69	35.79	26.09	24.17	13.06	11.07	3.75	3.72	2.52	2.54	1.47	1.93	1.82
76	MILLS K. SARANTOPOU	7.07	28.26	26.24	23.17	4.19	4.16	21.76	19.05	1.54	1.19	0.99	0.11	-0.10	0.02	-0.15
77	FLOUR MILLS KEPENOS	20.23	38.44	37.03	40.05	20.21	19.15	33.41	33.29	3.20	2.85	1.90	1.80	0.73	1.37	0.64
78	LOULIS MILLS	41.09	162.85	162.21	160.20	91.81	88.19	100.58	91.89	9.97	9.65	9.39	3.82	3.55	3.92	3.43
79	P.G. NIKAS	65.91	40.32	39.85	34.02	-0.14	2.91	51.72	40.48	0.67	0.50	-2.01	-3.14	-6.32	-3.19	-5.72
	Average	462.05	631.61	617.47	597.07	247.07	243.14	459.79	468.51	18.87	15.16	37.56	0.23	18.08	-0.39	9.42
	Median	66.82	100.1	94.97	94.68	40.22	41.44	37.55	40.48	3.75	3.53	2.78	1.92	1.25	1.29	0.71
	Min	1.32	7.76	7.51	7.92	-36.60	-31.79	0.00	0.00	-1,783.4	-1,802.6	-213.92	-2,323.7	-802.48	-1,963.1	-874.69
	Max	7,577.30	12,767.6	12,726.5	13,482.4	3,154.60	3,825.03	8,023.56	8,967.70	708.70	645.30	651.80	706.50	669.58	635.00	523.39

This table presents the names of the sample's companies along with some key accounting figures (assets, equity, turnover, EBITDA, profit before taxes (PBT) and profit after taxes (PAT) as at 31/12/2019 and 31/12/2018. Numbers are presented in million euros. 1. The market capitalization is as of 31/12/2021. 2. The adjusted assets as of 31/12/2019 are calculated by subtracting the current value of rights from operating leasing as at 31/12/2019 from the assets found in the published financial statements for that year. 3.The Adjusted EBITDA for 2019 is calculated by subtracting the deprecation and the interest expense relating to the rights from operating leasing from the non-adjusted EBITDA for that year.

Table 2. Stock Performance

This table presents four alternative calculations of the Greek companies' performance on the 21st day before the publication date of each company's financial statements, the 5th day before the publication, the day before the publication, the day of the publication, the day after the publication, the 5th day after the publication and the 21st day after the publication of financial statements. The performance calculations considered are the daily returns, the cumulative daily returns, the abnormal daily returns and the cumulative abnormal returns. Returns are presented for years 2018 and 2019.

Panel A: Daily Returns							
2018	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t-0**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	0.27	0.46	0.41	-0.26	-0.38	0.37	0.08
Median	0.16	0.10	0.00	0.00	0.00	0.10	0.05
Min	-2.10	-2.38	-9.80	-13.33	-17.93	-4.00	-1.39
Max	2.63	4.28	9.52	16.51	10.26	7.71	2.20
Companies	79	79	79	79	79	79	79
2019	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t-0**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	-0.15	-0.08	0.35	0.03	-0.01	0.40	0.30
Median	-0.03	0.00	0.00	0.00	0.00	0.14	0.14
Min	-3.05	-5.62	-15.91	-16.67	-9.87	-5.15	-1.07
Max	2.01	5.18	18.75	21.36	15.00	6.13	3.81
Companies	79	79	79	79	79	79	79
Panel B: Cumulative Returns							
2018	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t-0**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	5.56	2.28	0.41	-0.26	-0.38	1.87	1.68
Median	3.29	0.49	0.00	0.00	0.00	0.48	1.00
Min	-44.08	-11.89	-9.80	-13.33	-17.93	-20.00	-29.12
Max	55.23	21.40	9.52	16.51	10.26	38.53	46.14
Companies	79	79	79	79	79	79	79
2019	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t-0**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	-3.15	-0.37	0.35	0.03	-0.01	2.00	6.20
Median	-0.65	0.00	0.00	0.00	0.00	0.70	2.95
Min	-63.98	-28.11	-15.91	-16.67	-9.87	-25.75	-22.51
Max	42.24	25.91	18.75	21.36	15.00	30.63	80.07
Companies	79	79	79	79	79	79	79
Panel C: Abnormal Daily Returns							
2018	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t-0**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	0.09	0.33	0.31	-0.32	-0.45	0.06	-0.02
Median	-0.03	0.00	0.01	-0.01	0.00	0.00	0.00
Min	-1.91	-2.29	-9.80	-13.42	-17.22	-3.92	-1.40
Max	2.63	4.13	8.97	16.57	10.15	5.53	2.17
Companies	79	79	79	79	79	79	79
2019	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t-0**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	-0.10	0.05	0.45	0.18	-0.16	0.17	0.17
Median	-0.13	0.02	0.02	0.11	-0.23	-0.04	0.15
Min	-2.57	-3.66	-15.93	-13.61	-9.30	-4.48	-1.51
Max	1.98	4.89	16.34	20.46	9.34	5.74	3.40
Companies	79	79	79	79	79	79	79
Panel D: Abnormal Cumulative Returns							
2018	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t-0**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	1.83	1.65	0.31	-0.32	-0.45	0.29	-0.48
Median	-0.70	-0.02	0.01	-0.01	0.00	0.00	0.00
Min	-40.03	-11.46	-9.80	-13.42	-17.22	-19.62	-29.49
Max	55.13	20.63	8.97	16.57	10.15	27.63	45.56
Companies	79	79	79	79	79	79	79
2019	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t-0**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	-2.07	0.24	0.45	0.18	-0.16	0.87	3.47
Median	-2.79	0.11	0.02	0.11	-0.23	-0.18	3.13
Min	-53.96	-18.28	-15.93	-13.61	-9.30	-22.39	-31.81
Max	41.50	24.43	16.34	20.46	9.34	28.69	71.39
Companies	79	79	79	79	79	79	79

Table 3. Stock Volatility

This table presents the volatility in the Greek companies' returns and abnormal returns on the 21st day before the publication date of each company's financial statements, the 5th day before the publication, the day before the publication, the day after the publication, the 5th day after the publication and the 21st day after the publication of financial statements. Volatilities are presented for years 2018 and 2019.

Panel A: Volatility in Daily Returns						
2018	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	2.64	2.45	1.92	2.32	1.83	2.72
Median	1.95	1.58	1.07	1.64	1.23	2.10
Min	0.00	0.00	0.00	0.00	0.00	0.00
Max	12.39	21.31	11.67	16.68	8.94	8.79
Companies	79	79	79	79	79	79
2019	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	2.65	2.47	1.91	2.30	1.85	2.73
Median	1.97	1.60	1.02	1.64	1.29	2.12
Min	0.00	0.00	0.00	0.00	0.00	0.00
Max	12.39	21.31	11.67	16.68	8.94	8.79
Companies	79	79	79	79	79	79
Panel B: Volatility in Abnormal Daily Returns						
2018	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	2.63	2.49	1.91	2.30	1.80	2.65
Median	1.92	1.64	1.07	1.65	1.17	2.05
Min	0.00	0.00	0.00	0.00	0.00	0.00
Max	12.36	21.78	11.77	16.67	9.00	8.79
Companies	79	79	79	79	79	79
2019	**Day: t-21**	**Day: t-5**	**Day: t-1**	**Day: t+1**	**Day: t+5**	**Day: t+21**
Average	2.64	2.51	1.90	2.29	1.82	2.67
Median	1.93	1.68	1.05	1.66	1.22	2.08
Min	0.00	0.00	0.00	0.00	0.00	0.00
Max	12.36	21.78	11.77	16.67	9.00	8.79
Companies	79	79	79	79	79	79

Table 4. Financial Ratios

This table presents three representative financial ratios of the Greek companies' profitability, leverage and liquidity, that is, the EBITDA to Turnover Ratio, the Leverage Ratio and the Current Ratio, respectively, for years 2018 and 2019. Adjusted versions of the ratios for year 2019 are presented too. The ratios presented are categorized in 5 five classes from top class 1 with the highest figures to bottom class 5 with the lowest figures.

	EBITDA/ Turnover 2019 (%)	AdjEBITDA/Turnover 2019 (%)[1]	EBITDA/ Turnover 2018 (%)	Leverage Ratio 2019 (%)	AdjLeverage Ratio 2019 (%)[2]	Leverage Ratio 2018 (%)	Current Ratio 2019 (times)	AdjCurrent Ratio 2019 (times)[3]	Current Ratio 2018 (times)
Class 1									
Average	45.12	43.44	38.37	122.71	123.32	107.36	11.43	12.38	10.85
Median	34.44	34.04	33.49	75.36	74.85	76.13	6.65	7.26	5.92
Min	23.87	23.43	6.79	61.08	60.18	55.86	4.33	4.34	0.95
Max	141.97	140.25	77.07	625.19	626.75	402.94	67.94	70.94	74.79
Companies	16	16	16	16	16	16	16	16	16
Class 2									
Average	17.11	14.69	16.06	51.17	49.81	50.00	3.25	3.36	2.95
Median	17.08	15.05	17.86	50.89	49.82	50.84	3.15	3.31	2.74
Min	12.41	6.25	5.22	39.55	36.13	38.13	2.37	2.43	0.31
Max	22.99	21.74	27.17	60.65	60.17	65.05	4.25	4.30	7.16
Companies	16	16	16	16	16	16	16	16	16
Class 3									
Average	8.59	7.39	6.77	30.16	10.60	15.52	1.79	1.83	1.94
Median	7.83	6.89	7.29	31.25	25.99	28.59	1.85	1.86	1.85
Min	6.80	5.07	-5.74	19.94	-237.68	-207.86	1.28	1.32	1.08
Max	11.98	11.95	14.76	39.05	38.93	65.34	2.37	2.50	3.13
Companies	16	16	16	16	16	16	16	16	16
Class 4									
Average	3.68	3.38	3.75	13.58	4.89	0.66	1.06	1.12	1.05
Median	4.13	3.30	3.92	14.91	10.25	7.72	1.09	1.10	1.08
Min	0.00	0.00	-4.97	3.94	-45.77	-53.16	0.81	0.82	0.41
Max	6.79	6.68	9.70	19.60	17.57	19.07	1.27	1.77	1.60
Companies	16	16	16	16	16	16	16	16	16
Class 5									
Average	-276.45	-287.12	-47.78	-251.93	-98.59	49.40	0.45	0.45	0.61
Median	-32.59	-36.78	-15.06	-28.21	-43.13	-13.24	0.52	0.52	0.66
Min	-2,345.31	-2,397.02	-212.80	-2,853.26	-641.40	-125.70	0.08	0.08	0.13
Max	-1.62	-1.72	7.78	2.06	1.26	1,091.30	0.69	0.69	1.42
Companies	15	15	15	15	15	15	15	15	15
Sample									
Average	-34.34	-37.40	4.75	-0.58	21.00	44.46	3.68	3.92	3.55
Median	8.70	6.89	7.60	32.95	26.87	31.64	1.89	1.89	1.57
Min	-2,345.31	-2,397.02	-212.80	-2,853.26	-641.40	-207.86	0.08	0.08	0.13
Max	141.97	140.25	77.07	625.19	626.75	1,091.30	67.94	70.94	74.79
Companies	79	79	79	79	79	79	79	79	79

1. The adjusted EBITDA for 2019 is calculated by subtracting the deprecation and the interest expense relating to the rights from operating leasing from the non-adjusted EBITDA for that year.
2. The adjusted Leverage Ratio (Net Debt/Total Capital Employed) for 2019 is calculated after subtracting the operating leasing liability as at 31/12/2019 from the numerator and denominator of the ratio.
3. The adjusted Current Ratio and Adjusted Cash Ratio for 2019 are calculated after subtracting the current liability for operating leasing as at 31/12/2019 from total current liabilities.

Table 5. Performance Regression Results

This table presents the results of the cross-sectional regression analysis for years 2018 and 2019 of Greek companies' performance on their profitability, leverage and liquidity on the 21st day before the financial statements' publication date of each company in the sample, the 5th day before the publication, the day before the publication, the day of the publication, the day after the publication, the 5th day after the publication and the 21st day after the publication of financial statements. The performance calculations considered are the daily returns, the cumulative daily returns, the abnormal daily returns and the cumulative abnormal returns. The profitability, leverage and liquidity ratios considered are the EBITDA to Turnover Ratio, the Leverage Ratio and the Current Ratio, respectively. Adjusted versions of the ratios for year 2019 are used too.

	Panel A: Daily Returns													
	Day: t-21		Day: t-5		Day: t-1		Day: t-0		Day: t+1		Day: t+5		Day: t+21	
2018	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	0.25*	3.02	0.36**	2.29	0.49	1.28	-0.48	-0.92	-0.36	-0.69	0.56*	3.02	0.05	0.63
Profitability	0.00	-0.12	0.00	-0.86	0.01	0.71	0.00	0.35	0.00	0.20	0.00	0.31	0.00	0.62
Leverage	0.00	1.33	0.00*	2.83	0.00	-0.03	0.00	0.09	0.00	-0.54	0.00*	-2.77	0.00	1.15
Liquidity	0.00	-0.42	0.00	-0.26	-0.04	-1.14	0.02	0.35	-0.01	-0.18	-0.01	-0.62	0.00	-0.13
R²	0.03		0.12		0.02		0.00		0.00		0.10		0.02	
2019	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	-0.16	-1.11	-0.12	-0.54	0.24	0.43	0.08	0.12	0.12	0.20	0.37	1.46	0.31*	3.08
Profitability	0.00	-0.60	0.00	-0.37	0.00	0.07	0.00	-0.07	0.00	-0.31	0.00	0.80	0.00	0.28
Leverage	0.00	-0.08	0.00	-0.14	0.00	0.23	0.00	0.20	0.00	-0.02	0.00***	-1.75	0.00	-1.58
Liquidity	0.00	-0.08	0.00	-0.18	-0.01	-0.23	0.00	0.00	-0.02	-0.30	0.02	0.63	0.00	-0.22
R²	0.01		0.00		0.00		0.00		0.00		0.05		0.03	
2019	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	-0.18	-1.20	-0.11	-0.49	0.28	0.49	-0.15	-0.22	0.07	0.12	0.43***	1.66	0.33*	3.08
AdjProfitability	0.00	-0.65	0.00	-0.38	0.00	0.07	0.00	-0.18	0.00	-0.31	0.00	0.86	0.00	0.30
AdjLeverage	0.00	0.56	0.00	-0.02	0.00	-0.23	0.01	1.45	0.00	0.24	0.00	-1.22	0.00	-0.70
AdjLiquidity	0.00	-0.01	-0.01	-0.27	-0.02	-0.31	0.02	0.24	-0.01	-0.20	0.01	0.49	0.00	-0.27
R²	0.01		0.00		0.00		0.03		0.00		0.04		0.01	
	Panel B: Cumulative Returns													
	Day: t-21		Day: t-5		Day: t-1		Day: t-0		Day: t+1		Day: t+5		Day: t+21	
2018	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	5.33*	3.02	1.82**	2.29	0.49	1.28	-0.48	-0.92	-0.36	-0.69	2.80*	3.02	1.07	0.63
Profitability	-0.01	-0.12	-0.02	-0.86	0.01	0.71	0.00	0.35	0.00	0.20	0.01	0.31	0.02	0.62
Leverage	0.02	1.33	0.01*	2.83	0.00	-0.03	0.00	0.09	0.00	-0.54	-0.02*	-2.76	0.01	1.15
Liquidity	-0.07	-0.42	-0.02	-0.26	-0.04	-1.14	0.02	0.35	-0.01	-0.18	-0.06	-0.62	-0.02	-0.13
R²	0.03		0.12		0.02		0.00		0.00		0.097		0.02	
2019	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	-3.41	-1.11	-0.61	-0.54	0.24	0.43	0.08	0.12	0.12	0.20	1.83	1.46	6.58*	3.08
Profitability	-0.01	-0.60	0.00	-0.37	0.00	0.07	0.00	-0.07	0.00	-0.31	0.00	0.80	0.00	0.28
Leverage	0.00	-0.08	0.00	-0.14	0.00	0.23	0.00	0.20	0.00	-0.02	-0.01***	-1.75	-0.01	-1.58
Liquidity	-0.03	-0.08	-0.02	-0.18	-0.01	-0.23	0.00	0.00	-0.02	-0.30	0.09	0.63	-0.05	-0.22
R²	0.01		0.00		0.00		0.00		0.00		0.05		0.03	
2019	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	-3.80	-1.20	-0.57	-0.49	0.28	0.49	-0.15	-0.22	0.07	0.12	2.17***	1.66	6.90*	3.08
AdjProfitability	-0.01	-0.65	0.00	-0.38	0.00	0.07	0.00	-0.18	0.00	-0.31	0.00	0.86	0.00	0.30

	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
AdjLeverage	0.01	0.56	0.00	-0.02	0.00	-0.23	0.01	1.45	0.00	0.24	-0.01	-1.22	-0.01	-0.70
AdjLiquidity	0.00	-0.01	-0.03	-0.27	-0.02	-0.31	0.02	0.24	-0.01	-0.20	0.07	0.49	-0.07	-0.27
R^2	0.01		0.00		0.00		0.03		0.00		0.04		0.01	

Panel C: Abnormal Daily Returns

	Day: t-21		Day: t-5		Day: t-1		Day: t-0		Day: t+1		Day: t+5		Day: t+21	
2018	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	0.06	0.72	0.23	1.45	0.39	1.03	-0.53	-1.01	-0.44	-0.89	0.22	1.35	-0.07	-0.84
Profitability	0.00	0.19	-0.00	-0.78	0.01	0.79	0.00	0.31	0.00	0.29	0.00	0.71	0.00	0.88
Leverage	0.00***	1.68	0.00*	2.98	0.00	0.01	0.00	0.13	-0.00	-0.50	-0.00*	-3.08	0.00	1.59
Liquidity	-0.00	-0.25	-0.00	-0.26	-0.04	-1.16	0.02	0.28	-0.01	-0.18	-0.01	-0.45	0.00	-0.04
R^2	0.04		0.13		0.03		0.00		0.01		0.12		0.04	
2019	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	-0.10	-1.04	0.11	0.59	0.38	0.71	0.26	0.43	-0.03	-0.06	0.14	0.66	0.19**	2.14
Profitability	0.00	-0.21	0.00	-0.17	0.00	0.15	0.00	0.12	0.00	-0.24	0.00	0.54	0.00	0.89
Leverage	0.00	-0.63	0.00	-0.20	0.00	0.16	0.00	0.16	0.00	-0.23	0.00**	-2.30	0.00**	-2.51
Liquidity	0.00	-0.19	-0.02	-1.08	-0.01	-0.21	-0.01	-0.08	-0.02	-0.34	0.02	0.66	0.00	-0.28
R^2	0.01		0.02		0.00		0.00		0.00		0.08		0.09	
2019	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	-0.09	-0.89	0.13	0.68	0.39	0.71	0.10	0.16	-0.04	-0.09	0.21	0.94	0.21**	2.28
AdjProfitability	0.00	-0.20	0.00	-0.16	0.00	0.13	0.00	0.03	0.00	-0.23	0.00	0.61	0.00	0.89
AdjLeverage	0.00	-0.47	0.00	-0.28	0.00	-0.09	0.01	1.14	0.00	0.02	0.00	-1.51	0.00	-1.27
AdjLiquidity	0.00	-0.30	-0.02	-1.20	-0.01	-0.23	0.01	0.09	-0.01	-0.26	0.01	0.46	0.00	-0.42
R^2	0.00		0.02		0.00		0.02		0.00		0.04		0.03	

Panel D: Abnormal Cumulative Returns

	Day: t-21		Day: t-5		Day: t-1		Day: t-0		Day: t+1		Day: t+5		Day: t+21	
2018	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	1.28	0.72	1.15	1.45	0.39	1.03	-0.53	-1.01	-0.44	-0.89	1.10	1.35	-1.36	-0.84
Profitability	0.00	0.12	-0.01	-0.78	0.01	0.79	0.00	0.31	0.00	0.29	0.01	0.71	0.03	0.88
Leverage	0.02***	1.68	0.02*	2.98	0.00	0.01	0.00	0.13	-0.00	-0.50	-0.02*	-3.08	0.02	1.59
Liquidity	-0.05	-0.25	-0.02	-0.26	-0.04	-1.16	0.02	0.28	-0.01	-0.18	-0.04	-0.45	-0.01	-0.04
R^2	0.04		0.13		0.03		0.00		0.01		0.12		0.04	
2019	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	-2.11	-1.04	0.53	0.59	0.38	0.71	0.26	0.43	-0.03	-0.06	0.69	0.66	3.89*	2.14
Profitability	0.00	-0.21	0.00	-0.17	0.00	0.15	0.00	0.12	0.00	-0.24	0.00	0.54	0.01	0.89
Leverage	0.00	-0.63	0.00	-0.20	0.00	0.16	0.00	0.16	0.00	-0.23	-0.01**	-2.30	-0.01**	-2.51
Liquidity	-0.04	-0.19	-0.11	-1.08	-0.01	-0.21	-0.01	-0.08	-0.02	-0.34	0.08	0.66	-0.06	-0.28
R^2	0.01		0.02		0.00		0.00		0.00		0.08		0.09	
2019	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat	Coef.	T-stat
Intercept	-1.86	-0.89	0.63	0.68	0.39	0.71	0.10	0.16	-0.04	-0.09	1.04	0.94	4.42*	2.28
AdjProfitability	0.00	-0.20	0.00	-0.16	0.00	0.13	0.00	0.03	0.00	-0.23	0.00	0.61	0.01	0.89
AdjLeverage	-0.01	-0.47	0.00	-0.28	0.00	-0.09	0.01	1.14	0.00	0.02	-0.01	-1.51	-0.02	-1.27
AdjLiquidity	-0.07	-0.30	-0.12	-1.20	-0.01	-0.23	0.01	0.09	-0.01	-0.26	0.05	0.46	-0.09	-0.42
R^2	0.00		0.02		0.00		0.02		0.00		0.04		0.03	

* Statistically significant at the 1%, ** Statistically significant at the 5%, *** Statistically significant at the 10%.

Table 6. Volatility Regression Results

This table presents the results of the cross-sectional regression analysis for years 2018 and 2019 of Greek companies' volatility on their profitability, leverage and liquidity on the 21st day before the financial statements' publication date of each company in the sample, the 5th day before the publication, the day before the publication, the day of the publication, the day after the publication, the 5th day after the publication and the 21st day after the publication of financial statements. The volatility is calculated for the daily returns and the abnormal daily returns. The profitability, leverage and liquidity ratios considered are the EBITDA to Turnover Ratio, the Leverage Ratio and the Current Ratio, respectively. Adjusted versions of the ratios for year 2019 are used too.

Panel A: Volatility in Daily Returns												
	Day: t-21		Day: t-5		Day: t-1		Day: t+1		Day: t+5		Day: t+21	
2018	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**
Intercept	2.61*	9.35	2.27*	5.47	1.91*	5.48	2.31*	6.02	1.58*	6.47	2.54*	11.48
Profitability	0.00	-0.18	0.00	-0.02	0.01	0.76	0.01	0.66	0.00	-0.07	0.00	0.35
Leverage	0.00	1.10	0.01**	2.01	0.00	-0.30	0.00	-0.46	0.01*	3.79	0.01*	3.76
Liquidity	0.00	-0.17	-0.01	-0.20	0.00	-0.04	0.02	0.49	0.00	0.13	-0.01	-0.56
R²	0.02		0.06		0.01		0.02		0.17		0.18	
2019	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**
Intercept	4.19*	10.66	4.10*	7.14	2.69*	5.85	3.32*	6.63*	4.10*	10.83	3.67*	14.84
Profitability	0.00	-0.55	0.00	-0.09	0.00	0.55	0.00	0.08	0.00	0.89	0.00	0.92
Leverage	0.00	1.22	0.00	0.89	0.00	0.64	0.00	0.65	0.00	-1.52	0.00	-0.46
Liquidity	-0.02	-0.54	-0.03	-0.52	-0.04	-0.70	0.00	0.05	-0.01	-0.16	-0.03	-1.09
R²	0.03		0.02		0.02		0.01		0.04		0.03	
2019	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**
Intercept	4.16*	10.15	4.08*	6.84	2.81*	5.93*	3.35	6.45*	4.24*	10.83*	3.67*	14.31
AdjProfitability	0.00	-0.55	0.00	-0.08	0.00	0.66	0.00	0.13	0.00	0.97	0.00	0.87
AdjLeverage	0.00	0.43	0.00	0.14	0.00	-1.04	0.00	-0.12	0.00	-1.56	0.00	0.16
AdjLiquidity	-0.02	-0.50	-0.03	-0.49	-0.04	-0.87	0.00	-0.02	-0.02	-0.39	-0.03	-1.04
R²	0.01		0.00		0.02		0.00		0.04		0.03	
Panel B: Volatility in Abnormal Daily Returns												
	Day: t-21		Day: t-5		Day: t-1		Day: t+1		Day: t+5		Day: t+21	
2018	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**
Intercept	2.58*	9.20	2.31*	5.51	1.93*	5.56	2.29*	6.01	1.53*	6.57	2.46*	11.12
Profitability	0.00	-0.10	0.00	-0.05	0.00	0.62	0.01	0.67	0.00	-0.14	0.00	0.42
Leverage	0.00	1.12	0.01***	1.95	0.00	-0.38	0.00	-0.42	0.01*	4.19	0.01*	3.87
Liquidity	0.00	-0.14	-0.01	-0.16	0.00	-0.06	0.02	0.47	0.00	0.21	-0.01	-0.49
R²	0.02		0.05		0.01		0.01		0.20		0.18	
2019	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**
Intercept	3.56*	10.55	3.44*	6.77	2.56*	6.52	2.85*	6.29	3.50*	10.28	3.23*	14.20
Profitability	0.00	-0.08	0.00	0.25	0.00	0.32	0.00	-0.11	0.00	0.95	0.00	1.00
Leverage	0.00	1.19	0.00	0.84	0.00	0.73	0.00	0.73	0.00***	-1.76	0.00	-0.58
Liquidity	-0.02	-0.40	-0.01	-0.14	-0.03	-0.69	0.02	0.45	0.00	0.01	-0.02	-0.92

R^2	0.02		0.01		0.02		0.01		0.05		0.03	
2019	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**	**Coef.**	**T-stat**
Intercept	3.50*	9.98	3.39*	6.43	2.62*	6.45	2.78*	5.94	3.64*	10.34	3.21*	13.63
AdjProfitability	0.00	-0.11	0.00	0.24	0.00	0.38	0.00	-0.13	0.00	1.04	0.00	0.94
AdjLeverage	0.00	0.76	0.00	0.37	0.00	-0.63	0.00	0.65	0.00***	-1.77	0.00	0.33
AdjLiquidity	-0.01	-0.29	0.00	-0.06	-0.03	-0.76	0.03	0.52	-0.01	-0.23	-0.02	-0.82
R^2	0.01		0.00		0.01		0.01		0.05		0.02	
* Statistically significant at the 1%, ** Statistically significant at the 5%, *** Statistically significant at the 10%.												