Nova Corporation is interested in measuring the cost of each specific type of capital as well as the weighted average cost of capital. Historically, the firm has raised capital in the following manner:

| **Source of capital** | **Weight** |
| --- | --- |
| Long-term debt | 35% |
| Preferred stock | 12 |
| Common stock equity | 53 |

The tax rate of the firm is currently 40%. The needed financial information and data are as follows:

* **Debt** Nova can raise debt by selling $1,000-par-value, 6.5% coupon interest rate, 10-year bonds on which *annual interest payments* will be made. To sell the issue, an average discount of $20 per bond needs to be given. There is an associated flotation cost of 2% of par value.
* **Preferred stock** Preferred stock can be sold under the following terms: The security has a par value of $100 per share, the annual dividend rate is 6% of the par value, and the flotation cost is expected to be $4 per share. The preferred stock is expected to sell for $102 before cost considerations.
* **Common stock** The current price of Nova’s common stock is $35 per share. The cash dividend is expected to be $3.25 per share next year. The firm’s dividends have grown at an annual rate of 5%, and it is expected that the dividend will continue at this rate for the foreseeable future. The flotation costs are expected to be approximately $2 per share. Nova can sell new common stock under these terms.
* **Retained earnings** The firm expects to have available $100,000 of retained earnings in the coming year. Once these retained earnings are exhausted, the firm will use new common stock as the form of common stock equity financing. (*Note:* When measuring this cost, the firm does not concern itself with the tax bracket or brokerage fees of owners.)

**TO DO**

Create a spreadsheet to answer the following questions:

* **a.** Calculate the after-tax cost of debt.
* **b.** Calculate the cost of preferred stock.
* **c.** Calculate the cost of retained earnings.
* **d.** Calculate the cost of new common stock. Andre
* **e.** Calculate the firm’s weighted average cost of capital using retained earnings and the capital structure weights shown in the table above.
* **f.** Calculate the firm’s weighted average cost of capital using new common stock and the capital structure weights shown in the table above.

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**Integrative Case 4 Eco Plastics Company**

Since its inception, Eco Plastics Company has been revolutionizing plastic and trying to do its part to save the environment. Eco’s founder, Marion Cosby, developed a biodegradable plastic that her company is marketing to manufacturing companies throughout the southeastern United States. After operating as a private company for 6 years, Eco went public in 2012 and is listed on the Nasdaq stock exchange.

As the chief financial officer of a young company with lots of investment opportunities, Eco’s CFO closely monitors the firm’s cost of capital. The CFO keeps tabs on each of the individual costs of Eco’s three main financing sources: long-term debt, preferred stock, and common stock. The target capital structure for Eco is given by the weights in the following table:

| **Source of capital** | **Weight** |
| --- | --- |
| Long-term debt | 30% |
| Preferred stock | 20 |
| Common stock equity | 50 |
| Total | 100% |

At the present time, Eco can raise debt by selling 20-year bonds with a $1,000 par value and a 10.5% annual coupon interest rate. Eco’s corporate tax rate is 40%, and its bonds generally require an average discount of $45 per bond and flotation costs of $32 per bond when being sold. Eco’s outstanding preferred stock pays a 9% dividend and has a $95-per-share par value. The cost of issuing and selling additional preferred stock is expected to be $7 per share. Because Eco is a young firm that requires lots of cash to grow it does not currently pay a dividend to common stockholders. To track the cost of common stock the CFO uses the capital asset pricing model (CAPM). The CFO and the firm’s investment advisors believe that the appropriate risk-free rate is 4% and that the market’s expected return equals 13%. Using data from 2012 through 2015, Eco’s CFO estimates the firm’s beta to be 1.3.

Although Eco’s current target capital structure includes 20% preferred stock, the company is considering using debt financing to retire the outstanding preferred stock, thus shifting their target capital structure to 50% long-term debt and 50% common stock. If Eco shifts its capital mix from preferred stock to debt, its financial advisors expect its beta to increase to 1.5.

**TO DO**

* **a.** Calculate Eco’s current after-tax cost of long-term debt. Andre
* **b.** Calculate Eco’s current cost of preferred stock.
* **c.** Calculate Eco’s current cost of common stock.
* **d.** Calculate Eco’s current weighted average cost capital.
* **e.**
  + (1) Assuming that the debt financing costs do not change, what effect would a shift to a more highly leveraged *capital structure* consisting of 50% long-term debt, 0% preferred stock, and 50% common stock have on the risk premium for Eco’s common stock? What would be Eco’s new cost of common equity?
  + (2) What would be Eco’s new weighted average cost of capital?
  + (3) Which capital structure—the original one or this one—seems better? Why?