

- **Complicated Investment Decisions** A firm in practice faces complicated investment decisions. The most common situations include choosing among investments with different lives, deciding about the replacement of an existing asset or timing of an investment and evaluating investments under capital rationing. The NPV rule can be extended to handle such situations.
- **Annual Equivalent Values (AEVs)** AEV is the NPV of an investment divided by the annuity factor given its life and risk-free discount rate:

$$AEV = \frac{NPV}{\text{Annuity factor}}$$

The choice between **projects with unequal lives** should be made by comparing their *real* annual equivalent values (AEVs). The procedure of comparing AEVs can be followed while replacing an existing asset by a new asset.

- **Capital Rationing** occurs because of either the external or internal constraint on the supply of funds. In capital rationing situations, the firm cannot accept all profitable projects. Therefore, the firm will aim at maximising NPV subject to the funds constraint.

- In simple one-period capital rationing situations, the **profitability index (PI)** rule can be used. PI rule breaks in the case of multi-period funds constraints and project indivisibility.
- A more sophisticated approach—either **linear programming** or **integer programming**—can be used to select investment under capital rationing. However, two factors limit the use of these approaches in practice. First, they are costly, and second, they assume investment opportunities as known. Also, large companies in reality hardly face the real capital shortage situations. Mostly it arises on account of the internal constraints imposed by the management for control purposes.