

Topic 18: Real Estate Investment – A Brief Introduction

(Copyright © 2024 Joseph W. Trefzger)

Economists define investing as the purchase of productive assets by businesses (households *save*, businesses *invest*). But more informally we say that investing occurs when an institution or individual gives up something of value today, in return for the expectation of getting back something even more valuable in the future – perhaps through buying income-producing real estate. The importance of real estate investing to the American economy rivals that of the stock market; the value of U.S. income-producing real estate is in the multi trillions of dollars. As measured over recent decades, real estate generally has provided lower average returns, but at lower average risk, than has a diversified portfolio of corporate common stock. Real estate sometimes is described as a form of *alternative* investment (along with derivative instruments and such commodities as oil, gas, and metals) because its returns historically have not tended to closely mirror those of stocks and bonds. One reason is thought to be that leases on income-producing real estate typically run for multiple years, so the cash flows generated largely are determined far in advance, and thus independently of the economic conditions that prevail during the lease periods. A fairly new real estate investment opportunity is the ability to speculate on the housing market with futures and options contracts, based on a popular index of home values. Other somewhat recent developments in the real estate investing arena have included real estate investment trusts (REITs), which promote diversification and liquidity, and the secondary mortgage market, which has provided the foundation for many new investment products (and hedging instruments as well), through collateralized mortgage obligations (CMOs) and other mortgage-backed investment instruments. Of course, these mortgage-related products were controversial in the financial market turbulence of the 2000s decade.

Much of the focus of this discussion, however, is on the financial aspects of direct or indirect “bricks and mortar” investing in equity (ownership) positions in income-producing buildings by *individual* or *institutional* investors. (The long life of improved real estate has made real estate equity an effective investment for institutional investors with long-term horizons, especially pension funds and life insurance companies – which, in the Amazon/Zoom era, have shifted from some of their traditional holdings of retail and office buildings to owning more warehouse and residential property.) Foreign investors have long sought income-producing properties in the U.S. because of our strong economy and political stability, although Chinese interest in the U.S. market, which was strong pre-Covid, has declined because of reduced demand for office space and hotel rooms, along with strained political relations between the two countries. In the pages that follow we address some important historical and conceptual aspects of real estate investment, along with some basic computational issues.

I. Fundamentals of Real Estate Investment

[This discussion should be seen as a simplified general overview of the real estate investment process, certainly not as a how-to guide. Among complications an actual investor would face are projecting revenues, vacancies, and operating costs; and predicting income tax that will be owed, which is affected by matters that include whether other portfolio holdings generate active vs. passive real estate income, and whether the payment of taxes on capital gains can be deferred.] An individual or institutional investor that buys (takes an equity interest in) an office building, apartment building, or other type of income-producing real estate traditionally has been pursuing the wealth-maximization strategy discussed in other finance courses, by seeking financial benefits in the form of:

A. Expected yearly (or other periodic; specialized real estate investment software packages typically track revenues and expenses monthly, with annual summaries) *after-tax cash flows* (ATCFs), the amounts expected to be left from rental revenues after operating expenses, loan payments, and income taxes have been met. ATCF is computed as:

- = Potential gross income (PGI, all rent that would be collected for the year/other period if all units were occupied and all rents paid)
- Expected losses from vacancies and uncollectible rents, which are affected by rent levels, age of improvements, and other issues
- = Effective gross income (EGI, rent revenue the analyst realistically expects the property actually to generate)
- Operating expenses (includes expected managers’ salaries, maintenance/repair costs, insurance, utilities, local property taxes)
- = Expected net operating income (NOI, cash remaining to compensate the lender/debt investor and the owner/equity investor)
- Debt service (principal and interest payments on loans, which constitute cash flow to the debt investor)
- = Expected before-tax cash flow to the equity investor (BTCF, also called the “equity dividend”)
- Income tax owed by the equity investor (affected by depreciation and by interest, but not principal, portion of debt service)
- = Expected after-tax cash flow to the equity investor (ATCF)

B. An expected eventual *after-tax equity reversion* (ATER), the amount (selling price net of selling expenses, loan principal repaid, and capital gain tax) received when the investment period ends and the property is sold. This component of the expected investment return is, obviously, higher if the property is expected to appreciate in value during the holding period. (Alternatively, we might note that an investor can justify paying a higher price, relative to the expected stream of annual

after-tax cash flows, if appreciation in value is expected to provide part of the owner's average periodic rate of return on equity.) In recent decades, real estate has come to be viewed as an "inflation hedge," in that many properties' nominal values have tended to rise with increases in the general price level (with increases in land, construction material, and construction labor prices – but be cautious about an investment that seems attractive only because someone recommending it projects an especially high reversion value many years into an uncertain future). ATER is computed as:

- Gross selling price expected
- Anticipated selling expenses (brokerage and legal costs)
- = Net selling price expected (NSP)
- Repayment of loan principal that will be owed
- = Expected before-tax equity reversion (BTER)
- Anticipated capital gain income tax owed by equity investor (based on NSP – [owner's investment – total depreciation claimed])
- = Expected after-tax equity reversion (ATER)

The entire debt service payment reduces the equity investor's yearly ATCF, yet only the interest portion reduces the income on which the equity investor pays tax. So interest paid reduces ATCF but with an attendant income tax savings that offsets part of the burden, while principal repaid reduces ATCF without generating an income tax savings. Think of possible tradeoffs. An amortizing loan's principal repaid each year generates no income tax benefit, and the amount of tax-saving interest paid declines with each passing year – but then the ATER will be higher, because principal remaining to repay from the net selling price will be less. An interest-only loan's entire annual payment would be deductible, and annual ATCFs would be higher than in the amortizing loan case, but because no principal would be repaid year by year the ATER would be smaller. Time value of money considerations might seem to argue for an interest-only loan, through which principal repayment has a bigger negative impact on the distant future ATER rather than on the more immediate yearly ATCFs. But an interest-only loan likely would carry a higher interest rate to reflect greater default risk perceived by the lender.

So we see that interest paid is a real cash outlay that at least reduces the equity investor's yearly income tax, and principal repaid is a real cash outlay that does not reduce income tax. Depreciation (recognition that the purchased improvements lose value over time), on the other hand, is *not* an actual cash outlay in the year to which it is applied, but it does reduce each year's income tax for the equity investor – yet because those deductions reduce the owner's basis in the property they increase the capital gain recognized on resale, and thus increase income tax paid in the year the investment terminates.

C. Enhancement to Wealth: A Quick Review of Net Present Value and Internal Rate of Return

The ATCFs and ATER provide the foundation for evaluating real estate investments with the same discounted cash flow analytical techniques – net present value (NPV) and internal rate of return (IRR) – employed in corporate investment analysis. With these techniques we look explicitly at each year's cash flows to the equity investor, rather than using a single year's expected Net Operating Income (which includes compensation for the owner and lender alike) as a proxy for expected benefits over a multi-year period, as we did in computing value with direct capitalization in our appraisal coverage. [We still might estimate the gross selling price expected at the end of, *e.g.*, a 5-year investment holding period by estimating year 6's NOI and dividing it by a "going-out" capitalization rate (likely higher than the "going-in" cap rate an appraiser would apply to year 1's expected NOI in computing a fair price to pay today, to reflect the greater risk of predicting what might happen many years down the road – indeed, higher discount rates are always used when the possible cash flows are more uncertain). In fact the analysis could be based on five years even if the investor expected to hold the property for more than five years, because the expected year-6 NOI divided by the going-out cap rate should be the expected value (paid for with equity and debt money) at the end of year 5 for a new buyer, or the total property value at the end of year 5 for a current owner who might be expected to decide to keep the property: the PV at that time of subsequent years' expected benefits.]

Recall the general discounted cash flow-based asset value equation. Under traditional financial applications, the value of a financial asset (CF_0 , the amount a buyer would be willing to pay today, with today being the end of time period 0) can be computed as the sum of the present values of the cash flows the asset is expected to generate for its owner over a holding period that runs for n periods, meaning further cash flows are expected in periods 1 – n (though the CF expected in one or more of those latter periods could be \$0, or even negative):

$$V_{\text{Asset}} (= CF_0) = CF_1 \left(\frac{1}{1+r} \right)^1 + CF_2 \left(\frac{1}{1+r} \right)^2 + CF_3 \left(\frac{1}{1+r} \right)^3 + CF_4 \left(\frac{1}{1+r} \right)^4 + \dots + CF_{n-1} \left(\frac{1}{1+r} \right)^{n-1} + CF_n \left(\frac{1}{1+r} \right)^n$$

$$= \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \frac{CF_3}{(1+r)^3} + \frac{CF_4}{(1+r)^4} + \dots + \frac{CF_{n-1}}{(1+r)^{n-1}} + \frac{CF_n}{(1+r)^n}$$

(the second version is just a bit of a visually streamlined form of the first one). This equation provides the thought model

for computing stock and bond values under the traditional methods you have seen in corporate finance or investments classes, although in most stock or bond examples you were able to do more efficient computations, bringing *groups* of cash flows back to present values together rather than dealing with the PV's of individual cash flows, because the interest or dividend payments were modelled as following convenient patterns. With typical coupon-paying bonds, for example, we can group the stream of equal coupon payments together, but must consider the maturity value's PV separately because it is the only dollar amount of that magnitude, not part of a group of equal payments:

$$V_{\text{Bond}} = \text{Regular Coupon Payment} \left(\frac{1 - \left(\frac{1}{1+r}\right)^{n-1}}{r} \right) + (\text{Regular Coupon Payment} + \text{Big Maturity Value}) \left(\frac{1}{1+r}\right)^n \quad \text{OR}$$

$$V_{\text{Bond}} = \text{Regular Coupon Payment} \left(\frac{1 - \left(\frac{1}{1+r}\right)^n}{r} \right) + \text{Big Maturity Value} \left(\frac{1}{1+r}\right)^n$$

(In computing bond value we more typically group the last coupon payment with the other coupon payments rather than combining it with the maturity value; in effect we think of getting two separate smaller payments rather than one combined larger payment on the maturity date. The same answer is computed either way, but we prefer the visual on the second of the equations above; it reminds us of how a financial firm might buy bonds and *strip* them: selling the right to receive the coupon payments to an investor that wants regular inflows, like a charitable trust, and selling the right to the maturity value to an investor that favors getting one large future payment, like a life insurance company or pension fund – note that the right to collect the maturity value by itself is essentially a zero-coupon bond.)

[Recall that $\left(\frac{1}{1+r}\right)^1 + \left(\frac{1}{1+r}\right)^2 + \dots + \left(\frac{1}{1+r}\right)^{n-1} + \left(\frac{1}{1+r}\right)^n = \left(\frac{1 - \left(\frac{1}{1+r}\right)^n}{r}\right)$. The PV of a level ordinary annuity factor is just the sum of the PV of \$1 factors for the same discount rate and number of time periods; the *distributive property* allows us to group equal payments together, when we compute, rather than having to add together individually discounted expected cash flows. In bringing different, unrelated cash flows back to a total PV we must discount each expected CF separately, and can not use the PV of an annuity factor, because the distributive property does not work with different, unrelated dollar amounts.]

This general equation, which should guide our thinking in all asset valuation applications, shows us where the Net Present Value equation comes from:

$$\begin{aligned} \text{NPV} &= \text{CF}_0 \left(\frac{1}{1+r}\right)^0 + \text{CF}_1 \left(\frac{1}{1+r}\right)^1 + \text{CF}_2 \left(\frac{1}{1+r}\right)^2 + \text{CF}_3 \left(\frac{1}{1+r}\right)^3 + \dots + \text{CF}_{n-1} \left(\frac{1}{1+r}\right)^{n-1} + \text{CF}_n \left(\frac{1}{1+r}\right)^n \\ &= \frac{\text{CF}_0}{(1+r)^0} + \frac{\text{CF}_1}{(1+r)^1} + \frac{\text{CF}_2}{(1+r)^2} + \frac{\text{CF}_3}{(1+r)^3} + \frac{\text{CF}_4}{(1+r)^4} + \dots + \frac{\text{CF}_{n-1}}{(1+r)^{n-1}} + \frac{\text{CF}_n}{(1+r)^n} \end{aligned}$$

So the NPV equation is a special case of the asset value equation. In the NPV application we figure out what the sum of the PV's of all of expected $\text{CF}_0 - \text{CF}_n$ nets out to be; the CF_0 value is a given. In the asset value application we figure out what CF_0 *should* be if the sum of the PV's of expected $\text{CF}_1 - \text{CF}_n$ is to equal the absolute value of CF_0 ; CF_0 is what we solve for. Otherwise the NPV and asset value computations are identical. In NPV analysis we recognize that, while a positive NPV is good (it means the average rate of return earned per period is greater than the periodic percentage opportunity rate/cost of capital, such that the equity investor's wealth is increased by the NPV amount), an NPV of \$0 is minimally acceptable, because at a \$0 NPV that investor is earning the acceptable hurdle rate, albeit nothing more. (Or consider that if the analysis of a property shows a \$25,000 NPV you could pay \$25,000 more than the indicated price and still earn the required annual rate of return.) In computing asset value we figure out the price an investor should pay today to generate a \$0 NPV on the investment, on the assumption that when there is strong competition it is unrealistic to expect to earn a periodic return higher than the risk-adjusted hurdle rate (no bargain prices are likely to be found in a competitive market). A \$0 NPV is expected if competition would drive out the opportunity to earn returns above those that would be merited in light of the perceived risk, and few situations are more competitive than the markets for actively-traded stocks and bonds issued by large organizations.

Under the most straightforward conditions all of $\text{CF}_1 - \text{CF}_n$ are expected to be positive, with money expected to come into the investor's hands each period after the CF_0 outlay has occurred, but the idea and computational steps do not change just because a negative cash flow is expected in a post-investment period; just keep the negative signs straight. (At least one of $\text{CF}_0 - \text{CF}_n$ must be negative and at least one positive, or the expected periodic rate of return is infinitely positive or negative. Note also that we could switch the order of the signs and view a straightforward investment case from the perspective of a single party on the other side of the transaction, which would receive money initially and then be obligated to pay something

back in each successive period.) An example with later-period negative CF's could be a corporate investment in equipment to make a new product, with an expenditure up front, positive cash flows expected for many years, then a negative net cash flow expected in a year when product sales continue but the original equipment must be replaced, and then multiple periods of positive cash flows again through the end of the project's life. In our real estate investment examples we will assume that the investment projects are "normal," with initial outlays followed by positive cash flows expected in all later periods (though we might expect certain building components to need replacement after some years have passed; the needed expenditures would reduce ATCFs for the years in which they are projected to be made).

Example: You buy an income-producing property for \$127,500 (\$27,500 equity and \$100,000 borrowed – we will keep the numbers small so the zeroes do not get in the way of explaining the techniques). It is expected to generate annual ATCFs for the equity investor of \$4,000. You also expect to sell the property at the end of year 5 for \$136,000, netting \$30,500 as the ATER after paying transaction fees, the remaining principal balance on the loan, and capital gain taxes.

If the opportunity rate (the minimum required rate of return on equity, or ROE) were 11%, the NPV would be computed as

$$-\$27,500 \left(\frac{1}{1.11}\right)^0 + \$4,000 \left(\frac{1}{1.11}\right)^1 + \dots + \$4,000 \left(\frac{1}{1.11}\right)^4 + (\$4,000 + \$30,500) \left(\frac{1}{1.11}\right)^5 = \text{NPV} \quad \text{OR}$$

$$-\frac{\$27,500}{(1.11)^0} + \frac{\$4,000}{(1.11)^1} + \frac{\$4,000}{(1.11)^2} + \frac{\$4,000}{(1.11)^3} + \frac{\$4,000}{(1.11)^4} + \frac{\$4,000 + \$30,500}{(1.11)^5} = \text{NPV}$$

$$-\$27,500 + \$3,603.60 + \$3,246.49 + \$2,924.77 + \$2,634.92 + \$20,474.07 = \$32,883.85 - \$27,500.00 = \$5,383.85$$

Alternatively, we could group the common dollar amounts together in computing:

$$-\$27,500 \left(\frac{1}{1.11}\right)^0 + \$4,000 \left(\frac{1 - \left(\frac{1}{1.11}\right)^5}{.11}\right) + \$30,500 \left(\frac{1}{1.11}\right)^5$$

$$= -\$27,500 (1) + \$4,000 (3.695897) + \$30,500 (.593451) = -\$27,500 + \$14,783.59 + \$18,100.27 = \$5,383.85$$

(Notice how much this real estate purchase looks like a bond investment, with an initial outlay, a series of equal expected regular cash flows, and a big equity reversion, which acts like the return of a bond's principal, along with the final regular cash flow, at the end of the holding period.) This property is projected to provide the equity investor with the minimum required 11% ROE, plus an added \$5,384 immediate increase in wealth. Because NPV is positive, the investment appears to be profitable in an economic sense. (Recall that real estate markets are characterized by unique properties, and thus we are not surprised to see a positive NPV in this potentially less competitive situation. Another way to think about it might be that NPV is positive if the buyer's individual investment value is greater than the price paid, which typically would be the market value.) With a positive NPV we know that the investment is projected to generate an average periodic rate of return greater than the 11% that the investor requires (the periodic cost of capital) – but what is that return? NPV analysis does not tell us. The internal rate of return (IRR), which represents the average after-tax periodic return on equity the investor will actually realize from internally generated cash flows (reinvestment is ignored) if the cash flows occur as expected, is computed as:

$$-\$27,500 \left(\frac{1}{1+r}\right)^0 + \$4,000 \left(\frac{1}{1+r}\right)^1 + \dots + \$4,000 \left(\frac{1}{1+r}\right)^4 + (\$4,000 + \$30,500) \left(\frac{1}{1+r}\right)^5 = \$0 \quad \text{OR}$$

$$-\frac{\$27,500}{(1+r)^0} + \frac{\$4,000}{(1+r)^1} + \frac{\$4,000}{(1+r)^2} + \frac{\$4,000}{(1+r)^3} + \frac{\$4,000}{(1+r)^4} + \frac{\$4,000 + \$30,500}{(1+r)^5} = \$0 \quad \text{OR}$$

$$-\$27,500 \left(\frac{1}{1+r}\right)^0 + \$4,000 \left(\frac{1 - \left(\frac{1}{1+r}\right)^5}{r}\right) + \$30,500 \left(\frac{1}{1+r}\right)^5 = \$0; \text{ solve for } r$$

NPV and IRR are computed with the exact same equation. In NPV analysis we have cash flow projections and a discount rate, and we solve for the net dollar difference in the present values of the projected cash flows. In IRR analysis we have cash flow projections and set the net dollar difference in the PV's of the projected cash flows equal to \$0, and solve for the discount rate that would cause the equality to hold. NPV: know the discount rate and solve for the dollar difference; IRR: know the dollar difference (we set it equal to \$0) and solve for the discount rate. (If there are multiple periods of expected

cash flows after the initial investment, then solving for IRR requires trial and error; notice in the example above that the annuity factor contains both r^1 and $r^{1/5}$, or working year-by-year involves all of r^1 through r^5 : either way there are two or more unknowns in one single equation.) Why do we set NPV equal to \$0 in solving for IRR? If you do an NPV computation and find a positive NPV, it means the periodic rate of return that $CF_1 - CF_n$ generate relative to the CF_0 investment is greater than the periodic discount rate used. (Rate of return relates what an investor receives in a given period to money that was at risk at the start of the period.) If an NPV computation shows a negative NPV, it means the rate of return the cash flows create is less than the discount rate used. But NPV is \$0 only if the rate of return the cash flows create is equal to the discount rate used in the computation. So find a discount rate that results in a \$0 NPV, and you will have identified the IRR.

Here the IRR turns out to be just in excess of 16% (if you discount the expected ATCFs and the ATER at a 16.1277% annual rate, you get a present value of \$27,500, which means that the NPV is \$0 after the \$27,500 investment cost CF_0 is subtracted). We knew that the IRR, whatever it was to be, had to be greater than the 11% hurdle rate, or else the NPV would not have been positive. Because the 16% expected ROE (the IRR) exceeds the opportunity rate (which is the 11% minimum required ROE in this example), the investment, again, appears to be profitable in an economic sense (it creates additional wealth for the equity investor). Periodic return > required rate \Rightarrow positive NPV; periodic return < required rate \Rightarrow negative NPV; periodic return = required rate \Rightarrow 0 NPV. (An investment situation involves three rate of return measures: the expected rate, the required or hurdle rate, and the rate that ultimately is realized. The decision must be made before the realized rate can be known, of course, so a favorable investment is one whose expected rate of return exceeds the required rate of return.)

D. Positive *financial leverage* – benefits from the use of borrowed money (this effect is seen indirectly in the above computations through its impact on the required ROE, since the required ROE is influenced by the debt/equity financing mix). The owner of real estate can borrow money against its value under favorable terms because of real estate's features (fixed location, long life of improvements, can not be hidden from creditors) and the highly developed mortgage markets. If after-tax periodic return earned on the asset exceeds the after-tax periodic cost of borrowing, the result of using leverage is to *magnify the percentage returns* to the equity investor (positive financial leverage). But: if the after-tax percentage return earned on the asset is *below* the after-tax percentage cost of borrowing, there is a *magnification of reduction in returns* (negative financial leverage) to the owner. Leverage thus is said to be a "two-edged sword:" the fixed-dollar outlay to meet loan payments represents a low relative cost when revenues are high, but a high relative cost when revenues are low.

Example: Consider a \$1,000,000 property that produces \$150,000 yearly in (revenue – operating costs – income tax). If the owner pays the entire purchase price with equity money, then the annual return on equity (ROE) is $\$150,000/\$1,000,000$ in equity = 15%. If the owner borrows 50% of the purchase price (\$500,000) at a 9% after-tax annual interest cost (\$45,000), then the dollar return to the owner is $\$150,000 - \$45,000 = \$105,000$, and annual ROE is $\$105,000/\$500,000$ equity = 21%. If the owner borrows 80% of the purchase price (\$800,000), and the after-tax annual interest cost for this riskier loan is a higher 12% (\$96,000 yearly interest cost), then the annual after-tax dollar return to the owner is $\$150,000 - \$96,000 = \$54,000$, and annual ROE is $\$54,000/\$200,000$ in equity = 27%. Positive financial leverage occurs because the 9% or 12% interest cost is less than the 15% annual return the asset generates. (Of course our goal in investing is to gain as much wealth as possible, not to generate less wealth that represents a higher periodic percentage return on a smaller investment base. Here we might think of an investor with \$1 million available borrowing an added \$4 million, for an 80% loan-to-value ratio, and generating wealth of $5 \times \$54,000 = \$270,000$ – which represents a 27% annual ROE on the \$1 million in equity invested.)

However, what if the property ends up generating only \$85,000 per year? Then there is *negative* financial leverage (the owner would have been better off not borrowing money toward the purchase price). If the entire \$1,000,000 is paid with equity money, then the ROE is $\$85,000/\$1,000,000 = 8.5\%$. If 50% of the purchase price is borrowed, then the dollar return to the owner is $\$85,000 - \$45,000 = \$40,000$, and annual ROE is $\$40,000/\$500,000 = 8\%$. An owner who borrows 80% of the price nets $\$85,000 - \$96,000 = -\$11,000$, and annual ROE is $-\$11,000/\$200,000$ in equity = -5.5%. Negative financial leverage results because the 8.5% annual return generated by the asset is less than the 9% or 12% annual interest cost for using borrowed money. (In this less desirable case the investor combining \$1 million in equity with \$4 million borrowed would earn -5.5% annually on equity, but with leverage would be *losing* $5 \times \$11,000 = \$55,000$ on the \$1 million invested.) Finally, if the property generated \$90,000 per year and 50% of the purchase was borrowed at a 9% annual interest rate, then the after-tax cash flow would be $\$90,000 - \$45,000$ interest = $\$45,000$, and ROE would be $\$45,000/\$500,000 = 9\%$: neutral financial leverage, because the 9% annual return created by the asset equals the 9% annual interest cost paid to borrow.

The buyer of an individual property may also like the idea of owning something under his or her managerial control, unlike, for example, investing a large amount of money only to become a small percentage stockholder in a large corporation. But the accompanying desire to own a large enough property to operate at an efficient scale may *necessitate* the use of leverage, thereby adding to the high risk of real estate investing on a stand-alone basis (and the risk of investing in real estate also is increased by the owner's inability to move land and improvements to a more desirable location if market conditions change).

E. *Income Tax Benefits* – the figures used in the NPV and IRR computations above reflect dollars expected to remain after income taxes have been paid. Until the mid-1980s, owning income-producing real estate allowed wealthy non-managing owners to shield their incomes from high income taxes. This result was achieved through *accelerated depreciation* write-offs on investments that were sometimes funded with *nonrecourse loans* (especially if the investor was not a direct owner, but rather a participant in a *real estate limited partnership* [RELP] whose general partner purchased and managed the property). An individual owner, or partner, could realize positive cash flows from owning rental real estate while showing losses “on paper” (through the depreciation and interest costs) that offset other income, including salary income, for U.S. federal income tax purposes. [We also should recognize that some major real estate investors are exempt from paying income tax (pension funds are an example), and therefore not directly motivated by income tax concerns.]

But then Congress passed the Tax Reform Act of 1986, three aspects of which greatly reduced the *tax shelter* benefits of investment real estate that people owned directly (or through partnership arrangements):

- *Depreciation*: Instead of accelerated (175% declining balance) over 18 years, income-producing real estate now must be depreciated on a straight-line basis over longer periods (27.5 years for residential rental property, 39 years for non-residential income property). [Before 1942 assets were depreciated over periods considered reasonable by their owners, subject to IRS challenge, and from 1942 to 1981 Congress issued “guideline” useful lives for various asset categories. But 1981 federal income tax legislation introduced the Accelerated (now Modified Accelerated) Cost Recovery System, which specifically identifies the periods over which assets of various types can be depreciated for federal income tax purposes, and the 1986 law lengthened the periods for real estate to the current 27.5 and 39 years.]
- *At-Risk Rules*: Investors now generally can claim depreciation deductions only based on the dollar amounts that they actually are at risk of losing (so asset amounts paid for with nonrecourse loans do not count).
- *Passive Losses*: Investors now generally can reduce their taxable incomes through losses claimed on investments in income-producing real estate *only* by using these losses to offset income on similar kinds of investments. For example, today a high-income individual like a physician can not reduce her taxable medical practice “active” income by showing losses on paper from “passive” real estate investments in which she does not play an active management role. A passive loss that can not offset passive income in the year it is incurred can be carried forward to offset passive income in subsequent years.

There still are some income tax benefits to investing in real estate. Mortgage loan interest can be deducted on any amount of principal borrowed toward purchasing real estate to be *held for investment or for use in a trade or business* (vs. \$750,000 principal limit for interest on a home mortgage loan – although discount points paid on an income-producing property must be deducted slowly over the loan’s life, and not fully deducted in the year paid). Local property taxes paid on real estate held for investment or for use in a trade or business are deductible without limit (vs. the \$10,000 total deductible limit for state and local taxes combined on an individual’s federal income tax return), and all maintenance expenses are allowed as business deductions (no deductions are allowed for maintenance and repairs done by home owner/occupants). [What we think of as “investment” real estate generally is classified as property held for use in a trade or business – such as apartment buildings rented out, because they have to be managed, even if the owner’s effort consists largely of hiring a professional manager. In debating the Tax Cuts and Jobs Act passed in December of 2017, Congress actually discussed requiring landlords to pay Social Security and Medicare taxes on rental income earned, but the final version of the bill did not include this provision.]

Depreciation is an imprecise measure of a *wasting asset’s loss in value* (land is not a wasting asset and therefore never is depreciable). The idea is that income is a measure of your increase in wealth during the specified time period; a loss in asset value causes a property owner’s wealth to grow by less than that party’s cash-based income alone would suggest. As noted, the improvements portion of real estate held for investment or for use in a trade or business can be depreciated (a developer or other dealer holding commercial real estate for *resale* can not claim income tax-reducing depreciation expense). [The investor could have an incentive to claim that a higher proportion of the total purchase price was building rather than land so that more depreciation could be claimed as a tax-reducing expense over time; the land/building value breakdown assigned in the local property tax assessment is likely to be seen as reasonable by the Internal Revenue Service.] And the owner is allowed to claim depreciation expense on the entire cost of the improvements, including the portion paid for with borrowed money if the loan is a “recourse” loan that the owner is responsible to repay. (Costs incurred in getting a property ready for a new tenant are depreciated over the lease term.) But claiming depreciation deductions also reduces what the owner is deemed to have invested in the property (the *basis*), and when income-producing real estate is sold for more than its basis the owner generally must pay an income tax on the amount received minus the basis, called a *capital gain*.

However, “Section 1231” property – income-producing real estate is the most common example – not only is taxed at the capital gains tax rate (often less than the rate applied to ordinary income) when sold for a gain; selling for less than the basis can generate losses that reduce the investor’s taxable income, even salary income, at the higher tax rate applied to ordinary income. (Under current federal income tax provisions in effect since 2018, other business assets generally can be fully

expensed in the year purchased rather than slowly depreciated over time – one instance of real estate receiving less friendly federal income tax treatment than do other investment asset categories. Personal residences do not qualify for depreciation deductions, so while homes do potentially enjoy business-like federal income tax breaks for mortgage loan interest and local property taxes paid, home owners generally may not claim any depreciation as a tax-reducing expense – one exception is when a distinct part of a home is used “regularly and exclusively” as the business office of a self-employed individual.)

But also: when income-producing real estate is sold for a price that exceeds its basis, the portion of the gain that relates to the depreciation previously claimed is called a “Section 1250 gain” that is “recaptured” in the higher selling price. That portion of the gain is taxed more heavily than is the remainder of the gain attributable to general increases in property values, but still at a rate below what many investors would pay on other types of income: maximum rate of 25% for the 1250 recapture, and rate of 15% for the ordinary long-term capital gain created by a rising real estate market. Consider an investor who pays \$1,000,000 for income-producing real estate and claims \$200,000 in depreciation over a 10-year holding period (\$780,000 building portion ÷ 39-year depreciable life x 10 years), for an adjusted basis of \$800,000. If the property then is sold for a \$1,300,000 net selling price the overall capital gain is \$1,300,000 – \$800,000 = \$500,000. The first \$200,000 of the \$500,000 is a Section 1250 recapture that (we will assume) is taxed at a 25% rate, for a \$200,000 x .25 = \$50,000 tax. The remaining \$500,000 – \$200,000 = \$300,000 is a regular long-term capital gain taxed at the 15% rate, for a \$300,000 x .15 = \$45,000 tax. Thus total tax owed with respect to this specific \$500,000 gain is \$50,000 + \$45,000 = \$95,000. (The actual tax treatment for the specific owner would depend on whether there were capital losses to offset the capital gain, but this simplified example should provide some insights that will be helpful in understanding the spreadsheet homework exercise.)

Or make the example even simpler by assuming that after owning the described property for ten years the investor sells it for a price equal to the purchase price: \$1,000,000. If not for depreciation we would look at this situation and say: sold for the same price it was bought for, so there was no gain/no loss. But because the owner has been claiming \$20,000 in lost value every year and enjoying a resulting income tax reduction, when ultimately we come to see there was no nominal value loss, we say: pay income tax retroactively on amounts you thought you were losing but actually were not. The logic of a Section 1250 rate lower than the ordinary income tax rate may be to soften the pain of having to pay the retroactive tax all at once. (A \$900,000 sale price would bring a \$100,000 gain, all of which would have to be recaptured under Section 1250. Finally, at a sale price of the \$800,000 adjusted basis we could say the depreciation model perfectly predicted the way the property would lose value over a ten-year holding period, selling in the end for just what the owner is deemed to have invested in it, resulting in no loss or gain or recapture to account for.)

(An owner is unable to opt not to claim depreciation expense toward avoiding recapture and higher measured capital gains; the IRS will treat the basis as being lower because of depreciation the seller was *eligible* to claim, even if she did not claim it. So generally it would make sense to claim the tax-reducing depreciation expense each year.)

An owner who wants to sell real estate that qualifies as Section 1231 property can receive even better tax treatment by structuring the transaction as a “Section 1031” tax-free exchange of “like-kind” property. In this arrangement, an owner replaces one or more income property parcels with “like-kind” real estate of equal value without paying *any* income tax on the realized increase in value or recaptured depreciation at the time of the transaction (the tax is delayed until the property exchanged for is sold, at which point another Section 1031 exchange could delay taxes on the gain once again). The replacement property need not be of similar use; an office building generally could be replaced with an apartment complex. (An investor can even exchange actively managed real estate for shares in a “Delaware Statutory Trust” [DST] that owns a large, professionally managed real estate project yet is treated as direct real estate ownership for 1031 exchange purposes. But U.S. real estate can not be exchanged for foreign real estate.) The seller generally organizes the sale and “exchange” (the new purchase) through a “qualified intermediary” law or accounting firm that specializes in 1031 exchange transactions.

The replacement property must be found within 45 days of the first sale of the initial properties, and the purchase of that replacement property must close within 180 days of the sale. (Historically, some real estate investment firms have offered those who could not locate replacement properties quickly the option of immediately becoming direct owners of specific qualifying properties as Tenants in Common with other 1031 exchanging owners, but these TIC arrangements are seen as more risky and complicated than the newer DST plans noted above, and often with especially high fees.) With other types of assets, stocks and bonds, for example, you must pay income tax on any capital gains in the year of disposition even if you end up buying other, very similar securities (securities are not considered like-kind property with other securities for section 1031 purposes). Farm equipment and business vehicles are among types of assets that used to qualify for Section 1031 treatment when sold, but the Tax Cuts and Jobs Act passed in late 2017 discontinued tax-free, like-kind exchange treatment for all asset classes other than real estate that meets the Section 1231 definition (held for investment or used in a trade or business).

Postponing payment of income tax on a capital gain with a Section 1031 like-kind exchange is complicated a bit if money (which reduces the amount of equity the seller has invested), a reduction in debt, or other non-real estate benefits come to the seller as part of the exchange because the traded properties do not have exactly equal values or equal amounts of debt financing. (This extra property or benefit received is called by the interesting name “boot;” a linguistics source says boot is derived from old English “bote,” which means advantage, and shares the same root as “better.”¹) Super simple example: an investor has a basis (original purchase price plus major improvements made, minus depreciation claimed) of \$450,000 in a commercial property that now is worth \$700,000, for a \$250,000 capital gain on paper. She exchanges it for a \$600,000 commercial property and \$100,000 in cash – the \$100,000 is boot, and it counts as a capital gain that she must pay tax on in the year the exchange takes place, with tax on the other \$150,000 delayed. But if she had exchanged for real estate worth exactly \$700,000 (and with no reduction in debt owed) the entire \$250,000 capital gain would go untaxed, for now.

[The Tax Cuts and Jobs Act created a tool even better than Section 1031 treatment for deferring taxes on capital gains. If gains from selling real estate or even common stock investments are rolled over into investments in designated “opportunity zones” in economically depressed areas, the tax on any gain is eliminated if the investment is held for at least ten years.]

So we see that *real estate held for investment or business purposes can be sold for more than its basis with income tax on the capital gain deferred if the owner “exchanges” it for an equally costly replacement property within a specified time window; no other investment asset gets that favorable income tax treatment.* (If you pay \$5,000 for shares of Ford common stock and later sell them for \$6,000 you can not defer income tax on the \$1,000 capital gain by buying \$6,000 worth of GM common stock.) Recall from our Topic 15 coverage that pre-1998 the owner of a primary residence could, somewhat similarly, sell it and defer income taxes on any capital gain by buying a replacement home costing at least as much as the price received for the property sold, within a specified time window. The simpler rule now is that a *principal residence can be sold for up to \$250,000 (\$500,000 for married couples filing joint returns) more than its basis with no income tax owed on the capital gain, even if that gain is simply pocketed and no new home is purchased; no other asset gets that favorable income tax treatment.*

Finally, while real estate investment clearly does enjoy some special federal income tax benefits, it is not always favored by federal policy makers. During the 2020 Covid-19 economic shutdown, the U.S. government’s Paycheck Protection Program – designed to help small businesses keep employees on payroll through forgivable loans – was not available to many small landlords who depended on rent payments for income. (Separate property management divisions of some larger real estate firms actually did qualify, since their activities were classified as active labor rather than the passive rent collection that PPP treated landlords’ activities as being.)

II. Real Estate Investment in the Context of a Diversified Portfolio

Of course, real estate investors, like all investors, must also be acutely aware of *portfolio* issues. The key to constructing an investment portfolio is *diversification*: the inclusion of assets whose returns have not been highly correlated during different economic scenarios in the relevant past. In the study of real estate investing, two diversification issues arise:

A. Diversifying *within the real estate asset class* itself. Proper diversification here requires a variety along dimensions that could include:

- Property types – residential (rental), commercial, industrial, agricultural. Post-Covid investors have been leery of committing to the office and retail sectors because of perceiving a permanent change in the nature of these properties, as people increasingly have worked remotely from home and shopped on-line. But hotels have received increased attention because of expectations that travel would come back to traditional levels once the shutdowns passed. Extended-stay hotels, with in-room kitchens and common area amenities, were becoming popular with health care professionals and others sent to changing work locations, and to people combining work with leisure travel.² Medical facilities, which frequently have long-term triple-net leases (through which most property management tasks are borne by the tenants) and warehouses, which tend not to require much active management, are property types some advisors recommend for individual investors.
- Geographic regions – areas that appear not to be highly subject to the same economic influences.
- Lease provisions – short-term vs. long-term; fixed vs. variable rents.
- The three listed above have long been noted as critical diversification criteria for real estate investors. But following the economic upheaval caused by the 2020 coronavirus pandemic, when so many businesses were legally required to close their operations and then could not afford to make rent payments, we might ask whether another diversification dimension that might be important for an investor to consider is whether commercial tenants are in industries (and perhaps even whether residential tenants are employed in industries) that would likely be deemed “essential,” and thus legally permitted to operate, in the event of a public health or other widespread social crisis. Both the federal Centers

for Disease Control and the state of Illinois prohibited landlords from evicting tenants for failure to pay rent during the shutdown. (At the same time we might ask whether the public would tolerate economically devastating future massive business closures – or whether elected leaders would even call for them again, in light of the unpopularity of policies that disrupted so many people’s lives and the huge resulting hit to tax revenues suffered at all government levels.)

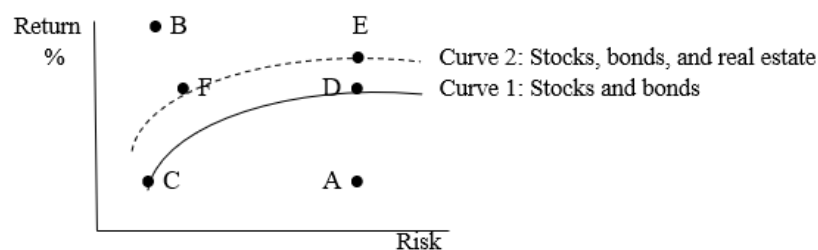
B. Some traditional measures used in real estate investment analysis.

- Equity Dividend Rate (EDR) – the BTCF for the equity investor (as described earlier, also called the “equity dividend”) as a percentage of the equity investment at the beginning of the measured time period (in measuring the EDR we do not factor in any expected increase in the property’s value over the expected holding period – thus it is a measure similar to the current yield on a bond, and not the yield to maturity or holding period yield).
- Taxable Income – total rent collected for the time period in question, minus operating expenses, minus the *interest* portion of payments to the mortgage lender (interest paid is a deductible expense, but repayment of principal is not), minus depreciation expense claimed for that period.
- Capital Gain – total selling price, minus selling expenses such as broker and attorney fees, minus the property’s adjusted basis (original purchase price, plus capital improvements made, minus total depreciation claimed). This gain is a type of income on which a form of income tax must be paid. As noted earlier, the portion of the gain attributable to increases in real estate values is taxed at a lower rate than is the Section 1250 recapture portion generated by the reduction in the property’s basis through the total of depreciation expenses claimed over the holding period.
- Debt Coverage Ratio – the net operating income remaining for the debt and equity investors in a given time period, divided by the mortgage loan payment to be made. This ratio is a measure of how well protected the lender is; the lender on an investment property typically likes to see a DCR of at least 1.3.
- Loan to Value Ratio – LTV is another measure of protection to the lender; the lender on investment real estate tends to restrict the amount lent to no more than about 70% of the price the equity investor pays for the property. (The DCR and LTV ratios relate to lenders’ protections, but in turn they are constraints that equity investors must deal with.)

C. Using real estate to further *diversify a traditional portfolio* of stocks and bonds:

The returns realized on income-producing real estate generally have not been highly correlated, over time, with those realized on stocks and bonds. One study found real estate returns to have correlation coefficients of 50% with returns on stocks and 30% with returns on bonds; some other studies have shown lower, and even negative, correlations. So including real estate in a broader portfolio can offer significant diversification benefits. My casual observation in 2008’s turbulent markets was that the value of my broad-based equity REIT index fund shares followed the same general pattern of price movements as did broad-based common stock index fund shares, but the percentage changes were not the same (and REIT shares pay better dividends on average), although on a few occasions the price movements were actually in opposite directions. (An investor’s personal residence should be viewed as part of the investment portfolio, in that its value will rise or fall in a manner that is strongly/weakly correlated with changes in the values of other assets the investor holds.)

Diversifying allows us to reduce the variability of returns. The *efficient frontier* plots the investment portfolios yielding the highest expected periodic return at a specified risk level (or yielding a specified expected periodic return at the lowest risk level). Plenty of portfolio possibilities like A are available, with high risk and low expected periodic return (lending money to people with poorly conceived business ideas for low promised annual interest rates); we avoid those. [Accepting added risk does not guarantee a higher periodic rate of return, but in a competitive market you must accept added risk to have a chance of earning a higher periodic return.] And we would love to find portfolios like B, with exceptionally low risk and high expected periodic returns (very high real interest rate on a group of U.S. government bonds), but those are unattainable. With a mix of traditional stocks and bonds an investor could hold portfolio C, to achieve undesirable portfolio A’s expected periodic rate of return but at a much lower level of risk, or could hold portfolio D, generating a much higher expected periodic rate of return for the level of risk that accompanies A. Some studies have found that combining real estate with traditional stocks and bonds shifts the efficient frontier upward and to the left, allowing for a portfolio like E with a higher expected periodic return than D at the same level of risk, or one like F with the same expected periodic return as D but at a lower level of risk.³



[Florida Atlantic University real estate economist Ken H. Johnson has suggested that an optimal portfolio mix would be 50% real estate (including one's personal residence), 30% stocks, and 20% bonds.⁴ Most observers would likely view that 50% figure for real estate as being on the high side.] Then again, real estate investors are not always as focused on diversification as securities investors are. Some real estate investors may place more emphasis on goals such as owning similar types of property in a small geographic area to enjoy economies of scale toward keeping management costs low, and to benefit from knowledge of the local market. Income-producing real estate tends to be so expensive that broadly diversifying with individual properties can be quite difficult for all but the largest-scale investors.

III. Ownership Forms in Investment Real Estate

A. *Individual Ownership and Partnerships*

B. *Limited Liability Corporations*

Whereas the partnership was a popular form of ownership for investment property a generation ago, today multiple owners often hold an individual property through a limited liability corporation (LLC), which limits each investor's liability to the amount invested in the property but is taxed the same way a partnership is on both the income and loss sides. The entity itself does not pay income taxes. But there can be legal complications and therefore high legal costs, especially since this form of ownership is still somewhat new such that the relevant statutory and case law are still in their early stages.

C. *Real Estate Investment Trusts*

Prior to 1960 it was difficult for smaller parties to invest in real estate. The corporate structure for limiting investors' liability was unavailable because a corporation could own real estate only if essential to the corporation's business (like headquarters and factory buildings), and double taxation of income would have been a problem even if people could invest in real estate with limited liability through corporate shares. Buildings' high cost and illiquidity limited diversification possibilities, and the need to hire third party property managers led to agency problems. Congress addressed these issues by passing the Real Estate Investment Trust Act of 1960, which allowed people to buy liquid shares with limited liability in real estate owning or lending corporate entities without paying income tax at the entity level (the Empire State Building was converted to REIT ownership in 1961);⁵ and the Tax Reform Act of 1986, which allowed REITs to manage the real estate they own. The REIT Modernization Act of 1999 further allows a REIT to create a subsidiary that can earn money by providing services to the REIT's tenants.

So now small investors can achieve diversification, limited liability, and favorable income tax treatment by investing in real estate through a form of securitization called a *real estate investment trust* (REIT, pronounced "reet"). ["Securitization" means creating securities, which we might define as reconfigurations of the claims on assets. Instead of directly buying apartment or office buildings, an investor buys pieces of paper, or securities – REIT shares – that give the investor a small claim on the cash flows generated by a diversified group of apartment buildings, office buildings, farm properties, or other income-producing real estate. Recall how Fannie Mae and Freddie Mac (and some private investment firms) purchase mortgage loan promissory notes and then securitize them, creating new securities based on the underlying loans' payment streams.] So an investor can buy or sell small, liquid claims on the productivity of a building, or more likely a group of buildings, rather than having to buy/sell a whole building (which generally would be very illiquid). Even some large investors are attracted to REITs' liquidity and diversification features.

A REIT is (usually) a corporation that holds equity investments in real estate (and/or mortgage notes). A REIT shareholder gets the benefits of professional property management, and a liquid claim on what generally is a diversified mix of properties. (REIT investors even get the same type of simple 1099 forms that individuals with bank or brokerage accounts get, not the more complicated K-1 forms that partnership investors receive.) Liquidity is enhanced through the shares of some (though not all) REITs' being traded on the organized stock exchanges, or held by mutual funds. (Vanguard has both a traditional REIT mutual fund and a publicly held exchange-traded fund, or ETF, that hold shares in a broadly diversified group of 160 U.S. equity REITs.) Of course, the investor who holds REIT shares gives up control of the assets themselves – but it can be much easier to sell small financial claims on a group of buildings than to sell an entire building, or multiple buildings. The REIT structure also is used in other countries, including Australia, the U.K., Germany, France, China, Japan, and Mexico.

Shares of large, actively-traded REITs are sufficiently liquid that even larger investors, especially pension funds and life insurance companies, have been lured from direct real estate ownership to some REIT investing in recent years for the liquidity benefits. (Illiquidity of the partnership shares was one of the big problems with real estate limited partnerships, which also provided for professional management and some diversification benefits. Illiquidity is also a problem of direct real estate ownership and LLCs, of course; investors can try to control for liquidity risk by holding higher quality properties and using less debt financing – which would reduce the chance of having to sell to escape unaffordable loan payments.)

Examples include the Japan Government Pension Investment Fund and Nippon Life, which in 2018 returned to buying U.S. commercial property after having left the market in the 1990s. A past concern was managing distant holdings, but these types of large pools have more recently invested through REITs, especially those operated by large firms like Blackstone.⁶

Under current federal income tax law (since 2018), 20% of an individual's "qualified business income" is a deduction from Adjusted Gross Income taken after (and in addition to) the individual's standard or itemized deductions (there is an income limit beyond which the deduction can not be claimed). "Qualified REIT dividends" are a form of "Section 199" dividends, which are part of qualified business income. Qualified REIT dividends are primarily dividends distributed to shareholders that relate to income earned from renting out the buildings owned, and not to the fund managers selling properties for capital gains. Each year a small part of my REIT ETF dividends are "qualified (stock) dividends" taxed at a low 15% rate, while most of the remainder are "qualified REIT dividends" of which only 80% are taxed (albeit at the higher ordinary tax rate). But recall that, unlike with other corporations you might hold shares in, a REIT's net income is not taxed at the entity level. So now REITs have some added attractiveness, from an income tax perspective, for moderate income individual investors.

A REIT can specialize in holding ownership positions (approximately 90% of REITs are "equity" REITs) or lender positions (the other 10% are "mortgage" REITs, sometimes called mREITs, which hold mortgage-backed securities and loans, often "nonconforming" loans that traditional lenders will not make, and often they are highly leveraged; AGNC Investment, SL Green Realty, and Annaly Capital Management are some large mortgage REITs). There used to be "hybrid" REITs that held both equity and debt investments, but few if any of these still exist. Early REITs tended to hold portfolios of diverse property types, but more recent practice has been to specialize (and arguably become less diversified), toward achieving targeted expertise and economies of scale in management. [This pattern also has been seen in corporations more generally, with movement decades ago to a "conglomerate" model involving a range of unrelated activities, followed by a return to "core competencies" that a top management team could more effectively oversee – with diversification handled by individual investors holding shares in multiple companies.]

An equity REIT might specialize in owning many properties in the same geographic region (including overseas), or many properties of a particular type. Examples: single-family homes (giant renters Invitation Homes and AMH/American Homes 4 Rent are REITs), apartment complexes (Equity Residential, Apartment Income REIT), office buildings (Alexandria Real Estate Equities, Boston Properties), warehouses (Prologis earns extra returns by selling electricity, and renting forklifts and storage racks, to lessees of the warehouses the REIT owns)⁷, cold storage facilities (Americold Realty Trust, and the larger Lineage, which provides lessees with services including packing and delivery),⁸ retail (Simon Property Group, Kimco Realty), data centers (data center REITs managed by Prudential Global Investment Management did quite well in 2023),⁹ movie theaters, shopping centers, health care facilities including hospitals, self-storage and document storage facilities, senior housing, student housing, hotels, farm land, cell phone towers, billboards, timber land – even marijuana farms, and zoos. (Another means of investing in timber land is the Timber Investment Management Organization; the minimum direct investment usually is \$1 million, but small investors can access them through mutual funds and ETF's. Some TIMOs have followed a strategy of leaving trees uncut, to absorb CO₂, so that companies that emit greenhouse gases can claim carbon offsets through these investments. Two firms that own private prison facilities, CoreCivic and GEO Group, were longtime REITs that converted in 2020 and 2021 to ordinary C-corporation status,¹⁰ perhaps because their managers did not want to have to pay the high dividends REITs must pay as the companies have struggled financially in recent years.) In Australia and China REITs even own toll roads.¹¹

Interestingly, some studies have shown REITs providing their investors with returns that have more closely paralleled the returns on small company common stocks than the returns on stand-alone real estate investments. Of course, a REIT is an ongoing business operation that includes assets and a management team, just like a small (or not so small) company. Some investors estimate the value of a REIT share by discounting expected dividends to a present value, or by examining the REIT's *net asset value* (NAV, the per-share value of the underlying property, net of debt obligations) to determine whether the current market price per share is what it theoretically should be. Two financial metrics often used in REIT analysis are cash flow-based measures *funds from operations* (FFO) and *adjusted funds from operations* (AFFO, also called cash available for distribution CAD or funds available for distribution FAD). There is no binding definition for either, but analysts typically think of FFO as cash generated by operating the properties (net income with depreciation added back, minus capital gains from property sales), and AFFO as FFO minus capital expenditures needed to maintain the property values – so AFFO helps show how much can be paid as dividends to the REIT shareholders. FFO and AFFO might be seen as somewhat analogous to operating cash flow and free cash flow, respectively, seen in corporate financial analysis. Analysts who like to value equity investments by applying multiples to earnings measures, like the P/E ratio used with common stock, would likely apply a multiple to FFO or AFFO, rather than to earnings per share, in estimating REIT values.

A publicly traded REIT has, like any other publicly traded corporation, a board of directors and a need to provide financial reports to the public (and to pay listing fees to stock exchanges); some publicly traded REITs' common shares have even been included in various Standard & Poor's stock market indexes. (Privately held REITs might or might not be organized as corporations, and not all REITs that are corporations have publicly traded shares, while some REITs have issued both common and preferred shares.)¹² REITs that are not traded on public stock exchanges have been criticized for illiquidity, high fees, and lack of transparency in valuations. Yet publicly traded REITs are not free of problems; short sellers tried to drive down the price of Farmland Partners, Inc. shares in 2018 by posting negative information about the REIT on an investment web site (the information was later acknowledged to be false, and a settlement was paid to Farmland.)¹³

But a newer form of the non-listed version is the Net Asset Value REIT, which provides investors with regular (quarterly, monthly, or even daily) appraisal-based updates on values of the underlying assets, and both sells and repurchases shares based on those net asset values. (REITs listed and sold on stock exchanges sell not at the values of the assets the trusts hold, *i.e.* their NAVs, but rather at whatever prices the market determines – often figures believed to be considerably higher or lower than NAVs. Some investors therefore view NAV REITs as providing more price stability than their publicly traded counterparts. Note that common stock mutual funds are bought and sold at their NAVs, whereas common stock exchange-listed ETFs trade at whatever prices the market determines, often more or less than the NAVs based on the underlying share values.) Listed REITs raise money by selling shares to the public, while nontraded REITs work through financial advisors to get funding directly from individual investors. Those who buy shares in NAV REITs – Blackstone Real Estate Income Trust (BREIT) and Starwood Real Estate Income Trust (SREIT) are two prominent examples – generally must pay commissions (while listed REIT shares often can be bought commission-free through brokerage accounts).

But sponsors of non-listed NAV REITs avoid delays and high costs of registering with the federal Securities and Exchange Commission and state securities regulators, realizing savings potentially passed along to the investors. Every NAV REIT sponsor provides a degree of liquidity for investors through a plan to repurchase shares on pre-determined dates, but that is less liquidity than publicly listed REIT investors have with access to ongoing trading, especially since NAV REIT sponsor repurchases are limited by regulatory restrictions, and managers may have to “gate” withdrawal requests due to a trust's own liquidity constraints. (Managers commit the funds they manage to these restrictions on redemptions to avoid having to sell real estate holdings at low prices to get cash when market conditions might be unfavorable, which would hurt remaining fund investors.) In late November of 2022 BREIT made news when it could meet only 43% of investors' repurchase requests, because those requests exceeded monthly withdrawal limits of 2% of the total real estate net asset values, and quarterly 5% withdrawal limits. The nontraded REITs also charge high management fees in the manner of hedge funds; BREIT charges a 1.25% annual fee and retains 12.5% of yearly profits earned.¹⁴ Ongoing liquidity problems may have been a factor in year 2023's much smaller investment in, and somewhat higher withdrawals from, nontraded REITs,¹⁵ while Starwood and KKR joined Blackstone in limiting what investors could take out amid high demand for withdrawals in 2023 and 2024.¹⁶

A REIT's managers avoid the traditional corporate problem of double taxation of income if the organization 1) holds 75% or more of its assets in real estate equity or debt (including mortgage-backed securities), 2) earns 95% or more of its gross income as rent on real estate equity, interest on real estate debt, or fees for providing services like property management, 3) has wide ownership, with at least 100 shareholders while the five largest holders control no more than 50% of the shares, and 4) pays 90% or more of its net earnings each year as dividends to its shareholders.¹⁷

Failing to pay sufficient dividends causes the entity to lose the income tax benefits its REIT status is supposed to convey. This need to pay most earnings out in dividends, which will be taxed as income at the investor level, may help justify the freedom from income tax at the corporate level, but it can be a drawback to the REIT structure; with little ability to retain earnings the managers would seem to have no internal source of money for growth. (However, treating depreciation as an expense means that net income per share is less than available cash per share, so paying out 90% of measured net income as dividends can still leave substantial cash in the managers' hands.) To encourage long-term investing the laws also require REITs generally to earn most of their income from properties held for four years or more. An owner wishing to sell real estate that has increased in value can defer tax on the capital gain realized by exchanging the real estate for illiquid partnership shares in a privately held Umbrella Partnership REIT [UPREIT] (a “Section 721” exchange, in some ways similar to a Section 1031 like-kind exchange); the investor then holds a claim on returns generated by the UPREIT's diversified portfolio of properties. (Exchanging direct real estate ownership for partnership interests can be structured to defer tax on capital gains, but exchanging real estate for securities – REIT shares – can not.) But to liquidate for cash the investor must convert the partnership shares to the entity's REIT shares, and then any capital gain tax must be paid. In a more complicated DownREIT arrangement the investor becomes a partner with a privately held REIT, and the investor's returns are based only on the property exchanged.

Like other shares of stock, publicly traded REIT shares have had their good and bad investment periods in recent decades. (The mid-1970s and part of the late 1990s were particularly bad periods for REITs, although, as with the stock market, some shares perform well even in “bad” times and some perform poorly even in “good” times.) Rate of return figures are compiled by a trade association called the National Association of Real Estate Investment Trusts (NAREIT). [The group’s web site, reit.com., includes information on the FTSE NAREIT U.S. Real Estate Index of REIT values; financial firms Dow Jones, Morgan Stanley, and Standard & Poor’s also produce REIT performance indexes.] But reported returns must be estimates, based on periodic reappraisals, since the underlying properties are not sold frequently. And appraisals can be unreliable; in 2020’s Covid-19 period appraisers found few comparables to use in sales comparison, and too much uncertainty regarding economic recovery and rental projections to complete an income capitalization. The NAV REIT sector is large enough to have its own trade association, the Institute for Portfolio Alternatives, and investment bank Robert A. Stanger & Co. maintains an index of non-traded REIT values. (The trade association for managers of individual properties is the National Council of Real Estate Investment Fiduciaries, NCREIF, pronounced NAY-creef.)

REIT share values generally fell by even greater proportions than did common stocks in the 2000s financial crisis. (The share price of the highly diversified Vanguard REIT ETF dropped to \$21.11 in early 2009 from \$87.06 in 2007 – a level that would not be reached again until 2015. Shares of heavily leveraged Chicago-based General Growth Properties, a REIT owning large retail centers, fell from more than \$41.00 to just over \$1.00 between November 2007 and November 2008.) This high decline was frustrating and surprising to REIT managers, because the steady dividends and the long-term nature of the leases on which REIT cash flows are based had historically kept REIT share values less volatile than those of other equity securities. In late May of 2020, after a couple of months of virus-related business shutdowns and the inability of so many commercial property tenants to pay rents, one report showed U.S. equity REIT values at about 20% below what they had been at the start of the year. In fact, the Vanguard REIT ETF (VNQ) fell in price from a then-all-time high of \$99.58 per share on February 14, 2020 to \$57.01 on March 23. By December 5, 2020 the price per share was back to \$86.42, and by December 31, 2021 it had made up all the lost ground and moved ahead to an all-time high of \$115.91. Vanguard’s Total Stock Market ETF (VTI) per-share value fell from \$171.68 on February 14, 2020 to \$111.94 on March 23, then climbing to \$191.21 on December 5, 2020 and ultimately hitting an all-time high of \$242.92 on January 3, 2022). So by those measures REITS fell 43% in the immediate aftermath of Covid’s hitting, while stocks fell only 35%, and stocks clearly have had a stronger recovery. [Closing prices on December 2, 2022 were \$87.63 for VNQ and \$203.99 for VTI; then amid the 2023 interest rate increases VNQ’s share price was down to \$75.59 by November 10, while VTI was up to \$217.46. But then on December 4, VNQ had risen to \$84.35 while VTI was at \$227.35 (up 11.6% and 4.9%, respectively, in three weeks).] More recent prices for the two were \$80.16 for VNQ and \$251.78 for VTI on April 26, 2024.

This result may not be surprising in light of the way Covid-19 shutdowns piled on to changing technology (shopping on-line, working remotely) to create tremendous uncertainty for the future of office and retail real estate. A late 2021 news account reported on investor fears that major cities’ office properties would struggle as business tenants cut their use of space in the years ahead. Hedge funds began short selling shares of publicly traded REITs that included Empire State Realty Trust, whose nine vintage NYC buildings were seen as especially vulnerable despite extensive mechanical upgrades.¹⁸

IV. The Role of Real Estate in the Broader Capital Asset Markets

As is true of other investments, real estate can be purchased and sold in private or public markets (see the grid below). Private markets usually involve the sale of whole buildings or parcels, while public market transactions tend to involve securities (shares that result from securitizations). Of course, public markets provide for liquidity that private market transactions generally lack. The cost per transaction in the private market also tends to be higher (but each transaction also may be much larger on average), and the determination of values in private markets also tends to be more difficult.

	Sold in Public Markets	Sold in Private Markets
Equity Assets	Corporate Stocks Equity Mutual Funds <i>Real Estate Investment Trusts</i>	Operating Businesses Oil & Gas Partnerships <i>Real Estate (Land, Buildings)</i>
Debt Assets	Corporate and Government Bonds Money Market Instruments Debt Mutual Funds <i>Mortgage Backed Securities</i>	Bank Loans Venture Capital Loans <i>Individual Mortgage Notes</i>

As in all capital asset transactions, prices reflect the expected level and growth in cash flows, the cost of capital, and

perceived risks (the degree to which cash flows could differ from projected levels). Projected cash flows that are more stable and expected to grow, that are perceived to be lower in risk, and that in turn carry lower capital/financing costs should be accompanied by higher transaction prices – for real estate, just like for other types of assets.

V. Speculative Investing in Real Estate

Real estate investors long bemoaned the lack of opportunity for hedging and speculating on housing and other real estate market activity. Then in the early 1990s a consulting firm started by economists Carl Case and Robert Shiller created “repeat-sale price” indexes (how the price changed from an earlier to later sale of the same house) for each of 20 major U.S. metropolitan areas, including Chicago, and in turn for the U.S. as a whole. These indexes exist today as the Standard & Poor’s CoreLogic Case Shiller indexes. You can hedge risks, or speculate (make bets), regarding housing price changes by buying or selling futures contracts on any of eleven of the indexes (nationwide and ten of the twenty individual metropolitan areas). Or you can follow the less risky approach of buying/selling put or call options on the futures contracts. These futures and options are listed on the Chicago Mercantile Exchange. There are also real estate derivative contracts based on less widely followed housing price indexes, which are bought and sold “over the counter.”

Someone concerned that home prices will generally fall in months ahead (perhaps a home builder with an inventory of houses to sell) could buy put options on the futures contracts for the applicable index relating to the local area (or for an area that follows similar economic trends). Then if prices do fall this individual loses money in the construction business, but gains on the put position. Someone concerned that home prices will generally rise (perhaps an investor planning to buy, over many months, a group of houses to rent out) could buy call options on the futures contracts for the index that relates to an appropriate local area. Then if prices do rise this individual must pay more for houses, but will gain on the call position. (The ability to short sell the shares of publicly traded REITs is another example of speculating in real estate.)

BREIT, discussed earlier, provides an interesting hedging example. In 2022 the fund managers, fearing interest rates would rise, bought \$31 billion worth of interest rate hedges. When extensive rate increases did occur, Blackstone earned \$5 billion on the hedges – which offset losses in the BREIT fund’s portfolio value brought about by those higher interest rates, and by unexpected declines in demand for the e-commerce warehouses that constituted a high proportion of the fund’s holdings.¹⁹

VI. Personal Investing in Real Estate: Some Practical Issues

A. Unless held in a securitized form, such as a REIT, real estate is characterized by *low liquidity* and *high transaction costs*. Also, on a small scale, it is difficult to make money if you must pay outside parties to do such work as plumbing repairs, yard work, and general property management. Small investors in real estate typically earn returns both on their *capital* and on their *labor*, by supplying their own management and maintenance/repairs. Sometimes people think that small real estate investors’ returns are high because they ignore the value of the labor supplied, and thus are viewing money that represents a combined return to capital and labor as though it were a return only to capital. (We must attribute an economic/opportunity cost even to work done by a property’s owner, perhaps increased by a small operator’s lack of economies of scale, and the added problem of relying on outside service providers for repairs – a potential *agency cost* of those outside parties’ doing things in a way not the most beneficial for the owner.) Of course as one who can not fix things and is too timid to deal with unruly tenants, and thus who invests in real estate through REITs, I have to pay for management services through charges against revenues that reduce my returns, and I face agency problems since others are handling all aspects of property management for me. But a REIT’s directors (whom the investors also have to pay) are supposed to control those agency problems, and economies of scale that accompany the large operation keep the percentage costs fairly low, even with an added level of administration if the REIT shares are held in a broad-based mutual fund or ETF for wider diversification.

(Lest the story sound too dire: I also know nothing about how to make tractors, so as the owner of a few shares of Caterpillar common stock I have to pay people at Cat to do all jobs in designing, building, and selling the equipment for me. Paying others who have skills we lack is just part of the deal in being little tiny owners, by holding shares of stock, in any business.)

There is nothing wrong with combining a financial investment with a part-time job, which is what small-scale real estate investing often involves. In fact, society benefits when people use their skills and energies to provide real estate services to residents and business operators. The issue is merely one of correctly analyzing and measuring return on investment. We can not simply compare the total real estate investment income of someone who owns a small apartment building and manages it in their spare time, with the total real estate investment income of someone who has equal money invested in REIT shares; if the building owner spends 15 hours each week at the site then we would have to subtract 15 x 52 x \$xx per hour from the direct owner’s total measured income before making the comparison. (It might make sense for a highly paid

individual like a doctor to hold REIT shares even if he or she would be quite capable of managing a direct brick-and-mortar investment, because the \$xx hourly opportunity cost of time would be so much higher than for a typical individual.)

We also might raise technical portfolio concerns, if the returns on an investment property owner's financial capital become too highly correlated with returns on the important personal asset known as *human capital* (skill and knowledge set), with high (low) returns on both in a strong (weak) rental market. Consider the interesting question of whether a real estate broker or developer (or investor) should own a house in the community where she lives and works (or invests), because any change in the value of the house likely would be highly positively correlated with returns to her human capital, since both would reflect local real estate market conditions. Of course, other business issues could outweigh portfolio matters; it might be awkward for a broker trying to sell homes in the area not to own one there herself.

B. One successful residential real estate investor wrote many years ago about the benefits of owning “horizontal apartments” – buying numerous separate houses instead of an apartment building. Among the advantages cited were the ability to start small and add units over time; the ability to diversify geographically within a local area (some near the college, some near a large employer, some near the hospital); the ability to offer different terms to different types of tenants (lease with option to buy for the young family, lower rent for the quiet widow than for the rowdy young party animals); and less difficulty in dealing with tenants (no neighbor disputes to resolve, no instances of tenants taking organized action against the landlord).²⁰

Traditionally individual houses were not seen as viable for larger-scale real estate investing, but in the aftermath of the mid-late 2000s housing and mortgage lending crisis the prices of houses (especially foreclosed homes) reached such low levels, while these cheap houses were available in such large numbers in concentrated geographic areas, that major investing organizations took notice. They saw the potential for high future annual percentage returns, relative to those low prices, in an environment in which many families were expected to have trouble accumulating down payments or otherwise qualifying for loans to buy homes (or might prefer to rent because of uncertainties in their future employment situations). Midwestern industrial cities like Cleveland and Cincinnati became attractive to investors, as some observers felt monthly rents were almost as high as rents for comparable houses in coastal areas yet purchase prices were far lower.²¹ (A rule of thumb sometimes used by single-family home investors is that the purchase price should be no more than 100 times monthly rent; try not to pay more than \$150,000 for a house that could be rented for \$1,500 per month. Of course as with any rule of thumb we should treat it only as a general observation, not as a guide to making a specific investment.) Then once again in the fall of 2022 houses became attractive to institutional investors who were willing to buy in bulk at discounted prices offered by new home builders, as the year's rapid rise in mortgage loan interest rates removed many individual buyers from the market, and what had been a shortage of available homes became an oversupply in a number of communities. Then a year later the institutional buyers were having trouble finding available houses, at the same time higher interest rates gave them non-real estate investment options whose long absence had led them to buy rental houses in the first place.²²

Owning many houses in one local area can promote efficiency in maintenance and other aspects of property management. During the Covid-19 crisis suburban houses which could draw, as renters, urban workers newly able to work from home became more attractive investments than increasingly empty retail and office properties. In fact some large organizations (Invitation Homes, which initially was a division of Blackstone Group, was the largest U.S. lessor of individual houses as of early 2024) have even added to their purchases of existing homes by building brand new houses to rent out. The founder of home rental giant AMH (initially called American Homes 4 Rent) said he took a backward approach to being a landlord: decide what tenants you want to attract (families with children prefer to rent in good school districts and tend to stay in place for many years), and then buy or build houses to suit them. Tricon Residential (purchased in early 2024 by Blackstone)²³ and Home Partners of America are other major owners of U.S. rental homes. Average home rents charged by these large investors were close to \$2,000 per month, and rising, in late 2020, and a March 2023 news account told of a Seattle area development of rental homes whose tenants' average annual income exceeded \$200,000.²⁴ In early 2022 real estate brokerage and data reporting firm Redfin estimated the percentage of home sales nationwide made to investors at 18%, and a National Association of Home Builders estimate later in the year held that 11% of all newly-built houses were to be rentals (SFRs, or single-family rentals, in industry terminology). Roofstock is an investment platform/ fintech that helps individual investors who want to buy single-family houses arrange for financing and property management.

[An August 2022 news story described “laptop landlords” who have used web sites like Roofstock, Appreciate, and Evernest to find houses and hire property managers, sometimes investing in distant cities as monthly rents started rising above home mortgage loan payments in some parts of the country. Financing in some cases has come from crowdfunding.²⁵ While there can be diversification benefits to owning real estate far from home, I would see too many causes for worry to ever become a laptop landlord (online purchasers sometimes are called iBuyers) – agency problems regarding the manager, and questions on why a truly good rental house would not have been snapped up by a local investor.]

Home owner associations have raised concerns about maintenance and other problems that could follow from investors owning rental houses in their developments; an April 2022 news account reported on actions to curtail investor purchases that have included requiring HOA approval of lessees and requiring an owner to live in a house for six months before renting it out. But then tenant advocates allege that those types of restrictions limit housing opportunities for renters. The desire to avoid such conflicts may be why some large investing organizations have built their own entire communities of new rental homes.²⁶ As of late summer of 2021 major investors still owned less than 3% of rented single-family houses in the U.S. But advocates for affordable housing voiced concerns that competition from institutional buyers was driving prices beyond the reach of many families (the median price for existing houses rose by more than 20% from August 2020 to August 2021). In fact, the Cincinnati Port Authority began buying rental houses with the aim of selling them at affordable prices to the occupying tenants; the agency expects to be able to outbid investors' price offers because it is not concerned about earning favorable returns, and could pay with money obtained through low-cost municipal bond issues.²⁷ Non-profits in other cities, including Jackson, Memphis, and Milwaukee, have also started programs of this type.²⁸ Similar concerns in other nations have led regulators to consider rent controls and higher property taxes on institutionally owned rental homes.

[Much of the preceding discussion is not directly related to personal investing in real estate, of course, but we want to address the issue of institutional purchases of individual houses someplace in our coverage, and the fairly recent entry of these large competitors into the single-family rental market may have a substantial impact on the success going forward of at least some of the small investors who traditionally have been the primary owners of rental houses.]

C. There always seem to be people touting real estate “get-rich-quick” schemes. Among promoted techniques, to be used alone or in various combinations, have been:

1. Buying real estate with no money down.
2. Buying real estate for a small fraction of its potential resale value at “tax sales.”
3. Making down payments with credit card liabilities for maximum “leverage.”
4. Making minor repairs/getting zoning changed to alter the character of a property and, in the process, greatly increasing its potential resale value.
5. Going into partnership with the organizer of the scheme (who likely gets a fee from the novice investor).

These plans all tend to have some common features:

- They rely on the other transactor's being a blithering idiot, who would cheerfully walk away from a great money-making opportunity and hand it over to you.
- They rely on your belief that people would turn their best money-making secrets over to you for a small (or not always small) fee, instead of keeping them or giving these secrets to their loved ones.
- They rely on the investor's purchasing books/recorded materials from the promoter, attending seminars/"boot camps."
- Objective parties (e.g., news reporters) who have purchased the promoted materials and tried the techniques have found that succeeding in these arrangements is extremely difficult.

Some promoters of such schemes have been fined, or even imprisoned, for fraud by the attorneys general of various states. Specific reasons for the sanctions have included:

- The promoters paid actors to portray successful, satisfied investors at promotional events or in video presentations.
- The promoters failed to disclose that they had earned their wealth not by using their recommended investment strategies, but by selling their books and recordings.

New faces, and new twists on the old themes, seem to have cropped up over the years as the promoters have moved from “infomercials” on late-night TV to social media. As your grandmother told you: if something *seems* too good to be true, it probably *is* too good to be true. Proceed with great caution in pursuing any of these gimmicks. •

¹ <https://www.yourdictionary.com/to-boot>.

² King, Kate, “Hilton, Marriott Face Off in Extended-Stay Battle,” *The Wall Street Journal*, May 24, 2023, B6.

³ See Busby, Gwen; Hall, Donald, and Ourso, Biff. “The Power of Private Real Assets.” *Nuveen*, January 2023. Also Ludlow, C. and Hanly, S.W. “Modern Portfolio Theory and the Efficient Frontier.” *Engineered Portfolio*, August 7, 2016.

⁴ Friedman, Robyn A. “Should You Add Real Estate to Your Retirement Portfolio?” *The Wall Street Journal*, December 23, 2021.

⁵ Skoboria, Evan. “Empire State Building Ownership (History and Present Day).” *SKNY*, September 8, 2023.

⁶ Fujikawa, Megumi. “Japan Buyers Return to Overseas Markets.” *The Wall Street Journal*, January 3, 2024, B5.

⁷ Broughton, Kristin. “Warehouse Giant Prologis to Offer More Peripheral Services, CEO Says.” *The Wall Street Journal*, January 26, 2022.

⁸ Driebusch, Corrie and Young, Liz. “Cold Storage Is the Hottest Thing on Wall Street.” *The Wall Street Journal*, July 27-28, 2024, B1, B5.

⁹ Grant, Peter. “Data-Center Developer Gets Infusion.” *The Wall Street Journal*, January 10, 2024, B6.

¹⁰ Jakab, Spencer. “Prison Stocks Get Out of Solitary.” *The Wall Street Journal*, December 13, 2022.

¹¹ See Fitch Ratings. *Special Report: Toll Road REITs in China*, September 13, 2023. Also Uribe, Alice. “Janus Henderson Takes a Big Swing on Australian REITs.” *The Wall Street Journal*, May 22, 2024, B6.

¹² Bary, Andrew. “Don't Overlook This Kind of Investment. It's Offering 6% to 8% Yields.” *Barron's*, December 21, 2022.

¹³ Baer, Justin. “Short Sellers Upended a Small Farm Real-Estate Company. This Is What It Looked Like.” *The Wall Street Journal*, September 25, 2022.

¹⁴ Bary, Andrew. “The Lesson of BREIT: Liquidity Matters.” *Barron's*, December 12, 2022.

-
- ¹⁵ Grant, Peter. "REIT Juggernaut Loses Strength." *The Wall Street Journal*, January 2, 2024, B1.
- ¹⁶ Grant, Peter. "Private Real-Estate Funds Face a Jump in Withdrawals." *The Wall Street Journal*, July 2, 2024, B1, B9.
- ¹⁷ U.S. Securities and Exchange Commission. "Investor Bulletin: Real Estate Investment Trusts (REITs)." Office of Investor Education and Advocacy, December 2011.
- ¹⁸ Putzier, Konrad and Grant, Peter. "If the Office Is Really a Thing of the Past, These Investors Will Make a Killing" *The Wall Street Journal*, December 9, 2021.
- ¹⁹ Zweig, Jason. "You Found a Hot Fund. Now It's on Ice." *The Wall Street Journal*, December 9, 2022.
- ²⁰ Hughes, Randy. "Horizontal Apartments." *Illinois Real Estate Letter*, Fall 1999, 8-9, 13.
- ²¹ Dezember, Ryan. "Cleveland Is a House-Flipping Hot Spot, and Covid Added Fuel." *The Wall Street Journal*, June 8, 2020.
- ²² Dezember, Ryan. "America's Biggest Landlords Can't Find Houses to Buy Either." *The Wall Street Journal*, September 20, 2023.
- ²³ Dezember, Ryan. "Blackstone Moves Back Into Rental Homes." *The Wall Street Journal*, January 20-21, 2024, B11.
- ²⁴ Parker, Will. "Three Million U.S. Households Making Over \$150,000 Are Still Renters" *The Wall Street Journal*, March 13, 2023.
- ²⁵ Parker, Will and Friedman, Nicole. "Everyone's a Landlord – Small-Time Investors Snap Up Out-of-State Properties." *The Wall Street Journal*, August 28, 2022.
- ²⁶ Parker, Will and Friedman, Nicole. "Homeowner Groups Seek to Stop Investors from Buying Houses to Rent." *The Wall Street Journal*, April 18, 2022.
- ²⁷ Putzier, Konrad and Parker, Will. "Cincinnati Agency Buys Nearly 200 Rental Homes, Thwarting Private Investors." *The Wall Street Journal*, January 18, 2022.
- ²⁸ Parker, Will. "Activist House Flippers Take On Wall Street to Keep Homes From Investors." *The Wall Street Journal*, November 29, 2022.