Economics Letters 255 (2025) 112559

Contents lists available at ScienceDirect

Economics Letters

journal homepage: www.elsevier.com/locate/ecolet

The impact of organizational capital on corporate debt maturity structure choices

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ARTICLE INFO

JEL Classifications:
G30
G32

Keywords:
Organizational capital
Debt maturity choice
Intangible asset

ABSTRACT

We examine the relationship between organizational capital and corporate debt maturity choices using a sample of U.S. public firms from 1990 to 2017. Our findings show that firms with higher organizational capital prefer shorter debt maturities. This positive effect is consistent over time and remains robust even after accounting for firm-specific, macroeconomic factors, and alternative definitions of our variable of interest. Cross-sectional analyses show that the effect of organizational capital is magnified in fast-growing firms but moderated in firms experiencing financial distress.

1. Introduction

Previous research on the determinants of firms' debt maturity structure has primarily focused on firm-specific factors, such as agency costs (Barclay and Smith, 1995), information asymmetries (Berger *et al.*, 2005), and growth opportunities (Billett *et al.*, 2007), executive-related factors like managerial stock ownership (Datta *et al.*, 2005) and executive gender (Datta *et al.*, 2021), and macroeconomic variables like policy uncertainty (Datta *et al.*, 2019). Recent studies have expanded the literature on corporate debt maturity by examining the impact of intangible assets, such as corporate culture (e.g., Datta *et al.*, 2024). In this study, we build on this growing body of work by investigating the role of organizational capital in shaping firms' financing decisions. Specifically, we address the following question: Do firms with higher organizational capital prefer shorter-maturity debt?

Organizational capital (OC) refers to a firm's knowledge, capabilities, values, norms, business processes, and systems that optimize the use of human and physical capital to improve corporate efficiency (Hasan *et al.*, 2021). Its importance has grown significantly over the past three decades. According to Corrado *et al.* (2009) and Falato *et al.* (2022), intangible capital has more than tripled recently, with approximately 30 % of this increase driven by investments in OC.

This rapid growth in intangible assets has sparked considerable research interest in understanding their impact on firm behavior. For example, Rampini and Viswanathan (2013) and Lim *et al.* (2020) highlight the critical role of intangibles in determining a firm's collateral value, which is central to financial decision-making. Within this growing body of work, OC has been associated with a wide array of favorable outcomes. More specifically, firms with greater OC have been linked to higher returns (Eisfeldt and Papanikolaou, 2013), greater productivity (Tronconi & Marzetti, 2011), lower cost of capital (Attig and El Ghoul, 2018), superior acquisition performance (Li et al., 2018), higher cash holdings (Marwick *et al.*, 2020), increased tax efficiency and firm value (Hasan *et al.*, 2021), greater corporate innovation (Cui *et al.*, 2021), higher dividends (Hasan and Uddin, 2022), increased promotion-based tournament incentives (Boubaker *et al.* 2022), more readable annual reports (Panta and Panta, 2023), and higher ratings (Panta and Panta, 2023B). Despite this extensive body of work, the impact of OC on debt maturity structure choices remains unexplored. This important gap in the capital structure literature is the focus of our study.

It is unclear ex-ante how OC can affect corporate debt maturity. On the one hand, previous research suggests that firms with more OC are more efficient and better able to navigate their business environment (Hasan and Cheung, 2023), which may help them manage the refinancing and monitoring risks commonly associated with short-term debt. Therefore, firms with more OC should also have a larger proportion of short-term debt. However, on the other hand, the positive documented effects of OC on various corporate aspects could make it easier for firms to access long-term financing, thereby reducing their reliance and use of short-term debt.

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https://doi.org/10.1016/j.econlet.2025.112559
Received 15 April 2025; Received in revised form 6 August 2025; Accepted 8 August 2025
Available online 12 August 2025

Using a sample of U.S. public firms from 1990 to 2017, we find that firms with higher OC have a greater proportion of debt maturing in one, three, and five years. These findings are robust across various robustness tests and empirical strategies. We further enrich our analysis by showing that the documented relationship is moderated by firm-specific factors, such as the firm's growth rates, as well as their financial distress status.

2. Data and sample

Our initial sample is comprised of all COMPUSTAT firms with data on capital structure from 1990 until 2017.[1] Following Barclay and Smith (1995), we restrict our sample to industrial firms (Standard Industrial Classification (SIC) codes from 2000 to 5999). Our final sample consists of 25,103 firm-year observations.

2.1. Debt maturity variables

We use three dependent variables to capture the debt maturity structure choices of firms, i.e., the percentage of debt maturing within one (ST1), three (ST3), or five (ST5) years as a percentage of total debt, multiplied by 100.[2]

2.2. Organizational capital

Following the approach of Eisfeldt and Papanikolaou (2013) and Li et al. (2018), we apply the perpetual inventory method to estimate the stock of OC. Specifically, we recursively compute the OC stock by accumulating the deflated values of selling, general, and administrative (SG&A) expenses,

$$Raw\ OC_{i,t} = (1 - depr_{oc}) Raw\ OC_{i,t-1} + \frac{SG\&A_{i,t}}{CPI_t} \quad (1)$$

Here, $depr_{oc}$ represents the depreciation rate, and CPI_t is the consumer price index at time t. The initial stock of OC is calculated as follows:

$$Raw\ OC_{i,0} = \frac{SG\&A_{i,1}}{g + depr_{oc}}$$

where g denotes a firm's growth rate of SG&A expenditure, calculated as the average growth rate for each firm starting from 1950, the earliest year for which COMPUSTAT provides firm data. In line with Eisfeldt and Papanikolaou (2013) and Gao *et al.* (2021), $depr_{oc}$ is set at 15 % and missing SG&A values are replaced with zero. We normalize the *Raw OC*, computed using Eq. (1), by the firm's total assets and label the result as *OC Ratio*.

3. Empirical design

Since long-term leverage and debt maturity are jointly determined, we follow Johnson (2003) and Datta *et al.* (2005) and address potential endogeneity by estimating the two-stage least squares model described below:

$$Leverage_{i,t} = \alpha + \gamma_1 OC\ Ratio_{i,t} + \gamma_2 Z'_{i,t} + Year\ FE_t + Industry\ FE_j + \varepsilon_{i,t} \quad (2)$$

$$ST1_{i,t}\left(ST3_{i,t}\ or\ ST5_{i,t}\right) = \alpha + \beta_1 OC\ Ratio_{i,t} + \beta_2 X'_{i,t} + Year\ FE_t + Industry\ FE_j + \varepsilon_{i,t} \quad (3)$$

In the first stage (Eq. 2), we model leverage as a function of several firm-level characteristics (Z) known to influence capital structure decisions. These include firm size, the market-to-book ratio, the ratio of fixed assets to total assets, profitability, abnormal earnings, stock return volatility, and indicator variables for the existence of operating loss carryforwards and investment tax credits. Organizational capital is also included as a control variable.

The predicted values of leverage from the first stage are then used as a control in the second stage (Eq. 3), where we estimate debt maturity ratios. In this model, debt maturity is specified as a function of a set of explanatory variables (X), such as firm size, the square of firm size (to capture non-linear effects), market-to-book ratio, abnormal earnings, asset maturity, stock return volatility, and the presence and quality of S&P credit ratings. Our main variable of interest is the *OC Ratio*. In both stages, we include year and 3-digit SIC fixed effects to control for time and industry-specific heterogeneity, clustering standard errors at the firm level.

Table 1
Summary statistics.

Panel A: All Sample				
	N	Mean	Median	SD
OC Ratio	25103	0.424	0.146	0.666
ST1	25103	14.407	5.355	22.835
ST3	25103	53.517	49.864	36.622
ST5	25103	73.277	87.859	31.481
Size	25103	6.088	6.039	2.235
MTB	25103	1.841	1.430	1.337
Leverage (%)	25103	14.025	10.110	14.129
Ab_Earn	25103	0.235	0.061	2.904
At_Mat	25103	9.495	6.606	9.168
Term	25103	1.614	1.640	1.195
Volatility	25103	0.085	0.068	0.062
FA	25103	0.285	0.231	0.208
Profitability	25103	0.098	0.121	0.151
% TLCF	25103	43.431		
% ITC	25103	15.227		
% Rated Firms	25103	29.295		
% Investment Rating	25103	16.551		

This table reports the summary statistics for variables constructed based on the sample of U.S. public firms from 1990 until 2017.

4. Results

4.1. Summary statistics

Summary statistics for key variables used in the baseline model are provided in Table 1. We note that the average firm in our sample has 14.41 %, 53.52 %, and 73.28 % of its debts due within one, three, and five years, respectively. Further, we note that firms in our sample have a median OC of 14.6 % of total assets, in line with the values documented by previous works (see, e.g., Hasan and Uddin, 2022).

4.2. Regression results

Table 2 presents the results for the baseline model (Eq. 3).[3] Our findings show that OC is positively associated with the proportion of debt maturing in one, three, and five years, indicating that firms with higher OC prefer shorter-maturity debt. The coefficients are statistically significant at the 1 % level across all measures of short-term debt. These results are also economically meaningful. A one standard deviation increase in OC raises the fraction of debt maturing in one year by 9.72 %, in three years by 3.14 %, and in five years by 1.80 %, relative to the average firm. Thus, our results illustrate that the firms' level of OC is an

[1] Our sample period is consistent with Chan *et al.* (2022) and Panta and Panta (2023B).

[2] All continuous variables are winsorized at 1 and 99 percent levels.

[3] For brevity, we only present the results of the second stage regression model.

Table 2
Organizational capital and debt maturity structure choices.

VARIABLES	(1) ST1	(2) ST3	(3) ST5
OC Ratio	2.103***	2.526***	1.975***
	(4.471)	(4.662)	(4.557)
Size	-4.417***	-12.23***	-4.898***
	(-7.776)	(-13.36)	(-6.177)
Size squared	0.244***	0.658***	0.147**
	(5.892)	(8.983)	(2.197)
MTB	0.266	-1.943***	-1.204***
	(0.678)	(-3.737)	(-2.750)
$\widehat{Leverage}$	-0.315**	-0.930***	-0.561***
	(-2.335)	(-4.941)	(-3.387)
Ab_Earn	0.264***	0.404***	0.241***
	(4.287)	(5.823)	(4.500)
At_Mat	0.00509	0.0552	-0.0142
	(0.157)	(1.063)	(-0.303)
Rating Dummy	-6.737***	-24.53***	-21.02***
	(-12.14)	(-21.52)	(-18.22)
Investment Grade	2.989***	13.38***	5.302***
	(4.875)	(10.44)	(3.771)
Term	0.838	1.938**	1.694**
	(1.396)	(2.287)	(2.353)
Volatility	25.57***	-22.38*	-23.26**
	(3.050)	(-1.922)	(-2.299)
Constant	32.05***	119.4***	111.2***
	(9.360)	(24.25)	(27.00)
Observations	25,100	25,100	25,100
R-squared	0.151	0.327	0.289
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes

This table shows the second-stage regressions from 2SLS regression models where leverage and debt maturity are simultaneously determined. We use the percentage of debt maturing in one (ST1), three (ST3) and five years (ST5) or less as a percent of total debt as dependent variables and regress those variables on the organizational capital variable (OC Ratio), the leverage predicted values obtained from the first stage, and a set of control variables affecting the debt maturity structure of firms. In all regression models, we control for year and 3-digit SIC fixed effects, thus the number of observations is reduced from 25,103 to 25,103. Numbers in parentheses are t-statistics, adjusted for heteroskedasticity and clustering at the firm level. ***, **, and * denote significance at 1 %, 5 %, and 10 %, respectively.

Table 3
Impact of organizational capital on debt maturity structure choices using alternative measures for organizational capital.

VARIABLES	(1) ST1	(2) ST1	(3) ST1	(4) ST1	(5) ST3	(6) ST3	(7) ST3	(8) ST3	(9) ST5	(10) ST5	(11) ST5	(12) ST5
OC_RANK	0.328***				0.655***				0.525***			
	(3.506)				(4.396)				(3.860)			
IND_ADJ_OC		2.214***				2.579***				1.987***		
		(4.675)				(4.758)				(4.555)		
IND_ADJ_OC_RANK			0.366***				0.522***				0.410***	
			(4.030)				(3.750)				(3.310)	
SGA_AT				2.632*				10.21***				7.494***
				(1.750)				(5.360)				(4.918)
Observations	25,100	25,100	25,100	25,100	25,100	25,100	25,100	25,100	25,100	25,100	25,100	25,100
R-squared	0.150	0.151	0.150	0.149	0.328	0.327	0.327	0.328	0.289	0.289	0.289	0.289
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table shows the second-stage regressions from 2SLS regression models where leverage and debt maturity are simultaneously determined. We use the percentage of debt maturing in one (ST1), three (ST3) and five years (ST5) or less as a percent of total debt as dependent variables and regress those variables on several alternative definitions for organizational capital (OC), the leverage predicted values obtained from the first stage and a set of control variables affecting the debt maturity structure of firms. OC_RANK is the rank decile of organizational capital of firm *i* at time *t*, IND_ADJ_OC is the organizational capital of firm *i* minus the 2-digit SIC industry median organizational capital divided by the book value of assets at the previous fiscal year, IND_ADJ_OC_RANK is the decile rank of industry-median adjusted organizational capital of firm *i* in year *t-1*, SGA_AT is the ratio of selling, general, and administrative expenses to total assets. In all models, we include the baseline controls, with year and 3-digit SIC fixed effects. Numbers in parentheses are t-statistics, adjusted for heteroskedasticity and clustering at the firm level. ***, **, and * denote significance at 1 %, 5 %, and 10 %, respectively.

essential determinant of their debt maturity structure choice.

We perform several additional tests on our baseline regression model. First, following the approach of Peters and Taylor (2017), Li et al. (2018) and Danielova *et al.* (2023), we test the relationship between OC and short-term debt using alternative OC measures: the decile ranking of OC (*OC_RANK*), the industry-median adjusted OC ratio (*IND_ADJ_OC*), the decile of the industry-median adjusted OC ratio (*IND_ADJ_OC_RANK*), and the SG&A-to-total assets ratio (*SGA_AT*). Table 3 shows that the positive impact of OC on short-term debt remains consistent across these alternative definitions for our variable of interest.

In Table 4, Panel A, we enhance Model (3) by adding variables that may influence the relationship between OC and debt maturity. First, we include the *Tangibility* ratio (i.e., the ratio of tangible assets to total assets) to reflect how firms use collateral to access better financing opportunities (Lensink and Tra, 2005). Second, we add the cash-to-total-assets ratio (*Cash Ratio*) to capture the link between

Table 4
Additional tests of the baseline regression model.

Panel A: Controlling for Additional Variables			
	-1	-2	-3
VARIABLES	ST1	ST3	ST5
OC Ratio	1.928***	2.201***	1.940***
	-3.429	-3.368	-3.599
Tangibility	-5.609	-32.44***	-25.03***
	(-1.418)	(-5.975)	(-5.182)
Cash Ratio	27.92***	0.807	-5.335*
	-9.917	-0.216	(-1.688)
EPU	0.0363***	0.0563***	0.0524***
	-2.674	-3.272	-3.343
Dividend Dummy	-0.759	-1.271	-2.220**
	(-1.124)	(-1.181)	(-2.304)
HHI	26.89	90.94**	101.3**
	-0.847	-2.071	-2.146
Managerial Ability	2.326	17.46***	10.28**
	-0.677	-3.629	-2.399
Observations	12,313	12,313	12,313
R-squared	0.193	0.311	0.285
Controls	Yes	Yes	Yes
Year FE	No	No	No
Industry FE	Yes	Yes	Yes

Panel B: Debt Maturity Ratios at Times (t+1) and (T+2)						
	-1	-2	-3	-4	-5	-6
VARIABLES	ST1(t+1)	ST3(t+1)	ST5(t+1)	ST1(t+2)	ST3(t+2)	ST5(t+2)
OC Ratio	2.211***	2.473***	1.762***	1.803***	1.962***	1.537**
	-4.08	-3.791	-3.308	-3.077	-2.628	-2.468
Observations	20,201	20,201	20,201	17,120	17,120	17,120
R-squared	0.145	0.312	0.28	0.137	0.301	0.276
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel C: Using a Dummy for Organizational Capital			
	-1	-2	-3
VARIABLES	ST1	ST3	ST5
High_OCRatio_Dummy	1.251***	2.385***	1.971***
	-2.643	-3.049	-2.789
Observations	25,100	25,100	25,100
R-squared	0.149	0.327	0.289
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes

Panel D: Decomposing Organizational Capital						
	-1	-2	-3	-4	-5	-6
VARIABLES	ST1	ST3	ST5	ST1	ST3	ST5
Knowledge	4.645***	4.471***	2.192**			
	-4.796	-3.947	-2.23			
Brand				0.92	1.497	0.149
				-0.582	-0.714	-0.089
Observations	12,910	12,910	12,910	7,566	7,566	7,566
R-squared	0.165	0.308	0.27	0.186	0.341	0.29
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes

This table shows the second-stage regressions from 2SLS regression models where leverage and debt maturity are simultaneously determined. We use the percentage of debt maturing in one (ST1), three (ST3), and five years (ST5) or less as a percent of total debt as dependent variables and regress those on the organizational capital ratio (OC Ratio) and the controls used in the baseline regression model. In Panel A, we augment the baseline models with the ratio of property plant and equipment to total assets (Tangibility), the ratio of cash to total assets (Cash Ratio), the economic policy uncertainty index (EPU), a dummy for whether firms pay out dividends (Dividend Dummy), the firm-level market concentration measure (HHI) by Hoberg and Phillips (2016), and the proxy for managerial ability (Managerial Ability) by Demerjian et al. (2012). Panel B replicates the baseline regression model using lead values of the dependent variables computed at times (t+1) and (t+2). Panel C replaces the continuous variable for organizational capital with a dummy variable (High_OCRatio_Dummy) that takes a value equal to one if the firm value of organizational capital is above the yearly sample median value. Panel D re-estimates the baseline model using Knowledge (Columns 1 – 3) and Brand (Columns 4 – 6) as the main independent variables. Knowledge and Brand are the two primary components of OC, constructed following Belo et al. (2022). In all models, we include the baseline controls with year and 3-digit SIC fixed effects. Numbers in parentheses are t-statistics, adjusted for heteroskedasticity and clustering at the firm level. ***, **, and * denote significance at 1 %, 5 %, and 10 %, respectively.

Table 5
Instrumental variable regression model.

	(1) 1st Stage	(2) 1st Stage	(3) 2nd Stage	(4) 2nd Stage	(5) 2nd Stage
VARIABLES	OC Ratio	Leverage	ST1	ST3	ST5
$\widehat{OC\ Ratio}$		-3.584***	12.89***	10.44***	3.652*
		(-3.577)	(5.594)	(4.083)	(1.731)
RD_Assets	2.240***				
	(10.70)				
$\widehat{Leverage}$			-0.409***	-0.932***	-0.517***
			(-3.436)	(-5.544)	(-3.521)
Observations	25,100	25,100	25,100	25,100	25,100
R-squared	0.403	0.452	0.154	0.327	0.288
Controls	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes

This table reports results for the instrumental variable regression analysis. We include the baseline controls with year and 3-digit SIC fixed effects. Numbers in parentheses are t-statistics, adjusted for heteroskedasticity and clustering at the firm level. ***, **, and * denote significance at 1 %, 5 %, and 10 %, respectively.

Table 6
Cross-sectional analyses.

Panel A: The Moderating Role of Asset Growth			
	-1	-2	-3
VARIABLES	ST1	ST3	ST5
OC Ratio × Asset Growth	1.54	2.717**	2.186**
	-0.994	-2.092	-2.006
OC Ratio	2.147***	2.343***	1.875***
	-3.281	-3.167	-3.13
Asset Growth	-2.330***	-7.410***	-4.791***
	(-3.221)	(-7.149)	(-4.949)
Observations	20,195	20,195	20,195
R-squared	0.156	0.328	0.291
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Panel B: The Moderating Role of Sales Growth			
	-1	-2	-3
VARIABLES	ST1	ST3	ST5
OC Ratio × Sales Growth	0.731	1.794*	1.778***
	-0.649	-1.689	-2.657
OC Ratio	1.534**	1.590**	1.658***
	-2.248	-2.078	-2.68
Sales Growth	-0.563	-4.271***	-3.154***
	(-0.689)	(-4.003)	(-3.270)
Observations	20,192	20,192	20,192
R-squared	0.158	0.328	0.291
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Panel C: The Moderating Role of Financial Distress			
	-1	-2	-3
VARIABLES	ST1	ST3	ST5
OC Ratio × Fin. Distress	-0.121***	-0.110***	-0.0454**
	(-3.009)	(-3.465)	(-2.543)
OC Ratio	2.654***	2.635***	2.120***
	-4.97	-4.539	-4.637
Fin. Distress	0.580***	0.500***	0.223***
	-4.73	-4.778	-3.782
Observations	24,734	24,734	24,734
R-squared	0.165	0.329	0.287
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes

This table reports cross-sectional analyses of the effect of organizational capital on debt maturity structure choices. Panel A (B) uses firm asset growth (sales growth) as the moderating variable. Panel C reports results when a dummy for financial distress (Fin. Distress) is used as an interacting variable.

liquidity and refinancing risk (Harford *et al.*, 2014). Third, we include the economic policy uncertainty measure (*EPU*) to account for the impact of macro uncertainty on short-term debt (Baker *et al.*, 2016; Datta *et al.*, 2019).[4] Fourth, we add a dividend payout dummy (*Dividend Dummy*), as firms paying dividends may prefer shorter-term debt to support growth and payout policies (Li and Roberts, 2023). Fifth, we control for innovative investment opportunities (*R&D*) that might influence short-term debt use (Barclay and Smith, 1995; Hao and Wu, 2024). Lastly, we include the managerial ability variable by Demerjian *et al.* (2012) and the industry concentration variable by Hoberg and Phillips (2016) to capture additional factors affecting debt choices. Our results demonstrate that including these controls does not affect the statistical and economic significance of our findings.

Further, in Panel B, we estimate Model (3) using lead values of the short-term debt ratios at times *t+1* and *t+2*. Our results show that the effect of OC on corporate debt maturity structure choices is solid and extends beyond the current period.

In Panel C, we estimate the baseline Model (3) by replacing the continuous variable for OC with an indicator variable taking the value of one if the firm-year observation is above the yearly median sample value. Once again, our fundamental results are confirmed.

Finally, in Panel D, we decompose OC into two primary components to examine how different types of intangible capital affect firms' debt maturity structures.[5] Specifically, we construct two variables, *Knowledge* and *Brand*, following the methodology of Belo *et al.* (2022) and re-estimate Model (3) by replacing the *OC Ratio* with each of these component variables. Our results indicate that firms with higher levels of knowledge capital tend to prefer shorter debt maturities. While we also observe a positive association between brand capital and short-term debt, this relationship is not statistically significant. This finding aligns with Mauer, Villatoro, and Zhang (2022), who report that brand equity does not influence debt maturity policies. Overall, these results suggest that, in addition to the overall stock of OC, the specific types of intangible assets comprising OC are also important for understanding its impact on firms' debt maturity structures.

4.3. Instrumental variable analysis

Omitted variables may bias our results. To tackle this challenge, we follow the approach by Panta and Panta (2023B) and use the ratio of R&D expenses to total assets (*RD_Assets*) as an instrument for OC. As argued by Panta and Panta (2023B), we expect *RD_Assets* to directly affect the level of OC but to influence the firm's debt maturity choice only through its effect on the *OC Ratio*. Our results presented in Table 5, Panel A, show that OC has a larger and still positive and significant impact on firms' debt maturity structure. Both under-identification and week identification tests confirm that the instrument choice is valid.[6]

4.4. Cross-sectional tests

In this section, we analyze the conditions that may moderate the relationship between OC and debt maturity structure. Following Myers (1977), we consider the role of a firm's growth rate in its preference for short- versus long-term debt. In Table 6, we analyze asset growth (Panel A) and sales growth (Panel B) and find that fast-growing firms rely less on short-term debt, likely due to their focus on long-term investments, such as infrastructure and machinery. However, we also observe that the positive effect of OC on short-term debt becomes more pronounced as firms grow faster, suggesting that, for rapidly growing firms, OC may

[4] Since we are including EPU, we exclude year-fixed effects from this panel.
[5] We are grateful to the anonymous referee for suggesting this analysis.
[6] The Kleibergen-Paap rk LM statistic is 71.75 (P-value < 0.001), the Cragg-Donald Wald F-statistic is 759.38, and the Stock and Yogo (2005) critical value is 16.38.

serve as a reputational signaling tool, incentivizing the use of short-term debt.

We also examine distressed firms, as suggested by Khurana and Wang (2014). Panel C of Table 6 shows that distressed firms have more debt maturing in one, three, and five years, likely due to limited access to long-term financing. Moreover, the positive effect of OC on debt maturity is weaker for these firms, suggesting that resource constraints limit their ability to invest in OC, reducing its influence on debt structure decisions.

This analysis provides us with two relevant findings. First, the positive and statistically significant coefficient on the *OC Ratio* across all tests confirms the robust effect of OC on a firm's debt maturity structure. Second, examining this relationship in a cross-sectional set-up is important to understanding how firm characteristics, like growth rates and distress levels, influence the impact of OC on debt maturity.

5. Conclusions

This study explores the link between OC and firms' debt maturity choices. We find that firms with higher OC tend to prefer shorter-term debt, suggesting they are better equipped to manage refinancing risks and the associated scrutiny. Our results are both statistically and economically significant, robust to additional firm- and macro-level controls, lead values for the dependent variable, alternative definitions of OC, and various identification strategies. We also examine potential channels through which OC influences firms' preference for short-term debt. We find that the effect of OC is magnified for fast-growing firms, either in terms of assets or sales, but weakened for firms in the financial distress zone.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix: Variable Description

Variables	Description
Ab_Earn	(Earnings in year t+1 (IBADJ) - earnings in year t)/(share price (PRCC) × outstanding shares (CSHPRI)) in year t).
Asset_Growth	Ratio of the change in total assets from year *t-1* to year *t* to assets at year *t-1*.
At_Mat	(Gross property, plant, and equipment (PPEGT)/total assets (AT)) × (gross property, plant, and equipment (PPEGT)/depreciation expense (DP)) + (current assets (ACT)/total assets (AT)) × (current assets (ACT)/cost of goods sold (COGS)).
Brand	Stock of brand capital, scaled by the book value of total assets, in year t constructed by cumulating firms i's CPI-deflated advertising spending (XAD) using a perpetual inventory method (Belo et al. (2022)).
Cash Ratio	Ratio of cash and short-term investments (CHE) to total assets (AT).
Dividend Dummy	Equals to one if the firm pays dividends (DVC), and zero otherwise.
EPU	Economic policy uncertainty index, as developed by Baker *et al.* (2016).
FA	Ratio of net property, plant, and equipment (PPENT) to total assets (AT).
Fin. Distress	A condition where a firm's earnings before interest, taxes, depreciation, and amortization (EBITDA) are less than 80 % of its interest expenses in any given year, as provided by Khurana and Wang (2014).
HHI	Herfindahl-Hirschman index, as developed by Hoberg and Phillips (2016).
High_OCRatio_Dummy	Equals to one if organizational capital of firm *i* is above the yearly sample median value, and zero otherwise.
IND_ADJ_OC	Organizational capital of firm *i* minus the 2-digit SIC industry-median organizational capital, scaled by book value of total assets in year *t*.
IND_ADJ_OC_RANK	Decile rank of industry-median adjusted organizational capital of firm *i* in year *t* based on Compustat universe.
Investment Grade	Equals to one if a firm's credit rating is BBB- or higher by Standard & Poor's, and zero otherwise.
ITC	Equals to one for firms with investment tax credits, and zero otherwise.
Leverage	Long-term debt (DLTT)/market value of total assets (= [Price Close * Common Shares Outstanding] + [total assets – common equity]) × 100.
Knowledge	Stock of knowledge capital, scaled by the book value of total assets, in year t constructed by cumulating firms i's CPI-deflated research & development spending (XRD) using a perpetual inventory method (Belo et al. (2022)).
Managerial Ability	A managerial ability score as developed by Demerjian *et al.* (2012).
MTB	Market value of total assets/book value of total assets.
OC Ratio	Stock of organizational capital, scaled by the book value of total assets, in year *t* constructed by cumulating firms *i*'s CPI-deflated selling, general and administrative (SG&A) expenditures using a perpetual inventory method (Eisfeldt and Papanikolaou (2013)).
OC_RANK	Decile rank of organizational capital of firm *i* in year *t* based on Compustat universe.
Profitability	Ratio of operating income before depreciation (OIBDP) to total assets (AT).
Rated Firms	Equals to one for rated firms, and zero for non-rated firms.
RD_Assets	Ratio of research and development (R&D) expenditures to total assets.
Sales Growth	Ratio of the change in total sales from year *t-1* to year *t* to sales at year *t-1*.
SGA_AT	Ratio of SG&A expense to total assets.
Size	Natural logarithm of assets.
ST1	Percentage of debt maturing in one year or less divided by total debt.
ST3	Percentage of debt maturing in three years or less divided by total debt.
ST5	Percentage of debt maturing in five years or less divided by total debt.
Tangibility	Ratio of net property, plant, and equipment (PPENT) to book value of total assets (AT) of firm *i* in year *t*.
TLCF	Equals to one for firms with operating loss carry forwards, and zero otherwise.
Term	The difference between the month-end yield on 10-year government bonds and the month-end yield on 6-month treasury constant maturity date.
Volatility	The standard deviation of the natural logarithm of stock return during the fiscal year [standard deviation of (ln(return)) × (market value of equity (= Price Close * Common Shares Outstanding)/market value of assets)].

Data availability

Data will be made available on request.

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