

Impact of leverage on business

Leverage.



1 INDUSWEALTH

“Give me a place to stand, and I shall move the earth”, Archimedes said demonstrating the principle of leverage – let’s look at financial leverage and its impact on business.

Let look at the case of 2 friends Arun and Deb who were running grocery shops in 2 different towns. Both had an inventory of Rs 50,00,000 (Rs 50 Lakhs) and were generating a profit of Rs 10,00,000 (Rs 10 lakhs per year). Arun had savings so he funded the business (Rs 50 lakhs) from his savings. Deb had only 10 lakhs savings so he borrowed Rs 40 lakhs interest rate of 15% per annum from the local bank.

- Arun owns all the inventory (Capital) in his business – hence his equity is Rs 50 lakhs.
- Deb also has an inventory of 50 lakhs, i.e, capital of Rs 50 lakhs. But he owns only Rs 10 lakhs of the inventory (as he only put in 10 lakhs), the bank owns Rs 40 lakhs of inventory.
 - Deb’s Debt is 40 lakhs, Equity is 10 lakhs. His Debt/Equity ratio (leverage) is $40/10 = 4$.
 - This is called leverage because he is able to deploy a capital of Rs 50 lakhs, with equity of Rs 10 lakhs.
 - The bank is funding 80% of the business for an interest. Bank wants a fixed interest, irrespective of how well the business does.

Let’s look at the impact of interest rate on the profitability.

INDUSWEALTH

Interest rate 15%				Interest rate 20%			
		Arun	Deb			Arun	Deb
E	Equity	5,000,000	1,000,000	E	Equity	5,000,000	1,000,000
D	Debt	-	4,000,000	D	Debt	-	4,000,000
C=E+D	Capital	5,000,000	5,000,000	C=E+D	Capital	5,000,000	5,000,000
P	Profit	1,000,000	1,000,000	P	Profit	1,000,000	1,000,000
R	Interest rate	0%	15%	R	Interest rate	0%	20%
$I=P*R*1/100$	Interest	-	600,000	$I=P*R*1/100$	Interest	-	800,000
P-I	Net Profit	1,000,000	400,000	P-I	Net Profit	1,000,000	200,000
RoC = P/C	Return on Capital	20%	20%	RoC = P/C	Return on Capital	20%	20%
RoE = (P-I)/E	Return on Equity	20%	40%	RoE = (P-I)/E	Return on Equity	20%	20%

Interest rate 25%				Interest rate 30%			
		Arun	Deb			Arun	Deb
E	Equity	5,000,000	1,000,000	E	Equity	5,000,000	1,000,000
D	Debt	-	4,000,000	D	Debt	-	4,000,000
C=E+D	Capital	5,000,000	5,000,000	C=E+D	Capital	5,000,000	5,000,000
P	Profit	1,000,000	1,000,000	P	Profit	1,000,000	1,000,000
R	Interest rate	0%	25%	R	Interest rate	0%	30%
$I=P*R*1/100$	Interest	-	1,000,000	$I=P*R*1/100$	Interest	-	1,200,000
P-I	Net Profit	1,000,000	-	P-I	Net Profit	1,000,000	(200,000)
RoC = P/C	Return on Capital	20%	20%	RoC = P/C	Return on Capital	20%	20%
RoE = (P-I)/E	Return on Equity	20%	0%	RoE = (P-I)/E	Return on Equity	20%	-20%

INDUSWEALTH

As depicted in the slide above, leverage boosts the return on equity as long as the rate of borrowing is lower than the return on of capital. Leverage will reduce the return on equity once the interest rate exceeds the return on capital.

Let's look at the impact of unforeseen incidents on the profitability of leveraged and unleveraged companies. Let's say that both Arun and Deb are not insured against theft. The amount lost due to theft has to be funded from profits. Net profits are reduced by the amount lost through theft.



INDUSWEALTH

Theft of Rs 1 Lakh				Theft of Rs 2 Lakh			
		Arun	Deb			Arun	Deb
E	Equity	5,000,000	1,000,000	E	Equity	5,000,000	1,000,000
D	Debt	-	4,000,000	D	Debt	-	4,000,000
C=E+D	Capital	5,000,000	5,000,000	C=E+D	Capital	5,000,000	5,000,000
P	Profit	1,000,000	1,000,000	P	Profit	1,000,000	1,000,000
R	Interest rate	0%	15%	R	Interest rate	0%	15%
$I=P*R*1/100$	Interest	-	600,000	$I=P*R*1/100$	Interest	-	600,000
T	Theft	100,000	100,000	T	Theft	200,000	200,000
P-I	Net Profit	900,000	300,000	P-I	Net Profit	800,000	200,000
RoC = P/C	Return on Capital	20%	20%	RoC = P/C	Return on Capital	20%	20%
RoE = (P-I)/E	Return on Equity	18%	30%	RoE = (P-I)/E	Return on Equity	16%	20%

Theft of Rs 4 Lakh				Theft of Rs 5 Lakh			
		Arun	Deb			Arun	Deb
E	Equity	5,000,000	1,000,000	E	Equity	5,000,000	1,000,000
D	Debt	-	4,000,000	D	Debt	-	4,000,000
C=E+D	Capital	5,000,000	5,000,000	C=E+D	Capital	5,000,000	5,000,000
P	Profit	1,000,000	1,000,000	P	Profit	1,000,000	1,000,000
R	Interest rate	0%	15%	R	Interest rate	0%	15%
$I=P*R*1/100$	Interest	-	600,000	$I=P*R*1/100$	Interest	-	600,000
T	Theft	400,000	400,000	T	Theft	500,000	500,000
P-I	Net Profit	600,000	-	P-I	Net Profit	500,000	(100,000)
RoC = P/C	Return on Capital	20%	20%	RoC = P/C	Return on Capital	20%	20%
RoE = (P-I)/E	Return on Equity	12%	0%	RoE = (P-I)/E	Return on Equity	10%	-10%

We can clearly see that Equity is the cushion against unforeseen events, and the lower the level of equity, lower is the level of cushion against unforeseen events for the organization. (This is also the reason why banks have been asked to raise capital after the sub-prime crisis in 2008).

In summary we can say that

- Leverage boosts up the return on equity as long as cost of borrowing is less than return on capital. This means that the company with debt will face an interest rate risk. (Risk of interest rates going up.)
- Equity provides a cushion against unforeseen events and using leverage means the company has less cushion against unforeseen events.