

Glossary of common terms used in Cost-Benefit Analysis (CBA)
E3/Office of Economic Policy

Word	Definition	Equation
Annual Debt Service Coverage Ratio (ADSCR)	Indicator used by bankers to decide if a stakeholder is creditworthy and able to receive a loan	$\frac{\text{Annual Net Cash Flow}}{\text{Annual Required Debt Payment}}$
Benefit-cost ratio (B/C ratio)	The net present value of benefits divided by net present value of investment. When the B/C ratio is equal to or greater than 1, the project is acceptable.	$\frac{\text{NPV of benefits}}{\text{NPV of investment}}$
Border Price	Unit price of a traded good at the country's border. For exports, it is the f.o.b. (free on board) price, and for imports it's the c.i.f (cost, insurance, and freight) price.	
C.i.f. (Cost, insurance, and freight)	Landed cost of an import on the dock or other entry point in the receiving country. It includes cost of international freight, insurance, and often the cost of unloading. It excludes other costs on the dock like tariffs and taxes.	
Capital	Investment that yields a service over a long period of time	
Cash Flow	Flow of money payments to or from a stakeholder. Expenditure is sometimes referred to as a negative cash flow. Gross profits are positive cash flows.	
Compounding	Finding value in some future year (t) based on a present amount growing at compound interest (i)	$\text{Future Value} = \text{Initial Value} * (1 + i)^t$
Constant Prices	Refers to prices that do not include general price inflation. This is the opposite of current prices. This can also be called real prices.	

Consumer Surplus	The economic gain obtained by consumers because they are able to purchase a product for a price that is less than the highest price that they would be willing to pay	In simplified cases, one can measure consumer surplus as the area between the demand curve and the price line.
Conversion Factor	A ratio of the economic value and the financial value. This is used to convert financial values into economic values. These adjustments may be made by multiplying the financial values by appropriate conversion factors.	$CF = \frac{\text{Economic value}}{\text{Financial value}}$
Cost Effectiveness Analysis (CEA)	Analysis used when benefits of project are difficult to monetize. Often used in health and nutrition projects.	
Cost- Benefit Analysis (CBA)	CBA is a conceptual framework applied to any quantitative project appraisal to determine whether, or to what extent, that project is worthwhile. Essentially, it determines if the benefits outweigh the costs.	
Current Prices	Prices that include the effects of general price inflation. This is opposite of constant prices. This can also be called nominal prices.	
Depreciation	A reduction in the value of an asset with the passage of time, due in particular to wear and tear	$\approx \frac{\text{Depreciation}}{\text{Life of Investment (years)}}$
Discount Rate	A measure of how much more you would need to receive in the future in order to give up some amount of consumption today. Used to calculate the net present value of a time stream of benefits and costs.	
Discounting	Discounting converts future values into their present-day terms by taking into account the time value of money.	
Distortion	When the market price of an item differs from the price it would bring in the absence of government policy failures or market failures. Usually, these are trade tariffs, taxes, and subsidies.	

Economic Price	The price of a good if the economy is operating in perfect competition and there are no externalities
Externality	Occurs when the true resource value of a good is not represented in the market price, arising from nonexistent or imperfect markets
F.o.b. (free on board)	The price of an export loaded in the ship or other vehicle that will carry it to foreign buyers

Financial Price	The actual price paid for a commodity during a certain period of time	
Foreign Exchange Premium	Essentially, the “tax” on purchasing foreign exchange in a given economy resulting from trade and non-trade distortions. It measures how much official exchange rates overstate the real value of local currency. Stated as a percentage.	
Incremental Cash Flow	The difference between the “without-project” net cash flows and the “with-project” net cash flows and measures the overall incremental value of the project	$\text{incremental net cash flow} = \text{net cash flow with project} - \text{net cash flow without project}$
Index	An index measures the changes in a variable over time	$\text{Current Index}_t = \text{Index}_{t-1} * (1 + \text{increase} (\%))$
Inflation	The increase of general prices in an economy over a period of time	
Internal Rate of Return (IRR)	The discount rate which causes the net present value of a stream of cash flows to be equal to zero	In Excel: =irr(year ₀ :year _t)
Intertemporal (IT) Variation	Changes in a model parameter that occur in different time periods	
Liquidation Value	The remaining value of a fixed asset after depreciation in a particular period (year). Can also be called salvage value.	
Market Power	The ability to restrict output in order to make the market price higher than the cost to produce. Associated with monopolies.	
Modified Internal Rate of Return MIRR	Modifies the IRR by assuming that positive cash flows are reinvested at the cost of capital, and not at the rate of return of the project	
Monitoring and Evaluation (M&E)	Indicators used to track a project’s progress and impact	
Net cash flow	The net cash flow calculates the net profit (inflows minus outflows) of a certain stakeholder in each period over time	$\text{net cash flow} = \text{inflows} - \text{outflows}$

Net incremental cash flow	The additional cash flow that an organization or individual receives from taking on a new project	$\begin{aligned} & \text{net incremental cash flow} \\ & = \text{net cash flow with project} \\ & - \text{net cash flow without project} \end{aligned}$
Net Present Value (NPV)	The total value of the project, expressed in terms of the present time, after accounting for all costs and benefits	$NPV = \sum_{t=0}^t \frac{\text{net cash flow}}{(1 + \text{discount rate})^t}$ In Excel: =NPV(discount rate, year ₁ :year _t) + year ₀
Net Replacement Cost	The current cost of replacing the fixed asset at its present state. Sometimes used as a salvage value at the end of a project period of analysis.	
Nominal Price	The price of a good that changes with general price inflation. Also called current prices.	
Non-traded goods	Goods not traded across national boundaries. Common examples are unskilled labor and land. Valued differently in economic analysis than traded goods.	
Opportunity Cost	Benefit foregone by using a scarce resource for one purpose instead of its next best alternative use. Often used to value the opportunity cost of family labor, that is not usually paid in cash terms.	
Present Value (PV)	The value in the present year of a sum of money in a future year	$\text{Present Value} = \frac{\text{Future Value}_t}{(1 + \text{discount rate})^t}$
Producer Surplus	The amount that producers benefit by selling at a market price that is higher than the minimum amount at which they would be willing to sell.	This is calculated by computing the area above the product supply curve and below the price.
Real prices	The price of a good that does not change with inflation (though it may change due to changes in supply or demand unrelated to inflation)	
Salvage value	The estimated resale value of an asset at the end of its useful life	$\begin{aligned} \text{Salvage Value}_t \\ & = \text{Salvage Value}_{t-1} \\ & - \text{Depreciation}_t \end{aligned}$
Sensitivity Analysis	Attempts to measure how movements in variables impact project outcomes	
Table of Parameters	The part of your CBA where you collect the data required to complete the model	
Transfer	A transfer is considered a financial transaction that moves money from one stakeholder to another, but in	

economic terms does not use or add any real economic value. Common examples of transfers are taxes, tariffs, subsidies, and financing mechanisms.

Willingness to Pay (WTP)

Refers to the amount consumers are prepared to pay for a final good or service.