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Greek Accounting Standards and Debt Covenants. Changes in Contracting

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Abstract.
Businesses, organizations, and even more governments are strongly related with information provided by accounting in order for CEO's or managers and even more members of parliament to make decisions. Financial statements which contain multiple criteria, and how managers or shareholders treat them influence the decision-making of organizations and all types of businesses, public and private. Auditing financial statements ensures their reliability and validity. Both lenders and borrowers must choose the right set of debt covenants to minimize risk from their respective perspectives. It is critical to use and select debt covenants in relation to the side of interest. For instance, in past decades, financial covenants based on balance sheet variables are more likely in debt contracting. Nowadays, the trend of choosing a batch of covenants in contracting changed. In this paper, we investigate the relationship between changing the Greek direction and accounting standard setting. Greek accounting standards are moving away from "old-fashioned" book- and record-keeping standards. This was a great change that took place in 2015, and since then, new notions of accounting practice have been introduced. Fair value, net realizable value, present value, cash equivalents, and useful economic life are some concepts that were first used in accounting the process in Greek economy. Changes were massive and everyone involved with accounting, financial statements, and the way they were introduced should change the way they are analyzed. We hypothesized that this significant shift in accounting standard setting reduces the value of analyzing balance sheets in debt contracting. Since 2015, balance sheet-based covenants started to vanish, especially from private debt contracting. We tried to correlate borrowers and their likelihood in using balance sheet-based covenants. The correlation between the change in accounting standard setting and the concurrent change in trend of choosing accounting-based covenants in debt contracting is being investigated. The results are consistent with our hypothesis. A mechanism that separates multiple covenants and correlates them with significant debt characteristics will be an innovative tool for managers and credit institutions, as well as a more definite way of auditing, for instance, by digitalizing it, which will be a great tool for everyone involved in businesses.

Keywords: accounting-based covenants, debt contracting, Greek accounting standards

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1. INTRODUCTION

This study will be a significant endeavor in promoting scientific tools to managers and credit institutions. This study will also be beneficial to the process of accounting information, as it aims to indicate which financial covenants need to be taken into account in contractual arrangements. In contract theory [1], financial covenants do control the conflicts of interest between lenders and borrowers via different mechanisms. A standard practice in the microeconomics of contract theory is to represent the behavior of a decision maker under certain numerical utility structures, and then apply an optimization algorithm to identify optimal decisions. Expected Utility Theory states that the decision maker chooses between risky or uncertain prospects by comparing their expected utility values. This elementary and seemingly commonsensical decision rule raises at once the most important questions in contemporary decision theory. As an extension of contract and utility theory, two major problems arise, information asymmetry and agency problem. A major problem of institutional borrowers and lenders is to recognize whether the risk of borrowing is easy to appraise. Debt covenants are a useful tool that can be utilized in order to manipulate risk appraisal. Especially in contracting, major changes occur in the manner of choosing the correct tools of analyzing debt covenants. We will try to investigate the correlation between the adoption of Greek accounting standards, debt covenants and the changes in contracting.

2. LITERATURE REVIEW

The classic view on debt covenants suggests that covenants control agency problems by restricting managerial behavior [10, 16]. The most recent analytical literature views covenants as trip wires that give lenders an option to renegotiate loan terms by threatening default following a decline in economic performance [3, 13, 9, 8]. Little theoretical or empirical work exists on the structure of covenant packages or the tradeoffs among financial ratios. Consequently, a number of questions remain unanswered. First, what determines the design of covenant packages? Second, do covenants based on different accounting ratios reduce agency costs through different mechanisms? Third, how do the properties of the accounting system influence the choice of covenants? Theoretical and empirical research has been carried out on the structure of covenant packages or

the tradeoffs among financial ratios in the investigation of ensuing debt criteria. These researches endeavor generally assume some kind of correlation and characteristic distribution among data [5]. These assumptions are not supported with sufficient data and their universal nature is not being adequately investigated. Literature reflects the idea that financial covenants controls interest between different parties. Financial covenants consist of various financial ratios. Ratios are categorized into profitability, liquidity, capital structure etc. Groups of ratios are financial covenants. Those covenants identify debt criteria, and the existing literature suggests that the relationship between covenants and debt criteria is linear and thus, they distributed normally [5]. Moreover, [6] suggests that there is a shift in choosing financial covenants and also there is a massive decline in using balance sheet-based covenant such as leverage, net worth, and current ratio. This massive decline in use of balance sheet-based ratio can be explained by the change in accounting standard setting [6]. The determination of covenant packages is strong correlated with the accounting system and influence the choice of covenants.

Recently, in Greek economy, have been observed changes in covenant packages chosen in debt contracts. In 2015, the balance sheet-based covenants used by lenders in order to debt contracting, were almost present in all cases. The percent of balance sheet covenants like net worth and current ratio were included in. more than 95% of private debt contracts. Through the years and as the Greek accounting standards dominates, the use of balance sheet-based covenants reduced to only 54% of contracting deals by 2020. In other structure of covenant packages is not common such a decline. The reducing percent of use in balance sheet-based covenants accompanied by a change in the direction of accounting standard setting since 2015. The adoption of fair value accounting means for example, that financial assets and liabilities such as stocks and inventories are recognized in market price rather than in historical cost. Greek accounting standards lie on accrual principle, though the balance sheet reflects the financial condition of a particular company in a very specific moment. In debt contracting theory both parties of debt contracting involves in covenant categorization choose to rely on conservative balance sheet. The balance sheet approach features estimation of assets and liabilities values and the value changes recognized with delay. Such value estimation, render balance sheet usefulness in debt contracting. Therefore, there are a lot of biases and errors in financial reports as concerned in assets and liabilities. As balance sheet often provide unreliable data for the net value and the liquidation value of a company, lenders tend to use balance sheet-based covenants less. Therefore, the changes in accounting standards enforce the hypothesis that there is a correlation in accounting standards and the selection of covenants. By using a standard approach

such as [6], we would like to test the correlation between new accounting standards and selection of covenants in Greek debt agreements. The sample of private debt agreements are 500 between 2015 and 2020. There is evidence of reducing in use of balance sheet-based covenant use. We measure the borrower-specific exposure to balance sheet-based accounting rules using the Volatility Ratio (VR) as [6]. Volatility ratio has the capacity of capturing the adjustments in balance sheet. In this piece of work, we use the framework of [6] in order to compute our hypothesis. The findings are consistent with our hypothesis which is a negative relation between balance sheet covenants and volatility ratio, whilst there is no relation between volatility ratio and income statement-based covenants. Despite the fact that in this piece of work, we study the Greek Accounting standards and the extent that those standards influence the usefulness of balance sheet bases accounting covenants in debt contracting, there are many explanations for that. We found consistency in the assets of a company and the selection of covenant packages. It is very common in debt contracting when a company holds a large amount of assets tend to use balance sheet-based covenants. Public sector borrowers that are safer tend to use other covenant packages. During last decades, a lot of discussion took place about accounting information provided by financial statements. Those information tend to be less useful in particular parties such as lenders and borrowers. The consequences and the causes of that change in accounting information is a subject to be studied in more extent. Previous years research, shows that every time that accounting standards setting changes, long periods of instability occur. In the beginning of 19^{th} century financial statements used only from banks in order to make credit decisions. As capital ownership extended users demand more information but less sophisticated in order to be more comprehensive. So, the trend to accounting standards was a more income statement-based approach. But eventually, as years passed the balance sheet approach dominated again.

3. DATA AND METHODOLOGY

The proposed conceptual framework, to abide with the desired relationship agnostic “covenant – debt criteria” methods data process, is to utilize available techniques that do not necessarily require the “a-priori” determination of the nature of the examined variables. The sample of data will be selected under certain criteria. Firstly, the capitalisation of companies will be the most important factor as well as the range of turnover. Moreover, data will be categorised into companies from developed and developing economies as well as industry sector. This will help to avoid biases. Data will be

collected from widely accepted databases. For instance, Compustat will be used to collect data like balance sheets, profit and loss accounts as well as financial ratios for the company selected. Amadeus will be used as well for the same scope. Dealscan database will be used as well. DealScan contains extensive and reliable information on the global commercial loan market. It provides access to Loan Pricing Corporation's (LPC's) robust database of detailed terms and conditions on over 131,000 loan, high-yield bond and private placement transactions. The approach is to consider the scientific process through cohorts, where each wave provides fundamental research as well as end-applications based on previous fundamental research. A particular research results thus can have a return over many generations. It is an interesting way to properly attribute the intellectual source of a new process, but the exercise is of little value if it is not possible to quantify the social value of the end-application.

In addition to the theoretical contributions described, this study is expected to provide new insights for practical multi criteria decision analysis to both managers and credit institutions. As this study will be conducted from both perspectives, could be useful in multiple stages of economic mechanism. Furthermore, to contributions to the practice of decision making, some of the insights will be provided by this study are also related to the whole management of software engineering processes in which commercial software components are or could possibly be involved in. The validity and applicability of results lies within the boundaries of selected data characteristics. In this respect the data will be delimited to companies that fulfil certain specific capitalisation and turnover financial criteria. Furthermore, selection criteria will separate companies from different economy structure (developed or developing) and industry sector. The sample consists of 500 private debt agreements from DealScan and the period covered is 2015 to 2020. Financial statement and other accounting data collected from Compustat.

4. RESULTS AND FINDINGS

In this piece of work in order to check the usage of different packages of covenant we use 4 financial covenants. Two of those covenants are income statement based, (Interest Coverage Ratio and Dividend Payout Ratio) and two balance sheet-based covenants, (Leverage and Net worth). In Table 1.1 shows how frequently each financial covenant used through the years.

Moreover, Table 1.2 shows the frequency of two different covenant category, the income-based covenants and the balance sheet-based covenants. The income-based covenants in our study consists of Interest Coverage Ratio and the Dividend Payout

Table 1: Frequency of financial covenant used.

Year	Observations	Interest Coverage Ratio	Dividend Payout Ratio	Leverage	Net Worth
2015	95	0.528	0.559	0.615	0.714
2016	99	0.513	0.488	0.589	0.556
2017	114	0.499	0.515	0.287	0.465
2018	93	0.408	0.345	0.267	0.379
2019	59	0.371	0.323	0.234	0.246
2020	40	0.369	0.289	0.163	0.139
Total	500	0.448	0.42	0.36	0.42

Ratio, thus the balance sheet-based covenant consists of Leverage and Net Worth. The results are consistent with our hypothesis as the balance sheet-based covenants reduced through the years.

Table 2: Frequency of Covenant Category.

Year	Observations	Income Statement Based Covenants	Balance sheet based Covenants
2015	95	0.989	0.999
2016	99	0.899	0.915
2017	114	0.856	0.485
2018	93	0.845	0.437
2019	59	0.799	0.398
2020	40	0.795	0.312
Total	500	0.86	0.59

Now, in measuring volatility ratio, we compute it by dividing Book Value Volatility to Adjusted Net Income Volatility. The book value volatility is the standard deviation of changes in the book value through the years and net income volatility is the standard deviation of net income which is the income minus expenses and non-operating income. Table 2 shows that the mean of volatility ratio is increasing over the years, as we have already mentioned volatility ratio has a negative relation between the VR and the balance sheet-based covenants. In Table 2 we can clearly observe that through the years, volatility ratio is increased, and it is statistically significant so, the balance sheet-based covenant is less used.

The study would like to investigate if the changes occur in accounting standard setting influence the selection of balance sheet-based covenant in debt contracting. According to Table 4 there is indeed a differentiation due to the statistical significance

Table 3: Mean Volatility Ratio.

Year	Observations	Mean Volatitily Ratio
2015	95	1.798
2016	89	1.567
2017	72	1.893
2018	87	2.111
2019	58	2.543
2020	42	2.321
Total	443	2.04

Table 4: One-way ANOVA.

Use of balance sheet-based Covenant	Mean	Std. Deviation	N
Yes	3.9833	0.74082	371
No	2.5	1	129
Total	3.6125	1.02429	500

Table 5: correlation of usage of balance sheet-based covenant and changes in Accounting standard setting.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8.251a	-	8.251	12.712	0.002
Intercept	157.626	-	157.626	242.8480	
Use of balance sheet cov.	8.251	-	8.251	12.712	0.002
Error	11.683	-	0.649		
Total	280.938	500			
Corrected Total	19.934	499			
a. R Squared = ,414 (Adjusted R Squared = ,381)					

(F=12.712, p=0.002) which is smaller than 0.05. This means that there is a difference if there is a change in accounting standard settings.

Table 6: *Correlation of Accounting setting changes and the balance sheet-based covenant (Pearson Correlation).*

		Accounting Standard	Balance Sheet cov.
Accounting standards	Pearson Correlation	1	0.738**
	Sig. (2-tailed)		0
	N	500	500
Balance Sheet cov	Pearson Correlation	0.738**	1
	Sig. (2-tailed)	0	
	N	500	500
** Correlation is significant at the 0.01 level (2-tailed).			

Correlation between changes in accounting standard setting and balance sheet-based debt covenants are investigated. In Table 5 we can observe, that this relation is strong or statistically significant ($r=0.738$, $p<0.01$). As [15] suggests when the correlation coefficient is between 0.7 and 0.89, then there is strong correlation. Even more, when $p<0.01$, it means that the possibility of strong relation or statistical significance is more than 99%. With other words, the possibility that strong correlation does not exist is 1%. That endeavor the hypothesis testing. We hypothesize that the changes in accounting standard setting lead to a decline in use of balance sheet-based covenant. When a company has debt and the choice to have income based or balance sheet-based covenants if there are no transactions for instance, dividends pay out, then there is no difference in the selection of covenant category. So, the sample of companies consists of companies that are paying out dividends. The DealScan software provide us with data on financial covenants, which are debt contract provisions, where the borrower should maintain a threshold level of an accounting-based financial measure. If borrower fails to do it the loan enters technical default, and the lender has the option to recall.

5. CONCLUSION

In this study, we tried to examine if the work of [6] comply with the Greek Accounting standards and more specifically, how the balance sheet-based covenants influenced by new accounting standard settings in debt contract. We analyze a sample of 500 private debt agreements in order to observe if there is a pattern or a correlation between that large scale change and selection of covenant packages. As [6] suggests, by using the Volatility Ratio as a proxy balance sheet-based accounting rule. According to Greek Accounting standards, new concepts introduced in performing accounting information. This change in accounting information seems to contribute to the decline in use of balance sheet-based covenants. The results of this study are consistent with a negative correlation between balance sheet approach and balance sheet-based covenant. Although there is a drift for an error in the results as the years studied 2015 to 2020 were depressed years for Greek economy and financial crisis may affect the debt contracting in a way that bias the results. As results are consistent with our hypothesis, we can conclude that a great change in Greek accounting standards that are based in balance sheet approach, affected the contracting parties in the selection of covenant packages, but for sure this is not the only reason. Extent research should be made in the area of consequences and reasons for changing trends in debt contracting.

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