

## Glossary of Common Terms

Term	Symbol	Description (with initial section reference in parentheses)
Annual amount or worth	$A$ or $AW$	Equivalent uniform annual worth of all cash inflows and outflows over estimated life (1.7, 6.1).
Annual operating cost	$AOC$	Estimated annual costs to maintain and support an alternative (1.3).
Benefit/cost ratio	$B/C$	Ratio of a project's benefits to costs expressed in PW, AW, or FW terms (9.2).
Breakeven point	$Q_{BE}$	Quantity at which revenues and costs are equal, or two alternatives are equivalent (13.1).
Book value	$BV$	Remaining capital investment in an asset after depreciation is accounted for (16.1).
Capital budget	$b$	Amount of money available for capital investment projects (12.1).
Capital recovery	$CR$ or $A$	Equivalent annual cost of owning an asset plus the required return on the initial investment (6.2).
Capitalized cost	$CC$ or $P$	Present worth of an alternative that will last forever (or a long time) (5.5).
Cash flow	$CF$	Actual cash amounts which are receipts (inflow) and disbursements (outflow) (1.10).
Cash flow before or after taxes	$CFBT$ or $CFAT$	Cash flow amount before relevant taxes or after taxes are applied (17.2).
Composite rate of return	$i'$	Unique rate of return when a reinvestment rate $c$ is applied to a multiple-rate cash flow series (7.5).
Cost estimating relationships	$C_2$ or $C_T$	Relations that use design variables and changing costs over time to estimate current and future costs (15.3–4).
Cost of capital	$i$ or $WACC$	Interest rate paid for the use of capital funds; includes both debt and equity funds. For debt and equity considered, it is weighted average cost of capital (10.2–3).
Debt-equity mix	$D-E$	Percentages of debt and equity investment capital used by a corporation (1.9, 10.3).
Depreciation	$D$	Reduction in the value of assets using specific models and rules; there are book and tax depreciation methods (16.1).
Depreciation rate	$d_t$	Annual rate for reducing the value of assets using depreciation models (16.1).
Economic service life	$ESL$ or $n$	Number of years at which the AW of costs is a minimum (11.2).
Expected value (average)	$\bar{X}$ , $\mu$ or $E(X)$	Long-run expected average if a random variable is sampled many times (18.3, 19.4).
Expenses	$E$	All corporate costs incurred in transacting business (17.1).
First cost	$P$	Total initial cost—purchase, construction, setup, etc. (1.3, 16.1).

(Continued)

Term	Symbol	Description (with initial section reference in parentheses)
Future amount or worth	$F$ or FW	Amount at some future date considering time value of money (1.7).
Gradient, arithmetic	$G$	Uniform change (+ or -) in cash flow each time period (2.5, 3.3-4).
Gradient, geometric	$g$	Constant rate of change (+ or -) each time period (2.6).
Gross income	GI	Income from all sources for corporations or individuals (17.1).
Inflation rate	$f$	Rate that reflects changes in the value of a currency over time (14.1).
Interest rate	$i$ or $r$	Interest expressed as a percentage of the original amount per time period; nominal ( $r$ ) and effective ( $i$ ) rates (1.4, 4.1).
Life (estimated)	$n$	Number of years or periods over which an alternative or asset will be used; the evaluation time (1.7).
Life-cycle cost	LCC	Evaluation of costs for a system over all stages: feasibility to design to phaseout (5.7).
Measure of worth	Varies	Value, such as PW, AW, $i^*$ , used to judge economic viability (1.2).
Minimum attractive rate of return	MARR	Minimum value of the rate of return for an alternative to be financially viable (1.9, 10.2).
Net cash flow	NCF	Resulting, actual amount of cash that flows in or out during a time period (1.10).
Net present value	NPV	Another name for the present worth, PW.
Payback period	$n_p$	Number of years to recover the initial investment and a stated rate of return (5.6).
Present amount or worth	$P$ or PW	Amount of money at the current time or a time denoted as <i>present</i> (1.7, 5.1).
Probability distribution	$P(X)$	Distribution of probability over different values of a variable (19.2).
Random variable	$X$	Parameter or characteristic that can take on any one of several values; discrete and continuous (19.2).
Rate of return	$i^*$	Compound interest rate on unpaid or unrecovered balances such that the final amount results in a zero balance (7.1).
Recovery period	$n$	Number of years to completely depreciate an asset (16.1).
Salvage value	$S$	Expected trade-in or market value when an asset is traded or disposed of (16.1).
Standard deviation	$s$ or $\sigma$	Measure of dispersion or spread about the expected value or average (19.4).
Taxable income	TI	Amount upon which income taxes are based (17.1).
Tax rate	$T$	Decimal rate, usually graduated, used to calculate corporate or individual taxes (17.1).
Tax rate (effective)	$T_e$	Single-figure tax rate incorporating several rates and bases (17.1).
Time	$t$	Indicator for a time period (1.7).
Value added	EVA	Economic value added reflects net profit after taxes (NPAT) after removing cost of invested capital during the year (17.8).