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\sum_{k=1}^{\Theta}\left(R_{k}-E_{k}\right)-1 \geq 0
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- If $\Theta$ is calculated to include some fraction of a year, it is rounded to the next highest year


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$\Theta$ ' is the smallest value that satisfies the equation

## INVESTMENT-BALANCE DIAGRAM

## Describes how much money is

 tied up in a project and how the recovery of funds behaves over its estimated life.
## INTERPRETING IRR USING

 INVESTMENTT-BALANCE DIAGRAM Unrecovered $_{1+\mathrm{i} \prime q}\left[\mathrm{P}\left(1+\mathrm{i}^{\prime}\right)-\left(\mathrm{R}_{1}-\mathrm{E}_{1}\right)\right]\left(1+\mathrm{i}^{\prime}\right)$ Investment Balance, \$

- downward arrows represent annual returns $\left(R_{k}-E_{k}\right): 1 \leq k \leq N$
- dashed lines represent opportunity cost of interest, or interest on BOY investment balance
- IRR is value i ' that causes unrecovered investment balance to equal 0 at the end of the investment period.


# INVESTMENT-BALANCE DIAGRAM EXAMPLE 

- Capital Investment ( I ) = \$10,000
- Uniform annual revenue $=\$ 5,310$
- Annual expenses = \$3,000
- Salvage value = \$2,000
- MARR = 5\% per year

> MARR $=5 \%$
> \$2,001 ( = FW )
> $\Theta^{\prime}{ }^{\prime}+\$ 4,310$
> - 5,000
> - 10,000

## WHAT INVESTMENT-BALANCE DIAGRAM PROVIDES

- Discounted payback period ( $\Theta^{\prime}$ ) is 5 years
- FW is $\$ 2,001$
- Investment has negative investment balance until the fifth year
Investment-balance diagram provides additional insight into worthiness of proposed capital investment opportunity and helps communicate important economic information

