

Web Chapter 18

Real Estate and Other Tangible Investments

■ Summary

This online chapter covers real estate and other tangible investment opportunities. An excellent real estate example is used as an illustration. Key issues covered in the chapter include: ways to control or manage real estate investments; valuation techniques; the effects of leverage on real estate returns; passive real estate investment opportunities and other (non-real estate) tangible assets.

As with all investments, a potential real estate investor must start with setting objectives. These objectives must include investment characteristics as well as constraints and goals. The expected rate of return on the investment is crucial as part of this first of a five-step procedure. Secondly, the investor must analyze important features of the property. These will include the physical property, property rights, the investor's time horizon, and a geographic area.

The third step involves collection of data to determine value. It begins with some questions about demand and supply. Who are likely buyers? What is the economic base in the area and which preferences may potential buyers have? Are the mortgage financing conditions favorable? On the supply side, a review of quantity and quality of available properties must be made. What is the overall market structure? Who is the competition and what are their inventories? As a further determinant of value would be the potential benefits that the property may provide. Potential restrictions on use, location, site, improvements, and property management will all be factors that will help us identify benefits, or lack thereof. The final value determinant deals with the property transfer process.

As a fourth step in the procedure it is now time to perform valuation and a thorough investment analysis. To determine market value, three approaches can be used: the cost approach, the comparative sales approach, and the income approach. The investment analysis examines the after-tax cash flows and the approximate yield on the property.

Finally, the last step synthesizes and interprets the results of the total analysis.

Passive investment opportunities in real estate are primarily found using the many available real estate investment trusts (REITs). REITs offer additional diversification to an investment portfolio and exhibit less volatility than stocks. Other advantages of REITs include an income stream, often around 10-12%, liquidity through the redemptions of shares for publicly traded REITs, and professional management from skilled, experienced real estate professionals.

Tangible investments can be seen, admired, touched, and obsessed over. Other than real estate, the three basic types of tangible investments are precious metals (gold, silver, and platinum), gemstones (diamonds and colored stones), and collectibles (artwork, coins, stamps, baseball cards, and so on). Investment merits come from appreciation in value, i.e., capital gains only. These tangible investments do not provide income and therefore investors may face substantial opportunity costs in the form of lost income that could have been earned on capital. Another factor is insurance and storage costs. Future prices tend to be influenced by inflation, scarcity, and global (in)stability. Because global events and demand/supply can change dramatically and quickly, holding tangible investments is considered to be very risky.

Learning goals for Chapter 18 are to:

1. Describe how real estate investment objectives are set, how the features of real estate are analyzed, and what determines real estate value;
2. Discuss valuation techniques commonly used to estimate the market value of real estate;
3. Understand procedures involved in performing real estate investment analysis;
4. Demonstrate the framework used to value a prospective real estate investment and evaluate results in light of the stated investment objective;
5. Describe structure and investment appeal of REITs;
6. Understand investment characteristics of tangibles such as gold and other precious metals, gemstones, and collectibles and review the suitability of investing in them.

■ Outline

- I. *Investing in real estate* means investing in tangible assets. Real estate includes residential homes, raw land, and income property. Other tangibles are assets that can be seen and touched.

Like other investment markets, the real estate market changes over time. It is often fueled by high economic growth and relatively high inflation. From 1989 through the mid-1990s the real estate market dropped in some areas by as much as 50%, following the strong economic growth and high inflation rates experienced in much of the 1980s. By 1998 the market had returned to pre-1989 levels and through 2006, real estate has once again increased in value due to historically low interest rates, low unemployment, low oil prices, and solid economic growth, but *not* due to high inflation rates.

- A. *Investor objectives* must distinguish between the various investment *characteristics* of real estate assets and investment *constraints and goals*.
 1. Investment *characteristics of properties* are as numerous as the number of investors.
 - a. *Income property* is leased-out residential or commercial real estate that is expected to provide returns primarily from periodic rental income.
 - b. *Speculative property* is raw land and real estate investment properties that are expected to provide returns primarily from appreciation in value.
 2. *Constraints and goals* are financial as well as non-financial. Financial rewards are most often the reason for an investment, but technical skills, temperament, repair skills, and managerial talents must also be considered.
- B. *Analysis of important features of the property* can guide an investment's appeal.
 1. *Physical property*—is the investor getting what he thinks he is getting?
 2. *Property rights*—an investor buys legal rights in the form of deeds, titles, easements, liens, and encumbrances. A physical inspection is crucial, as is legal representation.
 3. *Time horizon*—real estate prices sometimes appear to be taking a roller coaster ride. Certain areas can become hot due to shifts in population, or prices can change with the rise and fall of mortgage interest rates.
 4. *Geographic area*—the location of a property relative to its surroundings is important.
- C. *Determining value* is the key to determining the investment's appeal.
 1. *Demand* in real estate is determined by people's desire to buy or rent a property.
 - a. *Demographics* are measurable characteristics of an area's population, such as household size, age structure, occupation, gender, and marital status.
 - b. *Psychographics* are characteristics that describe people's mental dispositions, such as personality, lifestyle, and self-concept.

2. *Supply* in real estate indicates the potential competitors available in the market. Analyzing supply means sizing up the competition.
 3. For long-term investment decisions, the investor must expand the concept of supply and demand and identify competitors through the *principle of substitution*.
 4. The property value is determined by *supply* and *demand*. The property itself, however, also has a *value or competitive edge*.
 - a. *Restrictions on use* determined by zoning laws, deeds, leases, and bylaws and governing rules. Take a lawyer along!
 - b. *Location* has always been stated as being the end-all-be-all. But how do you determine whether or not it is a good location?
 - i. *Convenience* refers to accessibility of a property to the places the people in a target market frequently need to go to.
 - ii. *Environment* plays a role in real estate. There is the natural environment as well as aesthetic, socio-economic, legal, and fiscal surroundings of a property.
 - c. *Site* dictates the size of the property. Depending on the use, must there be a garden, a playground, a fenced-in yard for the dog? Will it accommodate your future plans for expansion? Site quality as reflected in soil fertility, topography, elevation, and drainage is also important.
 - d. *Improvements* are the additions to a site, such as buildings, sidewalks, and various on-site amenities. Quality of materials can influence property value.
 - e. *Property management* is finding the optimal level of benefits for a property and providing them at the lowest cost.
 5. *Property transfer process* refers to the process of promotion and negotiation of real estate, which can significantly influence the cash flows a property will earn. Real estate markets are inefficient.
- II. *Real estate valuation* means finding the *market value*, the actual worth of a property; it indicates the price at which it would sell under current market conditions.
- A. Estimating market value means completing the process of an *appraisal*. There are three approaches to estimating the real estate market value.
1. *Cost approach* is a real estate valuation based on the idea that an investor should not pay more for a property than it would cost to rebuild it at today's prices. Works well for new or relatively new buildings and is more difficult to apply to older properties.
 2. *The comparative sales approach* uses as the basic input the sales prices of properties that are similar to the subject property.
 3. *The income approach* calculates a property's value as the present value of all its future income.
- Net operating income (NOI)* is the amount left after subtracting vacancy and collection losses and property operating expenses including property insurance and property taxes from an income property's *gross potential rental income*.

$$\text{Market value} = \frac{(\text{annual}) \text{ net operating income (NOI)}}{\text{market capitalization rate (R)}}$$

$$V = \frac{NOI}{R}$$

Market capitalization rate is obtained by looking at recent market sales figures to determine the current required rate of return. Technically, it is the rate used to convert an income stream to a present value; used to estimate the value of real estate under the income approach.

4. *Using an expert* is always a good idea due to real estate complexity and technical procedures. The expert will know of comparable properties, their selling prices, and financing currently available.
- B. In performing an *investment analysis*, it is important to consider not only similar properties but also look at the underlying determinants of the property's value.
1. Market value differs from investment analysis in four ways:
 - a. *Retrospective versus prospective*—an attempt to estimate the price of a property by looking at recent sales prices of similar properties.
 - b. *Impersonal versus personal*—an attempt to find a market average.
 - c. *Unleveraged versus leveraged*. Leverage is the use of debt financing to purchase a piece of property and thereby affect its risk-return parameters.
 - i. *Positive leverage* is a position in which, if a property's return is in excess of its debt cost, the investor's return is increased to a level well above what could have been earned from an all-cash deal.
 - ii. *Negative leverage* is a position in which, if a property's return is below its debt cost, the investor's return is less than from an all-cash deal.
 - d. *NOI versus after-tax cash flows (ATCFs)*. ATCFs are the annual cash flows earned on a real estate investment, net of all expenses, debt payments, and taxes.
 - e. Calculating *discounted cash flow* uses the present value technique to find the *net present value (NPV)*, which is the difference between the present value of the cash flows and the amount of equity necessary to make the investment.

$$NPV = CF_{\text{ann}} \left[\frac{1 - \frac{1}{(1+i)^n}}{i} \right] + \frac{CF_{\text{sale}}}{(1+i)^n} - I_o$$

Where CF_{ann} = annual after-tax cash flows

CF_{sale} = after-tax net proceeds from sale in year 'n'

i = the discount rate

N = number of years for holding the property

I_o = the original required investment

- f. Calculating *yield* means calculating the yield that causes the present value of the cash flows to equal the amount of equity.

III. Real estate valuation example.

- A. Academic Arms Apartments are for sale. Jack Wilson is the potential buyer. The investor follows a five-step procedure:
1. Set Investor Objectives
 - a. Investment characteristics
 - b. Constraints and goals
 2. Analyze Important Features of the Property
 - a. Physical property
 - b. Property rights
 - c. Time horizon
 - d. Geographic area

3. Collect Data on Determinants of Value
 - a. Demand: Who will buy?
 - b. Supply: What are the quantity and quality of supply?
 - c. The property: What set of benefits should be provided?
 - d. Property transfer process: How will the property rights be transferred?
 4. Perform Valuation and Investment Analysis
 - a. Market value
 - i. Cost approach
 - ii. Comparative sales approach
 - iii. Income approach
 - b. Investment analysis
 - i. After-tax cash flows – NPV
 - ii. Approximate yield
 5. Synthesize and Interpret Results of Analysis
- B. *Depreciation* in real estate investing is a tax deduction based on the original cost of a building and used to reflect its declining economic life.

IV. *Real estate investment securities* are used as a more indirect way of investing in real estate.

- A. *Real estate investment trust (REIT)* is a type of closed-end investment company that invests money obtained through the sale of its shares to investors in various types of real estate and real estate mortgages.

REITs were established with the passage of the Real Estate Investment Trust Act of 1960, which set forth requirements for forming a REIT, as well as rules and procedures for making investments and distributing income. The appeal of REITs lies in their ability to allow small investors to receive both the capital appreciation and the income returns of real estate ownership without the headaches of property management.

1. Basic structure—must pay out 95% of income as dividends; must keep at least 75% invested in real estate investments, earn at least 75% of their income from real estate and hold each investment at least four years.
 - a. *Equity REITs*—invest in properties, such as shopping centers, apartments, warehouses, office buildings, and hotels.
 - b. *Mortgage REITs*—make construction and mortgage loans by lending money to property developers.
 - c. *Hybrid REITs*—invest in properties as well as make loans.
 - d. Other REITs might for example specialize in health care facilities, such as hospitals and nursing homes, and some are geographically concentrated.
2. Advantages to investing in REITs are that they offer professional management; shares trade on exchanges; investors can buy and sell shares conveniently and can reap tax benefits by placing shares in a Keogh or an IRA.
3. *Investing in REITs.* Equity REITs seem to be the most popular, because when rents rise, dividend distributions rise, and share prices often rise reflecting property appreciation. Mortgage REITs tend to trade like bonds. Always check the investment objectives and performance to ensure it is consistent with the investor's risk-return objectives. REITs offer diversification, as REITs do not move in tandem with stocks.
 - a. REITs do not offer tax benefits but can provide income and benefits of appreciating real estate.

- V. Other *tangible investments* are gold, artwork, stamps, etc.
- A. *Tangibles* as investment outlets.
1. Investment merits hinge on inflation, scarcity, and global instability. Only source of return is appreciation in value.
 2. Investors in tangibles must consider their required ROR just like they do for any other investment.
 3. Determinants of future prices, and thus the potential for return are affected by:
 - a. rate of inflation.
 - b. scarcity (supply/demand relations) of the assets.
 - c. domestic and international instability.
- B. Investing in tangibles.
1. Gold can be bought in the form of gold coins, gold bullion, gold jewelry, gold stocks, mutual funds and ETFs, gold futures, and gold certificates.
 2. Gemstones are diamonds and colored precious stones (rubies, sapphires, emeralds).
 3. Collectibles are items that have value because of their attractiveness to collectors, and because of their beauty, scarcity, historical significance, or age.
- C. There are considerable costs involved in owning tangibles. Insurance, safekeeping, opportunity cost are but a few. Resale markets are poor and transaction costs can be high.

■ True-False Questions

- T ____ F ____ 1. Debt investments in real estate, such as mortgages or deeds of trust, are called income property investments.
- T ____ F ____ 2. Examples of single-family residential investments include houses, condominiums, and cooperative units.
- T ____ F ____ 3. Under the net present value approach, the value of a real estate investment is equal to the present value of its cash flows.
- T ____ F ____ 4. High interest rates reduce the demand for certain kinds of real estate.
- T ____ F ____ 5. One major non-financial constraint on real estate investment is the investor's own management talents.
- T ____ F ____ 6. Depreciation is a tax deduction based on the original cost of a building and used to reflect its declining economic life.
- T ____ F ____ 7. A problem with market value approaches to real estate investments is the fact that these approaches are backward looking.
- T ____ F ____ 8. The NOI approach to real estate property values is always consistent with the NPV techniques.
- T ____ F ____ 9. The returns on REITs tend to move in tandem with those of stocks.
- T ____ F ____ 10. A real estate investment trust is a type of open-end mutual fund.

- T ____ F ____ 11. REITs exhibit less volatility than stocks.
- T ____ F ____ 12. The asking price for a property may be anywhere from 5-60% below the price that a seller will actually accept.
- T ____ F ____ 13. A REIT is like a public company, and the investor should analyze its EPS, just like she does with any other company.
- T ____ F ____ 14. Tangible investments such as gold, silver, or artwork are very similar to zero-coupon bonds in that both have only two cash flows: an outflow at the time of purchase, and an inflow at the time of sale (or maturity).
- T ____ F ____ 15. A REIT will benefit from having high leverage (>50%) at variable rates.
- T ____ F ____ 16. An advantage to investing in a gold certificate rather than gold bullion is there is no downside risk to a gold certificate because the investor owns the same dollar amount with the certificate.
- T ____ F ____ 17. Hotels and retail properties display greater cyclical sensitivity to the economy than do office buildings and apartments.
- T ____ F ____ 18. Commercial properties are generally considered to be speculative property.

■ Multiple Choice Questions

- All the following real estate investors will acquire an income property except those who invest in
 - leased-out residential units.
 - office buildings.
 - factories.
 - raw land.
- The principle that people do not buy or rent real estate, but judge properties as different sets of benefits and costs is called
 - the principle of supply and demand.
 - the principle of an efficient market.
 - the principle of comparative sales.
 - the principle of substitution.
- REITs offer all of these, except:
 - an income stream.
 - price appreciation/depreciation.
 - illiquidity.
 - professional management.
- Which of the following is an investment analysis approach to determining real estate values?
 - the cost approach
 - the net present value approach
 - the comparative sales approach
 - the income approach

5. The concept of market value differs from investment analysis in all the following ways except:
- it is prospective rather than retrospective.
 - it is impersonal rather than personal.
 - it is unleveraged rather than leveraged.
 - it focuses on net operating income rather than after-tax cash flows.
6. Other tangible investments tend to offer high returns during these periods, except:
- global instability.
 - high inflation.
 - when scarcity is apparent.
 - stock market rises.

■ Problems

1. What is the market value of each of the following properties given their annual net operating incomes and capitalization rates?

Property	NOI	Capitalization Rate %
A	\$16,850	10.0
B	3,100	8.5
C	4,800	11.25
D	13,300	12.2

2. Adam and Ann are evaluating an investment in a condominium close to the campus of the University of California at Riverside. Adam has determined that the following numbers seem realistic.

Purchase price:	\$130,000
Sale price in 4 years:	\$180,000
Holding period:	4 years
Rents per year:	\$11,000

Ann has found a bank that will lend them \$100,000 at an interest rate of 6%. Their alternative is to finance the entire \$130,000 out of their savings. (Ignore taxes, maintenance, and other expenses.)

- What is the holding period rate of return and annualized rate of return if (1) they use all equity, and (2) they use the loan?
 - Compare (1) and (2) in terms of leverage.
3. Gold went from a low of \$116.50 an ounce in January 1974 to a peak of \$875 an ounce in January 1980. It dropped to \$515 in January 2006. For a holder of gold, please calculate the rates of return for the two separate periods 1974–1980 and 1980–2006, and then the total period from 1974 to 2006. During this time there was no income associated with holding the gold, and we will ignore any insurance or safekeeping costs.
4. Anita is an individual taxpayer who has gross income of \$90,000. Anita actively manages her investment in the condominium. Based on the following condominium investment income statement, reconstruct the income statement to after-tax cash flows. Assume a tax rate of 28%. There was \$2,000 paid in principal over the year.

Gross rental income	\$25,000
Operating expenses	
Dues	\$3,200
Maintenance	600
Interest	21,000
Depreciation	16,000
Promotion and advertising	200
Property taxes	<u>2,500</u>
Profit or (loss)	(\$18,500)

5. On January 3, 2005, Tony purchased a vacant building lot for \$30,000. He sold the lot on January 2, 2006, for \$35,000. His transaction costs at time of sale were \$1,000. Tony is in the 28% income tax bracket.
- If Tony purchased the lot for cash, what is his return on equity?
 - Assume Tony financed two-thirds of acquisition cost at 6% interest. Was the use of leverage beneficial to Tony on an after-tax basis? Assume Tony can deduct the interest paid as investment interest expense.

■ Answers

True/False

- False.** Income property investments refer to equity positions in commercial or residential structures. These are not debt investments.
- True.** All of the examples are single family residential units.
- False.** Its value is the present value of its cash flows minus the cost of the investment.
- True.** The cost of financing may make properties unacceptable investments.
- True.** Especially with income (residential and commercial) property where maintenance is necessary to maintain value over the year.
- True.**
- True.** As with all investments, any returns will depend on what happens in the future, not the past.
- False.** NOI does not consider after-tax cash flows, leverage, or reversion, all of which are considered by NPV. NPV is a superior model.
- False.** The returns on REITs tend to correlate poorly with the returns on stocks.
- False.** A REIT is a closed-end fund; its number of shares is fixed.
- True.**

12. **False.** The asking price for a property is often 5–60% *above* the price the seller will accept.
13. **False.** Looking at EPS on REITs is not meaningful.
14. **True.** Neither tangibles nor zero-coupon bonds return any current income. Tangibles may have security, storage, or insurance costs, which are current out-flows. Zero-coupon bonds have tax liabilities on assumed annual interest income.
15. **False.** Variable rates can wreak havoc on a real estate investment, and the higher the leverage, the worse that will become.
16. **False.** A gold certificate is title to a specific amount of gold, not a dollar value. As gold prices change, the dollar value of the gold certificate changes just as bullion values change.
17. **True.**
18. **False.** Commercial properties are considered income property.

Answers—Multiple Choice Questions

1. The correct answer is D. Raw land is acquired for its appreciation potential, and thus investments in raw land are considered speculative. Answers A, B, and C represent real estate investments that will produce a stream of income to the investor, and thus are considered income properties.
2. The correct answer is D.
3. The correct answer is C. Because REITs are listed on exchanges, the liquidity is rather good.
4. The correct answer is B. The other three methods are market value-based methods.
5. The correct answer is A. Market value approaches are retrospective, such as how much was the cost to build the property, and what were the recent selling prices of similar properties. Investment analysis is prospective and focuses on future cash flows. The market value approaches are impersonal (B), unleveraged (C), and use NOI rather than after-tax cash flows (D).
6. The correct response is D. There is basically no relationship with stocks and other tangible investments. Such investments react to fads, supply/demand, and other often unplanned occurrences.

Solutions to Problems

1. (a) $\$16,850/.10 = \$168,500 = \text{market value}$
 (b) $\$3,100/.085 = \$36,471 = \text{market value}$
 (c) $\$4,800/.1125 = \$42,667 = \text{market value}$
 (d) $\$13,300/.122 = \$109,016 = \text{market value}$
2. (a) (1) $\text{HPR} = \frac{\$180,000 - \$130,000 + \$11,000 \times 4}{\$130,000} = .7231 \text{ or } 72.31\%$
 Annualized rate of return is $\sqrt[4]{1 + .7231} = 1.1457 \text{ or } 14.57\%$.

$$(2) \text{ HPR} = \frac{\$180,000 - 130,000 + 11,000 \times 4 - 6,000 \times 4^*}{30,000} = 233.33\%$$

*Interest expense = $\$100,000 \times .06 = \$6,000$

Annualized rate of return is $\sqrt[4]{1 + 2.3333} = 1.3512$ or 35.12%

- (b) Leverage is favorable only when the rate of return on the investment is greater than the cost of borrowed funds.
3. Appreciation from \$116.50 to \$875 over 6 years is a stunning 651%.
 Depreciation of gold from \$875 to \$515 over 26 years was a drop of 41.14%.
 Overall holding period return from 1974 to 2006 was 342%.

The comparable annualized rates of return can be calculated as follows:

$$\sqrt[6]{1 + 6.5107} = 1.3994 \text{ or } 39.9\%$$

$$\sqrt[26]{1 + (-.4114)} = 0.9799 \text{ or minus } 2.01\%$$

$\sqrt[32]{1 + 2.42} = 1.0475$ or 4.75%. As an aside, you may wish to compare that to the DJIA or S&P500 for the same periods!

4.

Income Statement		Cash Flow
Gross rental income	\$ 25,000	\$25,000
Operating expenses		
Dues	-3,200	-3,200
Maintenance	-600	-600
Interest	-21,000	-21,000
Principal		-2,000
Depreciation	-16,000	0
Promotion	-200	-200
Property taxes	-2,500	-2,500
Tax savings*		<u>+ 5,180</u>
Loss	<u>(\$18,500)</u>	
After-tax Cash Flow		<u>\$ 680</u>

*Tax saving = $\$18,500 \times .28 = \$5,180 =$ sheltering of income

Note: Depreciation is a non-cash expense item.

5. (a) Selling price = \$35,000
- | | | |
|---------------------|------------------|-----------------------|
| - Cost | <u>-30,000</u> | |
| Gross gain | 5,000 | |
| - Transaction costs | <u>-1,000</u> | |
| Net gain | 4,000 | |
| After-tax net gain | = 2,880 | (\$4,000 × (1 - .28)) |
| Return on equity | = <u>\$2,880</u> | = 0.096 or 9.6% |
| | <u>\$30,000</u> | |

- (b) Tony financed two-thirds of the purchase price of \$20,000. At 6% interest he paid \$1,200 in interest expense.

Before tax

Selling price = \$ 35,000

- Cost -30,000

Gross Gain 5,000

- Transaction costs -1,000

- Interest expense -1,200

Before tax gain 2,800

After-tax net gain \$ 2,016 (\$2,800 × (1 - .28))

After-tax return on equity = $\frac{\$ 2,016}{\$10,000}$ = 0.2016 or 20.16%

The leverage was favorable.