



---

## Real Estate Investment Newsletter – January 2004

---

### **Primer for Calculating Real Estate Returns**

Thanks to the huge number of real estate books out there that explain various aspects of real estate investing, most of you will have a decent understanding of the basics of investment real estate. The subject of this month's newsletter, measurement of real estate returns, is a bit more quantitative than what you'll find in most real estate books. My discussion of returns is divided into the two major components of return: cash flow and equity buildup. After I've defined these terms, we'll look at how to go about estimating returns for a potential investment.

#### **Cash on Cash Return**

"Cash on Cash" return is a frequently used measure of real estate performance. Essentially this return is calculated by dividing the property's free cash flow (after debt service) in the first year of ownership, by the initial cash invested. Note that this definition is a bit ambiguous. Some people may choose to include the cash set aside for capital replacement in the free cash flow while others may exclude it to get a better measure of the "spendable" cash on cash. (I prefer the later approach because I believe it provides more useful information). Note that this is calculated without taking into account income tax liabilities. Cash invested is also subject to some wiggle room. Most would simply use the total cash required to close escrow. I prefer to add in the working capital needed to actually operate the property without bouncing checks.

Cash on cash is useful (especially if there is no tax liability) because it helps retired investors, who are focused on current cash flow, to choose those properties that will meet their needs. For example, if you have \$1,000,000 to invest and you know you want at least \$80,000 (pre-tax) cash flow to live on, then you would look for a portfolio of property that could generate cash on cash of at least 8% (= 80,000/1,000,000).

### **Equity Buildup**

While cash flow return is often of prime importance for many investors, the portion of returns that come in the form of equity buildup should also be considered. When you buy a property and mortgage it to do so, your equity in the property is simply its value minus the amount of loan owed. As time goes by, the loan amount is reduced by payments from the property's cash flows. If you've chosen the property and its management well, the property value will also be appreciating. Both loan repayment and appreciation serve to increase your equity in the property. This increase must be added to the year's cash flows to calculate the total return for the year. Total Return is defined as a percentage of the original investment cash. Thus you divide the combined cash flow and equity buildup by the starting equity (including working capital) to express it as a percentage return. This measure is useful for measuring the economic gains per dollar invested to see where you are maximizing returns and where returns are below requirements.

### **Taxation**

So far we haven't taken account of taxes; we've only looked at pre-tax returns. If you have taxable income, and therefore pay taxes, it's important to realize that different types of real estate deals have very different effective tax rates. Since we are most interested in what we get to spend, after-tax returns are the true measure of investment performance. This will be specific to each investor's tax situation.

### **Multi-year Returns**

Things get a bit more complicated when you want to calculate returns on equity over multiple years. Convention is to calculate compounded returns so as to standardize return calculations to an annual basis. As your equity builds up in the property (due to appreciation and loan repayments) it increases your capital invested and therefore if dollar returns were to stay constant, the percentage Return On Equity (ROE) would decline ( $ROE = \frac{\$ \text{ return}}{\text{beginning equity}}$ ). You must also take into account inflation in a multi-year analysis. Rents and expenses will go up while loan payments stay fixed. Also, each year the portion of loan payments that reduce principal will increase and interest deductions will decrease. Meanwhile depreciation deductions stay fixed. All of these things interact in complex ways, but in general – you can expect ROE to decline slightly through time. At some point you need to refinance to pull out excess capital and reinvest it elsewhere to keep your returns up. The overall compounded return over a number of years is the constant return on each year's invested amount that yields the

total of after-tax cash flows and equity build up over the holding period. This is best calculated using an excel spreadsheet.

### **Estimating Returns and Comparing Deals**

Now that you know what we need to measure, we'll discuss how to estimate future returns on a potential investment property so that it can be compared to alternative choices.

#### **Income**

The starting point is current gross potential income. Use actual rental rates for occupied units and market rent rates for current vacancies. Ideally you would have information on lease expirations and be able to project rents going to market at the end of lease terms. Beyond year 1 you need a forecast of rent increases. In the absence of specific factors, rents rising at the inflation rate is a reasonable assumption. You cannot raise rents in excess of inflation no matter what the local demand-supply balance if your property is subject to rent control.

Rents actually collected will be reduced by both vacancy and rental concessions, if any. Use market wide vacancy but adjust it if the property has below market rents or some features that make it either inferior or superior at attracting tenants. In some markets competitive conditions require that new tenants receive a month or more of free rent when moving in (and signing a lease). You must know the standard rent concession and apply it to your forecast of unit turnover to determine the concessions' effect on collected rents. You should also consider uncollectible amounts from tenants – especially when competition forces deposits to very low levels. Subtracting the uncollectible amounts from potential gross income gives you an estimate of Effective Gross Income (EGI).

#### **Expenses**

Next, you'll need to estimate expenses. The key thing I want to convey here is that you must do a reality check on any information you get from the seller's agent. Except in rare cases, where lousy management has bloated expenses beyond reason, (and they actually disclose these costs) expenses disclosed will not reflect your true post-purchase expenses. For example, both property taxes and insurance are based on the value of the property. Presumably the seller has made a significant gain and therefore the implication is higher costs once your purchase closes.

Most investors will find that their time is worth more than the cost of hiring management. While management cost is often left out of sellers' disclosures (presumably they manage it themselves and their labor is worth nothing), you should be sure to estimate some cost. In most cases, 8% of EGI

will be sufficient. Try to get actual historical costs for utilities, repairs, capital replacements, and other expenses. You should expect a property with separate utility meters to have expenses in the range of 40-50% of EGI. Mass metered units will have much higher utility costs.

### **Financing Costs**

Subtracting our expense estimates from EGI gives us the property's estimated Net Operating Income (NOI). Generally banks will set loan underwriting standards to limit the loan offered to the smaller of 80% of purchase price/value (whichever is lower) or the largest loan such that NOI is 120% of debt service payments. Use these underwriting rules to check to see how much loan to expect. Use market rates and fees for loan costs. You should use at least a 5 year fixed rate for your analysis. The amortization period is also important for calculating loan payments. While apartments can generally qualify for 30 year amortization, commercial properties will receive amortization commensurate with either the estimated remaining useful life of the property or the term of the lease. Together, rate and amortization period determine loan payments.

### **Income Taxes**

Once you know cash flows after financing costs, its time to estimate income tax expenses related to the property. In order to calculate taxable income on real estate you must subtract interest expense and depreciation from the property's NOI (un-levered cash flow). The depreciation deduction is a non-cash expense that you use to shelter cash flows from taxation. In the U.S., the amount depends on how much of value is attributable to the building (as opposed to the land under the building) and the depreciation period. For apartments the period is 27.5 years. For commercial buildings it is 39 years. In Japan the material used to construct the building and the year built determine the depreciation period. Wooden apartments are considered to have a life of **20** years from the year built and so a building is depreciated over the remainder of the **20** years (subject to a minimum depreciation period of 4 years).

Once you have calculated taxable income of the property, you apply your marginal<sup>1</sup> tax rate to determine how much tax liability you must subtract from pre-tax returns to calculate after-tax returns. Note that this calculation does not take into account any taxes that would be payable if you sold the property. Since these taxes can generally be avoided, I assume you'll do so. Otherwise you'll have to do a more complex tax calculation for the year of disposition.

---

<sup>1</sup> Marginal means the percentage tax you pay on the *next* dollar of taxable income.

### **Investment Balances: Equity and Reserves**

So far we've estimated after-tax cash flows. Now let's look at the investment balance sheet. Since you've estimated your loan amount, you also know your down payment requirement. Your total initial investment will also include closing costs and working capital (unless you're buying a triple net lease deal). Depending on the size of the transaction and the number of inspections you do, closing costs will range from 2-3% of asset value. It will be less if you forgo bank financing. For apartments figure 2% of asset value for working capital. Add it all up to get your initial investment. This is the basis on which you calculate returns.

When calculating each year's return you must use that year's beginning equity in the property. Because this grows through time, returns tend to drop unless after-tax cash flow and appreciation (in dollar terms) increase at the same rate that equity builds up.

You will also build up reserves for capital expenditures. If these are in excess of actual deterioration, they will add to equity – otherwise they can be ignored in forecasting returns.

Note that closing costs are transaction costs that do not add to the value of a property. They essentially reduce first year returns. These costs, along with the costs of selling, are why it usually makes sense to plan on holding a property over a relatively long holding period.

### **Reinvestment**

Eventually the equity in the property grows to the point where the returns to be had by pulling out money via refinancing or selling, outweigh the transaction costs. To be complete in your analysis of a property's returns, you must forecast this event and account for the refinancing cash flow net of transaction costs.

Sometimes it will be optimal to actually sell a property and reinvest the proceeds elsewhere. Disposition will cost 5-6% of the asset value (which corresponds to an even larger chunk of your equity). If you follow the tax rules to get exchange treatment for the reinvestment, you won't pay any taxes on the sale. If you don't do an exchange, you'll pay taxes at ordinary income rates (high) on all the depreciation you previously claimed on the property and federal capital gains rate on the rest of the gain (appreciation). On top of that, state taxes may apply.

### **Appreciation**

When forecasting appreciation on apartments or other commercial property, bear in mind these are not single family homes (or internet stocks)

where the prices can be totally disconnected from future cash flows<sup>2</sup> for more than a few years. It is useful to think of value as a function of NOI and Capitalization Rate (Cap Rate). I.e. Value = NOI/Cap Rate.

Cap Rates are heavily influenced by financing rates because the majority of purchase price usually comes from the bank. As a consequence, Cap Rates have followed mortgage rates down to historically low levels. In my view, mortgage rates and Cap Rates are very likely to drift back up over a period of years as inflation increases from unacceptably low levels (current Federal Reserve policy is to raise the inflation rate). Thus, over a 10 year horizon, you should expect to see your selling Cap Rate higher than your buying Cap rate. This will tend to push the price down. Of course the impact of rising inflation on NOI works in the opposite direction so that you still should get decent appreciation. My point is that it's worth explicitly taking both factors into account when forecasting long run returns.

### **Conclusions**

Understanding returns on real estate is the basis for making informed investment decisions. If you can be disciplined in using this type of analysis, you will invariably make better decisions and so accumulate wealth faster than if you rely on intuition or incomplete analysis.

### **Featured Investment Opportunity**

This Taco Bueno restaurant was built last year in Ponca City Oklahoma and leased for 20 years under a triple net lease. Based on the asking price of \$1,000,000 the required investment is \$265,000. Rent starts at \$85,000 annually (Cap Rate = 8.5%) and rent increases 1% every year. The tenant is a privately held 120 store Mexican food chain concentrated in Oklahoma and Texas. The property is located next to a Wal-mart Supercenter; the population within 5 miles is 29,000. I estimate cash on cash at 9.7% and return on equity over 10 years at 13% compounded annually.

### **Contact Information:**

[RayMeadows@BerkeleyInvestment.com](mailto:RayMeadows@BerkeleyInvestment.com)

Tokyo phone: (080) 3122-9601

San Francisco phone (510) T367-3280

---

<sup>2</sup> Except, perhaps, in California.