

## Formula for Adjusting the Cost of Equity to Allow for Stock Expense and Underpricing

Let

$$RR = kB(N + n) + fnB \quad (1)$$

where

$RR$  = total dollars of required return on equity;

$k$  = cost of equity;

$B$  = book value per share;

$N$  = number our shares outstanding before the issue;

$n$  = number of new shares;

$f$  = allowance for stock expense and underpricing

In Equation (1) the total dollars of required return are equated to the total fair return,  $kB(N + n)$ , plus the dollar cost of the stock issue,  $fnB$ , effectively expensing the dollar cost of the stock issue. The required return on equity, adjusted to allow for stock expense and underpricing, is therefore

$$r = \frac{RR}{N(N + n)} \quad (2)$$

and by substituting (1) into (2) and rearranging we get

$$r = k + \frac{nf}{N + n} \quad (3)$$

The adjustment to the cost of equity to allow for stock expense and underpricing is therefore the quantity  $nf/(N + n)$ . Recognizing  $n/(N + n)$  as the rate of growth in new shares, we can further simplify this to

$$r = k + zf \quad (4)$$

where  $z$  is the rate of growth in new shares, and  $f$  is the percentage allowance for stock expense and underpricing, and  $zf$  is the flotation cost allowance as an addition to the cost of equity.