

EE-287 Engineering Economics

Lecture Title:

Cash Flows: Estimation & Diagramming

Instructor:

Dr. Muhammad Amir (DEE, UET, Peshawar)



Put on your headphones. Click Slideshow. Play the Speaker icon on each Slide and listen to the Lecture. Change Slide through Right/Left arrow keys or Page Down/Page Up keys

Cash Inflows (Receipts): Estimation or Estimates

- 1. Revenues (from sales or contracts).**
- 2. Operating cost reductions (resulting from an alternative).**
- 3. Salvage value.**
- 4. Construction & facility cost savings.**
- 5. Receipt of loan capital.**
- 6. Income tax savings.**
- 7. Receipts from Stock and Bond sales.**



Cash Outflows (Disbursements): Estimation or Estimates

- 1. First cost of assets.**
- 2. Engineering design costs.**
- 3. Operating costs (Annual & Incremental).**
- 4. Periodic maintenance & rebuild costs.**
- 5. Loan interest & Principal payments.**
- 6. Major expected/unexpected upgrade costs.**
- 7. Income taxes.**



Background Information about Estimates (Departments/Sections of an Organization)

- 1. Accounting.**
- 2. Finance.**
- 3. Marketing.**
- 4. Sales.**
- 5. Engineering Design.**
- 6. Manufacturing.**
- 7. Production.**
- 8. Field services.**
- 9. Computer services.**
- 10. etc.**



General Information

NET CASH FLOW = Receipts – Disbursements
= Cash Inflows – Cash Outflows

END OF PERIOD CONVENTION:

All cash flows are assumed to occur and calculated at the end of an Interest period.

Important: End of Period means End of Interest period not End of Calendar year.

CASH FLOW DIAGRAMMING:

- Very important tool when cash flow series is complex.
- A cash flow diagram starts at $t = 0$ followed by periodic increments/decrements or status quo.
- Positive Cash Flow (i.e. Cash Inflow) represented by a Vertical arrow pointing upwards.
- Negative Cash Flow (i.e. Cash Outflow) represented by a Vertical arrow pointing downwards.



Perspective (Nuqta-e-Nazar)

Important: For cash flows, the perspective must be determined prior to placing a sign (+ve or -ve) on each cash flow and diagramming it.

Example Scenario:

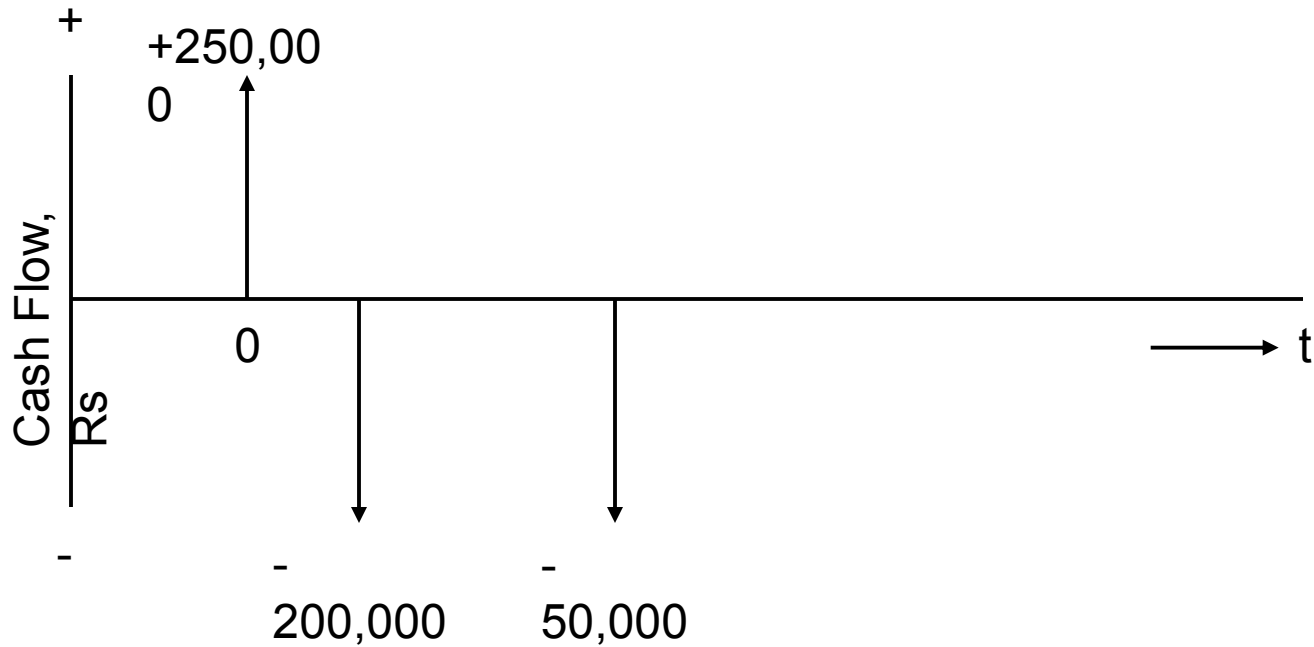
Lets suppose **YOU** borrow Rs.250,000/- for a used car purchase.

YOU use Rs.200,000/- on purchasing the car and use Rs.50,000/- on repainting it.

<u>Perspective</u>	<u>Cash Flow, Rs</u>
Bank	- 250,000
YOU as Borrower	+ 250,000
YOU as Purchaser	- 200,000
YOU as Paint Customer	- 50,000
Used Car dealer	+ 200,000
Painter	+ 50,000



Cash Flow Diagram from "YOU" Perspective



No specific mention of periods/interest rate/Future value





Thank You for listening

