

Analysis of Value Creation in Real Estate

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ABSTRACT :Real Estate is a strategic sector in the Spanish economy, that, during the last years, has been subjected to large fluctuations, including numerous retailer bankruptcies and that, frequently, generate distrust on shareholders since they fear that their investments will not be compensated. With the aim of obtaining relevant information about the capacity of these companies to create value for their shareholders, we have analyzed Real Estate companies that are listed in the Spanish stock market. The financial data has been processed and the necessary variables have been calculated in order to make an exhaustive analysis of value creation for these companies, following the main theories of the ad hoc literature. The results obtained point to construction companies and civil engineering companies that achieve the creation of value for their shareholders, and that, therefore, are among the most capable of facing potential trust crisis from shareholders, in the face of instability situations in the financial markets.

Keywords: CAPM, Real Estate, ROA, ROE, Value Creation

I. INTRODUCTION

The Real Estate sector in Spain is one of the most important in terms of job creation and contribution to Gross Domestic Product, however, it is also one of the most prone to rates of interest fluctuations, political instability or abrupt changes to the economic cycle. In recent years it has been a sector that has gone through many fluctuations caused by sudden movements in the stock markets, the disappearance and creation of new companies or the appearance of new business models. The ever-changing picture that the Real Estate sector presents, will, without a doubt, bring important consequences to the investment and Real Estate promotion of assets and at the same time it will cause changes to the creation of business opportunities. Real Estate companies will have to quickly adapt in order to survive in this uncertain scenario [1].

Despite the importance of the Real Estate sector and its role in the Spanish economy, Real Estate companies find it increasingly difficult to self-finance in capital markets. This process of financing of the Real Estate activities starts with the acquisition of capital based on the image of trust that is projected towards the shareholders[2]. Therefore, from the perspective of management strategy, just like from the perspective of any other company, it is essential to maintain a shareholders' remuneration/return on equity that fulfills their expectations, this, in the short term, will help companies to have greater guarantees of obtaining financial resources from potential shareholders when they resort to the capital markets to ask for financing. In the case of companies that are listed in stock markets, fulfilling the return expectations of the shareholders or even surpassing them, creating value, will have a positive impact on the stock capitalization value.

In this context of value creation, it is without a doubt fundamental to study the shareholders' expected return (K_E) and its comparison with the remuneration that the company really offers to them (ROE). However, other variables such as the Return on Assets (ROA), Leverage, Cost of Debt (K_D) or Weighted Average Cost of Capital (WACC) prove to be essential as an adequate financing structure and a K_D inferior to the obtained return, are fundamental premises in any study of value creation.

Our paper will analyze shareholder's expectations from Real Estate companies that are listed in the official stock market. With that purpose, we have used a sample composed of the 88% of the Real Estate companies, separated in two subsections: construction companies and civil engineering companies.

The paper is composed of a first part in which, after the abstract and the introduction, the methodology used for the collecting of the necessary variables for the subsequent analysis of value creation (K_E , K_D , WACC, ROE and ROA) is explained. Then, in the second part, the sample used, its main aspects and the study results are explained. Finally, the conclusions obtained, as well as the discussion of the results, the limitations of the study and future lines of research are analyzed.

II. RECENT VALUE CREATION RESEARCH

The research about financing cost is a constant concern inside the Real Estate sector, due to the recent investigations about the corporate financial decisions and the factors that influence the capital structure. With this in mind, we are basing our paper on the previous literature in order to determine the many ways of measurement that the previous authors have developed. First of all, we can highlight the Cost of Debt (K_D), in which previous studies have stressed the importance of establishing the value of external financing in the Real Estate sector [3, 4, 5]. By contrast, other authors have studied the minimum return that shareholders will demand [4], through the analysis of the Cost of Equity (K_E), [6]. Because of this, many recent investigations have considered the CAPM model as the necessary model to calculate the cost of self-financing [7, 8, 9]. However, for a company to find financial balance, it is necessary for it to be funded with external resources as well as its own resources, forcing companies to consider the cost of external financing [10]. In this way, the difficulty to measure the financing cost is established, therefore to determine the cost of capital it is necessary to set division of individual financing forms [11]. Thereby, [4] determined that the Weighted Average Cost of Capital (WACC) allows us to calculate the Weighted Arithmetic Average of the cost of the company's different financing sources (Cost of Capital).

From the other hand, our study is focused on the creation of value for the construction and civil engineering companies that are listed in the Spanish stock market. During the last decades, many researchers have tried to find the concept of value creation. [11] established that "the value creation process could be describes as a spectrum ranging from core value, to added value, to future value". Subsequently, [12] stated that the creation of value is considered as the capacity of companies to create utility. In the same vein, [13] showed that the creation of value is part of the resource configuration of a company, maintaining its strategy, business model and organization. Accordingly, the creation of value is a term that is becoming more important in the Real Estate sector; therefore, it proves to be of great interest for shareholders to know the profitability of a company before making an investment, because of that, it is essential to know the Return on Equity (ROE) and the veracity of the financial statements of the company [14].

The Capital Asset Pricing Model (CAPM) has been used for the calculation of the K_E , for being considered, mostly in literature, as the most suitable for calculating K_E in listed companies [15, 16]. This method uses a beta coefficient (β) to measure the variability of stock's return relative to the market in which they are traded (market risk). (β) has been obtained through the connection between the relative covariance of the title with that of the market, this has allowed us to estimate the relationship that exists between the stock return and the market return as a whole.

III. METHODOLOGY

The Weighted Average Cost of Capital (WACC) allows us to calculate the weighted arithmetic average of the cost of the company's different financing sources (Cost of Capital); in which weights are the percentages that represent each financing source relative to the total financing [4]. To determine the cost of capital it is necessary to set division of individual financing forms [11]. For that reason, according to [4], there are two basic formulas to determine WACC, depending on if we take the tax effect into account or not.

First of all, without taking the tax effect into account, as weighted average of the cost of equity and the cost of debt:

$$WACC = \frac{E * K_E + D * K_D}{E + D} \quad (1)$$

Second, taking into account the tax effect, with t being the regular taxes' tax rate we find that:

$$WACC^t = \frac{E * K_E + D * K_D(1 - t)}{E + D} \quad (2)$$

3.1. Cost of Debt (K_D)

It is widely accepted that the credit rating and the weighted average are two methods used in order to quantify the Cost of Debt [3]. However, it is difficult to find a reliable credit rating for construction and civil engineering companies that are listed in the stock market. With this in mind, we have applied the methodological approach used by [4] to determine the Cost of Debt. In this way, our approach has been formulated by taking in mind companies' financing costs and financial debt:

$$K_D = \frac{FinanceCost}{FinancialDebt} \quad (3)$$

3.2. Cost of Equity (K_E)

In order to calculate the return on equity we base our work on the previous research made by [6, 17], therefore, we have applied the Capital Asset Pricing Model (CAPM) model. This model shows the return of equity (K_E) as the sum of the risk-free return and the systematic risk premium $\beta (R_m - R_f)$ [4]:

$$\text{CAPM Model: } K_E = R_f + \beta (R_m - R_f) \quad (4)$$

In order to determine R_f we have taken into account that the main reference in Spain is the public auction of government bonds on 10 years. We have used data from [18], obtaining an average reference of 0.44%.

The second component, $\beta (R_m - R_f)$, is the so called systematic premium risk, being $(R_m - R_f)$ the market risk premium. For its calculation, we value as the main reference the premium market risk's historical average relative to that of the risk-free return. Consequently, for our study, we have considered the average total yield of the IBEX 35 stock index during the last 5 years, in order to determine the market yield that ascended to 1.67%.

β measures the share's relative covariance in relation to the market, and, therefore, it allows us to know the relationship between the stock return and the market return as a whole:

$$\beta = \frac{\text{cov}(\text{share}, \text{market})}{\sigma_m^2} \quad (5)$$

σ_m : measures the volatility or the market return's standard deviation.

3.3. Value Creation

The use of financial leverage has a great influence on companies' economic performance/return. Thereby, the evaluation of the impact that financial leverage leaves on companies' profitability helps creating synchronous solutions to help companies' operational efficiency [19]. So, in order to calculate the impact of financial leverage on the profitability of construction and civil engineering companies that pay contributions on the Spanish stock market, we have considered the relationship of this variables with that of the return on equity (ROE):

$$ROA = \frac{\text{Profit before Tax (PBT)}}{\text{Assets}} \quad (6)$$

$$ROA_t = \frac{\text{Net result for the financial year}}{\text{Assets}} \quad (7)$$

$$ROE = \frac{\text{Profit before Tax (PBT)}}{\text{Net Equity}} \quad (8)$$

$$ROE_t = \frac{\text{Next result for the financial year}}{\text{Net Equity}} \quad (9)$$

According to [4] a company only creates value when it reaches an expansive financial leverage so high that the return on equity is superior to the cost of equity. However, a company that reaches a contractionary financial leverage will only create value if the return on equity exceeds that of the cost of equity.

IV. SAMPLE AND RESULTS

4.1. Sample

The sample used during this paper is composed of eleven construction companies and four civil engineering companies that are listed in the Sistema de Interconexión Bursátil Español (SIBE) in the four Spanish stock markets (Madrid, Barcelona, Bilbao and Valencia). They have been randomly selected between those that meet the following criteria: being audited, having an operating income superior to one million euros and being in an active situation.

The construction sector in Spain has experimented a slow growth since the recession ended in 2014. Therefore, in regards to the Spanish construction companies' financial return: Actividades de Construcción y Servicios (ACS), Sacyr, Obrascon Huarte Lain (OHL), Deloitte, Fomento de Construcciones y Contratas (FCC) y Ferrovial are six Spanish companies that are among the 100 construction companies in the world that generated the greatest sales volume during 2019, reaching the 5% of total sales globally, specifically, they obtained 73,544 million dollars of turnover altogether. This way, Spain is placed among the countries with a larger market share in the Real Estate sector [8, 20]. Table 1 shows the listed companies in the Real Estate sector.

Table 1 Listed companies in the Real Estate sector analyzed

Sector	Companies	Operating Income (mil €)	Abbreviation
Listed Construction Companies	Metrovacesa, S.A.	75578	MVC
	Sacyr, S.A.	69768	SCYR
	Renta Corporación Real Estate, S.A.	57858	REN
	Grupo Empresarial San José, S.A.	54306	GSI
	Aedas Homes, S.A.	53400	AEDAS

	Neinor Homes, S.A.	41963	HOME
	Realia Business, S.A.	16419	RLIA
	Compañía Levantina de Edificación y Obras Públicas, S.A.	5702	CLEO
	AzahariaRentalSocimi, S.A.	5541	YAZR
	Ayco Grupo Inmobiliario, S.A.	3979	AYC
	QuabitInmobiliaria, S.A.	3547	QBT
Listed Civil Engineering Companies	Elecnor, S.A.	1376774	ENO
	Obrascon Huarte Lain, S.A.	925086	OHL
	Actividades de Construcción y Servicios, S.A.	841477	ACS
	DuroFelguera, S.A.	257221	MDF

Source: Sistema de Análisis de Balances Ibéricos de Bureau Van Dijk (SABI)

4.2. Results

4.2.1. Cost of Debt (K_D)

Table 2 shows the Cost of Debt, calculated according to formula (3), obtaining the following individual results:

Table 2 Cost of debt of the listed companies analyzed

Sector	Companies	External financing (mil €)	Financial expenses (mil €)	K_D (%)
Construction Companies	MVC	338080	9325	2.8
	SCYR	13907024	470422	3.4
	REN	102203	3591	3.5
	GSJ	160761	6435	4
	AEDAS	589751.34	20464	3.5
	HOME	356099.34	5740	1.6
	RLIA	46924	1	0
	CLEO	37192	1890	5.1
	YAZR	62837	2110	3.4
	QBT	132800	2766	2.1
	AYC	13800	757	5.5
	<i>Average</i>	<i>1431582.60</i>	<i>47591</i>	<i>3.3</i>
Civil Engineering Companies	ENO	2241924	54560	2.4
	OHL	1886108	20847	1.1
	ACS	33095820	497202	1.5
	MDF	462327	9647	2.1
		<i>Average</i>	<i>9421545</i>	<i>145564</i>

Most of the listed construction companies are close to the sector's average (3.3%), excluding HOME in the first place, that possesses a cost of 1.6% due to its lack of non-current liabilities. In the second place, we find RLIA that, after the capital increase carried out in 2018, proceeded to pay off their debt with Caixabank, for a total of 120 million euros.

4.2.2. Cost of Equity (K_E)

Table 3 shows the calculation of the Cost of Equity, determined according to formula (4). To this end, we obtain the parameter β in the first place (formula (5)), achieving the following individual results:

Table 3 Cost of Equity of the listed companies analyzed

Sector	Companies	β	K_E (%)
Construction Companies	MVC	0.93	1.6
	SCYR	2.13	3.1
	REN	1.27	2
	GSJ	1.12	1.8
	AEDAS	0.36	0.9
	HOME	0.86	1.5
	RLIA	0.53	1.1

	CLEO	0.42	0.9
	YAZR	0.64	1.2
	QBT	1.87	2.7
	AYC	0.78	1.4
	<i>Average</i>	<i>0.99</i>	<i>1.7</i>
Civil Engineering Companies	ENO	0.74	1.4
	OHL	2.02	2.9
	ACS	1.62	2.4
	MDF	1.90	2.8
	<i>Average</i>	<i>1.57</i>	<i>2.4</i>

From the previous table we can deduce that the highest beta value corresponds to that of SCYR, with a value of 2.13, which means that when IBEX 35 increases or decreases by 10%, the stocks of this company will increase or decrease their value by 21.3%. Therefore, the stocks of this company represent a greater risk in regards to the market's average. Likewise, REN, GSJ and QBT present more moderate values, but still superior to 1, they are consequently considered market-sensitive assets. On the contrary, the rest of the companies possess a beta value inferior to 1, which indicates that they are assets not sensitive to market changes, which means that they represent a lesser risk in regards to the market's average. CLEO is the company with the lowest beta value, which allows us to state that the stocks of this company are the ones that possess the lowest volatility of all the listed Spanish construction companies.

In regards to the Spanish civil engineering listed companies, OHL is the company that possesses the highest beta value and therefore, the one that has a greater risk in the stock market. In the opposite end, ENO possesses a beta value of 0.74, so the stocks of this company have a lesser volatility relative to the average of the Spanish civil engineering companies.

The CAPM model has to be considered as a useful instrument for calculating the minimum return demanded by the listed companies' shareholders, hence we can affirm that the minimum return that the shareholders demand is much higher in the civil engineering sector than in the construction sector, due to the K_D of the listed civil engineering companies being higher (2.4%) than that of the listed construction companies (1.7%). In the same way, in average, civil engineering companies have a higher beta value than construction ones, as they all have a value higher than 1 (except for ENO). For that reason, companies in the civil engineering sector possess a much higher risk than those in the construction sector. This results in higher return expectations by shareholders.

4.2.3. Weighted Average Cost of Capital (WACC)

The Weighted Average Cost of Capital (WACC) is one of the important parameters of finance and it helps in: firm valuation, capital budgeting analysis, and several other applications [21]. The WACC calls for a balanced capital structure in which debt and equity are utilized at some predetermined percentage [22]. However, it is worth noting that it is not a cost, but the weighted average of a cost [23]. Therefore, for its calculation we use formulas (1) and (2). Table 4 shows the WACC of the analyzed construction and civil engineering companies.

Table 4 WACC of the listed companies analyzed

Sector	Companies	K_E (%)	Equity capital (mil €)	Full financing (mil €)	Liability (mil €)	K_D (%)	WACC (%)	WACC _f (%)
Construction Companies	MVC	1.616	2340843	2678923	338080	2.8	1.7	1.7
	SCYR	3.1	1190371	13907024	12716653	3.4	3.4	2.6
	REN	2	75841	178044	102203	3.5	2.9	2.4
	GSJ	1.8	14237	174998	160761	4.0	3.8	3.0
	AEDAS	0.9	938874	1528625	589751	3.5	1.9	1.6
	HOME	1.5	857837	1213937	356099	1.6	1.5	1.4
	RLIA	1.1	586750	633674	46924	0.0	1.0	1.0
	CLEO	0.9	21592	58784	37192	5.1	3.6	2.8
	YAZR	1.2	34452	97289	62837	3.4	2.6	2.0
	QBT	2.7	285104	417814	132800	2.1	2.5	2.4
	AYC	1.4	8519	22255	13735	5.5	3.9	3.1
	<i>Average</i>	<i>1.7</i>	<i>577666</i>	<i>1901033</i>	<i>1323367</i>	<i>3.3</i>	<i>2.6</i>	<i>2.2</i>
Civil Engineering Companies	ENO	1.4	737320	2979244	2241924	2.4	2.2	1.7
	OHL	2.9	893947	2780155	1886208	1.1	1.7	1.5
	ACS	2.4	5495906	38591726	33095820	1.5	1.6	1.3
	MDF	2.8	19431	481758	426327	2.1	1.6	1.5
		<i>Average</i>	<i>2.4</i>	<i>1786651</i>	<i>11208220</i>	<i>9412569</i>	<i>1.6</i>	<i>1.9</i>

In average, the financing cost in the Spanish construction sector is much higher than that of the civil engineering sector. Specifically, of all the companies that form the Spanish listed construction sector, only five of them exceed the financing cost average (2.6% without tax effect and 2.2% with tax effect). AYC and CLEO are the companies that have the highest cost of debts. However, QBT, REN and YAZR are the closest construction companies to the sector's average.

In regards to the Spanish listed civil engineering companies, the average WACC (1.9% without tax effect and 1.5% with tax effect) is exceeded by all the companies that form this sector, except for ACS.

4.2.4. Value Creation (I). ROA, ROA_t, ROE and ROE_t

Table 5 Return on Assets and Return on Equity of the listed companies analyzed

Sector	Companies	ROA (%)	ROA _t (%)	ROE (%)	ROE _t (%)
Construction Companies	MVC	-0.1	-0.2	-0.1	-0.2
	SCYR	1.3	1.9	15.5	22.9
	REN	9.7	9.6	22.7	22.6
	GSJ	32.3	30.5	397.5	375.4
	AEDAS	2.9	2.2	4.7	3.6
	HOME	1.7	1.2	2.4	1.6
	RLIA	1.1	0.5	1.2	0.6
	CLEO	3.9	32	10.6	8.6
	YAZR	1.8	1.8	5.1	5.1
	QBT	-4.4	-2.0	-6.4	-2.9
	AYC	-6.4	-6.4	-16.6	-16.6
	<i>Average</i>	<i>4.0</i>	<i>3.9</i>	<i>39.7</i>	<i>38.24</i>
Civil Engineering Companies	ENO	6.4	4.4	25.8	17.7
	OHL	-1.8	-2.2	-5.5	6.7
	ACS	1.6	1.9	11.5	13.0
	MDF	0.9	1.0	24.1	25.4
	<i>Average</i>	<i>1.8</i>	<i>1.3</i>	<i>14.0</i>	<i>12.4</i>

It is worth mentioning the extreme values that GSJ presents in ROA and ROE, which are the result of an increase in the income statement of 52,954,000€. The increment of the business figures' net amount has been obtained through its holding activity, that distinctively includes the financial income originated from the financing provided to the investee companies. These extreme values make the construction sector's average much higher than that of the civil engineering sector.

In relation to the profitability that the Spanish construction companies generates by/in their investments (ROE) we can observe that REN has obtained the most profitability as the 9.6% of its benefits has been achieved because of the investments made in 2019, followed by CLEO and AEDAS. However, there are three companies in the sector that have not achieved any profitability in their investments: MVC, QBT and AYC.

In contrast, in regards to the return that the shareholders in the listed construction sector obtain, SCYR is the company that offers a better yield. Furthermore, the companies with a negative ROE are the same ones that have not generated any return on assets. Specifically, we can confirm that SCYR has been the company that has generated the most financial profitability in the studied sector, this is because for each euro generated as benefits, their shareholders gain 0.23 €, even though its income statement has decreased compared with the previous year, generating losses. After being able to increase the operating income compared to 2018, the losses in the income statement have been greater. It is worth noting that group Sacyr uses derivative financial instruments in order to eliminate or significantly reduce some particular interest rate, foreign currency or market risks, present in monetary transactions, equity transactions or other types of transaction.

Regarding the economic return/profitability of the listed civil engineering companies in Spain, we can observe that ENO is the company that has a higher ROA, because for each euro generated as benefits, 0.044 € are generated due to the investments carried out during 2019. However, OHL does not generate any profitability. Even though that company has obtained benefits in its operating activities, its financial results have generated very high losses. These financial losses have been caused by the high financial expenses of the

company: interest and other financial costs and marketable securities, in addition to a high deterioration of the company group’s equity instruments.

Finally, we can consider that, in a general way, the listed civil engineering sector in Spain, presents a high financial profitability rate, except for OHL, highlighting MDF with a value of 25%.

Once we have the necessary variables (K_D , $WACC_t$, ROA_t , ROE_t and Leverage) we can proceed to the analysis of Value Creation.

4.2.5. Value Creation. Leverage and Creation Value

Table 6 Creation and Destruction of Shareholder Value in the listed construction and civil engineering sector

Sector	Companies	K_E (%)	K_D (%)	ROA_t (%)	ROE_t (%)	Leverage	Creation of Value
Construction Companies	MVC	1.6	2.8	-0.2	-0.2	Neutral	Destruction
	SCYR	3.1	3.4	1.9	22.9	Expansive	Creation
	REN	2.0	3.5	9.6	22.6	Expansive	Creation
	GSJ	1.8	4.0	30.5	375.4	Expansive	Creation
	AEDAS	0.9	3.5	2.2	3.6	Expansive	Creation
	HOME	1.5	1.6	1.2	1.6	Expansive	Creation
	RLIA	1.1	0.0	0.5	0.6	Expansive	Destruction
	CLEO	0.9	5.1	3.2	8.6	Expansive	Creation
	YAZR	1.2	3.4	1.8	5.1	Expansive	Creation
	QBT	2.7	2.1	-2.0	-2.9	Contractive	Destruction
	AYC	1.4	5.5	-6.4	-16.6	Contractive	Not create value
	<i>Average</i>	<i>1.7</i>	<i>3.3</i>	<i>3.9</i>	<i>38.24</i>	<i>Expansive</i>	<i>Creation</i>
Civil Engineering Companies	ENO	1.4	2.4	4.4	17.7	Expansive	Creation
	OHL	2.9	1.1	-2.2	6.7	Expansive	Creation
	ACS	2.4	1.5	1.9	13.0	Expansive	Creation
	MDF	2.8	2.1	1.0	25.4	Expansive	Creation
		<i>Average</i>	<i>2.4</i>	<i>1.6</i>	<i>1.3</i>	<i>12.4</i>	<i>Expansive</i>

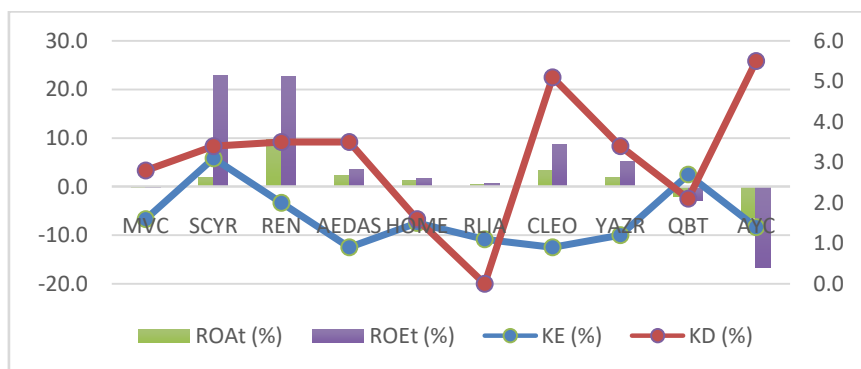


Figure 1 Creation and Destruction of Shareholder Value in the listed construction sector in Spain

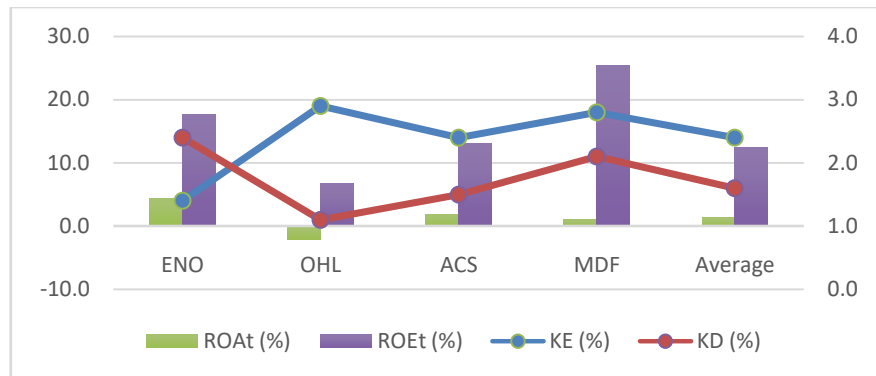


Figure 2 Creation and Destruction of Shareholder Value in the listed civil engineering sector in Spain

In Figure 1 and 2 we can observe the creation and destruction of shareholder value in the listed construction and civil engineering sector in Spain. In Figure 1 we have not considered GSJ due to its extreme values. In general, both sectors create shareholder value as a consequence of their expansive financial leverage, as in average, the return on equity is superior to the return on assets.

If we make an exhaustive analysis of both sectors, we can deduce that the companies: REN, GSJ, ENO, ACS, SCYR, AEDAS, HOME, CLEO, YAZR, OHL and MDF have an expansive financial leverage, due to the return on equity being superior to the return on assets as a result of ROA being superior to the cost of debt. Therefore, the following companies: REN, GSJ, ENO and ACS have created value because $K_D < ROA < ROE$. However, SCYR, AEDAS, HOME, CLEO, YAZR, OHL and MDF are in a situation in which the return on equity is superior to the cost of equity, thereby, they also create value.

On the other hand, MVC has a neutral financial leverage because its return on equity is equal to its return on assets. Nevertheless, this company is not able to create any value due to its return on assets being inferior to the weighted average cost of capital. Specifically, they destroy value because $(ROE = ROA) < K_E$.

Only two companies in the construction sector have a contractive financial leverage, this can be attributed to its return on equity being worse than its return on assets, as a consequence of these companies having a cost of debt (K_D) that exceeds the return on equity (ROE). Generally speaking, with this kind of financial leverage, it is impossible to create shareholder value. Specifically, QBT destroys value for its shareholders because $ROE < ROA < K_D < K_E$.

V. CONCLUSIONS

In the current economic situation, the listed companies' financial cost is a relevant matter, in terms of both external financing cost and shareholder's expected return. The present paper has approached these questions in regards to the Real Estate sector in Spain.

Regarding the financial cost relative to the external resources, we can conclude that the construction companies with the greatest cost of the whole sector are: AYC, GSJ and CLEO, followed by REN, AEDAS, SCYR and YAZR. However, the ranking changes drastically if we analyze the self-financing cost instead of the external one. As the Spanish companies in the construction sector that are demanded the biggest amount of return on equity by their shareholders are SCYR and REN. In this way, CLEO, YAZR, AYC and AEDAS are the companies with less demand by their shareholders. If we analyze the CAPM model in depth, we can determine that the sector's companies that present a greater risk are SCYR, REN and QBT, because of their beta values surpass the unit. Therefore, these companies possess a high risk in regards to the other companies in the sector, as a decrease of the IBEX 35 value will cause an even higher decline of its stocks' quote. Nonetheless, YAZR and AYC are companies that possess minimum risk in the stock market (even though they have a high self-financing cost) as their beta values are not very high, which means that their financial assets are not very sensitive to market changes, so they present lesser volatility than the stock market's average.

Consequently, and considering what we just stated, the listed Spanish companies that have the greatest weighted average financial cost are: AYC, GSJ and CLEO, as they are companies that possess a high financial resources cost, even when they do not have a high self-financing cost. Even though they do not have high financial expenses, the external financing of these companies is reasonable. Likewise, the next on the list are SCYR, REN and QBT, as they have a cost in both external and self-resources. However, the construction company that presents the lesser costs of the whole sector is RLIA, as it finances its assets with a minimum percentage of external resources and therefore, its financial expenses are scarce.

In regards to value creation, CLEO, AEDAS, REN, SCYR and YAZR have been able to create value for their shareholders, even when they have the highest financing cost of the sector, as those costs are compensated with high profitability. Thereby, the return on equity of these companies is superior to the return

on assets, which has caused an expansive financial leverage that allows to create value. Surprisingly, RLIA which has the lowest costs of the sector and an expansive financial leverage has not been able to create value. As a consequence, its return on assets has not surpassed the debt's weighted average cost, so even though they possess an expansive financial leverage, RLIA has not been able to reward their shareholders with the return/profitability that they demand.

In the case of the civil engineering sector, the financial cost of external resources (1.6%) is considered inferior to that of the construction sector (1.6%). The companies that present a higher percentage of this type of cost are ENO and MDF. In this sense, if we compare the companies with the highest financial cost of external resources in both sectors, we can confirm that the construction sector provides a much higher percentage than the listed civil engineering one, as AYC has a cost of 5.5%, while ENO's is 2.4%, less than half of the previous one. On the other hand, if we analyze these companies' self-owned resources financial cost, we can observe that OHL is the company to which their shareholders demand the greatest minimum return, even though it is the company with the lowest external financing cost in the listed civil engineering sector. This way, we can analyze the risk that these companies have in the stock market if we study the beta values of these CAPM model companies, where all companies present a beta value superior to 1 (except for ENO). Therefore, we can conclude this sector's companies have an elevated risk as their stock quote will suffer a much higher decrease when the reference index goes down. On the contrary, ENO has a beta value inferior to the unit, which means that it is the company with the lowest risk in the sector, as its active assets are not very sensitive to market changes.

This way, considering the previous analysis, we can conclude that, the weighted average cost of financing in the Spanish listed civil engineering sector (1.5%) is way lower to that of the construction sector (2.2%).

In regards to shareholders' return, the companies that have achieved value creation are the two that are positioned in both ends of the weighted average cost ranking: in the first place we find ENO, and in the last place, we find ACS. The first one has been able to reward their shareholders with their expected return, even though this company has the highest weighted average financing cost in the market. However, MDF, even when having the highest return on equity in the market (allowing them to achieve an expansive financial leverage), their return of assets have not been able to surpass the average cost of debt, making this company not able to reward their shareholders with their expected return.

In conclusion, the Spanish listed construction companies that have been able to create value for their shareholders are: REN, AEDAS, CLEO and GSJ, due to their return on equity has been superior to the sector's average return, so, even though they possess the highest demanded weighted average costs, the mentioned return has allowed to face this demand. Therefore, the return on equity of these companies is superior to their return on assets.

On the other hand, the civil engineering companies that have created value are: ENO and ACS. MDF is the company with the greatest return on equity, but the company's return on assets has not been able to surpass the weighted average cost of the required capital.

VI. LIMITATIONS AND FUTURE LINES OF RESEARCH

The present paper is not exempt of limitations; the most important one is that it has only examined the construction and civil engineering companies that are listed in the Spanish stock market. Therefore, these results could not be applied at international level, as this paper focuses only on the analysis of a particular financial market.

Moreover, with the aim of exhaustively analysis the construction companies, this study has focused on two groups of activities: Construction and Real Estate. Future studies could consider the same variables in regards to value creation for Real Estate companies that are listed in the Spanish stock market.

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