Pelabur's Pizza Wants to Determine Its Optimal Capital Structure

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Work-in-Progress – Finance Teaching Case

Abstract: *This case is based on an actual business decision that was made by a small, closely-held company. Pelabur's Pizza is a popular pizza restaurant and bar located in a mid-sized, Mid-Western city. It has been very successful serving outstanding food and beverages in a trendy atmosphere and location. Pelabur's successfully caters to a working-professional lunch crowd, a family-oriented dinner crowd, and a young night-life bar crowd. The business has been entirely financed with equity since inception and the owners are investigating obtaining debt financing to improve return on equity and allow the owners to cash out some of their stock. The case is designed to give undergraduate and MBA students exposure to the determination of an optimal capital structure in a small business setting. The capital asset pricing model (CAPM), the weighted average cost of capital model (WACC), and subjective Beta estimates are used to estimate per share stock values at a variety of debt levels. An earlier version of the case has been used for a number of years in finance coursework.*

PELABUR'S PIZZA MINI CASE – CAPITAL STRUCTURE DECISION

Assume you have just been hired as Business Manager of Pelabur's Pizza. The company's earnings before interest and taxes (EBIT) was $500,000 last year and is expected to remain constant (in real terms) over time. Since no expansion capital will be required, Pelabur's plans to pay out all earnings as dividends. The management group owns fifty percent (50%) of the stock and the rest is traded in the over-the-counter market. You are currently enrolled in a MBA program. In your finance course, you learned that most firm owners would be financially better off if the firm used some debt. When you suggested this to your new boss, she encouraged you to pursue the idea.

Pelabur's is currently financed with all equity, it has 100,000 shares outstanding and the current market price is $15 per share. If Pelabur's were to recapitalize, debt would be used and the funds received would be used to repurchase stock at the $15 per share market price. Pelabur's is in a 40% federal plus state tax bracket. The company leases all of its equipment and its building. Therefore, Pelabur's has no depreciation expense.

From your finance training, you know that there is an optimum relationship between debt and equity at which the market value per share will be maximized. You recall that you can use estimated cash flows, weighted average cost of capital (WACC), and the capital asset pricing model (CAPM) to estimate share value.

As a first step you found the following information on Yahoo finance: The current prime borrowing rate is 5% and the current risk free rate (30 year Treasury bond) is 4%. You estimate the market risk premium into the foreseeable future at 8%.

Next, you obtained from a local investment banker the following estimated debt risk premiums and subjective betas for Pelabur's at various debt levels:

Scenario	Amount Borrowed	Debt Risk Premium	Subjective Beta
1	$0	2.0%	2.0
2	$187,500	2.0%	2.1
3	$375,000	2.5%	2.3
4	$562,500	3.5%	2.5
5	$750,000	5.0%	2.9
6	$937,500	7.0%	3.3
7	$1,125,000	10.0%	3.7

REQUIRED WORK TO ESTIMATE AND ANALYZE STOCK VALUE

a. What will be the amount of equity after repurchase of stock under each debt scenario?

b. What will be the weights of debt and equity under each debt scenario?

c. What will be the after-tax cost of debt under each debt scenario?

d. What will be the cost of equity (CAPM) under each debt scenario?

e. What will be the weighted average cost of capital (WACC) under each debt scenario?

f. How many shares will be repurchased and how many will remain outstanding under each debt scenario?

g. What is the estimated total asset value and total equity value under each debt scenario?

h. What is the estimated market value per share under each debt scenario?

i. It is also useful to determine the effect of recapitalization on earnings per share. Calculate the EPS under each debt scenario.

j. Briefly explain the trade-offs between debt and equity financing.

k. Suppose you discovered Pelabur's had more business risk (operating leverage) than you originally estimated. Describe how this would impact your analysis. What if they had less business risk than originally estimated?

SOLUTION: PELABUR'S PIZZA MINI CASE – CAPITAL STRUCTURE DECISION

a. What will be the amount of equity after repurchase of stock under each debt scenario?

Amount Borrowed	$ -	$187,500	$375,000	$562,500	$750,000	$937,500	$1,125,000
Equity after Repurchase	$1,500,000	$1,312,500	$1,125,000	$937,500	$750,000	$562,500	$375,000
Total	$1,500,000	$1,500,000	$1,500,000	$1,500,000	$1,500,000	$1,500,000	$1,500,000

b. What will be the weights of debt and equity under each debt scenario?

Weight of Debt	0.0%	12.5%	25.0%	37.5%	50.0%	62.5%	75.0%
Weight of Equity	100.0%	87.5%	75.0%	62.5%	50.0%	37.5%	25.0%

c. What will be the after-tax cost of debt under each debt scenario?
*Cost of Debt = (Prime Rate + Risk Premium) * (1 – Tax Rate)*

Prime Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Risk Premium	2.0%	2.0%	2.5%	3.5%	5.0%	7.0%	10.0%
Before Tax Cost of Debt	7.0%	7.0%	7.5%	8.5%	10.0%	12.0%	15.0%
Tax Rate	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
After Tax Cost of Debt	4.2%	4.2%	4.5%	5.1%	6.0%	7.2%	9.0%

d. What will be the cost of equity (CAPM) under each debt scenario?
CAPM = Risk Free + Beta (Market Risk Premium)

Risk Free Rate	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Market Risk Premium	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Beta	2.0	2.1	2.3	2.5	2.9	3.3	3.7
CAPM	20.0%	20.8%	22.4%	24.0%	27.2%	30.4%	33.6%

e. What will be the weighted average cost of capital (WACC) under each debt scenario?
*WACC = (Weight of Debt * Cost of Debt) + (Weight of Equity * Cost of Equity)*

WACC	20.0%	18.7%	17.9%	16.9%	16.6%	15.9%	15.2%

f. How many shares will be repurchased and how many will remain outstanding under each debt scenario? *Shares Repurchased = Debt / $15 per share*

Shares Outstanding - Old	100,000	100,000	100,000	100,000	100,000	100,000	100,000
Shares Repurchased	-	12,500	25,000	37,500	50,000	62,500	75,000
Shares Outstanding - New	100,000	87,500	75,000	62,500	50,000	37,500	25,000

g. What is the estimated total asset value and total equity value under each debt scenario?
Estimated Asset Value = Cash flow / WAAC

Estimated Asset Value	$1,500,000	$1,560,080	$1,579,498	$1,604,213	$1,536,145	$1,462,264	$1,311,881
Liabilities	$ -	$187,500	$375,000	$562,500	$750,000	$937,500	$1,125,000
Estimated Equity Value	$1,500,000	$1,372,580	$1,204,498	$1,041,713	$786,145	$524,765	$186,881

h. What is the estimated market value per share under each debt scenario?

Estimated Value per Share	$15.00	$15.69	$16.06	$16.67	$15.72	$13.99	$7.48

i. It is also useful to determine the effect of recapitalization on earnings per share. Calculate the EPS under each debt scenario. *EPS = Net Income / Outstanding Shares*

Earnings per Share (EPS)	$3.00	$3.34	$3.78	$4.34	$5.10	$6.20	$7.95

j. Briefly explain the trade-offs between debt and equity financing.

k. Suppose you discovered Pelabur's had more business risk (operating leverage) than you originally estimated. Describe how this would impact your analysis. What if they had less business risk than originally estimated?