CAPITAL STRUCTURE EXERCISES

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MILLER CO.

Miller Co is benchmarking its capital structure with the industry

Data collected

Financial indicators	Miller Co.	Competitors
D/E	0,50	0,40
Variance in EBITDA	20%	35%
EBITDA / Invested Capital	20%	15%
Effective income tax rate	30%	25%
R&D / Revenue	2%	5%

1. Considering these variables, what does your intuition tell you? Should Miller has higher or lower leverage than its competitors. Explain.
2. If you run a regression of D/E ratios of all peers and you get the following regression equation, what would you expect the D/E of Miller Co. could be?

$$\frac{D}{E} = 0{,}1 - 0{,}45 \times \partial EBITDA + 1{,}75 \times \frac{EBITDA}{EV} + 0{,}3 \times t + 1{,}5 \times \frac{R\&D}{Revenues}$$

HOW MUCH CAN YOU AFFORD?

Number of shares	10 000 000
Share price	4,00 €
Market capitalisation	40 000 000 €
Debt	20 000 000 €
Rating	BBB
Beta	1,00
Market risk premium	5,50%
Risk free rate	3,50%
Income tax rate	30,0%
Interest rate BBB	4,25%
Interest rate B	4,50%
New Borrowing	4 000 000 €
EBIT of new projects	440 000 €
New project investment	4 000 000 €

1. Should you borrow the additional 4 M€?
2. If you borrow 4 M€ what will be the price per share after the borrowing (assuming no growth, i.e. projects with NPV=0)?
3. Assume that you have a project that requires an investment of 4M€ and generates 0,44 M€ EBIT per year in perpetuity. Is this a desirable project if it has a risk profile identical to the rest of the company? What is the impact in the share value?

APPLYING STATIC TRADE-OFF THEORY

This is information about the firm and the market *as is* now:

Debt	985 €
Cost of debt	4,00%
Number of shares	40
Price per share	47,72 €
EBIT	300 €
Income tax rate	36,56%
Bankruptcy cost % of Value	25,00%
Risk free rate	3,00%
Beta	1,00
Market risk premium	5,50%

Assume NOPAT as Operating Free Cash Flow in perpetuity i.e. CAPEX is equal to depreciations and Increase in WCR is nil

Information about the bond rating and probability of default

Debt ratio	Bond rating	Probability of Default
0%	AAA	0,30%
10%	AA	0,30%
18%	A	1,50%
28%	BBB	12,00%
34%	BB	18,50%
37%	B	25,00%
45%	CCC	35,00%
54%	CC	40,00%
64%	C	65,00%
74%	DDD	80,00%
82%	D	90,00%