

Professor Chhajwani

Thursday 3:30 Class

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1. Presuming Presario wishes to maximize the total market value (MV) of the firm, what course of financing would you recommend the firm pursue for the \$27m acquisition – the issuance of debt or equity? Why would you choose this course of action?

Presario should finance the \$27 million acquisition using debt rather than equity to maximize the total market value of the firm. Currently, Presario operates with a 100% equity and 0% debt capital structure, which means the firm is not benefiting from any tax shield advantages of debt. However, management has identified that the firm's target capital structure is 65% equity and 35% debt. This indicates that some level of leverage is optimal. To test this, I used excel to find what the capital structure would be if the acquisition was 100% debt financed. This gave a new equity percentage of 91.96% and equity percentage of 8.04%. By issuing debt to fund the acquisition, Presario moves closer to its optimal target structure, captures the interest tax shield, and increases total firm value to.

2. Create Presario's MV balance sheet prior to the acquisition announcement of the multifamily project in Austin.

QUESTION # 2		
(Pre-Acquisition) Balance Sheet		Equation
Assets		
Total Assets	\$ 308,800,000.00	Liabilities + Equity
=		
Liabilities		
Total Debt	\$ -	No Use of Debt
+		
Equity		
Common Stock	\$ 308,800,000.00	Shares Outstanding * Price
Total Equity	\$ 308,800,000.00	

3. Presume Presario makes the decision to issue equity to finance the acquisition of this property.

a. What is the NPV of the investment?

The NPV is 7,793,814.43. Using excel, I calculated the NPV of the acquisition by first converting the annual pretax cash flows of \$4,500,000 into after-tax cash flows using the firm's 25% tax rate, which resulted in \$3,375,000 per year. Because the cash flows last in perpetuity, I then valued the project using the present value of a perpetuity formula, dividing the after-tax cash flow by the unlevered cost of capital of 9.7%. This produced a project value of \$34,793,814.43. Finally, I subtracted the \$27,000,000 acquisition price from the project's present value to compute the net present value.

b. Create Presario's MV balance sheet after it announces the firm will finance the acquisition utilizing 100% equity. What would be the new price per share of Presario's stock? How many shares will Presario need to issue to finance the acquisition?

The post-announcement firm market value was \$316,593,814.43, the new stock price was \$39.57 per share, and the new shares required were 682,263 shares.

After the acquisition is announced, the market immediately adds the positive NPV of \$7.79 million to Presario's original firm value of \$308.8 million. Because the firm has not issued any shares yet, I calculated the price per share with the original 8 million shares. The new stock price is calculated by dividing the post-announcement equity value by the existing shares. To raise the \$27 million needed for the acquisition, Presario must issue new equity at this price. To find this I divided the acquisition cost by the new stock price and used roundup excel function since you can't issue part of a share.

QUESTION # 3b		
100% Equity Balance Sheet (Post Announcement)		Equation
Assets		Liabilities + Equity
Operating Assets	\$ 316,593,814.43	
Total Assets	\$ 316,593,814.43	
=		
Liabilities		
Total Debt	\$ -	No Use of Debt
+		
Equity		
Common Stock	\$ 316,593,814.43	
Total Equity	\$ 316,593,814.43	Old Equity + Acquisition NPV
QUESTION # 3b		
100% Equity Finance Stock (Post Announcement)		Equation
Number of Shares Outstanding	8,000,000.00	Same Because its Pre Issuance
New Price Per Share	\$ 39.57	New Equity/# of Shares
New Shares Required for Equity Finance	682,263.00	Roundup Functoin Acquisition Cost/New Share Price

c. Now, create Presario's MV balance sheet after the equity issue but before the acquisition has been made. How many shares of common stock does Presario have outstanding? What is the price per share of the firm's stock?

After the equity issue but before the acquisition, Presario has 8,682,263 shares outstanding, and the stock price is about \$38.68 per share.

The firm has more shares because it has sold new shares to raise cash. Therefore, I added the value of the new shares to equity. However, since no asset has been purchased yet, the cash is simply sitting on the balance sheet. The number of shares outstanding rises because of the new shares issued, and the stock price adjusts downward slightly because the same total value is now spread across a larger number of shares.

QUESTION #3c			
100% Equity Balance Sheet (Post Issuance)		Equation	
Assets		Liabilities + Equity	
Operating Assets	\$ 335,800,030.70		
Total Assets	\$ 335,800,030.70		
=			
Liabilities			
Total Debt	\$ -	No Use of Debt	
+		Old Equity + (New Shares * Share Price)	
Equity			
Common Stock	\$ 335,800,030.70		
Total Equity	\$ 335,800,030.70		
QUESTION #3c			
100% Equity Finance Stock (Post Issuance)		Equation	
Number of Shares Outstanding	8,682,263.00	Old Shares + Newly Issued	
New Price Per Share	\$ 38.68	New Equity/New# of Shares	

d. Construct Presario's MV balance sheet after the acquisition has been made.

QUESTION #3d					
100% Equity Balance Sheet (Post Acquisition)		Equation			
Assets					
Operating Assets	\$			316,593,814.43	Equity
Real Estate	\$			27,000,000.00	Acquisition Cost
Total Assets	\$			343,593,814.43	
=					
Liabilities					
Total Debt	\$			-	No Use of Debt
+					
Equity					
Common Stock	\$			343,593,814.43	Old Equity + Acquisition Cost + NPV
Total Equity	\$	343,593,814.43			
QUESTION #3d					
100% Equity Finance Stock (Post Acquisition)		Equation			
Number of Shares Outstanding		8,682,263.00	Old Shares + Newly Issued		
New Price Per Share	\$	39.57	New Equity/# of Shares		

4. Now suppose Presario makes the decision to issue debt to finance the acquisition of this property.

a. What will the MV of the firm be if the acquisition is financed with 100% debt?

The MV of the firm will be 350,343,814.43 after the acquisition has been made. This is because when Presario finances the acquisition entirely with debt the firm gains the full economic value of the project as well as the tax shield created by interest payments on debt. So, to calculate this, I found the tax shield on Excel, then added it to the MV. Since I'm finding the MV post-acquisition, I added both the NPV and cost of the asset to the original MV. This is because post-acquisition the cost of the investment is listed as an asset.

b. Create Presario's MV balance sheet after both the debt issue and the acquisition. What is the price per share of the firm's stock?

The price per share is 40.42. Like I mentioned earlier, after Presario issues debt and completes the acquisition, the firm now owns both its original operating business and the newly acquired real estate. Since no new shares were issued, the number of shares outstanding remains the same. The stock price increased because the firm's total value has risen while the share count stayed constant.

QUESTION # 4b			
100% Debt Balance Sheet (Post Acquisition)		Equation	
Assets			
Operating Assets	\$ 323,343,814.43	Equity	
Real Estate	\$ 27,000,000.00	Acquisition Cost	
Total Assets	\$ 350,343,814.43		
=			
Liabilities			
Total Debt	\$ 27,000,000.00	Acquisition Price	
+			
Equity			
Common Stock	\$ 323,343,814.43	Firm MV - Acquisition Price	
Total Equity	\$ 323,343,814.43		
QUESTION # 4b			
100% Debt Finance Stock (Post Acquisition)		Equation	
Number of Shares Outstanding	8,000,000.00	Old Shares	
New Price Per Share	\$ 40.42	New Equity/# of Shares	

c. What will the cost of equity be if the firm decides to utilize debt for the acquisition? What will the new cost of capital (WACC) be for the firm?

QUESTION #4c		
WACC and Cost of Equity		Equation
Ru	9.70%	Unlevered cost of capital
Rd	6.01%	Cost of debt
D	\$ 27,000,000.00	Debt
E	\$ 323,343,814.43	Equity
V	\$ 350,343,814.43	Total Firm Value
New Cost of Equity (Re)	10.01%	$Ru + (Ru - Rd) * (D / E)$
WACC	9.58%	$(E/V) * Re + (D/V) * Rd * (1 - T)$

I calculated both the cost of equity and the WACC using excel with their proper formulas. The cost of equity is 10.01%, and the WACC is 9.58%.

d. What type of risk is the firm taking on that would drive this change in the cost of equity?

When Presario chooses to finance the acquisition with debt, the firm takes on additional financial risk due to the possibility of default. Default risk has a greater effect on equity because debt holders have a priority claim on cash flows. This added leverage increases the risk borne by shareholders, which is why the cost of equity rises from 9.7% to 10%. However, if you look at the firm's WACC, you'll notice that it drops to 9.58% making the company as a whole less risky. This is because the debt has low risk and created a better capital structure.

5. Does the route of financing the acquisition with equity or with debt maximize the price per share of Presario's equity?

Financing the acquisition with debt maximizes the price per share of Presario's equity. Under equity financing, the final stock price is \$39.57, while under debt financing the stock price rises to \$40.42. The higher stock price under debt financing occurs because the firm benefits from the interest tax shield created by debt. This increases total firm value without diluting existing shareholders through the issuance of new shares. As a result, debt financing creates greater value for existing equity holders in this case.

6. Scenario Analysis: a. Assume Presario makes the decision to issue equity to finance the acquisition of this property.

Now presume two scenarios where the acquisition is expected to increase Presario's annual pretax earnings by the below (instead of \$4.5 million):

1. \$1.5 million in perpetuity
2. \$3.492 million in perpetuity

All else being equal, what would the new price per share of Presario's stock be for each scenario? How many shares will Presario need to issue to finance the acquisition in each scenario?

QUESTION # 6 1			QUESTION # 6 1			QUESTION # 6 1		
100% Equity Scenario 1		Equation	Shares Post Announcement		Equation	Shares Post Acquisition		Equation
Pre-Tax CF	\$ 1,500,000.00	Given	Shares Outstanding	8,000,000.00	Old Shares	Shares Outstanding	8,736,202.00	Old Shares+Newly Issued
After tax CF	\$ 1,125,000.00	Pre-Tax * (1 - .25)	Share Price	36.67474227	New Firm Value/New Shares	Share Price	36.67474014	New Firm Value/New Shares
PV of Perpetuity	\$ 11,597,938.14	After-Tax/Rate	New Shares Required	\$ 736,202.00	Roundup Functoin Acquisition Cost/Share Price	New Firm Value	\$ 320,397,938.14	Prev firm value + Acquisition Cost
NPV	\$ (15,402,061.86)	PV - Acquisition cost	New Firm Value	\$ 293,397,938.14	Beg firm value + NPV			
QUESTION # 6 2			QUESTION # 6 2			QUESTION # 6 2		
100% Equity Scenario 2		Equation	Shares Post Announcement		Equation	Shares Post Acquisition		Equation
Pre-Tax CF	\$ 3,492,000.00	Given	Shares Outstanding	8,000,000.00	Old Shares	Shares Outstanding	8,699,482.00	Old Shares+Newly Issued
after tax CF	\$ 2,619,000.00	Pre-Tax * (1 - .25)	Share Price	38.60	New Firm Value/New Shares	Share Price	38.5999994	New Firm Value/New Shares
PV of Perpetuity	\$ 27,000,000.00	After-Tax/Rate	New Shares Required	\$ 699,482.00	Roundup Functoin Acquisition Cost/Share Price	New Firm Value	\$ 335,800,000.00	Prev firm value + Acquisition Cost
NPV	\$ -	PV - Acquisition cost	New Firm Value	\$ 308,800,000.00	Beg firm value + NPV			

The first scenario would be the worst one. Therefore, if these earnings were the case the firm should choose not to invest. The project has a negative NPV of -\$15.40 million, which means it destroys firm value. As a result, Presario's total firm value falls and the stock price declines to \$36.67 per share. To raise the \$27 million needed for the acquisition at this lower price, the firm must issue 736,202 new shares, which causes greater dilution for existing shareholders. If these earnings were the case, the firm should choose not to invest.

The second scenario is better than the first, but still worse than the original cash flow amount. It represents the break-even point. The project has an NPV of zero. Because the project adds no economic profit, Presario's stock price remains unchanged at \$38.60 per share. To finance the \$27 million acquisition at this price, the firm must issue 699,482 new shares. This results in less dilution than in the first scenario but is still worse than the cash flows originally predicted. If these earnings were the case, the firm should prioritize other better investments even though they wouldn't lose money on this one.

