

Papa john's cost of capital assignment

Business



Cost of Equity: For the risk-free rate, we decided to use the 30-year old Treasury yield, which is currently 4.6%. We believe it is important to match the time horizon when comparing financial assets. Given that stocks have essentially an endless time horizon, the 30-year Treasury seems a more reasonable asset by which to compare stocks. 1-month Treasury Bills, for instance, are comparable to safety-deposit boxes, which are completely safe, but cannot ever yield a return.

It's highly likely that no financial analyst would ever compare a stock to a deposit box; hence, it also doesn't make sense to compare stocks with very short-term Treasury Bills. For the beta of Papa John's equity (PZZA), we regressed the monthly return on PZZA with the monthly return on the S 500 index. Through doing so, we determined that PZZA had a market beta of 0.53. (Please refer to the attached spreadsheet for calculations of beta.) We also used the Ibbotson estimate for market premiums based on data from 1926-2009.

Specifically, we decided that over the long run, geometric mean is more reflective of true risk premiums than arithmetic mean (since arithmetic mean fails to incorporate year-over-year returns, thus producing an overly optimistic result). According to Ibbotson, the geometric mean for returns for large-company stocks was 9.6%. The market premium is therefore $9.6\% - 4.6\% = 5\%$. We decided to use the returns for large-company stocks because Papa John's is already an established corporation with substantial market capitalization.

Since the S 500 index is our benchmark, it makes more sense to use the market returns of large company stocks than those of small company stocks. Therefore, the cost of equity for Papa John's is $0.046 + 0.53(0.05) = 7.25\%$.

In order to determine which companies were "comparable" to Papa John's, we used two main criteria. First, the company would have to be in the food service industry, though not necessarily directly in pizzas. Second, the company would need to have a similar unlevered beta to Papa John's.

Looking at the 2009 balance sheet for Papa John's, we found a D/E ratio of approximately 1.25. Furthermore, we used 0.35 as for the corporate tax rate, since Papa John's earns enough net income to be in the highest corporate tax margin. Based on that, we have the following calculation for determining Papa John's unlevered beta: $BU = BL/[1+(1-T)(D/E)]$ $BU = 0.53/[1+(1-0.35)(1.25)]$ $BU = 0.53/(1+(0.65*1.25)) = 0.29$. For

comparables, first, we took a look at Yum Brands, Inc. Yum Brands, Inc. operates and licenses a variety of food chains, including Taco Bell, KFC, and Pizza Hut. Thus, it satisfies our first criteria. After regressing the performance of Yum's equity, we obtained a levered beta of 1.5. According to its 2009 10-K report, Yum! Brand has approximately 6:1 Debt-to-Equity (D/E) ratio.

Based on that, we have for Yum! Brands: $BU = BL/[1+(1-T)(D/E)]$ $BU = 1.05/[1+(1-0.35)(6/1)]$ $BU = 1.05/(1+(0.65*6)) = 0.214$. Based on the above calculations, we determined that due to the similarity of the unlevered beta between the two companies, they likely have a similar composition of assets. From that, we conclude that Yum! Brands is an appropriate firm to compare Papa John's to. It is obvious that the debt level of the respective companies explain why Yum!

Brands has such a higher cost of equity than Papa John's. As for the difference in unlevered beta, we hypothesize that Yum! Brands has a lower BU due to their diversification and size, which leads to more borrowing power and investor confidence. Yet overall, adjusted for D/E, these two companies have very similar costs of equity. We also looked at Domino's Pizza as a possible comparable firm. Using the same regression method as above, we determined that Domino's had a levered beta of 1.25. However, we cannot determine a D/E ratio for Domino's, since it has a negative total for Shareholder Equity.

In any case, Domino's has a substantially higher levered beta than Papa John's due to the fact that its shareholders are owners of a company that, based on its balance sheet, is worth less than its debt. Cost of Capital: If we assume that Papa John's has a credit rating of BB-BBB, we can estimate that its long-term debt (10 years at BB) will have a yield of approximately 233 basis points above treasury (as of February, 2010), according to Moody's. Since the current yield on 10-year Treasuries is approximately 3.75%, this means that Papa John's long-term debt has a nominal yield of 6.08%.

The formula for calculating the firm's cost of capital is the following: $WACC = (E/(E+D)) * r_{equity} + (1-T)(D/(E+D)) * r_{debt}$ = $(177/285) * 7.25\% + (0.65) * (99/285) * 6.08\%$ = $4.50\% + 1.37\%$ = 5.87% From the 2009 balance sheet, we know that the long-term debt level stands at \$99m. We treated the remaining liabilities as current liabilities (for the bulk of it is), and since CL is part of working capital (hence temporary), we can leave it out of the capital structure. Therefore, after factoring in the tax benefits of debt and

assuming that debt is valued at par value, the Weighted Average Cost of Capital for Papa John's is approximately 5.87%.