

## 13.16: Table- Correlations, Returns and St. Deviations Across National Equity Markets (CH11)

The calculations made in the main body of Chapter Ten assume that there are no additional costs to raising money other than paying the investors' their required return. However, this is often not the case. When issuing new debt or selling additional shares of stock, most firms use (and must pay for) the services of an investment banker. There also may be some other additional costs of issuing new securities. The investment banking fees and other costs of issuing securities are referred to as flotation costs. To accurately capture the cost of capital it would be appropriate to consider flotation costs when appropriate.

When are flotation costs appropriate? Well, any additional debt financing or preferred stock financing needs to be generated by issuing more bonds or preferred stock. Thus, debt financing and preferred stock financing should consider flotation costs. Common stock financing on the other hand can come from two sources — (A) retained earnings and/or (B) newly issued securities. If the firm can generate all of its equity financing from retained earnings, then it doesn't have to issue new stock and can avoid flotation costs. On the other hand, if the company needs more equity financing than can be supplied by retained earnings, then it must issue new stock and pay flotation costs. This leads to breakpoints in the firm's cost of capital.

Consider a firm that has market value weights of 40% debt, 10% preferred, and 50% common stock. Also, the firm has \$1,000,000 in retained earnings being generated this year. Since 50% of the firm's financing is coming from common equity, it can spend \$2,000,000 on capital budgeting projects before it runs out of retained earnings and must issue new shares of common stock. Thus, there will be a cost of capital breakpoint at \$2,000,000 where the Marginal Cost of Capital will increase to reflect the impact of flotation costs associated with issuing new common stock financing. Additional breakpoints could also happen if the company issues so much debt that investors feel the firm has become more risky and increase their required return.

To include flotation costs in the cost of debt financing, we would re-estimate the Yield-to-Maturity on the bonds. Specifically, instead of using the market price of the bond we would replace it with the amount that would be received after flotation costs. For example, consider a situation where the firm estimates flotation costs on debt to be 3%. If we currently have bonds outstanding with a price of \$888, 6% coupon rate and 12 years to maturity, then the current YTM would be 7.44%. However, with flotation costs, we would use a price of \$861.36  $[(\$888) \cdot (1 - .03)]$  to calculate the YTM and instead have a before tax cost of 7.82%.

To include flotation costs in the cost of preferred stock, we would re-estimate the cost. Specifically, instead of using the market price of preferred stock, we would replace it with the amount that would be received after flotation costs. For example, consider a situation where the firm estimates flotation costs on preferred stock to be 4.5%. If we currently have preferred stock outstanding with a 9% dividend rate, a \$50 par value and a \$45 market price, then the current cost of preferred stock would be 10%. However, with flotation costs, we would use a price of \$42.98  $[(\$45) \cdot (1 - .045)]$  to calculate the cost of preferred and would get  $k_p$  to be 10.47%.

To include flotation costs in the cost of common stock, we would re-estimate the cost. Specifically, instead of using the market price of common stock, we would replace it with the amount that would be received after flotation costs. For example, consider a situation where the firm estimates flotation costs on common stock to be 7%. If we currently have common stock outstanding with a forecasted dividend ( $D_1$ ) of \$2.50, a \$25 market price and a 5% growth rate, then the current cost of common stock would be 15%. However, with flotation costs, we would use a price of \$23.25  $[(\$25) \cdot (1 - .07)]$  to calculate the cost of common and would get  $k_s$  to be 15.75%. Note that this only works with the dividend valuation approach. To adjust the cost of common stock financing using the SML or Bond Yield Plus Risk Premium approach would require a subjective adjustment. Also, remember that we would only include flotation costs in estimating the cost of common after we have used up all of our retained earnings financing.

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