Determinants of financial leverage

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Objective

To study the different factors which determines the financial leverage of the firm.

Capital Structure Decision

Capital structure is a part of the financial structure and it includes only sources through which permanent finance is being raised. A company can raise the required amount of capital through

- Reinvestment of profits
- Bank borrowings
- Issue of equity shares
- Issue of bonds
- Issue of debentures
- Issue of preferred shares

This decision is one of the important decision taken by the management.

Financial Leverage

Financial leverage is defined as the extent to which a company uses its borrowing capital to fund its operations. Financial leverage measures the risk of a company. A company with high financial leverage is considered to have a high risk of bankruptcy and a company with low leverage is less risky. An optimal financial leverage is required for a firm since it has the capacity to maximize both profits and losses.

Importance of Financial leverage

Financial leverage impacts the following:

- Shareholders return
- Financial risk of the firm
- Firm value
- Cost of capital of the firm
- Long term sustainability of the firm

Literature Review

Capital Structure Theories

Modigliani and Miller Theory

Pecking Order Theory

Static trade-off Theory

Firm Specific Variables

Variable	Definition	Expected Relationship
Financial leverage	Total debt to Total assets	NA
Profitability	Net income to Total assets	+/-
Liquidity	Current assets to Current liabilities	+/-
Non-debt tax shields	Depreciation and amortization to Total assets	-
Firm size	Natural logarithm on Total assets	+
Firm age	Age of the firm since establishment	+
Collateral value of asset	Net fixed asset to Total assets	+
Business risk	Standard deviation of EBIT	-
Effective tax rate	Tax to Income	+
Uniqueness	Research and expenditure to Sales	-
Debt service capacity	EBIT to Total interest	+
Dividend payout	Dividend/Net income	-
Growth	Net asset/Number of total shares	-
Cost of equity capital	Risk free rate + Beta*Risk premium	+
Inflation rate	Yearly CPI inflation rate for India	+

Conceptual Model

Financial leverage of the firm

Variables of Interest:

Cost of equity capital

Control Variables:

- Profitability
- Liquidity
- Non-debt tax shields
- Firm size
- Firm age
- Collateral value of asset
- Business risk
- Effective tax rate
- Uniqueness
- Debt service capacity
- Dividend payout
- Growth
- Inflation rate

Data Methodology

Sample size: 1) 100 BSE firms
2) 145 Agro based firms
Data collection: CMIE Prowess

Sample year: 2007 to 2016 (10 Years)
Data type: Panel data

Methodology: Regression
Model: Fixed effects model and random effects model

Empirical Model

Fixed effects model: $Y = \beta o + \beta iXit + \lambda t + \alpha i + \mu it$

Random effects model: $Y = \beta o + \beta iXit + \lambda t + \alpha i + wit$

Results

BSE firms

Independent variable	FEM	REM
const	0.266659***	0.3640***
COEC	2.14158***	2.9235***
Lqudty	-0.0198***	-0.0181***
Pftbty	-0.5725***	-0.4824***
NDTS	-0.9749*	-0.9441*
Size	0.1144***	0.0967***
CVA	-0.1866***	-0.1577***
Age	0.0247	0.0035
Dpayout	0.1340***	0.0961***
Unqness	-1.1461***	-1.1510***
DSC	0.0000	0.0000
ETR	0.0000	0.0001
Brisk	-1.2158***	-1.2810***
Gwth	-531.0290**	-540.9600**
Ifltn	0.0000	0.0016
dt_2	-0.0364	-0.0313
dt_3	-0.0158	-0.0291
dt_4	-0.1186***	-0.1283***
dt_5	-0.0649***	-0.0834***
dt_6	-0.0939***	-0.1011***
dt_7	-0.1058***	-0.1118***
dt_8	-0.0400*	-0.0477**
dt_9	-0.0637***	-0.0671***
dt_10	-0.0251	-0.0477*

Agro-based firms

Independent variable	FEM	REM
Const	-0.2513	-0.1130***
Lqudty	0.0020***	0.0020***
COEC	0.0639	0.0551*
Age	0.0362**	0.0278*
Pftbty	-0.5656***	-0.5256***
NDTS	-0.0680	-0.0226
Size	0.0508***	0.0406***
Unqness	-1.4716***	-1.3301**
DSC	0.0000	0.0000
CVA	0.2894***	0.2978***
Dpayout	-0.0004**	-0.0003*
Brisk	0.1724**	0.1931***
ETR	-0.1153***	-0.0745**
Gwth	-3593.4400***	-3412.3200***
Ifltn	0.0287	0.0152***
dt_2	0.0210	0.0217
dt_3	0.0415*	0.0418*
dt_4	0.0153	0.0114
dt_5	0.0378*	0.0366
dt_6	0.0175	0.0164
dt_7	0.0259	0.0266
dt_8	0.0457**	0.0458**
dt_9	0.0373	0.0323
dt_10	0.0145	0.0131

Conclusion

- As the cost of equity capital of the firm increases the financial leverage of the firm also increases
- The company would prefer debt financing rather than equity financing when the cost of equity capital increases
- Random effects model is the better fit model