# Finance and debt tax shields assignment

Business

Case Discussion: The Wm. Wrigley Jr. Company: Capital Structure, Valuation and Cost of Capital 1. Dobrynin plays the role of the financial entrepreneur, exploiting inefficiencies in investment valuation and corporate finance. She seeks to profit by restructuring firms with “ lazy financing” or too much cash and unused debt capacity relative to the (low) risks faced by the firms. By pressuring directors and managers to adopt more efficient policies, she hopes to reap an investment gain. The larger issue is whether or not Wrigley is inefficiently financed.

If so, how much capital structure change will bring it to more efficient operation? 2a. A recapitalization based on a dividend will have no effect on the number of shares outstanding. But with a repurchase, the number of shares will change materially. If we adjust the current stock price only for our estimate of tax benefits, the repurchase price would be $61. 53. Wrigley currently has 232. 4 million shares outstanding. At that price, 48. 755 million shares will be repurchased ($3 billion/$61. 53), leaving 183. 86 million shares outstanding. 2c. With the addition of the new debt, Wrigley’s share price should quickly and fully reflect the changes in investors’ perceptions stemming from the repurchase once the company publicly discloses its intentions. One way to frame the issues is??? immediately upon the announcement??? the stock price should change to reflect the following: | | | | | | Post-recapitalization |= Prerecap. Present value | Present value of | Signaling, incentive, & | | equity value | equity value |+ Debt tax shields | distress-related | clientele effects | | | | | costs | | | | | | | | |= $56. 7 |+ Tc ‘ Debt | Challenging to | Unobservable | | | | 0. 4 ‘ ($3, 000) | observe | | |$61. 53 |= $56. 37 |+ $1, 200 or |? |? | | | |+ $5. 16/sh | | | The effect of the

present value of debt tax shields: It shows that adding $3 billion in debt to Wrigley’s capitalization and returning a like amount to shareholders will add $1. billion in equity value due to tax effects. The tax benefits are estimated assuming that Wrigley commits to maintain the $3 billion in debt in perpetuity. The net revised value per Wrigley share is $61. 53. Debt grows from zero to $3 billion. Assets grow by $1. 2 billion, equal to the present value of the debt tax shields. 2b. Book equity becomes negative as a result of the large payout under the dividend or share repurchase. Market value of equity declines by $1. 8 billion, the result of the payout of $3 billion, which is offset by the benefit of the debt tax shields ($1. 2 billion).

Note that the accounting values give no attention to the value of debt tax shields and to the possibility that the market value of fixed assets may be greater than the historical value. 2f. Under the share repurchase, the shrinkage in shares outstanding might alter the influence of control groups. In some tax environments, investors may have a preference for capital gains (triggered by a repurchase) as opposed to dividend income (which might be taxed more aggressively. 3. Beginners will often turn to book values as the basis for determining the weights of capital for use in the weighted-average calculation.

Equity accounts for 89% of Wrigley’s book value of capital before the recapitalization. But the book value per share is $5. 49,[1] less than one-tenth of Wrigley’s current share price of $56. 37. This huge disparity is the possibility that book values are backward-looking and ignore important economic considerations, such as the value of brands, intellectual property, and customer franchise as well as the debt tax shields. In contrast, finance

theory and best practice rely on the firm’s current market value as a guide to compute the capital weights.

Before the recapitalization, Wrigley’s market value of equity accounted for 99% of its capital. And, after the recapitalization, that ratio fell to 78%. The increase in leverage will imply a change in Wrigley’s cost of capital. WACC before recapitalization Wrigley’s prerecapitalization WACC is 10. 9%. The cost of equity assumes a risk-free rate of 5. 65% for 20-year U. S. Treasuries (case Exhibit 7), a risk premium is assumed 7% (or 5%), and uses Wrigley’s current beta of 0. 75 (case Exhibit 5). 4. WACC after recapitalization The increase in leverage will affect Wrigley’s WACC in at least three ways: . Cost of debt: Wrigley’s debt rating will change from AAA (consistent with no debt) to a BB/B rating reflecting the higher risk. The postrecapitalization credit rating is a matter of judgment. It is highly instructive to guide students through a rating exercise for Wrigley’s pro forma recapitalization. This requires computing the range of measures included in case Exhibit 6 and determining where in the ratings range the firm would fall. [2] Comparing Wrigley’s projected results to the benchmarks given in case Exhibit 6 suggests that BB/B is a reasonable call.

Turning to the yields by credit rating given in case Exhibit 7, one can interpolate between BB (12. 73%) and B (14. 66%) to obtain a cost of debt. The cost used in the remainder of this analysis is 13%, Blanka Dobrynin’s choice. [3] Yields rise almost linearly across the investment-grade spectrum (AAA to BBB) and then rise curvilinearly at lower debt ratings??? this hints at the problem that we will encounter in estimating the cost of equity. 2. Beta:

You should unlever Wrigley’s current beta of 0. 75, assuming the current values of book debt and the market value of equity.

This gives an estimate of the unlevered beta of 0. 75, reflecting the fact that Wrigley has almost no debt. [4] This beta then needs to be relevered to reflect the addition of $3 billion in debt. Using the formula produces a levered beta of 0. 87. All in all, this is not much of a change. Why? The answer is twofold: first, the market value of Wrigley’s equity is so large that $3 billion more in debt does relatively little to change the debt/equity ratio. Second, the levered beta formula is a linear model that accounts for debt tax shields but not the costs of financial distress.

Thus, the curvilinear relationship between risk and yield observed in case Exhibit 7 is not reflected in the estimate of the levered beta. 3. Capital weights based on the market value of equity and the book value of debt: These were calculated earlier as 78% equity and 22% debt. Best practice and finance theory require the use of long-term target weights in calculating WACC. Are those weights the long-run target capitalization for Wrigley or a short-run peak that will gradually change as Wrigley repays its debt?

For the sake of simplicity and the illustration of extreme change, the balance of this note will assume the 78/22 percentage mix. Relevering beta to reflect the new mix of capital and otherwise assuming similar risk-free rate and equity-market risk premium will yield an estimated cost of equity for Wrigley of 11. 7%. We could dwell on the modest increase of 80 basis points in the cost of equity. This reflects the impact of the higher debt tax shields and

does not incorporate the costs of financial distress relative to the levered beta as discussed earlier.

Another way is to compare the estimated cost of equity with the cost of debt. Assumed at 13%, the cost of debt does incorporate a financial risk premium (as reflected in the changed credit rating). Yet the equity, which has a junior claim on the assets of the firm, bears a lower cost. Again, the paradox is explained by the fact that the estimated cost of equity ignores costs of financial distress. Combining the costs of equity and debt with the revised capital weights yields a postrecapitalization WACC of 10. 91%??? virtually unchanged from the prerecapitalization WACC.

The company is manifestly riskier in financial terms. Why doesn’t the estimate of WACC reflect this? Basically, the tax benefit of using more debt is virtually offset by the higher cost of equity, but most importantly, the estimate of the levered beta postrecapitalization fails to reflect costs of financial distress. Costs of financial distress revisited If we give Wrigley a BB/B rating postrecapitalization. Some may wish to argue that Wrigley deserves a higher credit rating based on an assessment of its business and industry, as well as on reasoning from general knowledge.

The firm has a dominant market position in an annuity business. If on this basis one concludes that the present value of the expected costs of financial distress is small, then a WACC of 10. 91% may not be unreasonable. Under the assumptions based on a put option, the value of the put option on $3 billion in Wrigley debt would be $6. 86 million. Inserting this into the calculation offered earlier reduces the share price by $0. 032. | | | | | | Post-

recapitalization |= Prerecap. Present value | Present value of | Signaling, incentive, & | | equity value | equity value |+ Debt tax shields | distress-related | clientele effects | | | | costs | | | | | | | | |= $56. 7 |+ Tc ‘ Debt | Put option value | Unobservable | | | | 0. 4 ‘ ($3, 000) |” $0. 032 million or | | |$61. 51 |= $56. 37 |+ $1, 200 or |” $0. 00014 |? | | | |+ $5. 16/sh | | | By this estimate, the effect of the costs of financial distress is negligible.

Would Wrigley’s current investors welcome the recapitalization? Surely a 6% increase in share price would be good news, but does this compensate sufficiently for the increase in financial risk? 2. d Effect of recapitalization on reported earnings per share If time permits, the instructor could explore the impact of the proposed recapitalization on Wrigley’s reported financial performance. EBIT/EPS analysis is a method for exploring the sensitivity of earnings per share (EPS) to changes in EBIT (earnings before interest and taxes).

Case Exhibit 8 gives a template for your analysis. This compares the status quo EPS (assuming no recapitalization) with an EPS after the addition of $3 billion in debt and draws on data in case Exhibits 2 and 3. The focal point for this analysis is the operating income of $514 million, which is the value for the year 2001 (see case Exhibit 2). The pro forma interest expense assumes $390 million at an interest rate of 13%. No adjustment is made for any possible amortization of the debt. The key issue is what will be the expected EBIT next year and thereafter.

If one assumes $514 million, the issuance of $3 billion in debt reduces the expected EPS from $1. 33 to $0. 41 with repurchase, or $0. 32 with dividend.

This results simply from increased interest expense and the variation in the number of shares outstanding. Clearly, shareholders should brace for much worse EPS results after the recapitalization. At EBIT values of $514 million and above, the repurchase produces higher EPS values than does the dividend-based recapitalization. Does the worsening EPS matter?

A wide range of research in financial economics suggests that investors see through reported EPS to base their investing decisions on cash flow. 5. Analysis suggests that the recapitalization will create returns on the order of 9%??? this figure is not larger simply because Wrigley is relatively richly-valued already. As shown in case Exhibit 5, Wrigley trades at a price/earnings multiple that is materially larger than its peers. Leveraged recapitalizations have the greatest impact on value when the target firm is trading at depressed values.

Also, given the very large asset value underlying the debt, the costs of financial distress appear to be negligible. Other effects, including signaling, investment, and clientele considerations, are more difficult to gauge but probably balance out to a mildly positive set of considerations. Reported earnings per share will be diluted significantly, but as argued above, EPS may not be a sufficient metric to guide corporate financial decision-making.

On those grounds, it would appear that a leveraged recapitalization would be attractive. ————————– [1] Equal to $1, 276, 287 ( 232, 441 shares. [2] Ratio definitions are given in case Exhibit 6, but the ratings agencies rely entirely on book values. [3] Pessimistic analysts will lean toward a B rating and KD of 14. 66%. This produces a postrecapitalization WACC that is

materially worse than the prerecapitalization WACC, and that proves to be a further disincentive to implement the recap. 4] For comparison, you might unlever the betas for Wrigley’s peers (see case Exhibit 5) and take the average[pic]_`. This gives an average unlevered beta of 0. 57. The reasons for the difference in the unlevered betas are difficult to assess under the best of circumstances and virtually impossible given the abbreviated information in the case. For more advanced analysts, we can assign the comparison of Wrigley and its peer group??? the competitive implication of lower capital cost for its peers.