

## Berkshire Instruments

Al Hansen, the newly appointed vice president of finance of Berkshire Instruments, was eager to talk to his investment banker about future financing for the firm. One of Al's first assignments was to determine the firm's cost of capital. In assessing the weights to use in computing the cost of capital, he examined the current balance sheet, presented in Figure 1 below.

In their discussion, Al and his investment banker determined that the current mix in the capital structure was very close to optimal and that Berkshire Instruments should continue with it in the future. Of some concern was the appropriate cost to assign to each of the elements in the capital structure. Al Hansen requested that his administrative assistant provide data on what the cost to issue debt and preferred stock had been in the past. The information is provided in Figure 2 below.

When Al got the data, he felt he was making real progress toward determining the cost of capital for the firm. However, his investment banker indicated that he was going about the process in an incorrect manner. The important issue is the current cost of funds, not the historical cost. The banker suggested that a comparable firm in the industry, in terms of size and bond rating (Baa), Rollins Instruments, had issued bonds a year and a half ago for 9.3 percent interest at a \$1,000 par value, and the bonds were currently selling for \$890. The bonds had 20 years remaining to maturity. The banker also observed that Rollings Instruments had just issued preferred stock at \$60 per share, and the preferred stock paid an annual dividend of \$4.80.

In terms of cost of common equity, the banker suggested that Al Hansen use the dividend valuation model as a first approach to determining cost of equity. Based on that approach, Al observed that earnings were \$3 a share and that 40 percent would be paid out in dividends ( $D_1$ ). The current stock price was \$25. Dividends in the last four years had grown from 82 cents to the current value.

The banker indicated that the under-writing cost (flotation cost) on a preferred stock issue would be \$2.60 per share and \$2.00 per share on common stock. Al Hansen further observed that his firm was in a 35 percent marginal tax bracket.

With all this information in hand, Al Hansen sat down to determine his firm's cost of capital. He was a little confused about computing the firm's cost of common equity. He knew there were two different formulas: One for the cost of retained earnings and one for the cost of new common stock. His investment banker suggested that he follow the normally accepted approach used in determining the marginal cost of capital. First, determine the cost of capital for as large a capital structure as current retained earnings will support; then, determine the cost of capital based on exclusively using new common stock.

**Figure 1**

**BERKSHIRE INSTRUMENTS**  
**Statement of Financial Position**  
**December 31, 2015**

<b>Assets</b>		
Current assets:		
Cash .....		\$ 400,000
Marketable securities .....		200,000
Accounts receivable .....	\$ 2,600,000	
Less: Allowance for bad debts .....	<u>300,000</u>	2,300,000
Inventory .....		<u>5,500,000</u>
Total current assets .....		\$ 8,400,000
Fixed Assets:		
Plant and equipment, original cost .....	30,700,000	
Less: Accumulated depreciation .....	<u>13,200,000</u>	
Net plant and equipment .....		<u>17,500,000</u>
Total assets .....		<u>\$25,900,000</u>
<b>Liabilities and Stockholders' Equity</b>		
Current liabilities: .....		
Accounts payable .....		\$ 6,200,000
Accrued expenses .....		<u>1,700,000</u>
Total current liabilities .....		7,900,000
Long-term financing:		
Bonds payable .....		\$ 6,120,000
Preferred stock .....		1,080,000
Common stock	} Common equity	6,300,000
Retained earnings		<u>4,500,000</u>
Total common equity .....		10,800,000
Total long-term financing .....		<u>18,000,000</u>
Total liabilities and stockholders' equity .....		<u>\$25,900,000</u>

**Figure 2**  
**Cost of prior issues**  
**of debt and**  
**preferred stock**

	<i>Security</i>	<i>Year of Issue</i>	<i>Amount</i>	<i>Coupon Rate</i>
Bond .....		2003	\$1,120,000	6.1%
Bond .....		2007	3,000,000	13.8
Bond .....		2013	2,000,000	8.3
Preferred stock .....		2008	600,000	12.0
Preferred stock .....		2011	480,000	7.9

**Required Activities:**

1. **Determine** the weighted average cost of capital based on using retained earnings in the capital structure. *Note:* The percentage composition in the capital structure for bonds, preferred stock, and common equity should be based on the current capital structure of long-term financing as shown in Figure 1 above (it adds up to \$18 million). Common equity will represent 60 percent of financing throughout this case. Use Rollins Instruments data to calculate the cost of preferred stock and debt. Show your work on your assignment document.
2. **Recompute** the weighted average cost of capital based on using new common stock in the capital structure. *Note:* The weights remain the same, only common equity is now supplied by new common stock, rather than by retained earnings. After how much new financing will this increase in the cost of capital take place? Determine this by dividing retained earnings by the percent of common equity in the capital structure. Show your work on your assignment document.
3. **Write** a 1 page summary that provides the following :
  - A. **Differentiate** between the methods used in question 1 above and those used in question 2 above as it relates to the results.
  - B. **Provide** your opinion on which method you would suggest and why, based on your findings.
  - C. **Add** this summary below your answers to 1 and 2 above on your assignment file.