

Real Estate Investment Metrics¹

Quick Sheet²

Net Operating Income (NOI) = EGI - Operating Expenses

Effective Gross Operating Income = EGI = Potential Rental Income - Vacancy Rates + Other Income

Potential Rental Income = Total Units x Average Rent per Unit (*assumes 100% occupancy*)

Other Income = the sum of all potential Parking, Laundry, Vending net incomes, Pet Income, Utility Reimbursements, etc.

Operating Expenses = Property Taxes + Insurance + Maintenance & Repair + Management Fees + Marketing + Accounting + Legal + Replacement Reserves, Any other applicable expenses required to operate and maintain property

Below the Line Items = Asset Management Fees, Capital Expenditures (CapEx), Debt Service

Debt Service = Principle and Interest payments

Debt Service Coverage Ratio = DSCR = $\frac{NOI}{Debt\ Service}$

Before Tax Cash Flow = **BTCF =** $NOI - Debt\ Service$ *Also referred to as Pre-Tax Cash Flow*

Capitalization Rate = **Cap Rate =** $\frac{NOI}{Purchase\ Amount\ (Price)}$

Multiple on Invested Capital MOIC can be conceptualized two different ways: 1) based on total dollar amount invested (equity) and 2) based on Peak Investment

Total Dollar Invested: $\frac{Distributions + Realized\ Value + Unrealized\ Value}{Total\ Dollar\ Amount\ Invested}$

Peak Investment: $\frac{Net\ Levered\ Cash\ Flows}{Peak\ Investment}$

Internal Rate of Return (IRR) Conceptually, IRR is the interest rate (r) that sets the net present value (NPV) of cash flows (CF) to zero. Calculation of IRR is an iterative

¹ The Quick Sheet is intended to present an abbreviated presentation of the included concepts in corporate finance and is not intended to be a full or complete representation of the concepts, models, metrics or the underlying foundations from which they are built.

² This material set was provided by Richard Haskell, PhD, Associate Professor of Finance, Bill and Vieve Gore School of Business, Westminster College, Salt Lake City, Utah (2020), rhaskell@westminstercollege.edu.

process using a changing rate starting with a guess and repeating the process until NPV = 0. $NPV = 0 = \sum_{i=1}^N \frac{CF_i}{(1+r)^t}$

Net Present Value = $NPV = \sum_{i=1}^N \frac{CF_i}{(1+r)^t}$

XNPV and XIRR These measures take into account date specific elements of NPV and IRR and provide more accurate values when cash flows occur irregularly or at multiple times during a given period

XNPV =
$$\sum_{i=1}^N \frac{P_i}{(1+r)^{\frac{d_i-d_j}{365}}}$$

XIRR Is the actual return on investments. XIRR stands for Extended Internal Rate of Return is a method used to calculate returns on investments where there are multiple transactions happening at different times. Like IRR it is an iterative process. XIRR is the date specific IRR resulting when $XNPV = 0 = \sum_{i=1}^N \frac{P_i}{(1+r)^{\frac{d_i-d_j}{365}}}$

Peak Investment = $\sum_{MAX} \text{Equity Investor Capital Contributions}_i$

This is equal to the highest level of investment from equity investors. It is the likely the amount equity investors have contributed before beginning to see cash flows returned to them

Total Exit Proceeds = *Exit Sales Price – Closing Commissions – Selling Costs*

Net Unlevered Cash Flows = *NOI – (Acquisition Costs + Capital Expenditures + Asset Management Fees + Tenant Improvements) + Total Exit Proceeds*

Net Levered Cash Flows = *Net Unlevered Cash Flows – Debt Service – Loan Origination & Appraisal Fees*

Cash-on-Cash Return Cash-on-Cash Return is the return an investor may achieve based on their receipt of the investment’s proportional cash flows as a percentage of the equity (cash) they invested in a given project. It may be calculated for a specific period or on an average annual basis

Period Specific Cash-on-Cash Return = $\frac{\text{Annual Pre-Tax Cash Flow}}{\text{Total Equity Invested}}$

Average Annual Cash-on-Cash Return = $\frac{\frac{\text{Total Pre-Tax Cash Flow}}{\text{Project Duration (yrs)}}}{\text{Total Equity Invested}}$