Financial Analysis of Greek Construction Enterprises Based on Investment Ratios

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Abstract

The current paper examines the progress of investment ratios of the four most significant Greek construction companies from 2008 to 2012 in order to draw conclusions on the performance and progress of the companies and the reliability of their shares under the generalized economic crisis, which, during the study period, creates unfavorable conditions for the whole industry. To this end, the relationship of figures drawn from the financial statements of these companies were analyzed by calculating ratios. The aim of this study is also the comparison of the progress of the four companies in order to examine the rank of each company in relation to the other selected companies and the assessment of the economic situation of the industry through the progress of the companies. The data is drawn from the annual and periodic financial reports of companies, and more specifically from the balance sheet and income statement as provided in the Athens Stock Exchange website. The provided results verify the situation of the industry in the questioned period. The analyzed companies presented a downward trend throughout the years 2008-2012.

Keywords

Financial Analysis, Greek construction companies, Investment ratios, Financial crisis

1. Introduction

The contribution of engineering companies in the wealth of the economy is highlighted by a variety of scientists. According to Alonso-nuez, Flores-garcia, Munoz-Porcar (2015), construction industry is a large scientific branch in terms of strategic significance. Not only the international but also the Greek economy are now faced with the deepest recession since the end of World War II (Kollintzas and Psalidopoulos, 2009). The global financial crisis that started with the US housing market in the summer of 2007 turned rapidly into a crisis of the global financial system (Kollintzas and Psalidopoulos, 2009). The financial recession has brought a decrease in household income, an increase of unsold property stock, reduction of loans with adverse consequences in the field of construction of private projects (residential, commercial and industrial assets etc). Simultaneously, the cuts in public investment programs and a reduction in public constructional auctions led to a decrease in activity of public constructions (Panteleou, 2013). Ocal, Oral, Erdis and Vural (2007), state that the importance of the ratios are different for each sector. For each sector, the use of different ratios is more effective and reliable. The present paper used investment ratios.

The construction sector in Greece, has always been based on public investment program and especially during the period before the Olympic Games (mid-1990 to 2004). After 2009 due to the debt crisis in Greece, public spending programs were limited and created serious problems for companies in the industry. Additionally, the operating costs for these companies increased as a result of the agreement policy with the European Union and the International Monetary Fund, while sales fell sharply and turnover axed. Therefore, investors are looking into new shares and this purpose is served by ratio analysis which will examine the strengths and weaknesses of operations in order to show whether the investments are viable and profitable. The analysis of companies using investment ratios can show whether the firm can be considered as a good investment and can be used to measure the efficiency of the companies based on the market value of the shares traded in the Athens Stock Exchange.

The course of construction companies is based on the effects that the results of macroeconomic factors such as economic, political and cultural have on the companies and on the situation that has been developed from the tax system, inflation, domestic resources of the country and others (Kaklauskas et al., 2011). In light of the above an attempt was made to investigate the relationship of the course of the construction sector, as seen through the evolution of investment ratios over five years, with the variation of various indicators of the economy. Furthermore, the degree of correlation of the four companies is examined compared to the change of other factors which are more directly linked to the construction industry.

In the following sections, the whole research methodology is presented in brief including data collection, and selection of representative indicators which are consequently combined with correlation analysis. The analysis' results are presented and discussed with a view to further research needed in this area.

2. Literature Review

In recent years, a big amount of published work has repeatedly demonstrated the benefits of using financial ratios. Yunus and Malik (2012) built a model to predict the performance prefabrication companies based on historical data using thirty ratios for companies in Malaysia 2006-2009. Ocal, Oral, Erdis and Vural (2007), tried to identify financial indicators that can be used for better financial analysis of construction companies. Ratios predominantly used for the assessment, forecasting and stock selection. Rounaghi, Abbaszadeh and Arashi (2015), used eight ratios from a sample of forty ratios to predict stock prices of all publicly traded companies in Tehran for six years. Moreover, Balatbat, Lin and Carmichael (2010) used ratios in their attempt to prove that investing in a construction company shares is so efficient, safe and profitable as investing in any other industry.

Mokhtar, Shuib and Mohamad (2014), dealt with shares and tried to identify the most important financial ratios so as to assess the performance of the shares with the method of fuzzy logic. Still, ratios have been used to predict the selection and purchase of shares (Hamzacebi and Pekkaya, 2011; Albadvi, Chaharsooghi and Esfahanipour, 2006; Huang, 2012; Edirisinghe and Zhang, 2007; Tiryaki and Ahlatcioglu, 2005).

Olson and Mossman (2003) compared neural network forecasts of one-year-ahead Canadian stock returns with the forecasts obtained using ordinary least squares (OLS) and logistic regression (logit) techniques. The input data are 61 accounting ratios for 2352 Canadian companies over the period 1976-1993. Ou and Penman (1989) performed a financial statement analysis that combines a large set of financial statement items into one summary measure which indicates the direction of one-year-ahead earnings changes. Cakici, Chan and Topyan (2015) provided an analysis of stock return predictability in China from January 1994 to March 2011 and found that size, price, the book-to-market ratio, the cash-flow-to-price ratio and the earnings-to-price ratio to have strong predictive power.

3. Research Methodology

The present work analyzes four construction companies belonging to the 7th grade of the Greek Registry of Contractors, which is the highest ranking of the construction enterprises regarding public projects. The study period ranges from 2008 to 2012. Certain companies were excluded from the original sample after a set of criteria were considered. For the purposes of the analysis, data were drawn from the annual balance sheets and statements of the above companies and the selected financial ratios were evaluated. As for the study period, the years 1995-2004 were excluded from the study because they consist a period of economic prosperity and progress of the construction enterprises. Within this period the stock market crash occurred and it put an end to the artificial inflation of the stock market in the year 1999-2000. In 2004, the industry strongly expanded due to projects undertaken in the context of the Olympic Games, while after 2005 the use of International Accounting Standards (IAS) ensured the preparation of financial statements that reflect the fair, impartial and true financial situation. In 2008 Greece joined the International Monetary Fund (IMF) which is associated with the beginning of the economic downturn. So it was decided that the study period should range from 2008 to 2012.

Literature indicated that the five consecutive years period is satisfactory. Then, followed, the selection of the sample of companies which was based on six criteria, namely: size of the companies, registered in the Athens Stock Exchange, geographic area of companies' activity, surveillance-or removal from stock exchange trading, absence of the requested data in the Athens Stock Exchange website. The present paper used investment ratios and the selection was based on their frequency of appearance in international literature sources. Using all available ratios would not be practical because it complicates the assessment process and makes data collection and analysis difficult and time consuming. Therefore, the selection of financial ratios was performed according to the frequency of appearrance in the literature, as shown in the following Table 1.

Table 1: The frequency of appearance of the investment ratios

Ratios	Count	Ratios	Count
Book value per share	2	Price to book ratio	3
Earnings per share (EPS)	6	EPS growth ratio	2
Price to earnings ratio (P/E)	12	Price to cash flow	2
Operating profit (risk)	1	Gross debt to cash flow	1
Dividend per share	3	Net debt to cash flow	1
Book value to market value ratio	2	Cash flow	1
Cash dividend as % of cash flow	2	Dividend yield	1
Price to sales ratio (PSR)	3	Market capitalization to trading revenue ratio	1
Cash flow to debt	1		

Finally, the following five ratios were selected: Price to earnings ratio (P/E), Earnings per share (EPS), Dividend per share, Price to book ratio, Price to sales ratio (PSR). In order to calculate the investment ratios, necessary elements were extracted from the balance sheets and financial statements. For the purposes of the investigation, the data processing and analysis were made using the statistical package «SPSS v.22». A Correlation Analysis was carried out assuming linear Correlation and using Pearson Analysis. The investment ratios that were calculated and analyzed previously, were then selected as the dependent variables and economic parameters served as the independent variables. The following include some of the dependent variables concerning the enterprise characteristics: Operating Years, Years of residence in the stock market, Number of enterprises in the market, Number of employees in enterprises, Compensation of employees, Social Security Expenditure, Turnover from construction activities, Turnover from building,

Turnover from civil engineering, Production value, Investments, Overall construction index of new buildings, Total number of bankrupt companies.

More significant correlations were observed between ratios themselves. Therefore, this was logical and anticipated as investment ratios, contain common values in the calculation. So, only the correlations obtained between the ratios and other figures were taken into account, even though these correlations are limited in number. This is because there have only been available records for five investment ratios, four companies and a five year period.

4. Research Findings and Discussion

Initially, considering the results of the index Dividend Per Share (DPS), the first picture of the amount of dividends distributed to shareholders each year can be formulated. It is observed that during the early years of the analysis, all companies, except COMPANY 2 (which does not distribute dividends during the five years periods), distribute profits to shareholders. As the years progress, one company after the other reduce and eventually nullify the distributed dividends. The dividend policy of each company varies. There are three main reasons why a company does not distribute profits. Firstly, in order to reinvest with the purpose of development or creation of reserves, second reason is the absence of earnings and thirdly enterprises avoid distributing dividends to repay or reduce enterprises' debts. These zero dividends are not a characteristical feature for each company as some of these companies may seek to maintain high growth rates.

Then the results of the ratio Price to Book (P / B) will be discussed in order for the behavior of the market to be examined. High index P / B means that the stock price is overvalued whereas a low index value and especially less than one means that the company's share on the stock exchange is undervalued. It is observed throughout all companies, that the ratio values follow a downward path. From this trend it can be concluded that the investors do not prefer these companies, without disregarding the fact that some of them would not be a profitable option for an investor if there are potential prospects for growth in the future.

Then, the ratio Earnings Per Share (EPS) will be examined, so as to take a picture of the size of the profit or loss corresponding to each share. It is obvious that during the first two years, three out of four companies show upward trends (excluding COMPANY 4). The index values are positive and present a small range of fluctuations during these years which represent a steady and profitable progress of the industry. In 2010 and 2011, however, a permanent reduction in the EPS ratio can be observed with the remarkable fact that in 2011 all companies experience losses. The average index remains negative for the years 2011 and 2012. The company that stands out is COMPANY 3 as it is the only company that manages to show profits again in fiscal year 2012 since 2011.

Only one company has been distinguished regarding a promising path in the industry. Having assumed from the valuation of P / B ratio that stock prices are continuously being decreased, the analysis of index Price to Earnings (P / E) will take place. The value of index P / E as mentioned above is not defined when the company is making losses. Examining the companies, through the years for which the index is defined, we can observe a continuous reduction of this index. The exception is once again COMPANY 3 because the value of P / E ratio is increased in the years 2010 and 2012. The combined consideration of ratios EPS and P / E reveal the trust that investors show to the future profitability of COMPANY 3.

Through the analysis and description of the industry situation and each company separately, it is possible to properly assess the final investment ratio Price to Sales (P / S). The index P / S is an investor tool for assessing whether the stock of a company is considered overvalued or underestimated. The values of the index P / S for COMPANY 1, 2 and 4 are less than 2. Therefore they are considered as undervalued while the index values for COMPANY 3 are larger than 2 and therefore are considered as overvalued. In this

analysis, all companies with P / S values less than 2 were rejected because it is more likely for the index to remain low and for the stock prices not to increase, as companies are in recession and do not show any growth trends. It is assumed that the calculation of only the index P / S, is not enough as a stock assessment tool. It should be preceded by a more detailed analysis in order to distinguish companies with growth prospects and profitability in comparison to those in recession.

Given the data used and introduced in the statistical processing program, it is worth noting that there is a very large and even negative correlation between the index number "earnings per share" and the number of bankrupt companies, $r = 0,984$ and $sig = 0,016$. It seems that there is high dependence between the probability of bankruptcy of a company and the reduction of its profits. This is obvious as the negative corellation suggests that the decline in corporate profits, increases the number of bankrupt enterprises and vice versa, ie the increase in profits reduces total bankrupt companies.

Then there is a large positive correlation between the number of employees and the index value "earnings per share" with $r = 0,967$ and $sig = 0,033$. The positive correlation indicates that increasing the profits of an enterprise, additional jobs could be created and vice versa, ie the increase in the number of employees is a fact that increases the efficiency and therefore the profitability of the business. Then there is interdependence between the number of employees and the index 'price to earnings per share.' This interdependence is negative, but can not be described as a correlation because the significance exceed 0,05 ($sig = 0,063$). In this case, interdependence will qualify as trend. The negative trend thus interpreted in the opposite way than the positive correlation between the number of workers with the "earnings per share" as the latter ratios appear in the index denominator 'price to earnings per share "and the two ratios are inverse. For the same reason ($sig = 0,064> 0,05$), the relationship between the number of operations and earnings per share is interpreted as a positive trend. This positive trend indicates that increased profits received by a company, lead to a healthy industry and a lucrative area of expertise. Consequently largest number of companies deal with the subject of this targeted profitability. On the other hand, small profits is a deterrent for new companies that are not likely to risk to get involved with a non-lucrative industry.

Finally, high and positive correlation appears among the value of "dividends per share" with investment ($r = 0,979$ and $sig = 0,021$). Specifically, it appears that investments lead to profitability. The higher profits are thus positively impacting on distributed dividends. When the company is healthy, it is possible that higher dividends are distributed, depending on the dividend policy of course.

5. Conclusions – Further Research

The current research focused on the most significant Greek Construction Enterprise. Overall, it is observed that the analyzed companies show a downward trend and a continuous decline in the companies' share prices in the Athens Stock Exchange throughout the years 2008-2012. Initially all companies show profits resulting in companies sharing dividends to shareholders which over time were reduced and completely eliminated in the coming years when companies exhibited losses. The inability of the companies to produce earnings combined with the uncertain economic and political situation in this period, affects the investors of the Athens Stock Exchange since they are rushing to sell their shares. This, results in the plummeting of shares of construction companies. In particular, the results of the index 'price to sales' clearly reveal the undervalued share price of three of the four companies. As part of this observation, it would be expected that some investors would buy these stocks in order to resell them to their benefit when the stocks acquire an upward trajectory. Instead, stock prices constantly decrease, and this shows that many investors have lost faith in the recovery of the industry and are looking for methods to make more secure investments. As far as further research is concerned, additional years beyond this period of investigation could be examined. It would be interesting to study years later than 2012 when the crisis is even deeper and before 2008 ie before the agreement of Greece with the International Monetary Fund and the imposition of fiscal discipline measures. It would also be desirable to include more investment ratios or a combination of investment and other categories of ratios in a future effort, in order

to develop more complete and reliable results.

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