REAL ESTATE INSIGHTS

THE BOTTOM LINE

Real Estate Performance Measurement

FIRST ISSUE

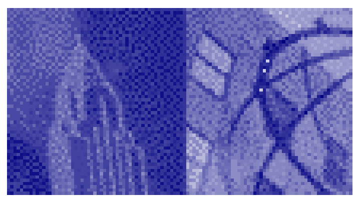
FEBRUARY 2002

INSIDE THIS ISSUE:

TWR or IRR?

I'm not going to debate which one is right or which one is better. Nor will I harp on the shortcomings of each. Instead I will focus on what they are, how they are used and the story they tell.

The Time-Weighted Return (TWR) is currently the industry standard for performance calculations and presentation for stocks, bonds and real estate. This is clearly stated in the AIMR-PPS™ (Association for Investment Management and Research Performance Presentation Standards) and GIPS (Global Investment Performance Standards). TWR is a period-to-period return that is geometrically linked (compounded) to compute a holding period return. It represents the growth rate of a single dollar invested. Therefore the amount of money invested and the timing of when returns are earned has no impact on the TWR. For example, a $1 billion portfolio (Fund A) earning quarterly returns of 2%, 2.5%, 3% and 10% has the same return as a $1 dollar portfolio (Fund B) earning returns of 10%, 2.5%, 3% and 2%.



Visit www.realestateinsights.com

The Dollar-Weighted Return (IRR) is also sited in industry standards. Per the AIMR-PPS™, it is the standard for venture capital. The IRR is a holding period return. The Internal Rate of Return (IRR) represents the average growth rate of all dollars invested which causes the sum of the present values of all cash flows associated with an investment to be zero. The IRR is impacted by the size and timing of cash flows. In the above example, Fund A and B would have very different IRR's.

So what's the Bottom Line? Generally, the TWR is a measure of a manager's investment decision making. This is useful when you are comparing the performance of

(Continued on page 2)

Behind the Scenes

Assume you're reading a quarterly or annual report. There's probably lots of discussion, charts, footnotes and disclosures. But what is the one thing you focus on and always remember? Returns!

Have you ever asked yourself what it really takes to calculate a return? Trust me; it's not as easy as you think. Calculating returns is an art not a science. Yes there are industry standard formulas such as the NCREIF (National Council of Real Estate Investment Fiduciaries) property level or the Modified Dietz investment level formula, but there are lots of nuances that you may not be aware of. There are lots of rules, and there are lots of exceptions to the rules. There are standards, but the standards change. It is therefore difficult to build an automated system that is all encompassing, flexible, and accurate. No wonder many are using spreadsheets to get the job done.

Most of the issues relate to Time-Weighted Returns because they are based on accrual market value accounting and require frequent revaluing (appraisal) of the property or portfolio. The TWR also requires a numerator (return) and a denominator

(Continued on page 2)

BASIS POINTS (TID BIPS)

1. Joe D'Alessandro will be teaching the Performance Measurement Workbook Seminar on February 27th at the NCREIF Conference in Snow Bird, Utah.
2. The comment period for the proposed Addition of Real Estate Provisions and Guidance to the GIPS™ Standards closed on December 31, 2001. Fifteen comments were received. Responses can be viewed at http://www.aimr.org/standards/issues/re_comments.html. The sub-committee will be reviewing the comments shortly.
3. The Real Estate Information Standards as published by NCREIF, PREA and NAREIM are in the process of being re-drafted. Drafts are anticipated to be circulated for comment in the near future.
4. For further updates, visit www.realestateinsights.com.

TWR or IRR?

(Continued from page 1)

Manager A and Manager B (note that the IRR may also be a meaningful comparison in certain circumstances). Generally, the IRR is a true measure of the investor's return.

Depending on the circumstance, one may be a better measure than another. In evaluating managers in an RFP, the TWR may be more appropriate. In negotiating an incentive fee contract tied to performance, an IRR may be more appropriate.

The Bottom Line is that both returns are meaningful and both have a story to tell.

Behind the Scenes

(Continued from page 1)

(investment) to be calculated. The complications are almost always in the denominator, because an "average investment" is desired. It's no wonder many like the simplicity of the Dollar-Weighted Return (IRR). All you need are cash flows (in's and out's) and one ending market value and either an HP-12c or a PC.

Whether you're using the TWR or the IRR, however, there are issues that need to be addressed. Partial Periods (acquisition and disposition) is one such issue. Assuming that you report quarterly, if you acquire a property or start a portfolio in the middle of a period, lets' say on January 15th, should you calculate a return for the entire quarter or only for the time subsequent to January 15th? Depending upon your answer, you must properly "tweak" the formula to calculate the right return. For the TWR that means the denominator is adjusted. For the IRR it means the initial cash flow is adjusted, unless you use the daily IRR method of calculation. The same applies for back-end (disposition) partial periods. For composites, however, both the front-end and back-end partial periods are usually ignored. Did you follow all that?

"If you're using spreadsheets for return calculations and composites, you should be using pivot tables"

Just to name a few, there are also issues in calculating before and after fee returns, de-levering levered returns, and calculating joint venture returns for complex structures with general and limited partners and preference distributions. And that's not the end of it. After calculation, there are presentation and disclosure issues. In certain cases the disclosures required by AIMR, may be different than those required by NCREIF, may be different than those required by the SEC, which may be different than those required by consultants in RFP's. Sound confusing?

From start to finish, the procedure is generally not efficient. There are ways, however to improve the process and ultimately the quality and timeliness of performance reporting. You might consider more education and training, better documentation of procedures, enhanced analytics, and comprehensive checklists. And last but not least, the creative and efficient use of technology. For example, if you're using spreadsheets to calculate and composite returns, you should be using pivot tables. Pivot tables allow you to easily summarize data without creating and maintaining cumbersome formulas.

The Bottom Line is that the next time you look at a performance return, take a moment and think about all the complexities behind the scenes.

Performance Scorecard

The broad NCREIF Property Indexes (NPI, Property Types, and Regions) , which are operating property level un-levered before advisory fee total returns, compared favorably to other asset class industry benchmarks as of December 31, 2001. Risk measures are presented, however, they may not be comparable due to appraisal based pricing for private equity real estate vs. transaction pricing for publicly traded securities.

1 YR	Index	3 YR	5 YR	10 YR	Annual High	Annual Low	Standard Deviation	Sharpe Ratio
13.9%	EQUITY REIT	11.2%	6.4%	11.6%	35.3%	-17.5%	14.5%	0.7
9.5%	Apartments	11.4%	12.2%	10.6%	14.1%	1.7%	3.4%	2.6
9.4%	Industrial	11.7%	13.3%	9.3%	15.9%	-4.5%	6.6%	1.1
8.2%	East	11.1%	12.7%	8.2%	16.1%	-5.1%	6.0%	1.0
8.1%	West	12.1%	14.1%	8.6%	18.2%	-6.2%	7.7%	0.9
7.4%	**NPI**	10.3%	12.2%	8.1%	16.2%	-4.3%	5.8%	1.1
6.8%	Retail	8.0%	9.1%	6.2%	12.9%	-2.2%	3.8%	1.1
6.8%	South	8.3%	10.4%	8.0%	15.7%	-1.9%	4.2%	1.4
6.4%	Office	10.9%	13.9%	7.9%	19.6%	-8.0%	8.6%	0.7
5.4%	Midwest	8.1%	10.0%	7.3%	13.5%	-1.2%	4.1%	1.3
1.6%	CPI (Inflation)	2.5%	2.2%	2.5%	3.4%	1.6%	0.6%	0.8
-3.3%	Hotels	5.5%	12.1%	11.4%	30.5%	-2.3%	10.9%	0.9
-7.1%	DOW JONES	3.0%	9.2%	12.2%	33.5%	-7.1%	13.4%	0.8
-13.0%	S&P 500	-2.3%	9.2%	10.7%	34.1%	-13.0%	16.0%	0.5

Data Sources: NCREIF , NAREIT, US Bureau of Labor Statistics, Dow Jones and S&P. Analysis: Real Estate Insights.

Performance Scorecard (As of 12/31/01)

1 YR	NCREIF Sub-Index (Property Type & Division)	3 YR	5 YR	10 YR	RISK MEASURES High	Low	Std Dev	Sharpe
12.1%	Apartments Mideast	**14.3%**	**13.9%**	**11.0%**	15.8%	1.3%	3.9%	2.3
12.1%	Industrial Mideast	**11.9%**	**13.5%**	9.5%	16.2%	-5.3%	6.2%	1.2
11.3%	Apartments Pacific	**14.1%**	**18.2%**	**12.4%**	25.5%	-3.5%	8.9%	1.2
10.7%	Industrial Pacific	**14.1%**	**15.9%**	10.1%	19.5%	-6.8%	9.0%	0.9
10.5%	Retail Pacific	10.7%	11.5%	**6.9%**	15.3%	-5.8%	5.6%	0.9
10.3%	Industrial Northeast	**13.8%**	**14.3%**	9.3%	16.4%	-3.8%	6.9%	1.1
10.1%	Industrial Southwest	10.1%	11.4%	**10.2%**	14.0%	1.4%	3.4%	2.4
9.6%	Apartments Northeast	**12.7%**	**15.0%**	**12.8%**	21.8%	1.4%	5.0%	2.1
9.1%	Office Mideast	**12.0%**	13.1%	8.7%	15.6%	-2.3%	5.7%	1.2
9.0%	Retail Southeast	8.3%	**9.6%**	**7.3%**	18.1%	1.2%	4.2%	1.3
9.0%	Apartments Southeast	10.3%	10.5%	**10.3%**	14.0%	4.2%	2.4%	3.5
8.8%	Apartments Southwest	8.9%	**9.5%**	8.7%	12.4%	3.1%	2.2%	3.1
8.5%	Apartments Mountain	9.8%	**9.6%**	**11.2%**	19.5%	7.6%	3.6%	2.6
8.4%	Industrial Mountain	10.0%	12.3%	**10.7%**	18.7%	0.3%	5.2%	1.7
7.9%	Retail West North Central	9.3%	**9.3%**	7.9%	11.0%	3.8%	2.2%	2.7
7.8%	Industrial East North Central	8.8%	9.8%	7.7%	11.6%	-0.5%	4.1%	1.4
7.7%	Office Northeast	**12.4%**	**15.6%**	8.5%	20.9%	-14.7%	10.1%	0.6
7.4%	**NPI**	10.3%	12.2%	8.1%	16.2%	-4.3%	5.8%	1.1
7.1%	Retail Southwest	8.6%	**9.6%**	**5.5%**	14.2%	-3.6%	5.0%	0.7
6.8%	Industrial West North Central	10.9%	12.3%	9.0%	17.3%	-3.2%	5.4%	1.3
6.4%	Apartments West North Central	**11.0%**	12.7%	**12.8%**	17.7%	6.4%	3.6%	3.0
6.3%	Office Pacific	**13.7%**	**17.0%**	8.4%	23.1%	-9.4%	11.7%	0.5
6.0%	Apartments East North Central	10.3%	11.9%	**10.5%**	15.2%	3.5%	3.6%	2.3
5.7%	Retail Northeast	**6.2%**	**8.5%**	**5.7%**	12.3%	-0.5%	3.8%	1.0
5.5%	Hotels Mideast	10.9%	**17.0%**	**13.2%**	31.5%	-2.1%	11.0%	1.0
5.4%	Retail Mountain	7.6%	**8.2%**	**6.0%**	9.7%	-6.7%	4.6%	0.9
5.3%	Office East North Central	8.4%	11.5%	**6.6%**	16.5%	-4.4%	7.2%	0.6
5.2%	Office West North Central	**7.0%**	10.2%	**6.4%**	17.6%	-7.8%	6.9%	0.6
5.1%	Office Southwest	**6.7%**	**13.7%**	**7.6%**	27.0%	-8.4%	10.0%	0.6
5.1%	Industrial Southeast	**7.4%**	**9.6%**	8.3%	14.4%	-3.7%	4.9%	1.3
4.7%	Retail Mideast	**7.5%**	**7.5%**	**5.3%**	11.7%	-2.2%	3.7%	0.9
4.0%	Office Southeast	**7.5%**	10.6%	8.2%	15.9%	-9.8%	7.5%	0.8
3.6%	Office Mountain	8.7%	12.0%	7.9%	19.4%	-7.2%	8.7%	0.7
3.6%	Retail East North Central	**6.1%**	**7.3%**	**5.6%**	9.5%	-0.4%	2.9%	1.2
-0.4%	Hotels Pacific	**5.2%**	NA	NA	8.5%	-0.4%	NA	NA
-0.8%	Hotels Northeast	9.0%	NA	NA	16.0%	-0.8%	NA	NA
-7.9%	Hotels Southwest	**4.4%**	NA	NA	22.0%	-7.9%	NA	NA
-13.6%	Hotels Southeast	**-1.4%**	NA	NA	17.3%	-13.6%	NA	NA
-14.2%	Hotels East North Central	NA	NA	NA	-14.2%	-14.2%	NA	NA

Data Sources: NCREIF . Analysis: Real Estate Insights.

1) Returns are total return, property level, before advisory fee, presented on a time-weighted annualized (geometric average) basis.
2) All property type/division sub-indexes are represented except for Hotels in the West North Central and Mountain divisions.
3) Returns in bold-only indicate a top 10 ranking; returns in bold-and-shaded indicate a bottom 10 ranking, for the respective periods.
4) The High and Low returns are based on annual returns.
5) Standard Deviation and Sharpe Ratios are based on 10 year annual returns only. The Sharpe Ratio assumes a 2% risk-free rate.

Real Estate Insights

875 Lawrenceville-Suwanee Rd.
Suite #310 PMB 131
Lawrenceville, GA 30043

Phone: 404-395-4498

Email: JoeD@realestateinsights.com

Performance Measurement Made Easy!

VISIT WWW. REALESTATEINSIGHTS. COM

Real Estate Insights Performance Measurement

SERVICES?
Training, Consulting, & Outsourcing

WHO?
Advisors, Plan Sponsors (Investors), Consultants, Software Vendors, and all other Real Estate Industry Professionals

WHAT?
AIMR / GIPS / NCREIF Compliance, RFP's, Research, Benchmarking, Incentive Fees, Analysis, Calculations, Spreadsheets / Systems, and Special Projects.

February 2002

Dear Real Estate Professional:

I hope you find *The Bottom Line - Real Estate Performance Measurement* newsletter informative, useful and entertaining. If there are any subject matters you would like me to address or if you would like to contribute to future newsletters, or advertise, please contact me. You can reach me by phone at 404-395-4498, or by e-mail me at JoeD@realestateinsights.com, or by my web site at www.realestateinsights.com.

I'm always looking for ways to improve, so if you have any feedback, whether positive or negative, please let me know. I look forward to hearing from you.

Best regards,

Joe D'Alessandro

Joe D'Alessandro

Ode to Returns

Performance returns are the ultimate measure,
Of how well one does managing the treasure.

Sounds simple - So what's all the fuss?
Read on, read on, read on you must!

The formulas, calculations and rules are a mess,
The terms, lack of standards and issues add to the stress!
IRR's or TWR's, which one is right?
Leverage, Un-leveraged, Before or After Fee
Are you beginning to see the light?

How could such a number be so sly?
Who uses it? How, When and Why?

Marketing does for RFP's.
Investors for benchmarking and incentive fees.
Senior Management for KPI,
(To equitably "divi-up" the bonus pie),
Research for analyzing historical trends,
Portfolio Management for strategic property & region blends,
And last but not least, NCREIF and AIMR,
Who are they anyway?

The Bottom Line – Returns can make or break your day!