📘 User Manual: Investment Metrics Explained

Net Present Value (NPV)

Think of NPV as: “How much is this stream of future profits worth today?”

• NPV > 0 → the investment is profitable

• NPV = 0 → the IRR is the return rate

• NPV < 0 → you’re losing money

🧮 Formula:

$NPV = \sum CF_t / (1 + r)^t$ - Initial Investment

Internal Rate of Return (IRR)

Definition: Annualized return rate where NPV = 0

🧮 Formula: Use numpy or a financial calculator:

np.irr([-Initial Investment, CF1, CF2, ...])

Return on Investment (ROI)

Definition: Total return relative to initial capital.

🧮 Formula:

ROI = (Total Return / Initial Investment) × 100

ROI includes:

• Appreciation

• Mortgage principal paydown • Net profit at sale

Cash-on-Cash Return (CoC)

Definition: Measures the annual pre-tax cash flow relative to the initial cash invested.

🧮 Formula:

CoC = (Annual Pre-Tax Cash Flow / Initial Cash Invested) × 100

💡Example:

You put $40,000 down on a rental property and receive $3,600 in annual cash flow:

CoC Return = ($3,600 / $40,000) × 100 = 9%

🧾 Monthly Expenses

This includes recurring costs like:

- Property Taxes
- Home Insurance
- Maintenance & Repairs
- HOA Fees
- Miscellaneous Operating Costs

💡Tip: If unsure of monthly expenses, estimate as 25% of rent. Typical operating costs include:

- Property taxes
- Insurance
- Repairs & maintenance
- Vacancy buffer
- HOA fees or other recurring expenses

💡Example: If your rent is $2,000/month, typical expenses might be 25% or ~$500/month.

Multi-Year Cash Flow & ROI

Cash Flow = Annual Rent – (Operating Expenses + Mortgage Payments)
ROI = (Total Return / Initial Investment) × 100

What Counts as Cash Flow for CoC and ROI?
Cash-on-Cash Return uses Net Pre-Tax Cash Flow — not total rent.

🧮 Formula:

Cash Flow = Annual Rent – (Operating Expenses + Mortgage Payments)

When CoC = ROI (Year 1):

If there is no appreciation, mortgage paydown, or sale value yet, ROI = CoC.

But ROI becomes more powerful long-term, factoring in gains like:

- Equity from price appreciation
- Mortgage principal reduction
- Sale value of property

📊 Long-Term Metrics

■ IRR (%) – Internal Rate of Return
Definition Recap: IRR is the annualized rate where NPV of all cash flows becomes zero.

💡 Example:

You buy a rental with a $40,000 down payment.
Each year you receive $3,600 in cash flow.
After 5 years, you sell and receive $60,000 net profit.

💰Equity Multiple
Definition: How many times your original investment has grown.
Formula:
Equity Multiple = Total Cash Inflows / Total Cash Invested

💡 Example:

You invest $40,000 and receive $78,000 total (rent + final sale).
Equity Multiple = 78,000 / 40,000 = 1.95×

🏗️ Capital Improvement Tracker

💡 **Purpose:**

Capital improvements are major upgrades that increase a property's long-term value or rental income.

Examples include kitchen remodels, roof replacement, solar installation, or HVAC upgrades.

📊 **Why It Matters:**

These improvements can boost both cash flow and property appreciation — two critical drivers in ROI and IRR performance.

By tracking them, investors can quantify how each upgrade improves returns over time.

🧮 **Example:**

A $15,000 kitchen renovation increases monthly rent by $150.

That's an additional **$1,800 per year**, which yields an **ROI of 12%** on that improvement alone.

🧠 **Takeaway:**

Consistently logging improvements helps refine your investment model, reveal which upgrades deliver the best payback, and better predict future property valuation trends.

💰 IRR (Operational) vs 💰 IRR (Total incl. Sale)

💡Understanding both forms of IRR helps investors distinguish between ongoing rental efficiency and total return over the full investment horizon.

We publish both IRR views so you can evaluate day to day rental efficiency and full life cycle return. Both now appear in the app's **Long-Term Metrics**.

🧠 **Why both matter?**		
IRR (Operational)	Return from yearly operations only (rent − expenses − mortgage). Excludes any sale/appreciation.	
IRR (Total incl. Sale)	Includes terminal sale proceeds or modeled appreciation at exit; reflects total holding period return.	
🧪 **Typical Example (numbers are illustrative)**		
Down Payment	$40,000	
Annual Net Cash Flow	$3,600	
Exit (Year 5) Net Proceeds	$60,000	
⚙️ **Metric**	💰**Cash Flows Considered**	**Approx. Result**
IRR (Operational)	[-40,000, 3,600, 3,600, 3,600, 3,600, 3,600]	≈ 8.7%
IRR (Total incl. Sale)	[-40,000, 3,600, 3,600, 3,600, 3,600, 3,600 + 60,000]	≈ 17.7%
👥 **Who Uses Which IRR?**		
💰Investors — compare operational performance vs. total return across deals.		
💰 Lenders — evaluate steady cash flow and loan risk (Operational IRR).		
🧠 Analysts — model sensitivity to rent growth and exit value (Total IRR).		

💡Tip: In the app, you'll now see both values under **Long Term Metrics**: **IRR (Operational)** and **IRR (Total incl. Sale)**.