The effect of Multinationality and Management Entrenchment on Debt Conservatism and Zero-Leverage phenomena, investigating the profile of North American firms adopting extreme conservative leverage conditions.

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Dissertation written under the supervision of Professor Panagiotis Dontis Charitos

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Abstract

This research is aimed to test whether multinationality of firms and management entrenchment are possible driver of companies' decisions to adopt Zero-Leverage or Almost Zero-Leverage financial decisions. In addition, we analyze the profile of Debt-Conservative firms to understand if the reason why companies decide to have low or nor debt is explained by their financial constraints or instead, by their desire to achieve financial flexibility.

We find, across different linear and logistic regressions, that Multinationality and CEOs Ownership positively increase the likelihood of a firm to be Debt-Conservative while controlling for Year and Industry fixed effects. Moreover, our findings suggest that higher the level of International Revenues more significant is the impact of Multinationality on the leverage status of a company for US companies listed in the NYSE and Nasdaq, between 1990 and 2018. Our findings are in line with previous research on the puzzling phenomenon of Zero-Leverage and represent the first scientific study on Multinationality and Debt Conservatism for North American companies.

Keywords: zero-leverage; almost zero-leverage; debt conservatism; multinationality; management entrenchment; financial constraints; financial flexibility.

O efeito da Multinacionalidade e da Proteção Injustificada dos Quadros sobre o Conservadorismo da Dívida e fenómenos de Alavancagem Zero, investigando o perfil de empresas norte-americanas que adotam níveis de alavancagem extremamente conservadores.

Giovanni Verde

Resumo

Esta investigação destina-se a testar se a multinacionalidade das empresas e a proteção injustificada dos quadros serão fatores potencialmente determinantes para as empresas ao adotarem decisões financeiras de Alavancagem-Zero ou Quase Alavancagem-Zero. Além disso, analisamos o perfil de empresas com níveis conservadores de dívida para compreender se estas decidem ter pouca ou nenhuma dívida devido aos seus constrangimentos financeiros ou, em vez disso, pelo seu desejo de alcançar flexibilidade financeira.

Verificamos, através de diferentes regressões lineares e logísticas, que a Multinacionalidade e a Propriedade dos CEOs aumentam positivamente a probabilidade de uma empresa ser Conservadora da Dívida enquanto controla os efeitos fixos do Ano e da Indústria. Além disso, as nossas conclusões sugerem que um nível de Receitas Internacionais mais elevado deverá levar a um impacto mais significativo da Multinacionalidade sobre o estatuto de alavancagem de uma empresa, isto para empresas americanas cotadas no NYSE e no Nasdaq, entre 1990 e 2018. As nossas conclusões estão em linha com estudos anteriores sobre o fenómeno de Alavancagem-Zero e representam o primeiro estudo científico sobre Multinacionalidade e Conservadorismo da Dívida para empresas norte-americanas.

Palavras-chave: alavancagem-zero; quase alavancagem-zero; conservadorismo da dívida; multinacionalismo; proteção injustificada dos quadros; restrições financeiras; flexibilidade financeira.

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1. Introduction

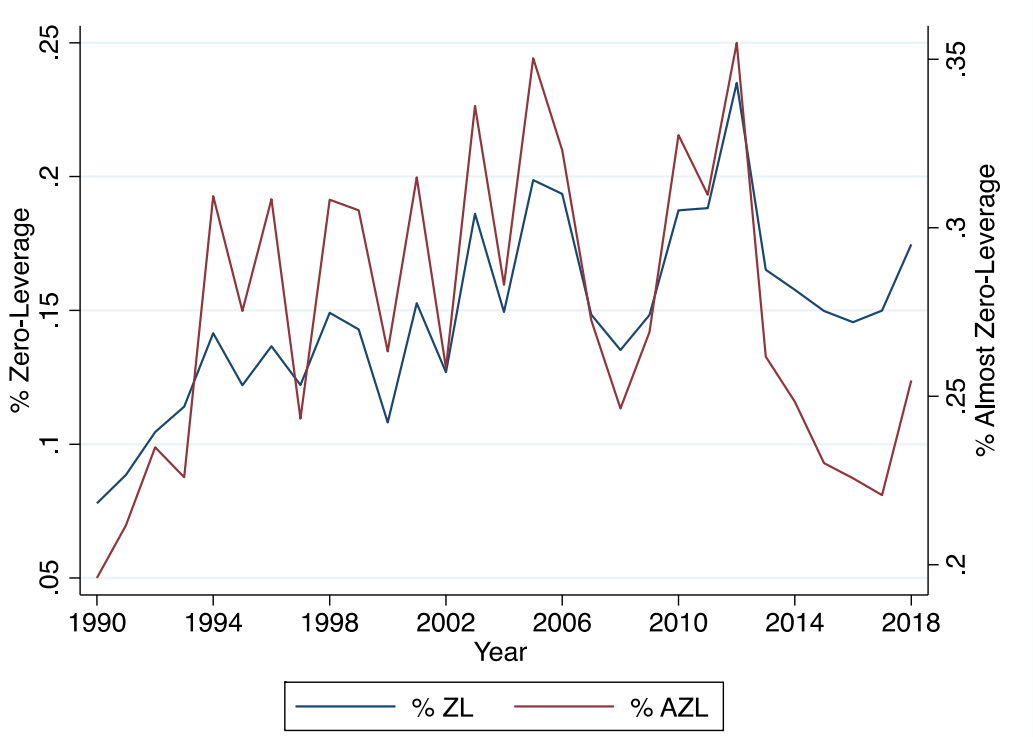
The motivation for this research derives from the debated problem in corporate finance to explain companies' capital structure and its drivers. This thesis focuses on the puzzling phenomenon of zero-leverage and debt conservatism which are in strong contrast with the main theories and findings regarding capital structure. Moreover, among the drivers considered to explain debt conservatism this research participates to previous literature by testing internationality of firms (level of International Sales) and management entrenchment (level of CEOs ownership) as potential significant explanatory variables. Particularly, while analyzing the drivers of capital structure decisions, this research aims at defining the main characteristics of firms that adopt a zero-leverage capital structure. Therefore, discriminating between those firms that are financially constrained and other firms that adopt such financing decisions to improve their financial flexibility.

When a real-world scenario is considered, in which financial markets cannot be described as perfectly efficient, Modigliani and Miller Theory of Capital Structure cannot explain firms' capital structure decisions. Previous literature and studies tend to converge towards two main accepted theories: The Pecking Order Theory (Myers and Majluf, 1984) and The Trade Off Theory (Kraus and Litzenberger, 1973). The latter implies that asymmetric information is an important determinant of firms' debt issuance decisions, and particularly how in the presence of information asymmetry debt financing would be a preferable source if compared to equity financing. The former theory instead concludes that companies define the combination of debt and equity to balance the costs and benefits of debt. Where the main benefit is given by interests' payments deductibility while costs associated to bankruptcy and agency conflicts represent the main disincentives to reduce the use of debt.

The increasing number of firms that decide to adopt a zero-leverage strategy sharply increased over time. Particularly, looking at Figure 1, we can notice a significant increase in the percentage of zero-leverage (ZL) observations when considering firms listed both in the NYSE and in the Nasdaq, between 1990 and 2018. The percentage of zero leverage firms increased from 7% to almost 18%, between 1990 and 2018. On average between 1990 and 2018, the percentage of firms-year observations having zero debt is equal to 15% in our dataset. In the case of Almost Zero-Leverage (AZL), meaning firms with a leverage ratio lower than 5%, we can also notice a significant growth. Particularly, the percentage of AZL was slightly more than 25% in 2018 after a peak of 35% of firms being AZL in our dataset in 2014. On

average 27% of our firm-year observation show a Leverage Ratio lower than 5% between 1990 and 2018. Such phenomenon doesn't find explanation in neither of the two aforementioned theories and represents a puzzle for the conventional scientific studies on capital structure.

Figure 1: Evolution of the Percentage of Zero-Leverage and Almost-Zero Leverage observations listed in NYSE and Nasdaq, 1990-2018.



Source: Compustat

Moreover, it is interesting to notice that some very well-known companies are part of our zero-leverage panel of North American firms. As an example, we recognize Adobe Inc, Electronics Art, Cisco, Alphabet Inc, LinkedIn Corp. This can help understand that while Zero-Leverage, and Debt Conservatism, may appear to be a very puzzling phenomenon it is a well-established and quite persistence practice across different firms and sectors.

Researching and studying the behaviour of zero leverage (ZL) firms and almost zero leverage (AZL) firms allows to better understand why companies decide to adopt such extreme financial decisions and if such decision is driven by financial constraints or financial flexibility considerations.

This research contributes to the already existing literature in the field of extreme debt conservatism by analysing and discovering what are they key factors affecting the decision to

adopt a zero-leverage, or close to zero, financing strategy. However, the traditional explanatory variables are complemented with the level of International Sales to Total Sales and CEOs ownership as a proxy of internationality and management entrenchment, respectively. The underlying reason to include the level of internationality is related to the idea that companies with geographically diversified revenues may find the advantages of debt less relevant as they capture other benefits linked to their international status, or instead, that they may increase their debt levels due to their lower cost of financing. For what concerns CEOs ownership, the underlying hypothesis is that a significant ownership stake held by CEOs may ultimately interfere with the optimal capital structure for companies and specifically push towards an extreme low debt capital structure. In addition to that, this research distinguishes between financially constrained and unconstrained firms within the aim to describe the profile of zero-leverage firms and to compare their long run performance. This helps to depict how a zero-leverage and almost zero-leverage decision can have an impact on the future investments' decisions of companies.

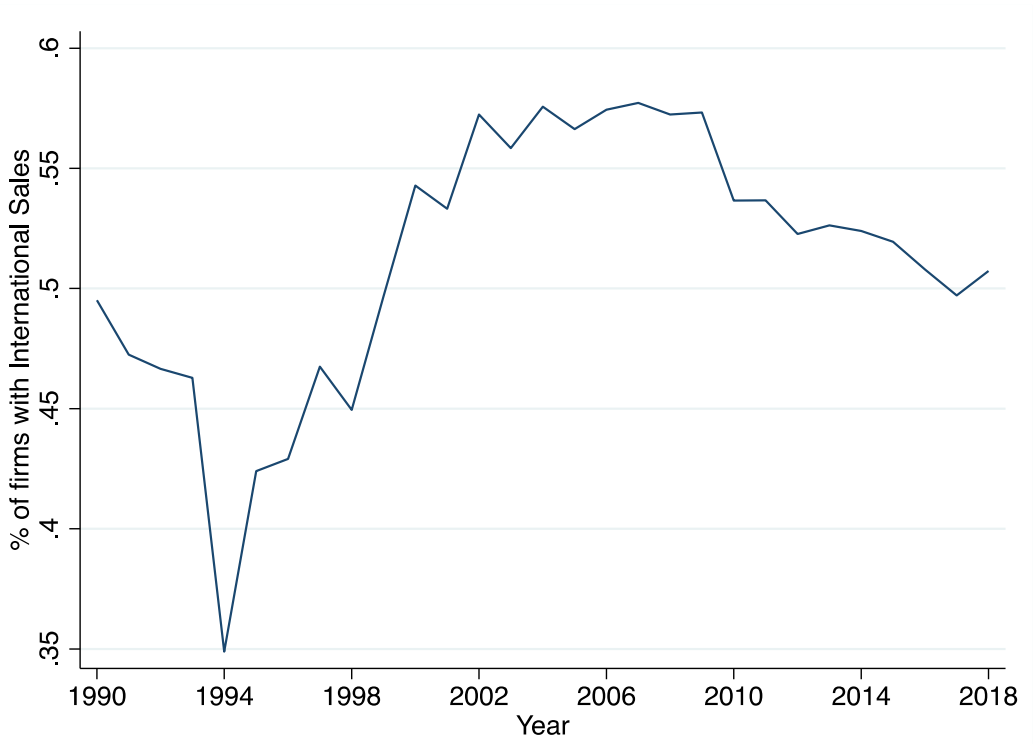
The importance of studying the drivers of debt conservatism and capital structure in general is given by the relevance that capital structure has for the firm, its shareholders and for the environment in which the firm operates. A successful selection of capital sources is one of the key elements of firms' financial strategies as it will affect the company's value, equity returns and cost of capital, which are fundamental concerns when running a company. A sound capital structure protects a business enterprise from financial risk, helps the firm keeping solvency and liquidity, and provides flexibility for possible capital adjustments needed due to a changing environment[1].

Studying the relationship between capital structure and firms' internationality is relevant for a few specific reasons. First of all, international firms can be considered key players in the world economy. An empirical fact, as shown for the zero-leverage phenomenon, can help describing the increasing number of international firms, considered as firms that reported positive international sales. Figure 2 shows the sharpe increase in the percentage of firms listed both in the NYSE and Nasdaq that had International Sales between 1990 and 2018. After a sharp decrease between 1990 and 1994 the percentage of firms having international sales

[1] I am grateful to my colleagues M. Livrieri, A. Carneiro, A. Batista, V. Pais. The collaborative scientific research that we carried together in 2021, during our MSc in Finance at Católica Lisbon School of Business, titled *"Does Asymmetric Information Drive Capital Structure Decisions in US Companies Listed on NYSE and Nasdaq?"*, truly helped me developing this research. The mentioned paper is available upon request.

sharply increased, reaching more than 50% in 2018. The overall average of firms showing International Sales between 1990 and 2018 is equal to 50%. At the same time, the average revenues achieved through international revenues, in absolute value, increased by 110% between 1990 and 2018, for the companies listed in the NYSE and the Nasdaq (Figure 3, Appendix).

Figure 2: Evolution of the Percentage of Firms with International Sales listed in NYSE and Nasdaq, 1990-2018.



Source: Worldscope, Thomson Reuters.

Secondly, while previous studies find evidence of significant differences in capital structure of international and non-international firms (Burgman, 1996; Chen et al., 1997; Mansi & Reeb, 2002; Reeb et al., 2001), no previous study effectively focus on Multinationality in North American companies as a variable capable of explaining debt conservatism. In addition to that, different studies conclude that there is a strong link between internationality and metrics of company performance (Aggarwal et al., 2011). Therefore, it is interesting to test whether the level of internationality may be also be a driver of capital structure decisions. Moreover, while previous studies focus on management entrenchment as a potential factor driving debt conservatism with mixed results (Berger et al., 1997; Strebulaev et al., 2012; Brailsforda et al.,

2002), this research contributes by focusing on the effect of CEOs ownership when considering multinational companies.

As a way of summary, we find in our research that the Multinationality dimension has significative and positive impact on the likelihood of a firm to adopt a zero leverage or almost zero leverage condition. Moreover, we find that the great majority of debt conservative firms are actually financially constrained, while a minority deliberately adopt low-debt capital structure. The most interesting results of this research can also be found, in a synthetic way, in Table 1 in the Appendix.

The thesis comprises a review of the previous literature on the topic (Section 2), a description of the data collection process and of the methodology of analysis (Section 3), univariate analysis (Section 4), multivariate analysis (Section 5), results of the study (Section 6) and conclusion (Section 7).

2. Literature review and Hypothesis Development

The topic of capital structure has been one of the most debated one in corporate finance scientific literature. Among the others, Modigliani-Miller's (1958) theorem of irrelevance of capitals structure represent a key result that has been challenged and tested by more recent studies. These latter studies include the Trade-off Theory (Miller, 1977; Modigliani and Miller, 1963; and Scott, 1977), the Pecking-order Theory (Myers, 1984; Myers and Majluf, 1984), the Agency Costs Theory (Jensen and Meckling, 1976), the Market Timing Theory (Baker and Wurgler, 2002), the Corporate Control Theory (Harris and Raviv, 1990; Stulz, 1988), and the Product Cost Theory (Campello, 2003; Harris and Raviv, 1990).

All of the aforementioned studies, that are considered the most accepted theories for capital structure, have something in common that is relevant (or irrelevant) for this research: they do not explain the puzzling effect of zero-leverage and debt conservatism. However, they identify key factors that seem to drive capital structure decisions. Those factors are size, asset structure, tangibility, profitability, non-debt tax shields, asymmetric information and others. To be precise, in previous literature it is possible to differentiate between studies that focus on testing the Pecking-order Theory (Shyam-Sunder and Myers, 1999; Fama and French, 2002; Frank and Goyal, 2003; Lemmon and Zender, 2004) and studies that instead try to either challenge or confirm conclusion of the Trade-off Theory (Hovakimian et al., 2004; Titman and Wessels,1988; Rajan and Zingales,1995).

The puzzling phenomenon of debt conservatism has been also broadly discussed in few recent studies that offer mixed results. As a matter of facts, Korteweg (2010) finds that on average, companies are under-levered relative to the optimal leverage ratio and attributes this finding on the zero-leverage firms included in the sample. Different studies try to explain what the main reasons are why companies decide to adopt zero-debt, or close to zero, by investigating what are the profiles of zero-leverage firms. Graham (2010) finds that large, profitable, and liquid firms with low distress costs have conservative capital structures. Other studies focus on understanding whereas zero-leverage decisions are driven by financial constraints or instead from the willingness to achieve financial flexibility to support further investments and capital expenditures in the future (Bancel and Mittoo, 2004; Graham and Harvey, 2001; Brounen, De Jong, and Koedijk, 2004; Pinegar and Wilbricht, 1989). For example, Marchica and Mura (2010) find that a conservative leverage policy seeking to achieve financial flexibility can improve the investment ability of a company. They point out that companies adopting a zero-

leverage capital structure increase capital expenditures and abnormal investments, therefore claiming that financial flexibility, achieved through an increasing borrowing power, should be central in understanding companies' capital structure decisions.

Contrary to the conclusions of the previous studies, Devos et al., (2012), shows that zero-leverage decision is driven by the impossibility of zero-leverage firms to access debt markets at convenient conditions, therefore concluding that zero-leverage firms are generally unable to carry debt in their balance sheets. In addition, more recent studies focus on explaining the zero-leverage phenomenon by analysing firm-level fundamentals. This is the case of Bessler et al., (2013), they find that the increasing number of zero-leverage firms is linked to market-wide forces, such as IPO waves, shifts in industry composition, increasing asset volatility, and decreasing corporate tax rates; and that most firms that adopt such capital structure are financing constrained. Moreover, Bessler et al., (2013) confirms the finding of Marchica and Mura (2010) that firms adopting zero-leverage for a short period of time achieve financial flexibility and are able to support greater capital expenditures in the future. Dang (2013) focusing on the profile of zero leverage firms, finds that there two groups of unlevered firms that can be distinguished among dividend and non-dividend payers. The study concludes that non-payers have zero leverage mainly due to financial constraints while the dividend payers deliberately adopt such extreme capital structure.

Another set of previous scientific literature focus on the long run performance of ZL firms compared to leveraged firms. Marchica and Mura (2010) demonstrate that zero leverage firms seeking financial flexibility are not only able to achieve better returns on their abnormal investments and capital expenditures but that they also achieve consistently and positive and significant results for Jensen's alpha. At the same time, Lee and Moon (2011) find that zero-leverage companies perform better over the long-run.

Considering management entrenchment and debt-conservatism's scientific literature it is possible to find mixed results. While Devos et al., (2012) point out that management entrenchment doesn't explain debt conservatism, Strebulaev and Yang (2012) find that companies with higher CEOs ownership and longer CEO tenure are more likely to have zero debt. Similar to this, Brailsford et al., (2002) concludes that there is a non-liner inverted U-shaped relation between the level of CEOs ownership and leverage, in which when managerial share ownership reaches a certain point there is a higher likelihood to have an opportunistic behaviour from the management and therefore a decrease in the leverage ratio. Also, Berger at al., (1997), find evidence that as the degree of management entrenchment increase so does the

likelihood to have a low debt capital structure. These previous researches tend to demonstrate how CEOs may prefer to avoid an optimal capital structure and opt for low leverage to protect their undiversified human capital (Fama 1980; Amihud and Lev 1981), and also to avoid external pressure that may interfere within their ability to have cash balances at their disposal (Jensen 1986).

In conclusion, different studies and previous researches conclude towards the presence of an increasing number of zero-leverage firms and try to find the most relevant factors that can explain such puzzling phenomenon while differentiating between firms that are financially constrained and unconstrained. However, there is not a vast literature regarding Multinationality and the zero-leverage phenomenon. To be precise, only the working paper of Dontis-Charitos et al., (2021) titled *The Impact of Internationalization on Zero Leverage: Evidence from the UK*[2], explore the possibility that Multinationality can drive the decision of UK listed firms to have zero-leverage. Particularly, they find a positive relationship between Multinationality and the propensity of firms to have zero-leverage while controlling for company-related factors and industry effects, for a panel of UK listed companies between 1990 and 2018. The absence of any other research on the possibility to consider Multinationality to be a significant factor for capital structure is one of the main reasons why this research has been carried. Specifically, this research aims at testing whether internationality can be considered a factor driving zero-leverage for North American listed companies. In this sense, this research, by building upon the existing research framework, represents the first analytical study that consider internationality and capital structure decisions in the US. Moreover, this research tries to study the role of management entrenchment for capital structure decisions in the case of Multinational companies.

General research and literature on the topic of International firms converge towards the idea that the superior performance of multinational when compared to domestic, is mainly given by their possibility to access capital markets and the benefits arising from a higher diversification. The latter point may imply a lower risk exposure (Dontis-Charitos et al., 2021; Errunza and Senbet, 1981; Lessard, 1973; Levy and Sarnat, 1970). Therefore, one could argue that Multinational can experience a lower cost of debt and adopt a higher debt balanced capital

[2] I am thankful to my Thesis Supervisor, Professor Dontis-Charitos, that offered me the possibility to work upon the research structure and theoretical reasoning of his most recent paper. His guidance has been central in writing this Thesis. The aforementioned paper is available upon request as it is currently under referee review for publication.

structure. Indeed, some studies point out that multinational have significantly more debt compared to domestic firms (Mansi and Reeb, 2002; Singh and Nejadmalayeri, 2004). Based on this and as tested in Dontis-Charitos et al., (2021), it is interest to consider a first hypothesis:

H1: Multinationality decreases the likelihood to have a conservative capital structure.

However, other studies point out that Multinational companies have lower debt than domestic counterparts, depicting a negative relationship between the level of internationalization and the leverage ratio (Lindner et al., 2018). This could be explained by the fact that International companies are exposed to greater risks arising from their international status (foreign exchange risk, political risk) and higher agency costs translating therefore in higher cost of debt. In regard to this view, international firms may be forced to avoid debt financing due to the inconvenient cost of debt. However, it is also important to consider that previous literature argues that multinational companies have a higher debt capacity and face lower taxes (Toplensky, 2018). In a way, multinational firms seem to benefit from a lower tax burden when compared to domestic firms. Such advantage may reduce the marginal benefit of debt financing and therefore limiting firms' reliance on debt tax shield (Blouin, 2012). Moreover, as already mentioned above and as pointed out by Desai et al., (2004), multinational firms have a facilitated access to global capital. Following the Pecking-order hypothesis one should expect therefore that international firms would prioritize internal funds to achieve financial flexibility. Therefore, as tested in Dontis-Charitos et al., (2021) this research tries to test also the two-following hypothesis:

H2a: Multi-nationality has a positive effect on the propensity of firms to have low leverage due to the financial constraints faced by MNC.

H2b: Multi-nationality has a positive effect on the propensity of firms to have low leverage due to the financial flexibility of MNC.

While testing these hypotheses this thesis also studies the effect of management entrenchment. This seems to be an interesting aspect, as one of the reasons why hypothesis 2a (H2a) could be true is given by the fact that international firms face higher agency costs. Therefore, complementing the analysis by adding a variable capable of capturing agency costs can help to further distinguish what is the relationship between internationality and debt conservatism.

3. Data, variables and model definition

3.1 Data Collection

This research focuses on understanding the drivers of zero-leverage and debt conservatism in the case of North American listed companies. For this purpose, the data collected include all companies listed in both the NYSE and Nasdaq, between 1990 and 2018. To conduct the analysis, yearly observations were retrieved from Compustat. For each firm in the Compustat database within each fiscal year, accounting data, used to build our dependent variable and independent variables of the regressions were collected. In addition, in order to take into account CEOs ownership data were collected from ExecuComp database part of Compustat. However, international sales, used as a proxy of internationality, is not a variable included in Compustat. For this reason, international sales data for companies listed in the NYSE and Nasdaq were retrieved from Worldscope. The final dataset is given by the merge between Compustat/ExecuComp data and Worldscope data. All the constructed variables, except leverage, are winsorized at the 1% and 99% tails to minimize any effect that may be due to extreme variables present in the dataset. Moreover, all the firm-year observations for which the Total Debt (Long Term Debt and Debt in Current Liabilities) and/or the level of international sales is missing have been removed from the dataset. As in Bessler et al., (2012) and other previous researches, we exclude from our dataset all firms in Financial and Utilities sectors, NAICS (2 digits) equal to 52 and 22, respectively, as they are exposed to different regulations and present significantly different capital structures.

The final dataset includes a total of 50,426 firm year observations, of which 55% comes from firms listed in the Nasdaq while the remaining 45% from firms listed in the NYSE. In our dataset there is a total of 5,000 distinct firms included. Table 2 exhibits the most relevant industries present in our dataset. Manufacturing represents the most significant Industry category with 46% of companies in our dataset being part of this category. The other two most represented Industry are Information and Real Estate with 12% and 9%, respectively. Table 3 provides a first description of the number and percentage of levered, zero-leverage and almost zero-leverage observations when splitting our dataset among Multinational and Domestic firms. In this particular case a firm is considered Multinational if it has a level of International Sales above 50% of total revenues, Zero-Leverage if a firm has zero Total Debt and Almost Zero-Leverage if a firm has Leverage Ratio lower than 5%. Table 3 shows that in our dataset there are 42,668 Domestic firms-year observations and 7,758 Multinational firms-year observations.

Once again, it is possible to depict that a significant number of both Domestic and Multinational companies adopt conservative capital structure policies. Particularly, in our dataset 13% of Domestic Firms have zero-leverage and 26% of them have can be considered almost-zero leverage. In the case of Multinational firms, 14% of them are zero-leverage and 28% are almost zero-leverage according to our definition.

Moreover, Table 4 shows the yearly number of firms, the percentage of Zero-Leverage and Almost Zero-Leverage Firms and the percentage of Multinational firms (International Sales above 50% of Total Sales) present in our dataset. Between 1990 and 2018 the average percentage in our dataset is 15% and 27% for Zero-Leverage and Almost Zero-Leverage firms, respectively. Such empirical finding help understand the importance of the debt conservatism phenomenon. The percentage of firms implementing extreme debt conservative capital structure sharply increased during the years of our analysis. At the same time, the percentage of multinational firms is 15%, with the share of multinational that sharply increased from 6% to 23%, between 1990 and 2018. Finally, it is possible to appreciate these results graphically in Figure 4 in the Appendix.

Table 2 – Most relevant industries in our Dataset by NAICS 2 digit.

NAICS (2 digits)	Industry	%
31-33	Manufacturing	46.10
51	Information	12.68
53	Real Estate	9.69
44-45	Retail Trade	4.89
54	Professional Services	4.64
21	Mining	4.47
48-49	Transportation	3.86

Table 3 – Key leverage statistics for the Multinational and Domestic firms-year observations

	Total #	LEV #	%	ZL #	%	AZL #	%
Domestic	49,374	42,668	86.42%	6,706	13.58%	12,680	25.68%
Multinational	9,061	7,758	85,62%	1,303	14.38%	2,495	27.54%

Table 4 – Evolution of the number of firms, percentage of Zero-Leverage and Almost Zero-Leverage firms and percentage of Multinational firms in our dataset between 1990 and 2018. A firm is counted as Zero Leverage if it shows a zero level of Total Debt (Long Term Debt plus Debt in Current Liabilities. A firm is considered Almost Zero Leverage it has a Leverage Ratio (Total Debt/Total Assets) lower than 5%, Finally, in this table a company is considered multinational if it has, in a specific year, a percentage of International Revenues over Total Revenues above 50%.

Year	# Firms	% Multinational	% ZL	% AZL
1990	719	6.26%	7.79%	19.61%
1991	836	6.70%	8.85%	21.17%
1992	928	7.33%	10.45%	23.49%
1993	1,009	6.74%	11.4%	22.6%
1994	834	6.35%	14.15%	30.94%
1995	1,5	7.13%	12.2%	27.53%
1996	1,757	7.57%	13.66%	30.85%
1997	1,138	8.08%	12.21%	24.34%
1998	2,267	8.91%	14.91%	30.83%
1999	2,267	10.54%	14.29%	30.52%
2000	1,424	9.69%	10.81%	26.33%
2001	2,26	12.12%	15.27%	31.5%
2002	1,513	13.35%	12.69%	25.84%
2003	2,353	16.87%	18.61%	33.62%
2004	1,6	17.38%	14.94%	28.31%
2005	2,421	17.68%	19.87%	35.03%
2006	2,387	18.73%	19.35%	32.3%
2007	1,651	19.26%	14.84%	27.26%
2008	1,672	21.05%	13.52%	24.64%
2009	1,713	20.32%	14.83%	26.91%
2010	2,62	21.60%	18.74%	32.75%
2011	2,715	21.73%	18.82%	30.98%
2012	2,068	23.79%	23.5%	35.49%
2013	2,246	21.82%	16.52%	26.18%
2014	2,258	22.81%	15.77%	24.84%
2015	2,237	21.73%	14.98%	23.02%
2016	2,26	20.58%	14.56%	22.57%
2017	2,275	20.97%	14.99%	22.07%
2018	2,874	23.17%	17.47%	25.47%
Mean		15.18%	14.83%	27.48%

3.2 Variables Definition

3.2.1 Dependent and Independent main variables

In this research, capital structure levels of firms are measured through Leverage Ratio (LR). The latter variable is defined as LR_{it}=Total Debt/Total Assets. While Shyam-Sunder and Myers (1999) use Market Value of Assets, Frank and Goyal (2003) show that it is equally acceptable to use Book Value of Assets. Following Bessler et al., (2013) and Dontis-Charitos et al., (2021) Zero-Leverage is a dummy variable that assumes value of 1 when $LR_{it}=0$, meaning when a firm in a specific year carries zero debt. In order to enlarge this research to the broader phenomenon of Debt Conservatism, the models also include a definition in which Almost Zero Leverage dummy assumes value of 1 when the Leverage Ratio is lower than 5%[3].

As presented in the literature Review, a few studies agree that there is a significant difference between capital structure decisions between multinational and non-multinational companies. Dontis-Charitos et al., (2021) actually show that Multinationality can be considered a variable capable of explaining zero-leverage. For this reason, following the aforementioned studies, the degree of multi-nationality is measured by considering the level of International Sales compared to Total Sales. This variable is named Multinationality (M_{it}) and measured as follow M_{it}=International Sales/Total Sales. In this research, we test the effect of Multinationality by using different specifications of when a firm is considered a multinational. Specifically, the regressions models include three specifications of Multinationality, in which companies are considered to have this international status only if the percentage of international is higher respectively than 40%, 50% and 60%. The aim of this research is not the one to test what are the most suitable proxies for Multinationality. Therefore, following Dontis-Charitos et al., (2021); Chen et al., (1997); Park et al., (2013), the percentage of international revenues is used. For what concerns CEOs ownership, this is measured as the percentage of shares held by CEOs to the total common equity for each year and for each company.

[3] Detailed specifications of the models are presented in Section 5.

3.2.2 Control Variables

In order to test the impact of Multinationality and CEOs ownership on zero-leverage and almost zero-leverage decisions, this study takes into account some variables that are believed to drive Leverage Ratio. Previous literature on the topic of capital structure highlights the significant effect that tangibility, size and profitability have on the capital structure of firms while testing either the Pecking-Order Hypothesis or the Trad-Off Theory. For example, Frank and Goyal (2003) show that these effects are significant for North American firms.

The argument for the effect of tangibility on capital structure can be two-sided. On the one hand, one can argue that under the Pecking Order Theory, firms with a low level of tangible assets will suffer more from asymmetric information problems and will therefore carry higher levels of debt, as explained in Harris and Raviv (1991). On the other hand, one can also argue that tangible assets serve as collateral and, hence, are associated with higher levels of debt, implying a positive relation between tangibility and leverage. We measure Tangibility through the ratio of Tangible Assets to Total Assets. For what concerns size, it is usually assumed that bigger firms have a better reputation and face lower costs due to information asymmetry, leading to a positive relation between size and leverage. In this research we measure size through the natural logarithm of total assets. Moreover, both tangibility and size help to test the financial constrained hypothesis defined in Section 2. Considering profitability, the predictions in the literature are once again conflicting. Ross (1977) predicts that firms with higher profitability have higher leverage ratios, but Fama and French (2002) challenge this finding in line with the Pecking-Order Hypothesis. Profitability is measured by using a firm ROA_{it}= Net Income/Total Assets. It is also argued that higher growth companies use more internal funds (Myers and Majluf, 1984), for this reason also Growth Opportunities are measured by using GO_{it}=Market Capitalization/Total Book Value. All the control variables mentioned so far allow to test both the Pecking-Order Hypothesis and the Trade-Off Theory.

As mentioned in the Literature Review (Section 2), we can test different hypothesis to explain firms' decisions to carry zero or low levels of debt. One potential explanation is that companies adopt a zero or close to zero-leverage capital structure because they are financially constrained. This would result in a lower exposure to debt financing for financially constrained companies compared to non-financially constrained ones. At the same time, companies may opt for such extreme capital structure to achieve financial flexibility. As shown in De Angelo (2007) and Modigliani and Miller (1963) and discussed in Dontis-Charitos et al., (2021) firms

would have large cash reserves with the aim to maintain their borrowing power high and avoid a low level of financial flexibility. Therefore, as in Bressler et al. (2013) this research includes Cash Holdings (CH_{it}), defined as CH_{it}= Cash and Cash Equivalents/Total Asset, as a control variable under the hypothesis that the level of cash holdings should increase the likelihood to have a zero or close to zero leverage structure.

One of the key reasons why firms with an international status could have a higher likelihood to adopt an extreme low-debt capital structure could be that a multinational capture alternative tax benefits that reduce the marginal tax befit of interests' deduction. Therefore, in this research the non-debt tax shields ($NDTS_{it}$=Depreciation / Total Assets), and the Actual Tax rate (measured as the ratio of cash paid for taxes to book assets) are included since the deduction of interests' expenses can protect the generated income while increasing companies' values (Titman and Wessels, 1998; Dontis-Charitos et al., 2021; Faccio and Xu, 2015).

In addition, Talberg et al. (2008) find that there is a significant difference in the capital structure of firms depending on the industry in which they operate. To incorporate this finding in our study, we add industry fixed effects to our model. Additionally, we include year fixed effects to control for the effect of the passage of time. Table 4, in the Appendix, summarizes all the variables presented and part of this research, how they are calculated and their expected effect, in terms of sign (+/-), in driving the likelihood to have debt conservatism according to previous findings.

3.3 Theoretical Regression Model

This study tests whether the international status of a company, measured by International Sales, and CEOs ownership affect the likelihood of a company to adopt a zero-leverage or close to zero capital structure. The key dependent variable tested here is Leverage Ratio. The latter is a dummy variable that assume value of 1 if a firm in a specific year has Zero-Leverage. However, as mentioned above, this study will present different regressions in which the main independent variable will take value of zero even if the Leverage Ratio is equal or below 5%. Therefore, the dependent variable in all of the logistic models that will be presented further in this research does not assume negative value. As in the case of Bressler at al., (2013); Dang, (2013); Dontis-Charitos et al., (2021) a logistic regression is used to identify the drivers of zero or quasi zero-leverage financial decisions.

Using mathematical terminology, the different models presented in this study can be described by the following equation (Equation 1):

$$Probability(Y = 1|X) = \frac{1}{1+e^{-(\alpha+\beta X)}} \quad (1)$$

where we Y is the dependent dummy variable that takes value of 1 if the company has either zero-leverage or a Leverage Ratio smaller than 5%, α is the constant/intercept, β is a vector of the coefficients related to the explanatory and control variables that are considered in this study and that have been broadly descripted in the section above.

In addition to the logistic regression model described above, we also present, as a first result of this research, a linear regression model in order to better explain the effects of the different independent variables on the Leverage Ratio between 1990 and 2018. The results of this first linear regression help us understanding what the key drivers of capital structure are including both our key explanatory variables, degree of Multinationality and CEO ownership, and the explanatory variables that previous scientific studies tend to consider as significant drivers of capital structure decisions. The theoretical linear regression model can be expressed by the following equation (Equation 2):

$$Leverage\ Ratio_{it} = \alpha + \beta_1 * M_{it} + + \beta_2 * CEO_{it} + +\beta_3 * TANG_{it} + \beta_4 * Size_{it} + \beta_5 * ROA_{it} + \beta_6 * GO_{it} + \beta_7 * CH_{it} + \varepsilon_{it}. \quad (2)$$

In the equation i and t are Industry and Year fixed effects. This regression model will guide us to study the average impact of the different explanatory variables on the Leverage Ratio for our data sample.

In the following section of this research, we present the results of ounr Univariate Analysis. They serve as a way to analyse the main features of our dataset and to firstly assess the key differences between ZL, AZL and levered firms considering the level of Multinationality.

4. Univariate Analysis

The scope of this part of the research is to explore the key differences between zero leverage almost zero-leverage and levered firms by including the multinational or non-multinational dimensions. In other words, we study what are the mean values for the key dependent and independent variables, and the t-statistics of the mean differences while considering companies according to their leverage status and their level of internationality[4]. The key results of this analysis are presented in Table 5.

The first three columns (1-3) exhibit the mean values for each variable when considering all levered firms (leverage ratio higher than 0), only domestic levered firms (share of international sales lower than 0.5) and only multinational levered companies (share of international sales higher o equal to 0.5). The three following columns (4-6) exhibit the same statistics when considering solely the panel of zero leverage firms while columns 7-9 show the statistics for the almost zero leverage panel of firms. The remaining columns of Table 5 contains the t-value and the significancy levels for different mean test that have been done to compare the mean values of the key variables included in this research.

First of all, we consider our key independent variables, Multinationality and CEO Ownership, between the panel of all levered firms and the panel of ZL firms and AZL firms. For what concerns, Multinationality we can notice that ZL firms and AZL firms show overall a higher level of international sales compared to levered firms, even if the difference is significant only when considering AZL firms. This is in line with both hypothesis H2a and H2b which expect Multinationality to have a positive impact on the likelihood of a company to adopt an extreme debt conservative capital structure. This result is in line with what founded by Dontis-Charitos et al., 2021, for the case of UK firms. Considering, CEO Ownership the results show that both ZL and AZL firms tend to have a higher level of Directors' Ownership. The t-value is significant in both panels at the 1% significancy level. This result supports the idea that a higher level of management entrenchment can result in a lower capital structure as shown by Strebulaev and Yang, 2012 and Berger et al., 1997.

Considering the control variables included in our research, our results are in line with previous findings on capital structure's drivers. Starting from size, both ZL and AZL firms are

[4] Given the nature of our dataset an unequal variance test has been carried to compare the means of the different key variables compared in this section.

significantly smaller than Levered firms. This result is in line with previous findings (Dang, 2013; Dontis-Charitos et al., 2021) and support the financial constraints hypothesis. The latter expects that smaller firms have lower debt capability due to their size and therefore present lower levels of debt. In addition, ZL and AZL firms have higher cash holdings than Levered firms. This supports both the Pecking Order and the financial flexibility hypothesis, under the idea that firms with higher level of cash will prioritize internal capital to debt. The positive and significant t-value associated to Profitability, shows that levered firm have on average higher profitability levels when compared to ZL and AZL firms. This finding supports the financial constrains hypothesis. Similarly, the positive and significant coefficient for Tangibility supports the idea that ZL have restricted access to debt financing due to a lower level of tangibility of their assets. The finding is in line with the Trade Off theory and the Pecking Order Theory which expects a positive relationship between tangibility and leverage. The result is opposite when considering AZL firms, supporting the financial flexibility hypothesis, and therefore showing that on average AZL have higher levels of tangibility compared to levered companies. Moreover, our findings in line with previous ones' show that ZL and AZL have significantly higher Growth Opportunities compared to levered firms. Considering Tax, we find that ZL and AZL have significantly higher tax payments when compared to levered firms. This result is in line with Bessler at al., 2013, which explain that since tax reductions are mainly related to tax deductibility, we should expect to notice a higher level of tax payments in the case of ZL and AZL firms. Finally, we find that ZL and AZL have significantly lower Non-Debt Tax Shield. While this result is in contrast with the Trade Off framework, it is in line with the findings of Dontis-Charitos et al., (2021), and Dang, (2013).

Following the panel division of Dontis-Charitos et al., (2021), we investigate the differences in the values of the mean of the key explanatory variables when comparing Domestic Levered with Domestic ZL and AZL (column 15 and 16) and Multinational Levered with Multinational ZL and AZL (column 17 and 18). Starting from the domestic panel, we find that domestic levered firms have on average higher levels of Multinationality compared to ZL and AZL firms. On the other hand, domestic ZL and AZL display higher CEO Ownership on average. Similarly, to our overall result discussed above, Domestic Levered firms are on average bigger (Size), have higher Profitability levels, have higher Non-Debt Tax Shields, have lower Cash Holdings, lower tangibility levels, actual Tax rate and growth Opportunity. To be precise, all the results are significant at 1% significancy level.

When considering the multinational panel of firms (column 17 and 18), we notice that ZL and AZL have significantly higher levels of Multinationality and of CEO Ownership. All the other results are in line with our overall comparison besides Growth Opportunity that lose significancy in this specification and Actual Tax Rate that shows that Levered Firms actually have on average higher tax payment compares to ZL firms. As in Dontis-Charitos et al., (2021), we find that Multinational Levered firms have higher tax rates than Multinational ZL firms.

In our last part of the univariate analysis, we compare Domestic and Multinational companies while holding constant the leverage status of the companies. The results are presented in column 12 (Levered Domestic – Levered Multinational), column 13 (ZL Domestic – ZL Multinational) and column 14 (AZL Domestic – AZL Multinational). First of all, Domestic firms, in the case of levered and AZL firms, display higher leverage ratio than Multinational companies. This result support the idea that Multinationality increase the likelihood to adopt a conservative capital structure. Moreover, Multinational, across all leverage specifications, have lower levels of CEO Ownership. Multinational companies have significantly higher Size. In addition, they also have on average higher tangibility and cash holdings. Domestic firms compared to Multinational have higher profitability levels, Non-Debt Tax Shield, Actual Tax Rate (with exception of the Levered firms) and Growth Opportunities (with exception of the Levered firms). The significant lower tax rate in the case of Multinational ZL and AZL compared to their domestic counterparts support the financial flexibility hypothesis that Multinational adopt such capital structure by choice and not because they are constrained.

In conclusion, from the univariate analysis we can argue that both Multinationality and CEO Ownership can affect capital structure's decisions and particularly debt conservatism. Further multivariate analysis will contribute to understand better the relationship between key explanatory variables and the puzzling ZL and AZL phenomenon.

Table 5 – Mean and t-test of the key variables for the Levered, Zero-Leverage and Almost Zero-Leverage Panels of data across different specifications of the Multinational Status. Column 1-9 include the mean values for the different key variables of the model for All Levered Firms, Levered Domestic (DOM) and Multinational (MN) Levered, All ZL firms, DOM ZL and MN ZL, All AZL, DOM AZL and MN AZL. Column 10-18 reports the t-test for the difference in means when comparing firms based both on their Leverage Status and the Multinational Dimension. A firm is considered Levered if it has a Leverage Ratio higher than zero, ZL if the Leverage Ratio is equal to zero, AZL if the Leverage Ratio is lower than 5%. A firm is considered DOM if has International Sales/Total Sales below 50%, while is considered MN if the ratio is equal or above 50%. The T-values are reported, while the asterisks (*) displays the significancy value of the p-value associated to each t-value. An unequal variance t-test has been implemented given the nature of the dataset and the panels compared. Accordingly, the t-value is given by $t-value = \frac{mean1-mean2}{\sqrt{(\frac{var1}{n1}+\frac{var2}{n2})}}$; and the Degrees of Freedom are given by $DF = \frac{(\frac{var1^2}{n1}+\frac{var2^2}{n2})^2}{\frac{(\frac{var1^2}{n1})^2}{n1-1}+\frac{(\frac{var2^2}{n2})^2}{n2-1}}$.

	LEVERED Firms			ZL Firms			AZL Firms			Mean Test								
	1.All	2.DOM	3.MN	4.All	5.DOM	6.MN	7.All	8.DOM	9.MN	1-4	1-7	2-3	5-6	8-9	2-5	2-8	3-6	3-9
Leverage Ratio	0,29	0,29	0,24	0,00	0,00	0,00	0,01	0,01	0,01	--	--	19,5***	--	3,75***	--	262***		103,6***
Multinationality	0,20	0,11	0,70	0,20	0,10	0,74	0,21	0,10	0,73	-1,38	-3,9***	-286,4	-128,9***	-171***	9,8***	3,3***	-2,2***	-8,4***
CEO Ownership	0,08	0,08	0,06	0,11	0,11	0,10	0,11	0,11	0,10	-6,7***	-9,4***	4,8	1,1*	1,9***	-6,4***	-8,3***	-4,6	-5***
Size	6,62	6,55	7,04	4,82	4,80	4,89	5,03	4,96	5,31	91,1***	96,9***	-17,8***	-1,9***	-9***	29,1***	91,5***	18,5***	39,2***
Cash Holdings	0,15	0,14	0,21	0,45	0,42	0,53	0,40	0,38	0,46	-93,4***	-101,6***	-23,7***	-14,2***	-15***	-52,5***	-90,6***	-25,8***	- 44,9***
Tangibility	0,67	0,67	0,68	0,74	0,73	0,76	0,72	0,71	0,73	17,4***	-14,3***	-1,6***	-3,3***	-3,8***	-6,8***	-11,7***	-4,5***	- 8,5***
Profitability	-0,02	-0,01	-0,03	-0,08	-0,05	-0,20	-0,07	-0,05	-0,14	16,2***	17,8***	6,4***	13,7***	12***	28,3***	12***	29***	13,4***
Non-Debt Tax Shield	0,04	0,04	0,04	0,03	0,04	0,03	0,04	0,04	0,03	28,3***	24,4***	5,9***	9,9***	10,3***	19,1***	18,8***	20,1***	16,5***
Tax	0,02	0,02	0,02	0,03	0,03	0,02	0,03	0,03	0,02	-18,3***	-25,6***	-2,6***	15,0***	13,6***	-25,4***	-27,4***	5,5***	-0,7
Growth Opportunity	3,27	3,22	3,50	4,91	5,30	3,66	4,47	4,68	3,73	-15,3***	-15,5***	-2,7***	7,6***	6,4***	-24,4***	-16,5***	-1,2	-1,4

T-values, * p<0.05, ** p<0.01, *** p<0.001

5 Multivariate Analysis

In this section of the research, we report the different regressions models that have been used and the most relevant results. These includes both our linear and logistic regression models.

5.1 Linear Regression

The linear regression model is based on the Equation 2, and it serves as a way to study the drivers of Leverage Ratio in our data sample and to firstly assess the impact of Multinationality and CEO ownership on the dependent variable which is 'the Leverage Ratio. This linear regression includes Year and Industry (by NAICS) Fixed Effects. The results of the linear regression are presented in Table 6. Firstly, it is possible to notice that Multinationality, expressed as the share of International Revenues to Total Revenues, and CEO Ownership (the effect is not significant when other explanatory variables are included), expressed as percentage of shares owned by CEOs to Total Common Equity, are significant at the 1% significancy level and have a negative coefficient. Therefore, this first analysis depicts that an increase in the level of Multinationality and CEOs Ownership has a negative impact on the Leverage Ratio, thus decreasing, on average, the Debt levels of a firm. Considering the Hypothesis developed in Section 2, this result could be in line with H2a and H2b that expects how a higher degree of Multinationality might result in a higher likelihood to have a debt conservative capital structure.

The third definition of the first linear regression includes different explanatory variables that previous literature considers drivers of capital structure decisions. In this specification, while Multinationality maintains a negative and significant effect, CEOs Ownership loses significancy. All of the included control variables are significant at the 1% significancy level besides Growth Opportunity. Particularly, we notice that Tangibility has a positive and significant impact. The latter result is in line with previous literature findings that show how a higher level of tangibility of assets is associated to a higher level of debt under the Pecking Order Hypothesis. Similarly, the coefficient associated to Profitability is negative and significant. This result can be explained through the Pecking Order hypothesis under the idea that profitable firms tend to prioritize internal capital financing rather than external sources (debt and equity). For what concerns Size, our result is in line with previous

literature, according to which larger firms usually display higher levels of debt financing due to easier access to capital markets and lower cost of debt (Frank and Goyal, 2003). The negative and significant sing associated to Cash Holdings shows that firms with higher cash and liquid short-term investments have on average a lower Leverage Ratio. This can be explained by the fact that internal financing resources are the preferable source to be used to finance new projects according to the Pecking Order Theory. Similarly, the negative sign of the Non-Debt Tax Shield can be explained by the fact that the firms capturing other benefits rather than the one associated to interests' deductibility may find debt financing less convenient.

Table 6 - Linear Regression

This table shows the results of our Linear Regression which follows Equation 2, developed in Section 2. Particularly the coefficient for each regression is reported and the p-values (in parenthesis) and the significancy. The dependent variable is Leverage Ratio (Total Debt/Total Assets). The hey explanatory variables are Multinationality (International Sales/Total Sales) and CEO Ownership (CEO Share Ownership/Total Outstanding Shares). Tangibility is defined as Tangible Assets/Total Assets, Size is equal to ln (Total Assets); Profitability is given by Net Income/Total Assets; Growth Opportunity is the ratio between Market Value/Total Book Value; Cash Holding is given by the ratio of Cash to Total Assets; Non-Debt Tax Shield is the ratio of Depreciation to Total Assets. Across the different regression Year and Industry Fixed Effects are included and reported at the bottom of the table.

	Leverage Ratio	Leverage Ratio	Leverage Ratio
Multinationality	-0.0197***	-0.0353***	-0.0530***
	(0.000)	(0.000)	(0.000)
CEO Ownership		-0.00102***	0.000369
		(0.000)	(0.020)
Tangibility			0.0452***
			(0.000)
Size			0.0344***
			(0.000)
Profitability			-0.279***
			(0.592)
Growth Opportunity			0.000462
			(0.142)
Cash Holdings			-0.422***
			(0.000)
Non-Debt Tax Shield			-0.567***
			(0.000)
Constant	0.260***	0.299***	0.432***
	(0.000)	(0.000)	(0.000)
No. Obs	52,578	52,578	52,578
Year Fixed Effects	YES	YES	YES
Industry Fixed Effects	YES	YES	YES
R-sq	0.154	0.233	0.350
Adj. R-sq	0.153	0.227	0.345

p-values in parentheses * p<0.05, ** p<0.01, *** p<0.001

5.2 Logistic Regressions

In this section we present the result of our logistic regression that is described by the theoretical Equation 1 in Section 2. We test different specifications of debt conservatism and international status of a company. Particularly, considering capital structure we test for both Zero-Leverage and Almost-Zero Leverage. In the case of the ZL specification the dependent variable is a dummy variable that assumes value of 1 if a firm shows 0 debt in a specific year. In the case of the AZL specification the dependent variable is still a dummy, that take value of 1 if a firm has a leverage ratio lower than 5%. For what concerns Multinationality, we realize three different regressions models in which Multinationality is treated as a dummy and takes value of 1 if a firm has 40%, 50%, 60% or above international sales respectively in each of the three models. In our logistic model following Bessler et al., (2013), all the explanatory variables included are lagged by one year.

The results of the aforementioned logistic regression are presented in Table 7. First of all, it is possible to say that Multinationality increase on average the likelihood for a firm to have a zero-leverage or an almost zero-leverage capital structure. The coefficient associated with the Multinationality dummy is positive and significant at the 5% significancy level for ZL when we define a firm multinational when the level of international sales to total sales is higher than 40% or 50%. Moreover, as shown in Dontis-Charitos et al., (2021), as the level of Multinationality threshold increases so does the significancy of the effect of being a multinational on the likelihood to have a Zero-Leverage capital structure. As a matter of fact, considering the case in which the multinational dummy assumes values of 1 if the share of International Sales is higher than 60% the coefficient for ZL firms is significant at the 1% significancy level. However, the effect does not increase in significancy as the level of Multinationality increases in the case of AZL firms. This result support Hypothesis 2a and 2b which state that a higher level of Multinationality increases the likelihood of a firm to adopt a debt-conservative capital structure.

Considering our second most relevant explanatory variable, CEOs Ownership, we can notice that the effect is also positive and significant. Particularly, considering the ZL firms the coefficient associated to CEO Ownership is significant across all the specification of the multinational status at the 5% significancy level. On the other hand, the impact is significant at the 1% significant level for AZL firms across the different specifications of the Multinational status. This result supports previous findings of literature review according to which a higher

level of management ownership may result in a less leveraged capital structure, under the underlying hypothesis that CEOs may prefer to avoid an optimal capital structure and opt for low leverage to protect their undiversified human capital (Fama 1980; Amihud and Lev 198; Strebulaev and Yang 2012; Berger et al., 1997).

We find that size, defined as natural logarithm of Assets, has a significant negative impact across all the different definition of the Multinationality dummy and for both ZL and AZL firms. Therefore, ZL and AZL firms are on average smaller. The negative coefficient of Size can support the financial constraints hypothesis, as smaller firms may incur in higher asymmetry levels and may find it more difficult to access debt capital markets. Moreover, the negative sign for Size supports both the main findings of the Pecking Order and Trade-Off Theory. Particularly, according to the former, smaller firms prioritize internal funds over external capital, while the Trade-Off theory argues that smaller firms are usually exposed to higher cost of debt financing due to their higher intrinsic risk. Similarly, we find that Tangibility has a negative significant impact on the likelihood for companies to adopt an ZL or AZL capital structure. This result corroborates the financial constraints hypothesis under idea that firms with a lower level of tangibility have limited access to debt capital markets and encounter higher cost of debt due to the higher risk of bankruptcy. In a way, tangible assets can play a role in guaranteeing the financial solidity of a borrower. For what concerns Profitability we find that this variable is significant for both ZL and AZL firms across all the models at the 1% significancy level. This result, that is in line with previous studies on Debt Conservatism, tend to support the Pecking Order Hypothesis and therefore the idea that firms with larger profits tend to prioritize the use of internal resources. Therefore, the finding on Profitability tend to support the hypothesis of financial flexibility.

The actual tax rate represents one of the key determinants of capital structure (De Jong et al., 2008; Fan et al., 2012; Bessler et al., 2012). Since tax deduction are mainly related to deductibility of interests it is possible to expect that firms having larger tax payments have a relatively low level of debt in their balance sheet. As a matter of fact, the Actual Tax rate variable in our model is positive and significant for both ZL and AZL firms for any specification of Multinationality. Another important consideration when studying debt conservatism is the possibility that firms decide to adopt such peculiar capital structure because they can count on tax benefits that are different than the one offered by debt financing. Those tax benefits reduce therefore the marginal advantage of the tax benefit of debt considered in the Trade-Off Theory. In our regression, in line with previous findings (Bessler et al., 2012; De Angelo et al., 1980),

we find a positive significant coefficient for the Non-Debt Tax Shield variable. This explains that firms' likelihood to adopt a debt-conservative capital structure increase as firms are capable to generate tax deductions benefits from non-debt items. Moreover, compared to Bessler at al., 2012, we find that Non-Debt Tax Shield is positive and significant even when fixed effects are considered.

For what concerns Cash Holding we find that the variable is positive and significant at the 1% significancy level across all the models of our logistic regression. This shows that firms with higher cash balances have a higher likelihood to have a ZL or AZL capital structure. this is in line with the Pecking Order Hypothesis, as the latter theory predicts that firms will prioritize internal resources over debt. At the same time, it is possible to argue that the finding is in line with the financial flexibility hypothesis, as firms tends to maintain larger cash, and similar to cash assets, to avoid underinvestment problems and investment distortions in the future (De Angelo, 2007; Modigliani and Miller, 1963; Bessler et al., 2012; Dontis-Charitos et al., 2021).

In conclusion, both the linear regression and the logistic regression results point out that Multinationality and CEO Ownership increase the likelihood of a firm to adopt a ZL or AZL capital structure. The findings of our regressions across the different specifications of Multinationality are consistent with previous findings and they either support the financial flexibility or financial constraints hypothesis. As a matter of fact, the results on Size, Tangibility tend to support the idea that firms adopt a conservative capital structure because they are constraints to do so. On the other hand, the results on Tax, Non-Debt Tax Shield, Cash Holdings and Profitability support the financial flexibility hypothesis. We will address the question of whether ZL and AZL firms adopt to seek financial flexibility or because they are actually constrained in the next Section.

Table 7 - Logistic Regression

This table shows the results of our Logistic Regression which follows Equation 1, developed in Section 2. Particularly the coefficient for each regression is reported and the p-values (in parenthesis) and the significancy. For each specification of the Multinational dimension, we run two regressions. In the first one the dependent variable is a dummy that takes value of 1 if a firm has Zero-Leverage (Total Debt = 0). In the second one the dependent variable is a dummy variable that takes value of 1 if a firm has Almost Zero-Leverage (Total Debt/Total Assets < 0.05). Multinational is a dummy variable equal to one when the foreign sales-to-total sales ratio exceeds the predefined threshold and zero otherwise. The thresholds are 0.4 in Model 1, 0.50 in Model 2, 0.60 in Model 3. CEO Ownership (CEO Share Ownership/Total Outstanding Shares). Tangibility is defined as Tangible Assets/Total Assets, Size is equal to ln (Total Assets); Profitability is given by Net Income/Total Assets; Growth Opportunity is the ratio between Market Value/Total Book Value; Cash Holding is given by the ratio of Cash to Total Assets; Non-Debt Tax Shield is the ratio of Depreciation to Total Assets. Across the different regression Year and Industry Fixed Effects are included and reported at the bottom of the table

	Multinational > 0.4		Multinational > 0.5		Multinational > 0.6	
	ZL	AZL	ZL	AZL	ZL	AZL
Multinational	0.307*	0.355***	0.310*	0.532**	0.490***	0.244*
	(0.002)	(0.000)	(0.014)	(0.000)	(0.000)	(0.045)
CEO Ownership	0.00931*	0.0137***	0.00949*	0.0142***	0.00972*	0.0137**
	(0.020)	(0.000)	(0.118)	(0.000)	(0.015)	(0.000)
Size	-0.643***	-0.580***	-0.635***	-0.585***	-0.626***	-0.550***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Profitability	1.856***	2.244***	1.840***	2.239***	1.819***	2.217***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Non-Debt Tax Shield	14.59***	11.27***	14.45***	11.14***	14.30***	10.89***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tax	9.300***	9.835***	9.237***	9.749***	9.190***	9.666***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tangibility	-0.974**	-0.753***	-0.979***	-0.762***	-0.973***	-0.741***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cash Holdings	6.124***	6.494***	6.125***	6.476***	6.135***	6.566***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Growth Opportunity	-0.0122	-0.0120	-0.0122	-0.0120	-0.0124	-0.0121
	(0.198)	(0.112)	(0.198)	(0.114)	(0.192)	(0.105)
Intercept	1.466	1.058	1.453	1.256	1.385	0.947
	(0.067)	(0.318)	(0.069)	(0.244)	(0.081)	(0.381)
No. Obs	52,578	52,578	52,578	52,578	52,578	52,578
Year Fixed Effects	YES	YES	YES	YES	YES	YES

Industry Fixed Effects	YES	YES	YES	YES	YES	YES
Pseudo R-sq	0.327	0.329	0.327	0.331	0.328	0.328

p-values in parentheses

* p<0.05, ** p<0.01, *** p<0.001

6. Understanding the profile of ZL and AZL firms

The results presented until now support the idea that Multinationality and CEO Ownership positively impact the likelihood for a firm to adopt a ZL or AZL capital structure. This result is in line with both H2a and H2b. It follows, that such behavior can either be explained by the willingness of a firm to seek financial flexibility or, conversely, it could be explained by the fact that a company is financially constrained. Therefore, in this section of the research we try to analyze the common profile of firms that adopt a ZL or AZL capital structure. To do so, we first differentiate our panel of ZL and AZL firms based on their levels of financial flexibility/constraints. We follow two different approach and specifically we use both the Whitted and Wu (WW) Index of Financial Constraints (Whitted and Wu, 2006) and the Size-Age (SA) Index (Hadlock and Pierce, 2010). Previous studies on the topic of debt conservatism use these two indicators to discriminate among the panel of debt conservative firms. Specifically, Bessler et al., (2013) includes the Size-Age Index, while Dontis-Charitos et al., (2021) implemented the WW Index.

The Size-Age Index is based on firm size and age and is expressed by the following equation:

$$SA = -0.737 * Size + 0.043 * Size^2 - 0.040 * Age.$$

We define Size as the natural logarithm of Total Assets, as previously used in our regression models, and Age is given by length of time each company has been listed. Hadlock (2010) finds that the SA Index is a more reliable indicators of financial constraints compared to other accepted measures and particularly the Kaplan and Zingales (1997) measure of financial constraints. This is mainly given by the simplicity of the SA Index and therefore its higher level of exogeneity. The rational of this indicator is that a higher value of the Index corresponds to a higher level of financial constraints.

The WW Index is based on different variables that may impact the level of financial flexibility of a firm. Particularly, the WW Index is calculated as follows:

$$WW = -0.091 * CF - 0.062 * DIVPOS + 0.021 * TLTD - 0.044 * LNTA + 0.102 * ISG - 0.035 * SG.$$

In the linear equation above CF is defined as the ratio of Cash Flows over Total Assets, DIVPOS is a dummy variable that assumes value of 1 if the firm pays cash dividends, TLTD as the ratio

between Total Long-Term Debt and Total Assets, LNTA as the natural logarithm of Total Assets, ISG as the Revenue growth for the 3 digits SIC and SG as the Revenue growth for each firm. As in the case of the SA Index, by construction a higher level of the WW Index is associated to a higher level of financial constraints.

Following Bessler at al., (2013), and Dontis-Charitos et al., (2021), we compute quintiles for each of the two aforementioned indicators and we split our dataset according to each firm-year level of the Indexes. Particularly, we ignore all the observations that lies on the third quintile and define as financially constrained firms with Indexes values above the minimum value of the fourth quintile, while we define firms as financial unconstrained if they have a value that is lower than the maximum value of the second quintile.

In order to better understand the firm characteristics of our panel of data we compare the mean differences for different explanatory variables and additional variables between ZL constrained and ZL unconstrained firms, AZL constrained and AZL unconstrained firms, Debt financed firms and ZL constrained firms, Debt financed and ZL unconstrained firms, Debt financed firms and AZL constrained firms, Debt financed and AZL unconstrained firms. The results of the mean t-tests are showed in Table 8. The Panel A of Table 8 shows the result when firms are classified based on the SA Index, while in Panel B firms are distinguished based on the WW Index. To carefully study the profile of debt conservative firms, while distinguishing between financial constrained and financial unconstrained firms, in this part of the research we include some key variable of interest in addition to our already tested explanatory variables. These are Capital Expenditures, Research and Development, Payout Ratio and ZL and AZL Duration. ZL and AZL Duration aims at capturing the period of time, expressed in years, that a firm maintains unchanged a ZL or an AZL capital structure. Borrowing from Bessler et al., (2013), this variable is computed as the ratio between the longest period a firm maintains a ZL or AZL capital structure over the number of years the firm is contained in our dataset.

First of all, it is possible to notice that the majority of ZL and AZL firms are financially constrained. Considering the SA Index 79% of the ZL firms and 77% of AZL firms in our dataset are financially constrained. When using the WW Index, we conclude that 82% of ZL and 80% of AZL firms in our dataset are financially constrained. This first finding supports H2b which states that debt conservatism is not a solution to seek financial flexibility but rather an unintentional decision for companies.

Considering the results of Table 8, Panel A, we can first notice that ZL and AZL constrained firms show significantly lower Multinationality levels compared to their unconstrained peers. Moreover, ZL and AZL unconstrained show higher Multinationality levels compares to Debt Financed firms. This result support our previous finding on Multinationality and explains how the positive effect tested in our logit regression (negative one in our linear regression) seems to be driven by the unconstrained ZL and AZL firms of our dataset. Considering CEO Ownership, we don't find any significancy differences between ZL and AZL constrained and their unconstrained counterparts. However, we find that ZL and AZL constrained and unconstrained have significantly higher CEO Ownership levels compared to Debt financed firms. Once again, this result is in line with the main findings of our logistic regression.

When it comes to analyze the general explanatory variables of capital structure, we find that ZL and AZL constrained firms are smaller, less profitable, have lower Capex and R&D expenses and payout ratio. Moreover, Constrained ZL and AZL have higher cash holdings and Growth Opportunity. The result on cash holding, which emerged also as significant in our regression model support the potential explanation that a higher level of cash holding is linked to a higher level of future expected financial constraints rather than financial flexibility (Almeida et al., 2004). Surprisingly, we find that they also show a higher level of tangibility. Moreover, by studying the Duration variable, we can notice that constrained ZL and AZL firms have longer periods of debt conservatism compared to unconstrained companies. This supports the idea that these companies actually are unable to change their debt conservative status due to their high levels of financial constraints.

When we compare Debt Financed firms with ZL constrained and AZL constrained firms, we notice again that leveraged firms have higher size, profitability, Capex and Payout Ratio. Constrained ZL and AZL have higher Cash Holdings, Tangibility, Tax payments and Growth Opportunities. In the last two columns of Table 8, we study the difference between Debt Financed and ZL and AZL unconstrained firms. We find that unconstrained ZL and AZL have higher size, cash holdings, profitability, growth opportunity and R&D. On the other hand, they have lower levels of Tangibility, Capex and Payout ratio.

It is possible to argue that the majority of our ZL and AZL firms are financially constrained. As found by Bessler at al., (2013), these firms are the least profitable, smaller, have higher Growth Opportunities, bigger cash holdings and maintain their capital structure

unchanged for the longest time when compared both to their unconstrained firms and Debt Financed firms. Particularly, the fact that they have the highest cash holdings in our dataset and at the same time are the least profitable supports Simutin's (2010) conclusion that firms with large cash holdings invest more in the future and that large cash holdings can be considered as a proxy for risky growth options. Moreover, Palazzo (2012) finds that firms with high cash balances are on average relatively smaller, display higher betas and growth opportunities, and have lower profitability levels (Bressler et al., 2013). This perfectly fits with the profile of ZL and AZL constrained firms in our dataset.

However, there is a small fraction of ZL and AZL firms that deliberately decides to adopt extreme debt conservative capital structures. These firms show the highest level of Multinationality in our dataset. Moreover, they are the most profitable firms including both constrained and Debt financed firms and while having lower Growth Opportunities than their constrained counterparts have higher Growth Opportunities than debt financed firms. Our subsample of unconstrained ZL and AZL display the highest level of R&D and Tangibility. In conclusion, unconstrained ZL and AZL show the highest levels of Multinationality and CEO Ownership in our dataset.

The results presented so far are based on the analysis of Panel A in which firms are considered constrained or unconstrained based on the SA Index. However, the significancy and sign effects that we achieve when using instead the WW Index, displayed in Panel B, are in line with the ones resulting from using the SA Index. In order to be precise, we only find a significant difference when comparing Debt financed and ZL unconstrained. Particularly, according to the WW Index, ZL unconstrained would be also the highest dividends payer present in our dataset.

Table 8 - Panel A

The table shows the results of the t-test to compare the mean values between Constrained and Unconstrained Zero-Leverage and Almost Zero-Leverage firms among themselves and with Debt Financed Firms. Particularly, the table shows the t-values for the mean comparison test and the significancy levels for the p-value associate to each t-value. In this Panel, a firm-year observation is considered to be financially constrained if it has in that specific year a Size-Age Index (Hadlock and Pierce, 2010) equal or above the minimum level of the 4th quintiles once the whole Size-Age Index are divided into quintiles. On the other hand, a firm-year observation is considered to be financially unconstrained if it has in that specific year a Size-Age Index equal or lower than the maximum level of the 2nd quintiles once the whole Size-Age Index are divided into quintiles. The Size-Age Index is calculated as SA=-0.737*Size+0.043*Size-0.040*Age. Size is the natural logarithm of Total Assets, as previously used in our regression models, and Age is given by length of time each company has been listed. The first column of the table shows each of the variable compared. Multinationality is the ratio of International Sale to Total Sales. CEO Ownership (CEO Share Ownership/Total Outstanding Shares). Tangibility is defined as Tangible Assets/Total Assets, Size is equal to ln (Total Assets); Profitability is given by Net Income/Total Assets; Growth Opportunity is the ratio between Market Value/Total Book Value; Cash Holding is given by the ratio of Cash to Total Assets; Non-Debt Tax Shield is the ratio of Depreciation to Total Asset; Capex is the total Capital Expenditure for a specific fiscal year; R&D is the total of Research and Development expenses for a specific fiscal year; ZL/AZL Duration measures the length of time a firm maintains a ZL or AZL leverage decision, and is calculated as the ratio of the longest period a firm maintained a ZL or AZL financial strategy to the total number of years a firm appear in our dataset. The Payout Ratio is given by the ratio of Total Dividends paid to Net Income.

	ZL Unconstrained - ZL Constrained	AZL Unconstrained - AZL Constrained	Debt Financed - ZL Constrained	Deb Financed - AZL Constrained	Debt Financed - ZL Unconstrained	Debt Financed - AZL Unconstrained
Multinationality	15,96***	22,15***	6,30***	5,42***	-14,52***	-21,08***
CEO Ownership	0,49	1,42	-4,66***	-6,51***	-2,70***	-5,41***
Size	75,79***	89,01***	112,81***	118,23***	-19,69***	-25,68***
Cash Holding	-21,47***	-25,75***	-87,41***	-95,50***	-23,29***	-26,59***
Tangibility	-13,72***	-16,98***	-21,33***	-20,00***	5,37***	8,62***
Profitability	27,83***	29,96***	20,04***	23,26***	-18,47***	-18,30***
Non-Debt Tax Shield	3,05***	1,51	26,22***	22,36***	8,93***	9,06***
Tax	5,52***	5,55***	-14,38***	-20,10***	-11,74***	-15,05***
Growth Opportunity	-6,48***	-8,38***	-14,40***	-15,09***	-5,00***	-4,05***
Capex	9,41***	5,93***	42,85***	25,82***	9,75***	-1,37
R&D	8,30***	7,57***	26,92***	23,67***	-3,77***	-5,71***
ZL Duration	-10,80***	-15,58***	-89,37***	-96,43***	-21,86***	-23,65***
Payout Ratio	1,05***	0,08	14,42***	19,49***	4,21***	9,34***
N. Obs	ZL Unonstrained 1712 ZL Constrained 6638	AZL Unonstrained 3323 AZL Constrained 11715	Debt Financed 45221 ZL Constrained 6638	Debt Financed 45221 AZL Constrained 11715	Debt Financed 45221 ZL Unconstrained 1712	Debt Financed 45221 AZL Unconstrained 3323

T-values, * p<0.05, ** p<0.01, *** p<0.001

Table 8 - Panel B

The table shows the results of the t-test to compare the mean values between Constrained and Unconstrained Zero-Leverage and Almost Zero-Leverage firms among themselves and with Debt Financed Firms. Particularly, the table shows the t-values for the mean comparison test and the significancy levels for the p-value associate to each t-value. In this Panel, a firm-year observation is considered to be financially constrained if it has in that specific year a WW Index (Whitted and Wu, 2006) equal or above the minimum level of the 4th quintiles once the whole WW Index are divided into quintiles. On the other hand, a firm-year observation is considered to be financially unconstrained if it has in that specific year a WW Index equal or lower than the maximum level of the 2nd quintiles once the whole WW Index are divided into quintiles. The WW Index is calculated as WW=-0.091*CF-0.062*DIVPOS+0.021*TLTD-0.044*LNTA+0.102*ISG-0.035*SG. CF is defined as the ratio of Cash Flows over Total Assets, DIVPOS is a dummy variable that assumes value of 1 if the firm pays cash dividends, TLTD as the ratio between Total Long-Term Debt and Total Assets, LNTA as the natural logarithm of Total Assets, ISG as the Revenue growth for the 3 digits SIC and SG as the Revenue growth for each firm. The first column of the table shows each of the variable compared. Multinationality is the ratio of International Sale to Total Sales. CEO Ownership (CEO Share Ownership/Total Outstanding Shares). Tangibility is defined as Tangible Assets/Total Assets, Size is equal to ln (Total Assets); Profitability is given by Net Income/Total Assets; Growth Opportunity is the ratio between Market Value/Total Book Value; Cash Holding is given by the ratio of Cash to Total Assets; Non-Debt Tax Shield is the ratio of Depreciation to Total Asset; Capex is the total Capital Expenditure for a specific fiscal year; R&D is the total of Research and Development expenses for a specific fiscal year; ZL/AZL Duration measures the length of time a firm maintains a ZL or AZL leverage decision, and is calculated as the ratio of the longest period a firm maintained a ZL or AZL financial strategy to the total number of years a firm appear in our dataset. The Payout Ratio is given by the ratio of Total Dividends paid to Net Income.

	ZL Unconstrained - ZL Constrained	AZL Unconstrained - AZL Constrained	Debt Financed - ZL Constrained	Deb Financed - AZL Constrained	Debt Financed - ZL Unconstrained	Debt Financed - AZL Unconstrained
Multinationality	4,42***	12,18***	1,61***	3,32***	-4,04***	-11,51***
CEO Ownership	-0,97	1,41	-5,36***	-5,70***	-2,66***	-5,81***
Size	32,71***	56,51***	115,19***	134,97***	8,84***	-0,67
Cash Holding	-13,37***	-24,06***	-87,07***	-97,88***	-30,98***	-31,90***
Tangibility	-5,13***	-7,71***	-18,38***	-17,23***	-3,36***	-1,06
Profitability	25,86***	32,51***	24,24***	28,99***	-13,16***	-16,53***
Non-Debt Tax Shield	0,33	0,94	24,07***	20,62***	12,73***	11,25***
Tax	11,58***	16,92***	-7,53***	-10,18***	-15,94***	-23,79***
Growth Opportunity	6,98***	6,01***	-10,72***	-11,62***	-11,07***	-11,71***
Capex	10,52***	7,88***	43,63***	39,07***	17,92***	-1,53
R&D	7,70***	8,58***	26,85***	23,07***	-0,73	-5,20***
ZL Duration	-5,14***	-12,24***	-89,37***	-95,28***	-35,99***	-37,69***
Payout Ratio	11,90***	14,80***	25,31***	32,28***	-2,14**	0,28
N. Obs	ZL Unonstrained 1238	AZL Unonstrained 2439	Debt Financed ZL Constrained 5917	Debt Financed AZL Constrained 10254	Debt Financed ZL Unconstrained 1238	Debt Financed AZL Unconstrained 2439
	ZL Constrained 5917	AZL Constrained 10254				

T-values, * p<0.05, ** p<0.01, *** p<0.001

7. Conclusions

Contrary to the main theories regarding capital structure and optimal leverage we find that a significant number of firms listed both in the NYSE and in the Nasdaq adopt either Zero-Leverage or Almost Zero-Leverage financing decisions. Moreover, the number of firms adopting extreme conservative Debt capital structures rapidly increased in our dataset between 1990 and 2018. At the same time, internationalization became, during the time of our research, a feature that applies to more and more companies. Specifically, we find a significant increase in the number of firms realizing international sales and in the value of international sales relative to total sales. Despite the increasing relevance of Multinationality in modern economies and the increasing relevance of the Debt Conservative phenomenon, no previous researches focus on the possibility to consider Multinationality, expressed as the share of International Revenues of a firm, as a potential variable capable of influencing ZL and AZL financing decisions for the case of North American companies. Therefore, this research building upon the working paper of Dontis-Charitos et al., (2021) tests the effect of Multinationality, CEOs Ownership and other control variable on the likelihood, for firms, to adopt a zero, or close to zero, leverage structure. Moreover, this research tried to characterize the profile of companies adopting ZL or AZL, discriminating between financial constrained and unconstrained debt-conservative firms.

As broadly explained in Section 2 we expected that Multinationality could either increase or decrease the likelihood of a firm to adopt a ZL or AZL status. In addition, our Hypotheses 2a and 2b states that a Multinationality could increase the likelihood for a firm to be ZL or AZL either because of the firm being financial constrained or because of the willingness of the firm to achieve financial flexibility.

Starting from our Univariate Analysis we find significant results supporting the thesis that ZL and AZL Firms on average display lower levels of debt, higher level of International Sales and CEOs Ownership. The main findings of our linear and logistic regressions also confirmed the results that being a multinational firm increase the likelihood to adopt a debt-conservative capital structure. At the same time, we found that on average an increase in the level of management entrenchment results on a higher likelihood for a firm to be either ZL or AZL. The results of our analyses tend to support, since the beginning, Hypotheses 2a and 2b, expecting a positive relationship between the level of internationality and the probability for a firm to be ZL and AZL. Moreover, the different models implemented in our logistic regression in which a firm was considered a multinational at different thresholds of the ratio of

International Revenues to Total Revenues (40%, 50% and 60% respectively) yielded some interesting results. Particularly, we find that as the threshold used to consider a firm Multinational increases, so does the economic impact and the statistical significancy of the positive effect of being a multinational firm on the likelihood to be Zero-Leverage or Almost Zero-Leverage.

From the results of our linear regression, we have concluded that a higher level of Multinationality and CEOs Ownership significantly and negatively impact the Leverage Ratio for a company when controlling for Year and Industry effects. According to our logistic model we finally can conclude that being a multinational and having a higher level of Management Entrenchment significantly and positively affect the likelihood for a firm to be Zero-Leverage or Almost Zero-Leverage. In other words, Multinationality is a significant factor in explaining the drivers of Debt Conservatism.

The results of our research pointed out that Multinationality and Debt Conservatism have a positive relationship. This is in line with both H2a and H2b. Therefore, in our research, once defined the nature of the relationship between Multinationality and Debt Conservatism, we tried to understand the profile of ZL and AZL firms and what drives their decision to adopt such extreme fand controversial financing decisions. We tried to understand if firms adopting such leverage status were either financially constrained or instead looking for financial flexibility. The control variables included in our regression models did not allow us to clearly answer this question. However, using two different measures of financial constraints, the Size-Age Index and the Whitted and Wu Index allowed us to better define the profile of ZL and AZL firms. As expected, the majority of ZL and AZL firms appear to be financially constrained in our dataset (around 80% of them). This finding tends to support H2a which expects that ZL is driven by the impossibility of firms to access debt markets.

However, we find that a small fraction of our ZL and AZL are not financially constrained and therefore deliberately decide to adopt zero or low leverage. We further studied the profile of these exceptional firms. Surprisingly, we find that the financially unconstrained ZL and AZL firms are the most Profitable of our dataset, compared both to Leverage and ZL and AZL constrained firms, have the highest level of R&D and have higher Growth Opportunities than Levered Firms. In conclusion, unconstrained ZL and AZL show the highest levels of Multinationality and CEO Ownership in our dataset. In a way, our results broadly support the hypothesis that Multinationality increases the likelihood for a firm to be ZL or AZL

because of their financial constraints. On the other hand, we find that a small fraction of firms deliberately decides to be ZL or AZL, these firms have the highest level of Multinationality, supporting therefore the idea that Multinationality positively impact the likelihood for a firm to adopt a ZL or AZL capital structure due to the financial flexibility of these firms.

This research, while borrowing from the main results of the working paper of Dontis-Charitos et al., (2021), which finds a positive relationship between Multinationality and Zero-Leverage in the case of UK listed firms, tests the effect in the case of North American companies. In a way, it is possible to state that this research significantly contributes to previous findings on the topic of the puzzling phenomenon of Debt Conservatism. Being a pioneer research on ZL and Multinationality for North American companies comes with some limitations that must be clarified in this final part of our research. For us this is important so that further research can be carried in this interesting topic. First of all, as already mentioned in Section 3, we use the share of International Sales to Total Sales as a proxy of Multinationality. In a sense, we rely on previous researches which uses this variable as a proxy of internationality. Even if the purpose of this research is not the one to study and find the perfect proxy of internationality, we conclude that, given the important role of this variable in our research, it could be interesting to actually consider alternatives measures of internationality. These could include an analysis of the internationality of assets for example. Moreover, one of the key reasons why multinational firms may decide to adopt a low leverage capital structure could be related to their lower tax payments and therefore a lower need to count on the tax benefit of debt. Both our Univariate and Linear and Logistic Regressions corroborates this hypothesis. However, it is possible to argue that the taxation level of multinational may be varying according to the countries in which international revenues are achieved. Moreover, another reason that supports H2b is that Multinational may have lower cost of debt due to their higher level of revenues diversification. Therefore, we believe that it could be interesting to further study the countries in which International Revenues are actually achieved. This could help to better understand the effect of taxation and revenues' geographical diversification. In addition, while building our dataset we lost a significant number of observations due to the lack of a potential variable capable of measuring Internationality on Compustat. This problem could be overcome by either using a single data provider or by considering innovating measures of Internationality.

We believe that the result of this research can truly add interesting ways to study and analyze the puzzling phenomenon of Debt Conservatism. At the same time, we consider this

research simply a starting point. Firstly because of the limits mentioned above. Secondly, because it would be even more interesting to further build upon this research and more carefully analyze the profile of ZL and AZL firms. For instance, we believe that it could be interesting to analyze the performance in equities markets of those financially unconstrained ZL and AZL that shows the highest levels of Profitability, R&D and Growth Opportunities. This for example has been done when considering broadly Debt Conservatism by Marchica and Mura, 2010. They find that zero leverage firms seeking financial flexibility not only are able to achieve better returns on their abnormal investments and capital expenditures but that they also achieve consistently and positive and significant results for Jensen's alpha. In addition, we also believe that could be interesting to study the investments capability and the actual investments that financially flexible firms adopting ZL or AZL for a short period of time achieve soon after the end of their low-debt financing period. This could help to understand the financial performance and future growth opportunities of these peculiar companies.

In conclusion, this research actively contributes to the scientific discussion on debt conservatism. We believe to deliver a research that offer an innovative way to study this phenomenon. This may come at the cost of delivering not the most solid results in terms of assumptions used and methodologies implemented. However, debate, feedbacks and further research will help us to further strengthen the accuracy and integrity of our findings.

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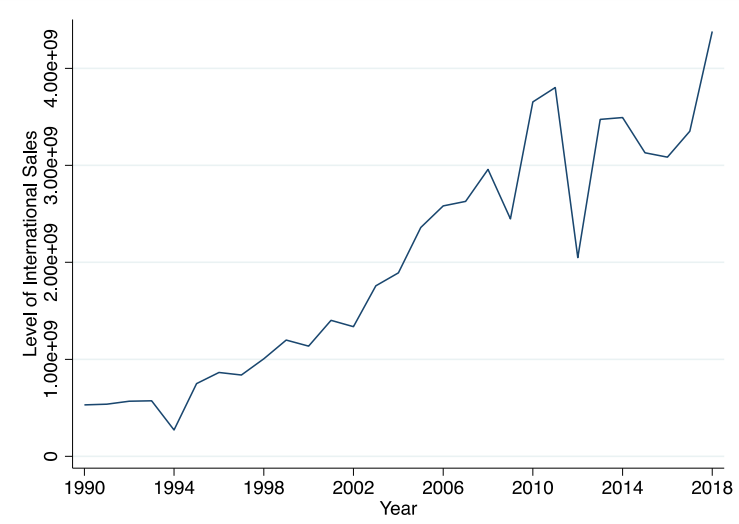
9. Appendix

Figure 3 – Evolution of the Absolute Value of International Sales between 1990 and 2018.



Source: Worldscope

Table 1a – Key results of the Linear Regression Model.

In the Linear Regression the dependent variable is Leverage Ratio measured as the ratio between Total Debt and Total Assets.

Variable	Sign effect and significancy level
Multinationality	Negative ***
CEOs Ownership	Insignificant
Tangibility	Positive ***
Size	Positive ***
Profitability	Negative ***
Growth Opportunity	Insignificant
Cash Holdings	Negative ***
Non-Debt Tax Shield	Negative ***
* p<0.05, ** p<0.01, *** p<0.001	

Table 1b – Key results of the Logistic Model, ZL and AZL dummies being the dependent variables.

We report here the main results of our second model in which a company is considered multinational if it has a share of International Revenues to Total Revenues above 50%. The dependent variable is a dummy variable that takes value of 1 in Model 1 if a company has zero leverage, while it takes value of 1, in Model 2, if the company has a leverage ratio lower than 5%.

	1. Zero-Leverage	2. Almost Zero-Leverage
Variable	Sign effect and significancy level	Sign effect and significancy level
Multinational	Positive *	Positive **
CEOs Ownership	Positive *	Positive ***
Tangibility	Negative ***	Negative ***
Size	Negative ***	Negative ***
Profitability	Positive ***	Positive ***
Growth Opportunity	Insignificant	Insignificant
Cash Holdings	Positive ***	Positive ***
Non-Debt Tax Shield	Positive ***	Positive ***
Actual Tax Rate	Positive ***	Positive ***

* p<0.05, ** p<0.01, *** p<0.001

Figure 4 – Evolution of the Percentages of Zero-Leverage, Almost-Zero Leverage and Multinational firms, between 1990 and 2018.

Source: Compustat, Worldscope

Table 4 - Variables include in the research and their specifications

Variable Name	Formula	Sign	Type
Leverage Ratio (LR_{it})	$Total\ Debt/Total\ Assets$	NA	Dependent
Zero-Leverage (ZL_{it})	Dummy variable that takes value of 1 if a firm has zero Total Debt in a specific year.	+/-	Explanatory
Almost Zero-Leverage (AZL_{it})	Dummy variable that takes value of 1 if a firm has a Leverage Ratio lower than 5% in a specific year.	+/-	Explanatory
Multinationality (M_{it})	$International\ Sales/Total\ Sales$	+/-	Explanatory
Mulitnational (MN_{it})	Dummy variable that takes value of 1 if a firm is multinational. In our regressions we use different thresholds to measure if a firm is multinational.	+/-	Explanatory
CEOs Ownership (CEO_{it})	$Shares\ Owned\ by\ Directors/Common\ Equity$	+	Explanatory
Tangibility ($TANG_{it}$)	$Tangible\ Assets/Total\ Assets$	-	Control
Size ($Size_{it}$)	$\ln Total\ Assets$	-	Control
Profitability (ROA_{it})	$Net\ Income/Total\ Assets$	-	Control
Growth Opportunity (GO_{it})	$Market\ Cap/Total\ Book\ Value$	-	Control
Cash Holdings (CH_{it})	$Cash\ and\ Cash\ Equivalents/Total\ Assets$	+	Control
Non-Debt Tax Schield ($NDTS_{it}$)	$Depreciation/Total\ Assets$	+	Control
Actual Tax Rate (ATR_{it})	$Income\ Taxes\ Paid/Total\ Assets$	+	Control
Capex	Capital Expenditures in a specific fiscal year	NA	NA
R&D	Research and Development Expenses	NA	NA
ZL/AZL Duration	Ratio between the longest time a company maintained a ZL or AZL leverage structure to the total amount of years the company is hosted in our dataset	NA	NA
Payout Ratio	Ratio between total dividends paid to Net Income	NA	NA