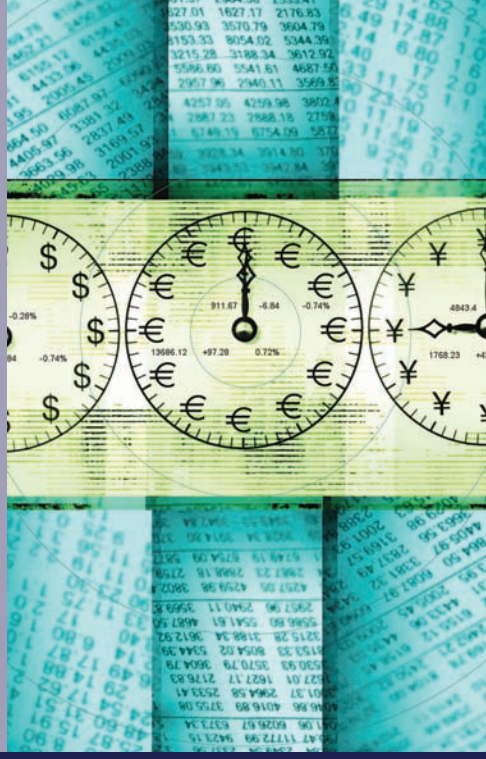
WEB EXTENSION 12A

The Accounting Rate of Return (ARR)



This Web Extension describes the accounting rate of return as a method for evaluating projects.

ACCOUNTING RATE OF RETURN (ARR)

The accounting rate of return (ARR), which focuses on a project's net income rather than its cash flow, is the second-oldest evaluation technique. In its most commonly used form, the ARR is measured as the ratio of the project's average annual expected net income to its average investment. If we assume that Projects S and L, as described in Chapter 12, will both be depreciated by the straight-line method to a book value of zero, then each will have a depreciation expense of \$1,000/4 = \$250 per year. The average cash flow minus the average depreciation charge is the average annual income. For Project S, average annual income is \$75:

$$\begin{aligned}\text{Average annual income} &= \text{Average cash flow} - \text{Average annual depreciation}\\ &= (\$1{,}300/4) - \$250 = \$75\end{aligned}$$

The average investment is the beginning investment plus the ending investment (the salvage value), divided by 2, or \$500:

$$\begin{aligned}\text{Average investment} &= (\text{Cost} + \text{Salvage value})/2\\ &= (\$1{,}000 + \$0)/2 = \$500\end{aligned}$$

This $500 is the book value of the asset halfway through its life. Dividing the average annual income by the average investment, we obtain an ARR for Project S of 15%:

$$ARR_S = \text{Average annual income/Average investment} = \$75/\$500 = 15\%$$

By a similar calculation, we determine ARR_L to be 20%. Thus, the ARR method ranks Project L over Project S. If the firm accepts projects with an ARR of 16% or more, Project L will be accepted, but Project S will be rejected. Note also that for these two projects the rankings under the ARR method are the opposite of those based on either payback method. We could argue about which method is better, hence which set of rankings should be used. However, this would be a hollow argument, because ARR is badly flawed in the same way that payback is flawed; both the regular payback and the ARR ignore the time value of money. Because this procedure does not provide complete information on the project's contribution to the firm's value, it could lead to incorrect capital budgeting decisions.[1]

[1]Actually, there are many ways to calculate the ARR. Because all of them have major deficiencies, we see no point in extending the discussion. Also, we should note that many firms use the ARR in one form or another to measure divisional performance. ROIC, as discussed in Chapter 7 and Chapter 11, is a better performance measure than ARR.