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SECTION 01

What Is This Tool?

The **Financial Analyzer** is a capital budgeting and project appraisal tool that answers the most fundamental question in corporate finance: does this investment create or destroy value? It builds a full Discounted Cash Flow (DCF) model from your inputs, applies straight-line depreciation and corporate tax automatically, and computes four standard decision metrics in one click.

The four metrics — **Net Present Value (NPV)**, **Internal Rate of Return (IRR)**, **Payback Period**, and **Profitability Index (PI)** — are the core toolkit of every capital allocation decision: from a ₹10 lakh plant upgrade to a billion-dollar acquisition. The tool also plots an interactive **NPV Profile** chart that shows how NPV changes across every possible discount rate, making the IRR visible at a glance.

Who should use this tool?

Finance students working through capital budgeting assignments, analysts evaluating project proposals, CFOs stress-testing hurdle rates, and any professional who needs a rigorous, structured DCF model without building a spreadsheet from scratch.

What the tool does NOT do

The tool models **uniform intermediate cash flows** — a single annual amount repeated across all operating years. Projects with year-by-year varying cash flows require editing the CF After Tax row directly in the table (fully supported — those cells are editable). The tool does not model working capital changes, MACRS depreciation, or multiple tax jurisdictions. For those, use the table's editable cells as a manual override layer.

SECTION 02

Quick Start

A complete capital budgeting analysis in under a minute.

1 SET WACC, YEARS, AND TAX RATE

Use the three sliders in the Parameters panel to set your discount rate (WACC: 1-40%), project duration (Years: 1-15), and corporate tax rate (Tax Rate: 0-60%). The current value of each is shown in gold above its slider.

2 ADD YOUR CASH FLOWS

Click + Add Cash Flow to add each item. Set the amount, choose its type (Initial, Intermediate, or Final), and optionally add a description. At minimum you need one negative Initial cash flow (your investment) and at least one Intermediate cash flow (your operating return).

3 CLICK "CALCULATE →"

The tool builds the full DCF table — inflows, outflows, depreciation, tax, CF after tax, and discounted CF — across all periods. The results appear instantly: four metric cards on the left and the NPV Profile chart on the right.

4 READ THE DECISION

Green NPV = value created. Green IRR = exceeds hurdle rate. Short payback = capital recovered quickly. PI > 1 = acceptable. Export a PDF or save the model for future sessions (Trial / Premium).

SECTION 03

Understanding the Parameters

Three sliders drive the entire financial model. Changing any slider after running Calculate requires pressing Calculate again to rebuild the table, but dragging a slider also updates the metric cards and chart live if a table is already displayed.

WACC

The Weighted Average Cost of Capital — your project's hurdle rate, or the minimum return required to justify the investment. It is the weighted blend of the cost of equity and the after-tax cost of debt.

```
WACC = w_e × k_e + w_d × k_d × (1 − Tax)
```

Typical ranges: Listed Indian companies 10-15%; infrastructure projects 8-12%; start-ups and high-risk ventures 18-25%; US investment-grade firms 7-11%. Range: 1% - 40%. Default: 10%.

YEARS

The project life in operating years. Intermediate cash flows repeat at this frequency. After the final operating year (Year N), the final period (labelled "Final" in the table) accounts for terminal cash flows such as salvage values or decommissioning costs.

Range: 1 - 15 years. Default: 5 years. Depreciation is distributed equally across all operating years

Range: 1 – 15 years. Default: 5 years. Depreciation is distributed equally across all operating years (straight-line method).

TAX RATE

The corporate income tax rate applied to operating earnings (EBIT). Tax is only charged when EBIT is positive — loss years receive no tax benefit in this model.

India: Domestic manufacturing companies 17.5% (Section 115BAB), other domestic companies 25.17%, older regime 30%. US: Federal corporate rate 21%. Range: 0% - 60%. Default: 17.5%.

> **Project Info fields** (Title, Name, Roll Number, Date) are optional but appear in the PDF header and footer. Fill them in before exporting for submission-ready reports.

SECTION 04

Adding Cash Flows

Each line item you add is one cash flow entry. The tool separates cash flows into three types based on when they occur in the project timeline.

INITIAL

Occurs at time zero (the start of the project, labelled "Initial" in the table column). This is typically the capital expenditure — enter it as a negative number because it is cash you pay out. Multiple initial items are supported: for example, land acquisition (-5,00,000) and construction cost (-15,00,000) as two separate Initial entries.

Positive initial flows are also allowed — for example, a government grant or asset sale proceeds received at project start.

The sum of all negative initial flows becomes the depreciable base for straight-line depreciation across the project years.

INTERMEDIATE

Occurs at each operating year (Years 1 through N, shown as "Yr 1", "Yr 2", … "Yr N" in the table). Use this type for any recurring annual cash flow: revenue, operating costs, maintenance, lease payments.

Enter revenues as positive numbers and costs as negative numbers. The tool aggregates all intermediate entries together — you can add multiple items (e.g., Revenue: +80,000 and Operating Costs: -20,000) and they are summed in each year's column automatically. The same amount appears in every operating year. To model varying cash flows, edit the CF After Tax cells directly after calculating.

FINAL

Occurs at the period after the last operating year (labelled "Final" in the table). Used for terminal cash flows: salvage value of assets (positive), environmental cleanup or decommissioning costs (negative), and working capital recovery (positive).

Final cash flows are not depreciated and receive no tax adjustment — they flow through to CF After Tax at face value. This is standard practice for terminal values in capital budgeting models.

DESCRIPTION

An optional text label for each cash flow item. Appears in Detail view as the row label, making it easy to identify which cash flow is which. If left blank, the row is labelled "CF 1", "CF 2",

etc. Up to any length. Good descriptions: "Solar Panel Capex", "Annual Revenue", "Salvage Value".

Default example pre-loaded

When you open the tool, four sample cash flows are already loaded: a Capital Expenditure of −100,000 (Initial), Annual Revenue of +45,000 (Intermediate), Operating Costs of −12,000 (Intermediate), and Salvage Value of +15,000 (Final). This is a ready-to-run example with WACC 10%, 5 years, and 17.5% tax. Click Calculate immediately to see a complete analysis, then edit the values to match your own project.

SECTION 05

The Cash Flow Table

After clicking Calculate, the table fills with columns for each period (Initial, Yr 1 … Yr N, Final) and rows that build the DCF model step by step. The table scrolls horizontally on small screens.

Summary vs. Detail view

Toggle between **Summary** and **Detail** using the two buttons in the Parameters panel. Summary (default) aggregates all your inputs into five computed rows. Detail shows each individual cash flow on its own row, then the same computed rows below. Use Summary for a clean overview; use Detail for auditing exactly which items drive each period's numbers.

Inflows (green)

The sum of all positive cash flows in each period. In the default example: Revenue + Salvage Value in the final period. Positive amounts are displayed in green.

Outflows (red)

The sum of all negative cash flows in each period. In the default example: the Capex at time zero, Operating Costs in each operating year. Negative amounts are displayed in red.

Dep

Depreciation (teal, italic)

Straight-line depreciation computed automatically. The depreciable base equals the absolute value of all negative Initial cash flows. This amount is divided equally across all operating years.

```
Annual Depreciation = |Total Initial Outflows| ÷ Years
```

Depreciation appears only in operating years (Yr 1 to Yr N). It is a non-cash expense: it reduces taxable income but does not represent actual cash leaving the business.

Tax

Tax (amber-background row)

Corporate tax charged on **EBIT** (Earnings Before Interest and Tax) in each operating year. EBIT = Inflows + Outflows − Depreciation. Tax is displayed in parentheses as a deduction. Shown as "—" in the Initial and Final periods and in any operating year where EBIT ≤ 0.

```
Tax = max(0, EBIT × Tax Rate)
```

CF After Tax

CF After Tax (cream background, bold) — Editable

The key operating cash flow figure used for all DCF calculations. For operating years this

The key operating cash flow figure used for all DCF calculations. For operating years this is the standard after-tax free cash flow formula:

```
CF After Tax = EBIT × (1 − Tax Rate) + Depreciation
```

For the Initial and Final periods it equals Gross Inflows + Gross Outflows (no tax adjustment). **These cells are directly editable** — click any CF After Tax value to override it. Metrics and the chart update instantly. This is how you model year-by-year varying cash flows or apply manual adjustments.

DCF @ X%

DCF @ X% (dark background, gold) — The Discounted Row

Each CF After Tax value discounted back to present value using the WACC. The sum of the entire DCF row is the project's **NPV**.

```
DCF_t = CF After Tax_t ÷ (1 + WACC)^t
```

The discount factor grows with time: cash flows in later years are worth less in today's money. The Initial column (t = 0) is undiscounted — its DCF equals its CF After Tax.

> To model a project where revenues grow each year, run Calculate once with your average intermediate cash flow, then click individual cells in the **CF After Tax row** to override each year's value manually. Metrics and the NPV Profile chart update in real time without needing to press Calculate again.

SECTION 06

Results Cards & NPV Profile

After calculating, four metric cards appear to the left of the NPV Profile chart. Together they answer every standard capital budgeting question.

NPV

Net Present Value

The sum of all discounted cash flows. **Positive NPV (green)** means the project creates value above the cost of capital — accept it. **Negative NPV (red)** means it destroys value — reject or restructure. The sub-label reads "Value created", "Destroys value", or "Break even" accordingly.

IRR

Internal Rate of Return

The discount rate at which NPV = 0 — the project's own implied return. **If IRR > WACC (green)**: the project earns more than its cost of capital — accept. **If IRR < WACC (red)**: the project cannot cover its financing costs — reject. Shown as "N/A" when no unique IRR solution exists (e.g., non-conventional cash flows).

PB

Payback Period

The number of years until cumulative after-tax cash flows recover the initial investment. Calculated with fractional precision: e.g., "3.42 yrs" means full recovery partway through Year 4. Displayed as "∞" if the project never recovers its cost. The sub-label reads "Recovery period" or "Not recovered".

PI

Profitability Index

The ratio of the present value of future cash flows to the initial investment cost. **PI > 1 (green)** = acceptable; each rupee/dollar invested returns more than one rupee/dollar in present value. **PI < 1 (red)** = not viable. Particularly useful for ranking mutually exclusive

projects when capital is constrained.

```
PI = (NPV + |Initial Investment|) ÷ |Initial Investment|
```

The NPV Profile Chart

The chart plots NPV on the y-axis against the discount rate (0%–50%) on the x-axis. It answers the question: at what cost of capital does this project stop being viable?

The Gold/Amber Line — NPV Curve

Shows how NPV changes as the discount rate rises. Most conventional projects slope downward from left to right — higher discount rates reduce present values, pulling NPV down. The area above the zero line is shaded green (NPV positive); below is shaded red (NPV negative).

The Teal Dot — Current WACC Marker

Marks the exact position of your current WACC setting on the curve. The label shows "WACC X%" and "NPV Y" at the dot's position. As you drag the WACC slider, recalculate to see this dot shift along the curve.

The Zero Line — Where IRR Lives

The horizontal bold line at NPV = 0. The point where the gold NPV curve crosses this line is the **IRR**. At any discount rate to the left of that crossing (lower rates), NPV is positive. To the right (higher rates), NPV is negative. The further the crossing is to the right, the more headroom the project has above its hurdle rate.

SECTION 07

Core Concepts Explained

Net Present Value (NPV)

The total value created by a project in today's money. It sums all future after-tax cash flows discounted back at the cost of capital. A positive NPV means the project earns more than the required return — it adds value to the firm. NPV is the theoretically correct decision criterion: always accept positive-NPV projects.

```
NPV = Σ CF_t / (1 + WACC)^t
```

Internal Rate of Return (IRR)

The discount rate that makes NPV = 0. Intuitively, it is the project's own return — the rate it earns on the capital invested. Compare IRR to WACC: if IRR > WACC, the project earns more than it costs to finance. The tool solves for IRR using binary search (bisection method) to within 10^{-10} precision.

Payback Period

The time required to recover the initial investment from after-tax operating cash flows. It does not account for the time value of money (unlike NPV) and ignores cash flows after payback. Despite its limitations, payback remains widely used as a liquidity and risk measure — projects that recover capital quickly are less exposed to uncertainty over long time horizons.

Profitability Index (PI)

The benefit-to-cost ratio: present value of future cash flows divided by the upfront investment. A PI of 1.25 means every ₹1 invested returns ₹1.25 in present value. PI is especially useful for ranking projects when capital is limited — it normalises NPV by the investment required, making projects of different scales comparable.

WACC & Hurdle Rate

The Weighted Average Cost of Capital blends the required return of equity holders and debt holders in proportion to each source's weight in the capital structure. The after-tax cost of debt is used because interest is tax-deductible. WACC is the opportunity cost of capital — the return the firm could earn on an equally risky alternative investment.

Depreciation & Tax Shield

Depreciation is a non-cash expense that reduces taxable income (EBIT), thereby reducing the tax payable. Adding back depreciation to after-tax earnings gives the actual operating cash flow. The "tax shield" from depreciation is Depreciation × Tax Rate — this amount of tax is saved each year, increasing the project's after-tax cash flows. This is why CF After Tax = EBIT × (1 − t) + Depreciation.

Discounted Cash Flow (DCF)

The principle that a rupee today is worth more than a rupee tomorrow because money can be invested to earn a return. DCF converts each future cash flow to its present value by dividing by (1 + WACC)^t, where t is the number of periods. The further in the future a cash flow occurs, the more its present value is reduced.

Straight-Line Depreciation

The simplest depreciation method: the total investment cost is divided equally across all operating years. While tax accounting allows accelerated methods (MACRS, WDV), straight-line is the standard assumption in academic capital budgeting models and gives a conservative picture of tax shields in early years.

NPV vs. IRR — Which should I trust?

NPV is always the correct criterion when the decision is accept/reject. IRR can mislead in three specific cases: (1) non-conventional cash flows (multiple sign changes) can produce multiple IRRs; (2) when comparing mutually exclusive projects, a higher IRR does not always mean higher NPV; (3) IRR implicitly assumes reinvestment of cash flows at the IRR itself, which may be unrealistic. Use NPV as the primary decision tool and IRR as a supporting communication metric.

SECTION 08

Business Applications

→ **Capital expenditure evaluation.** Model a factory expansion, equipment purchase, or technology upgrade: initial capex as a negative Initial flow, annual cash savings or incremental revenue as Intermediate, and scrap or resale value as Final. The NPV tells you whether the investment creates shareholder value.

Build vs. buy analysis.	Compare the NPV of building internal capability (high initial capex, lower ongoing costs) against buying a service externally (zero capex, higher annual costs). Whichever NPV is less negative — or positive — is the better choice.
Lease vs. buy decisions.	Model the buy option (initial purchase, depreciation tax shield, salvage value) against the lease option (annual lease payments as negative Intermediate flows, zero terminal value). The higher NPV wins.
Project prioritisation under a capital budget.	Rank multiple projects by Profitability Index when total capital is constrained. The PI normalises NPV by investment size, giving the most value per rupee of capital deployed.
WACC sensitivity analysis.	Use the NPV Profile chart to identify the IRR and assess how much headroom the project has. A project with IRR = 28% and WACC = 12% has a 16% margin of safety — it remains viable even if financing costs double.
Real estate and infrastructure projects.	Model land acquisition and construction as Initial outflows, annual rental income or toll revenue as Intermediate, and property resale as Final. The IRR can be benchmarked against the property market's expected cap rate.
R&D and product development.	Model development spend as Initial, product revenue net of COGS as Intermediate, and intellectual property sale or write-off as Final. Adjust Tax Rate to 0% if the project sits in a tax-exempt entity.
Academic and coursework submissions.	The tool produces a complete, structured DCF model with all formulas visible in the table. Export the PDF with your Project Title, Name, Roll Number, and Date fields filled in for a submission-ready report.

SECTION 09

Interpreting Your Results

The accept/reject decision framework

For a standalone project, apply these criteria in order:

- **NPV > 0** → Accept. The project creates value above the cost of capital.
- **IRR > WACC** → Consistent with NPV positive (for conventional cash flows).
- **Payback** → Compare to your company's maximum acceptable payback period (commonly 3–5 years for industrial projects).
- **PI > 1** → Acceptable. Use PI to rank projects when comparing alternatives.

When NPV and IRR disagree

This can happen with non-conventional cash flows (e.g., large terminal outflows for decommissioning). If the IRR shows "N/A", the cash flow stream has no mathematically unique solution — rely on NPV exclusively. You can verify by looking at the NPV Profile: if the curve does not cross zero cleanly in the 0–50% range, the IRR is outside the observable window or does not exist.

Reading the NPV Profile for risk assessment

The distance between your current WACC dot and the zero-crossing (IRR) on the NPV Profile is your rate headroom. A project where the teal dot sits far to the left of the IRR crossing is robust — it remains viable even if your WACC estimate is significantly underestimated. A project where the dot is close to the crossing is rate-sensitive and requires careful WACC validation.

Adjusting for non-uniform cash flows

If your actual project has different revenue or cost in each year, click any cell in the **CF After Tax row** to override it. The model will instantly recompute NPV, IRR, Payback, PI, and the NPV Profile chart using your edited values. This makes the tool fully flexible for real-world projects that don't fit a uniform annual pattern.

Important — model assumptions

This tool uses: straight-line depreciation (not accelerated); tax only on positive EBIT (no loss carry-forward benefit); uniform intermediate cash flows unless manually overridden; no working capital model; no inflation adjustment. For academic coursework these are standard assumptions. For live investment decisions, validate the tax and depreciation treatment against the applicable jurisdiction's rules.

SECTION 10

Saving Models & Exporting PDFs

Export PDF and **Save Model** are available to Trial and Premium users. Free users can run the full analysis and read every result on-screen; saving and exporting require an account.

FEATURE	FREE	TRIAL	PREMIUM
Calculate (full DCF)	✓ Unlimited	✓ Unlimited	✓ Unlimited
Export PDF	✗ Not available	✓ Unlimited	✓ Unlimited
Save Model	✗ Not available	Up to 3 models	✓ Unlimited
Load Saved Model	✗ Not available	✓ All saved models	✓ All saved models

Exporting a PDF Report

Click ⬇ **Export PDF** (below the Calculate button) after running the analysis. The PDF is generated entirely in your browser in A4 landscape format and downloaded immediately. It contains:

PARAMETERS BAR
A dark bar at the top of the PDF lists the three project parameters: WACC, Tax Rate, and Period. This makes the report fully self-contained.

CASH FLOW TABLE
The full cash flow table — Inflows, Outflows, Depreciation, Tax, CF After Tax, and DCF — with all

column labels and period headers. Font is compressed for PDF to fit all columns on one page.

NPV PROFILE CHART

The NPV vs. discount rate chart, including the WACC marker and the zero line, embedded at full width after the table.

HEADER & FOOTER

Project Title, Name, Roll Number, and Date (if entered) appear at the top. Page numbers and the project title appear in the footer. The PDF is submission-ready without further editing.

Saving and Loading Models

A **model** is a snapshot of all your inputs: WACC, Years, Tax Rate, all cash flow entries (amounts, types, descriptions), and all project info fields. Saving lets you return to a previous analysis in any future session.

1 CLICK "SAVE MODEL"

The Save Model button appears below the Export PDF button once you are logged in with a Trial or Premium account.

2 ENTER A MODEL NAME (UP TO 10 CHARACTERS)

Choose a short, memorable name — for example `SolarPh1`, `FactoryB`, or `Q3Capex`. Saving under an existing name prompts you to confirm overwrite.

3 LOAD FROM THE DROPDOWN ANYTIME

Select a saved model from Load saved model. All inputs are restored and Calculate is run automatically so you pick up exactly where you left off.

What is stored in a saved model?

WACC · Years · Tax Rate · All cash flow items (amount, type, description) · Project Title, Name, Roll Number, and Date. Cash flows are stored as entered at the time of saving — the model does not recompute or change saved values between sessions.

SECTION 11

Glossary of Terms

TERM	DEFINITION	IN THIS TOOL
Net Present Value (NPV)	The sum of all future after-tax cash flows discounted to present value at the cost of capital. Measures total value created (positive) or destroyed (negative) by a project.	Displayed in the NPV metric card. Sum of the entire DCF row in the table.
Internal Rate of Return (IRR)	The discount rate at which NPV = 0. The project's implied return on capital invested. Accept when IRR > WACC.	Displayed in the IRR metric card. Visible as the zero-crossing on

		the NPV Profile chart.
Payback Period	The number of years until cumulative after-tax cash flows equal the initial investment. A simple measure of capital recovery speed and risk, but does not account for time value of money.	Displayed in the Payback metric card, in years with fractional precision.
Profitability Index (PI)	(NPV + Initial Outlay) ÷ Initial Outlay. Ratios the present value of future benefits to the initial cost. PI > 1 = acceptable. Useful for ranking projects under capital constraints.	Displayed in the PI metric card.
WACC	Weighted Average Cost of Capital. The blended required return on a firm's equity and debt, weighted by each source's share of total financing. Used as the discount rate in DCF models.	The WACC slider (1–40%). Appears as the x-position of the teal dot on the NPV Profile.
Discounted Cash Flow (DCF)	A valuation method that converts future cash flows to present value by dividing by (1 + rate)^t. The foundation of NPV analysis.	The DCF row in the table. Each cell = CF After Tax ÷ (1 + WACC)^t.
EBIT	Earnings Before Interest and Tax. In this tool: Net Inflows + Net Outflows − Depreciation for each operating year. The base on which tax is applied.	Computed internally; displayed implicitly via the Tax row in the table.
Depreciation (Straight-Line)	The allocation of asset cost evenly across its useful life. Reduces taxable income without consuming cash, creating a tax shield each year.	Depreciation row in the table. Auto-computed as |Initial Outflows| ÷ Years.
Tax Shield	The reduction in tax payable due to a deductible expense (depreciation, interest). Depreciation tax shield = Depreciation × Tax Rate. Increases after-tax cash flows.	Embedded in the CF After Tax row: CF AT = EBIT × (1 − t) + Depreciation.
CF After Tax	The actual cash generated by the project after paying tax, with non-cash depreciation added back. For operating years: EBIT × (1 − Tax Rate) + Depreciation.	The CF After Tax row (cream background). Editable — click any cell to override.
Initial Cash Flow	Cash flow occurring at time zero (the investment date). Typically a capital expenditure — a negative number. Not discounted (t = 0 factor = 1).	The "Initial" column in the table. Type = Initial in the cash flow form.
Terminal / Salvage Value	The residual value of an asset at the end of	Modelled as a Final-type cash

	its useful life, or the cash recovered from winding down a project. Can be positive (asset sale) or negative (cleanup cost).	flow. Appears in the "Final" column.
NPV Profile	A chart plotting NPV against all discount rates from 0% to 50%. The intersection with NPV = 0 is the IRR. The slope shows sensitivity of project value to the discount rate.	The chart to the right of the metric cards. Gold line, teal dot at current WACC.
Hurdle Rate	The minimum acceptable rate of return on an investment. Often set equal to WACC. A project must earn at least the hurdle rate to be considered for approval.	Represented by the WACC input — the teal dot on the NPV Profile marks it.
Capital Budgeting	The process of evaluating and selecting long-term investments that are expected to produce returns over several years. NPV, IRR, Payback, and PI are the standard capital budgeting metrics.	The entire purpose of this tool.

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