

# The Determinants of Financial Covenants on Private Debt: The Case of Listed French Companies

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## Abstract

The purpose of this paper is to identify factors that influence financial covenants in private debt agreements of listed French companies. We test whether borrower characteristic influence the presence of financial covenants in debt contract. Using a sample of large listed French firms over the period of 2003-2009, we find that profitable firms with growth options are likely to include financial covenants on their syndicated private debt. We also test whether debt characteristic influence the financial covenants in private debt. We find that type of debt and security dummy influence significantly financial covenants. Our results are consistent with prior studies in general.

**Keywords:** financial covenants, private debt, borrower characteristic, debt characteristic

## 1. Introduction

Debt constitutes by far a principle source of external financing for large firms. The debtholders of private debt market give debt to borrowers with uncertain perspective. Every borrower has his own possible distribution of futures earnings. Sometimes, the debtholder is entirely repaid, and in many cases only a portion of debt is repaid. The distribution of earnings may be influenced by a variety of factors. These factors can be specific to the borrower, for example, the conflict of interest between manager and debtholder which can increase the opportunity of loss by following a policy which does not maximize the value of the firm. In addition, the distribution may be influenced by external event, for example, macroeconomic shocks that affect the operations of the firm and will be insolvent. Whatever the source, debtholders are exposed to the risk of non repayment. One possible mechanism is that lenders require financial covenants in a loan agreement to reduce the risk of default and to facilitate monitoring. We will examine the inclusion of this mechanism on private debt contracts for listed French companies. Financial covenants are provisions written in term of a variety of accounting ratios (Leftwich 1983; Dichev & Skinner 2002). If the borrower fails to maintain the threshold of accounting ratios, the debt will be in technical default and the lender have the option to take actions against the borrower, such as the renegotiation of debt or the acceleration of repayment.

The utilization of a variety of types of financial covenants is more widespread in private debt contract. Financial covenants are included in debt contracts to reduce uncertainty on the capacity of borrower to repay loans. Before the conclusion of contracting, the lender evaluates the credit risk of the borrower. Research on public and private debt was widely examined (Smith & Warner 1979; Begley 1994, Begley & Feltham 1999; Bradley & Roberts 2004 ; Nikolaev 2010 ; Dimerjian 2010...). Although, this literature present a variety of studies on financial covenants included on both private and public debt, however, these studies has only examined the Anglo-Saxon context. Little detail is known about the financial covenants included in private debt contracts of French firms. This lack of knowledge raises a problem for researchers to make assumptions about the contents of French debt contracts. Typically, we don't know if private debt contracts contain or no financial covenants. The current research aims to bridge this gap in our understanding, and contributes the contracting debt literature in several ways. First, through a review of financial statements and especially footnotes, we identify that covenants are contained on private debt agreement. Second, we identify that there's many types of covenants typically used in private debt contracts of listed French firms. Third, we identify that the most frequently used accounting based covenants in French private loan agreements are leverage ratio, interest coverage, gearing ratio and cash flow.

The remainder of this paper is organized as follows. In section 2, we review the literature and develop our hypotheses. In section 3, we present the results of univariate and multivariate tests. In section 4, we offer concluding remarks.

## 2. Background and related literature

The agency theory of covenants, developed by Jensen & Meckling (1976), Myers (1977) and Smith & Warner (1979), gives the reason of the presence of covenants in debt agreements. In the bottom of the theory, is the conflict between lenders and borrowers. This conflict results from the actions undertaken from managers whose operate in favor of shareholders. These actions can be in the form of excessive distribution of dividends, overinvestment or underinvestment. In the result, these actions will have a negative impact on the value of debt and the total value of firm; the agency theory of covenants (ATC) suggests a way to attenuate these conflicts and

reduces the agency costs of debt. The limitation of the behavior of managers via covenants turns out a way for alignment of interest between lenders and borrowers. These covenants were listed by Smith & Warner (1979), are expressed in the form of accounting ratios, they provide lenders an early warning signal. Covenants are designed to limit the managerial discretion to take actions leading to bondholder wealth expropriation.

Demiroglu & James (2010) argument that financial covenants serve like a signal mechanism. These authors developed what we call the signal theory of covenants "STC". They formulate the hypothesis that financial covenants allow the borrower to reveal his type to the lender. By considering two borrowers who seem similar to lender; whereas in fact, one has a higher default risk (bad borrower) and the other has a low default risk. The signal theory of covenants predicts that the good borrower agrees to maintain a high threshold of performance which would be painful to bad borrower to maintain. So, the inclusion of one or several covenants allows differentiating whether borrower is bad or good. Under this theory, the good borrower has incentives to include tightest covenants in their contract, because he supplies a credible signal. Although the empirical evidence is relatively limited, El Gazzar & Pastena (1991) demonstrate that borrower with low quality have covenant more tight. In summary, the utilization of financial covenants is contradictory or inconsistent with the signal theory.

## 2.1 Financial covenants

Financial covenants are financial ratios that serve like an instrument of allocation of control right between lenders and borrowers (Aghion & Bolton 1992; Hart 1995). They reveal the state of the firm during the period of debt contract. If the state of the firm is rather "good", the equity holder stay in the control of the firm and could even collect private profits. By opposition, if the state of the firm is "bad", covenants are violated and the firm is in technical default, the control right are between the hands of lenders, whose have the right to ask for repayment of the debt. If the demand is executed, the borrower could go bankrupt. In practice, covenants are divided in three categories: affirmatives covenants, negatives and financial. Affirmatives covenants or positives are commitment to make, for example, respect of legislative and statutory provisions, put back to the bank annual accounts audited for the deadlines, maintain a good state of firm assets. The negative covenants prevent borrower from undertaken certain actions, for example, change of the nature of the firm activity, to give up its assets, payment of dividends, proceed in investments. Financial covenants are limits of performance and risk based on accounting. These covenants include often limits on debt, coverage of interests, total fixed charges, and net assets. Financial covenants include often measures based on operating cash flow (EBITDA).

Although covenants are common in every type of debt contract private or public, these covenants are very numerous, detailed and more tight in the case of private debt as mentioned by Kahan & Tuckman(1993), Gilson & Warner(1998), Verde(1999) and Sansone & Taylor(2007). Roberts & Sufi (2009) indicate that 96% of private debt contains at least one financial covenant, with covenants that are more common: leverage covenant and coverage interest covenant. Financial covenant in private debt are based on maintenance, what means that borrower has to be in keeping with covenant on a regular base, typically every fiscal quarter (Sansone & Taylor 2007). In contrast, financial covenants on public debt are based on incurrence that means that borrower needs to be in compliance at the moment of specific event for example, at the issue of additional debts. The incapacity to avoid the maintenance base of financial covenants on private debt makes them tighter.

In summary, financial covenants are a driver of important value for lenders and borrower (Zhang 2009). Lenders benefit from the protection against the option of technical default in the case of low performance of the borrower. The lender offers a lower interest rate to the borrower.

## 2.2 Development of hypotheses

Many factors are likely to influence the presence of financial covenants on debt contracts. In the case of French companies the principals factors are linked to characteristic of firm and debt.

### Hypotheses 1: Size of the firm

Large firms have generally access to financial resources more easily than small and medium firms. Bilodeau *et al.* (2005) assert that firms with large size are considered as taking advantage even of a position of strength during renegotiation terms of contract with lenders. Smith & Warner (1979) and Griner & Huss (1995) signal that the size of the firm can be used like a measure of the probability of financial distress. The assets of the firm can be an estimation of the age of the firm. In addition, the assets of the firm are very dependant of the activity of firm. Bradley & Roberts (2004) find that large firms use little covenants in their debt contracts. The size of the firm can be a proxy for agency problems caused by borrower. Paglia & Mullineaux(2006) predict that when the size of the firm increases the activity of covenants decrease. Also, Malitz (1986) found in a sample of 252 public's debt issues of 223 firms that the presence of covenants is negatively associated with the size of firms

H1: the presence of financial covenants is negatively associated with the size of firms.

### Hypotheses 2: Leverage

According to Jensen & Meckling (1976), Myers (1977), Smith & Warner (1979) and Titman & Wessels (1988) the increase on leverage ratio increases the incentives of managers to enter on the reduction of firm value by

transferring the wealth of lenders to equityholders. Begley (1994) find that the most due firms are likely to have covenants in their public debt issue. Also, Bradley & Roberts (2004) signal a positive relation between covenants and leverage in the case of private debt contract. Chava *et al.*(2004), Reisel (2004) and Goyal (2005) examine the issue of public debt, whereas, Bradley & Roberts (2004) examine the private debt (banking debt).

H2: there's a positive relation between leverage and the presence of financial covenants.

Hypotheses 3: Cash flow

The free cash flow defined by Jensen (1986) as being the sum of available funds after financing of all profitable projects. In fact, the existence of free cash flow create agency problems because managers can use it for their own interest what falls the value of the firm (Jensen & Meckling 1976). Firms with a great variability of cash flow use debt covenants on their debt contracts (Begley & Feltham 1999). Begley (1994) indicate that firms with less cash flow are more subject to include covenants that limits the payment of dividends and additional debt issue. In addition, Begley & Feltham (1999) stipulate that less restriction are used when there's more available cash flow.

H3: we predict a negative relation between presence of financial covenants and cash flow

Hypotheses 4: Tangibility

Tangibles assets represent a guarantee to lenders in the case of nonpayment of debt. These assets capture the composition of assets; they represent the intensity of capital. Lenders can resort to these assets in the case of default of payment debt. Firms with considerable tangibles assets are less likely to include covenants.

H4: the presence of financial covenants is negatively related to tangibles assets.

Hypotheses 5: Profitability

Jensen (1986) indicates that firms with a high profitability should increase their leverage to reduce the agency costs resultant of overinvestment of managers. Profitable firms have a lower risk of default and can borrow at low costs of debt. Nikolaev (2010) indicates that profitable firm has more covenants on their debt contracts. In contrast, Bradley & Roberts (2004) claim that profitability do not influence the presence of financial covenants in debt contracts.

H5: the presence of covenants influence positively profitability of firms

Hypotheses 6: Credit risk

Edward Altman was the pioneer of recommending the use of accounting ratios to measure the credit risk. In 1968, he developed what we call the z-score from five accounting ratios. The z-score evaluate the risk of financial distress. Begley (1994) finds that the risk of financial distress is negatively related to debt covenants. Nikeolaev (2010) signals that credit risk measured by z-score do not influence the presence of financial covenants in debt contracts.

H6: the presence of financial covenants is associated with credit risk.

Hypotheses 7: Growth

Kahan & Yermack( 1998) and Nash *et al.*(2003) examine the relation between growth opportunity and the choice of covenants in public debt contracts. These studies find that firms with higher options of growth are less likely to include debt covenants, suggesting that the advantage of future flexibility exceed the advantage of including debt covenants. However, Bradley & Roberts (2004) and Nikolaev (2010) find that firms with higher growth opportunity are more likely to include covenants on private debt contract.

The market to book ratio is likely to reflect the growth opportunity. For growing firms, covenants based on accounting are planned to be costly in cause of decrease of financial flexibility. However, growing firms face an uncertain future, increasing afterward the probability to become on difficulty and making the advantage of inclusion of debt will be potentially greater. Nash *et al.*(2003) find that growing firms use less covenants.

H6: the presence of financial covenants is linked to growth options.

Hypotheses 8: Rating

Rating is the evaluation of financial solvency risk of firm by rating agency like S&P or Moody's. Thus, a good note reflects a good financial solvency. The debt rating is another proxy for credit risk like z-score.

The question of link between rating and debt covenants is empirical question, because authors suggest two alternatives explanations: Demerjian (2010) include variable of non rating of debt to capture the information asymmetry because rating increases the credibility of borrower and thus reduces the information asymmetry. The result of this study is positive and significant suggesting that borrower that belong to opaque environment (non transparent) will have more covenants. Paglia & Mullineaux(2006) include variable of credit rating to signal that if the note improve, the number of covenants will be reduced because the improvement of rating suggests that firm is financially healthy.

H8: the presence of covenants is negatively related to credit rating

Hypotheses 9: The nature of debt

Whether it is a public or private debt, covenants are present in most forward debts. We are interested more particularly to syndicated debt. The structure of syndicated debt brings in many banks which one a lead arranger that represents and acts in the name of the group. In practice, syndicated debt concerns big volume of money and

their granting is impossible by one lender that is why the decision of syndication is collective. Since the volume of debt is important, debt covenants will be present in these types of contract which will be controlled by leader bank. One advantage to syndication is to reduce the exhibition to default risk. Dass *et al.* (2011) study the role of covenants in syndicated debt contract, besides their role in controlling borrower, covenants can attenuate the conflicts between arranger and participant banks in the syndicate. Dass *et al.* (2011) claim that syndicated debt contract are more likely to include covenants than debt issued by one lender. The participants on the syndicate are likely to impose covenants on borrower in the purpose to oppose the lead arranger to renegotiate the terms of debt contract in the case of financial troubles. Sufi (2007) concludes that the syndicate is formed to improve the control of the lender. Syndicated debt is always senior debt and contains more tight financial covenants than in public debt issue (Smith & Warner 1979; Assender 2000; Dichev & Skinner 2002). The more frequent financial covenants used in syndicated debt contract are: coverage of interests and maximum debt to EBITDA.

H9: a syndicated debt is likely to include financial covenants than the non syndicated one.

Hypotheses 10: Secured debt

Bester (1985) and Besanko & Thakor(1987) demonstrate that borrower can signal a better solvency through their willingness to offer collateral. In addition, when a debt is entirely secured, the supplied effort by lender for controlling will be less important. In the other hand, Berger & Udell (1990) document that collateral is associated with risky debt. Bradley & Roberts (2004) include security debt on their model, that indicates if the debt is supported by a guarantee or no. Berkovitch & Kim (1990) signal that the issue of secured debt can reduce the under investment but increase the over investment.

H10: the presence of financial covenants is negatively associated with secured debt.

### 3. Sample and descriptive statistics

#### 3.1 Sample

Our study is realized on a sample of French firms listed firms in the Euronext Paris and belonging to the index of SBF250. The final sample is a panel not cylinder during period of 7 years (2003-2009) and including 94 French firms that is 658 observations. Of the sample of departure, we have already eliminate financial firms, real and estate and as well as insurance companies. Besides, we have eliminated firms of which annual reports are missing. Finally, we have eliminated firms with outliers. The financial and accounting data are collected manually from annual reports of firms available on their sit web. So our sample is a panel, it is often interesting to identify the associated effect with every individual. This effect can be fixed or random. To settle between twice, the Hausman tests is the solution to determine if the coefficients of two estimations (fixed or random) are statistically different. The dependant variable is the presence of financial covenant on debt contract. Our variable is binary, what means that equal 1 if there's financial covenant in debt contract and 0 otherwise. The frequency of the presence of financial covenant is 465 on a total of observation 730. It represent 63,7% in the French debt contract.

**Table 1: frequency of financial covenants**

<b>fincov</b>	<b>frequency</b>	<b>percent</b>
<b>0</b>	265	<b>36,3</b>
<b>1</b>	465	<b>63,7</b>
	<b>730</b>	<b>100</b>

#### 3.2 Presentation of model

The purpose of this study is to examine the relations between certain characteristic of French firms and their debt with the presence of covenants. The different independent variables are linked to characteristic of firms like size, profitability, growth options...and to characteristics of debt such as rating, type of debt and secured debt. Our empirical model is as follow:

$$\text{Fincov} = \alpha_0 + \alpha_1 \text{Size} + \alpha_2 \text{Cashflow} + \alpha_3 \text{PPE} + \alpha_4 \text{ROA} + \alpha_5 \text{Leverage} + \alpha_6 \text{MTB} + \alpha_7 \text{Z-score} + \alpha_8 \text{Rating} + \alpha_9 \text{Type of debt} + \alpha_{10} \text{Security dummy} + \varepsilon$$

Where:

**Fincov** is the dependant variable. His type is binary and it takes the value of 1 if financial covenant is present on private debt contract and 0 otherwise.

$\alpha_0$  is a constant.

$\alpha_1, \alpha_2, \dots, \alpha_{10}$  are coefficients of independent variables.

**Size** is natural logarithm of total assets.

**Cashflow** represent the available cash in the firm measured by the EBITD to total assets.

**PPE** represent the net value property, plant and equipment to total assets.

**ROA** return on assets defined as the ratio of income before extraordinary items to total assets

**Leverage** ratio of long term debt to total assets.

**MTB** ratio of market capitalization to total assets.

**Z-score** Altham's credit risk score computed as  $1,2 * (\text{current assets} - \text{current liabilities}) / \text{total assets} + 1,4 * \text{retained earnings} / \text{total assets} + 3,3 * \text{pretax income} / \text{total assets} + 0,6 * \text{market capitalization} / \text{total liabilities} + \text{revenue} / \text{total assets}$ .

**Rating** an indicator variable that takes the value of one if the debt is rated and, zero otherwise.

**Type of debt** an indicator variable that takes the value of one if the debt is syndicated, and zero otherwise.

**Security dummy** an indicator variable that takes the value of one if the debt is secured, and zero otherwise.

### 3.3 Descriptive statistics and correlation analysis

To examine empirically the determinants of financial covenants in French context, the statistical approach follow three stages: univariate analysis, bivariate and multivariate analysis.

#### 3.3.1 Descriptive statistics

Table 2 summarizes the descriptive statistics of different explanatory variables. We notice that the size of firms has a mean of 18,34, this demonstrate that French companies are relatively large because they belong to the index of SBF250; the mean value of net property, plant and equipment is 17%, we can notice that French firms have less tangibles assets on their holdings. The ROA variable vary between -19% and 31% with a mean of 6%. As regards, the leverage variable, his mean value is about 54%, what confirms that French firms have an important recourse to external financing for their investments. The market to book ratio is about one. It indicates that market value of these firms is equal to their accounting values. The mean value z-score variable is 1,46.

**Table 2: Descriptive Statistics of quantitative variables**

variable	Obs	Mean	Std. Dev	Min	Max
<b>Size</b>	654	18,34307	1,193496	13,68949	19,99975
<b>Cash_flow</b>	654	0,0752079	0,0587935	-0,1559054	0,2946127
<b>PPE</b>	634	0,1735795	0,15942	0,0000119	0,7777791
<b>ROA</b>	654	0,068164	0,0689603	-0,1963359	0,315417
<b>Leverage</b>	629	0,5480338	0,2344898	0,00051860	1,178443
<b>MTB</b>	639	0,9517169	0,5403964	0,0007195	2,965235
<b>Z-score</b>	654	1,461926	0,7223781	-0,4707969	4,467014

For qualitative variables the descriptive statistics is as follow

**Table 3 : Descriptive Statistics of qualitative variables**

Variable	frequency	percent
<b>Rating</b>		
<b>0</b>	612	85,59
<b>1</b>	103	14,41
<b>Type of debt</b>		
<b>0</b>	275	38,04
<b>1</b>	448	61,96
<b>Security dummy</b>		
<b>0</b>	452	62,52
<b>1</b>	271	37,48

We notice that the percentage of rating debt is rather low with a value equal to 14,41%. In contrast, about 85,59% of French firms have no rating on their debt. As for the variable type of debt, 61,96% of French firms have syndicated debt and finally for secured debt only 37,48% of firms have secured debt.

#### 3.3.2 Correlation analysis

We begin by the verification of the sense of correlation signification between explanatory variables.

**Table 4 : Spearman correlation matrice**

Variable	Size	cashflow	ppe	roa	Lev	mtb	Zscore	Rating	Type	Security
size	1									
cashflow	0,0002 0,9958	1								
ppe	0,0557 0,1371	0,1116* 0,0029	1							
roa	0,1239* 0,0008	0,2922* 0,0000	0,1224* 0,0011	1						
lev	-0,0935* 0,0131	-0,0130 0,7298	0,0388 0,3098	-0,1226* 0,0011	1					
mtb	0,0109 0,7704	0,1689* 0,0000	-0,0096 0,8005	0,0646 0,0840	0,2549* 0,0000	1				
zscore	-0,0212 0,5655	0,1765* 0,0000	-0,0768* 0,0403	0,3302* 0,0000	-0,0326 0,3875	0,0861* 0,0212	1			
rating	0,0853* 0,0206	0,0027 0,9713	0,1101* 0,0032	-0,0255 0,4903	-0,0735 0,0513	-0,0879* 0,0186	-0,1909* 0,0000	1		
Type	0,1027* 0,0055	-0,0022 0,9527	0,1114* 0,0030	-0,0088 0,8120	-0,0658 0,0820	-0,0826* 0,0276	-0,1010* 0,0063	-0,0506 0,1556	1	
security	0,1034* 0,0052	0,0290 0,4342	-0,0753* 0,0451	0,0000 0,9999	-0,0799* 0,0346	-0,0495 0,1875	-0,0292 0,4310	0,0241 0,4986	0,1545* 0,0000	1

The correlation table indicates that there are positives (negatives) relations between explanatory variables. From the correlation coefficient, we can note that there's no multicollinearity problem (Groebner *et al.* 2008).

### 3.3.3 Multivariate analysis

In this section we present the results of our logit regression with Stata "11" Software.

**Table 5 : Results of multivariate regression**

variables	Predicted sign	Coef.	Z	significance
size	-	0,223	2,61	<b>0,009**</b>
Cashflow	-	-0,781	-0,42	0,672
ppe	-	0,088	0,14	0,891
roa	+	4,544	2,67	<b>0,008**</b>
leverage	+	0,462	1,11	0,266
Mtb	+/-	0,455	2,51	<b>0,012*</b>
zscore	-	-0,500	-3,03	<b>0,002***</b>
rating	-	0,029	0,11	0,916
Type of debt	+	1,092	5,41	<b>0,000***</b>
Security dummy	-	-1,277	-6,44	<b>0,000***</b>
constant		-3,822	-2,42	<b>0,015**</b>

Random effects

**LR.Chi2=0,00**

**P=1,000**

Additional statistics

**N=610**

**R<sup>2</sup>=12,6%**

**LR.Chi2=99,44**

**P=0,000**

**Pooled**

Significance : **1% and 5%**

As can be seen from the table, the coefficient on size indicates in the model presence of financial covenant are used significantly more for large firms what is opposite to the literature (Myers 1977; Smith & Warner, 1979; Malitz 1986; Bradley & Roberts 2004; Bilodeau *et al.* 2005; Nikolaev 2010; Paglia & Mullineaux 2006; Hong *et al.* 2011). In addition ROA is positively associated with financial covenants. The evidence further suggests that cash flow, assets in place and rating do not influence financial covenants significantly in the presence of other variables. Finally the coefficient on type of debt is significantly positive, where as the security dummy is significantly negatively related to the inclusion of financial covenants. These findings are broadly consistent with firms trading off the costs and the benefits of covenants restrictions. More frequent reliance on financial covenants among firms with syndicated debt and secured debt. In line with Levine & Hughes (2005) and Chava

*et al.*(2005), who argue that “good” firms signal their type via covenant inclusion, while firms with higher default risk will find this costly, firms with stronger profitability have more restrictive covenants. The findings also suggest that firms with growth options will prefer to include restrictive covenants (Hong *et al.* 2011). Although it is difficult to make direct comparisons with prior research due to the difference of sample, period and sample specification, these findings are generally consistent with prior research.

#### 4. Conclusion

In this paper, we examine financial covenants on private loan agreements in French firms within the frameworks of the agency model and costly contracting model; we focus on private loan agreements rather than public debt. First, private loans dominate the market for corporate debt especially in French context where banks takes the principal source for external financing (Piot & Missonier-piera 2011). Second, private debt, which includes syndicated loans, is easier to renegotiate than public debt (Dichev & Skinner 2002). As a result, private debt is more likely to include restrictive covenants designed to reduce agency problems (Smith & Warner 1979).

We test whether borrower characteristic influence the presence of financial covenants in debt contract. Using a sample of large listed French firms, we find that profitable firms with growth options are likely to include financial covenants on their syndicated private debt. We also test whether debt characteristic influence the financial covenants in private debt. We find that type of debt and security dummy significantly influence financial covenants. Our results are much more consistent with the agency model of financial covenants as a monitoring tool than with the costly contracting hypotheses. This study is subject to potential limitations. First, we didn't add macroeconomic factors that are likely to influence the presence of financial covenants. Second, we didn't count the number of financial covenants on debt contract. Future research may include other borrower debt characteristic and macroeconomic factors not examined in this study. Our results are specific to the large French firms and future research can extend the sampling to medium and small firms to see the determinants of financial covenants.

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