Αμοιβαία Κεφάλαια και Εναλλακτικές Επενδύσεις

Ακίνητα - Real Estate

Real Estate

- There are several characteristics unique to real estate that differ from other asset classes.
- A real estate investment is immobile, not divisible, and unique from all other real estate properties.
- Since each property is unique, it is impossible to directly compare to other properties, making it difficult to determine true market value.
- For these reasons, real estate as an asset class is somewhat illiquid.

Basic Forms

- There are four basic forms of real estate investment that can be described in terms of a two-dimensional quadrant.

Figure 1: Basic Forms of Real Estate Investment

	Debt	*Equity*
Private	Mortgages	Direct investments such as sole ownership, partnerships, and other forms of commingled funds
Public	Mortgage-backed securities	Shares of REITs and REOCs

Real Estate Characteristics

- **Heterogeneity.** Bonds from a particular issue are alike, as are stocks of a specific company. However, no two properties are the same because of location, size, age, construction materials, tenants, etc.
- **High unit value.** Because real estate is indivisible, the unit value is significantly higher than stocks and bonds, which makes it difficult to construct a diversified portfolio.
- **Active management.** Investors in stocks and bonds are not necessarily involved in the day-to-day management of the companies. Private real estate investment requires active property management by the owner or a property management company. Property management involves maintenance, negotiating leases, and collection of rents.

Real Estate Characteristics

- **High transaction costs.** Buying and selling real estate is costly because it involves appraisers, lawyers, brokers, and construction personnel.
- **Depreciation and desirability.** Buildings wear out over time. Also, buildings may become less desirable because of location, design, or obsolescence.
- **Cost and availability of debt capital.** Because of the high costs to acquire and develop real estate, property values are very sensitive to the level of interest rates and availability of debt capital. Real estate values are usually lower when interest rates are high and debt capital is scarce.
- **Lack of liquidity.** Real estate is illiquid. It takes time to market and complete the sale of property.

Real Estate Characteristics

- **Difficulty in determining price.** Stocks and bonds of public firms usually trade in active markets. However, because of heterogeneity and low transaction volume, appraisals are usually necessary to assess real estate values. Even then, appraised values are often based on similar, not identical, properties. The combination of limited market participants and lack of knowledge of the local markets makes it difficult for an outsider to value property. As a result, the market is less efficient.

Property Classifications

- Real estate is commonly classified as **residential** or **non-residential**.
- Residential real estate includes single-family homes and multi-family properties, such as apartments.
- Non-residential real estate includes commercial properties, other than multi-family properties, and other properties such as farmland and timberland.

Reasons to invest in Real Estate

- **Current income**. Investors may expect to earn income from collecting rents and after paying expenses and taxes.
- **Capital appreciation**. Investors usually expect property values to increase over time, which forms part of their total return.
- **Inflation hedge**. During inflation, investors expect both rents and property values to rise.
- **Diversification**. Real estate, especially private equity investment, is less than perfectly correlated with the returns of stocks and bonds. Thus, adding private real estate investment to a portfolio can reduce risk relative to the expected return.
- **Tax benefits**. In some countries, real estate investors receive favorable tax treatment.

Valuation Approaches

- Since real estate transactions are infrequent, appraisals are used to estimate value or assess changes in value over time in order to measure performance.
- In most cases, the focus of an appraisal is market value; that is, the most probable sales price a typical investor is willing to pay.
- Appraisers use three different approaches to value real estate: the **cost approach**, the **sales comparison approach**, and the **income approach**.

Valuation Approaches

- The premise of the **cost approach** is that a buyer would not pay more for a property than it would cost to purchase land and construct a comparable building.
- Consequently, under the cost approach, value is derived by adding the value of the land to the current replacement cost of a new building less adjustments for estimated depreciation and obsolescence.
- The cost approach is often used for unusual properties or properties where comparable transactions are limited.

Valuation Approaches

- The premise of the **sales comparison approach** is that a buyer would pay no more for a property than others are paying for similar properties.
- With the sales comparison approach, the sale prices of similar (comparable) properties are adjusted for differences with the subject property.
- The sales comparison approach is most useful when there are a number of properties similar to the subject that have recently sold, as is usually the case with single-family homes.

Valuation Approaches

- The premise of the **income approach** is that value is based on the expected rate of return required by a buyer to invest in the subject property.
- With the income approach, value is equal to the present value of the subject's future cash flows. The income approach is most useful in commercial real estate transactions.

Income Approach

- The income approach includes two different valuation methods: the **direct capitalization method** and the **discounted cash flow method**.
- With the *direct capitalization method*, value is based on capitalizing the first year NOI of the property using a capitalization rate. This is the method we are going to explore.
- With the *discounted cash flow method*, value is based on the present value of the property's future cash flows using an appropriate discount rate.
- Value is based on NOI under both methods.

Net Operating Income (NOI)

Rental income if fully occupied

+ Other income

– Vacancy and collection loss

– Operating expense

= Net operating income

Net Operating Income (NOI)

- *Rental income if fully occupied* is the combined total rent under the terms of each individual residential or commercial lease, with the assumption that the property is 100 percent occupied.
- *Other income* includes, for example, proceeds from vending machines, proceeds from laundry services, income generated from parking fees, and other relevant service charges.
- *Vacancy loss* corresponds to the reduction of income given that a project's occupancy is typically less than 100 percent over the long run. You must take a vacancy into consideration, even if occupancy is 100 percent at the time your analysis is being conducted.

Net Operating Income (NOI)

- A *collection loss* amount recognizes that not all tenants honor their contractual lease obligations. In other words, a certain percentage of the tenants will default, whether because of a failed business or some other reason.
- *Operating expenses* include all necessary expenditures associated with operating and maintaining an investment property. Operating expenses typically include:
  - Property Taxes
  - Rental Property Insurance
  - Property Management Fees
  - Maintenance and Repairs
  - Miscellaneous Expenses (legal fees, marketing and advertising expenses)

Net Operating Income (NOI)

- It is important to note that interest expenses , tenant improvements, repairs to wear and tear and income taxes are not included in the calculation of net operating income.
- This is because NOI is unique to the property itself and does not include other expenses that are specific to the investor/borrower.

Net Operating Income (NOI)

- **Example**: Calculate net operating income (NOI) using the following information:

Property type	Office building
Property size	200,000 square feet
Gross rental income	€25 per square foot
Other income	€75,000
Vacancy and collection loss	5% of potential gross income
Property taxes and insurance	€350,000
Utilities and maintenance	€875,000
Interest expense	€400,000
Income tax rate	40%

Net Operating Income (NOI)

- **Answer:**
- Gross rental income = €5,000,000 = 200,000 SF × €25
- Other income = 75,000
- Potential gross income = €5,075,000
- Vacancy and collection losses = 253,750 = 5,075,000 × 5%
- Operating expenses = 1,225,000 = 350,000 + 875,000
- Net operating income = €3,596,250
- Note that interest expense and income taxes are not considered operating expenses.

Capitalization Rate

- The **capitalization rate**, or cap rate, and the discount rate are not the same rate although they are related. The discount rate is the required rate of return; that is, the risk-free rate plus a risk premium.
- The cap rate is applied to first-year NOI.
- If NOI and value is expected to grow at a constant rate, the cap rate is lower than the discount rate as follows:

  cap rate = discount rate – growth rate

- The value of the property using the direct capitalization method is $Value = \frac{NOI_1}{cap\ rate}$

Capitalization Rate

- **Example:** Suppose that net operating income for an office building is expected to be $175,000, and an appropriate cap rate is 8%. Estimate the market value of the property using the direct capitalization method.
- **Answer**: $Value = \frac{NOI_1}{cap\ rate} = \frac{175{,}000}{8\%} = 2{,}187{,}500$

Cost Approach

- The premise behind the **cost approach** is that a buyer is unlikely to pay more for a property than it would cost to purchase land and build a comparable building.
- The steps involved in applying the cost approach are as follows:
- *Step 1:* **Estimate the market value of the land.** The value of the land is estimated separately, often using the sales comparison approach.

Cost Approach

- Step 2: **Estimate the building's replacement cost**. Replacement cost refers to the cost of a building having the same utility but constructed with modern building materials.
- Step 3: **Deduct depreciation including physical deterioration, functional obsolescence, locational obsolescence, and economic obsolescence.** Physical deterioration is related to the building's age and occurs as a result of normal wear and tear over time. Physical deterioration can be curable or incurable.
- An item is curable if the benefit of fixing the problem is at least as much as the cost to cure. For example, replacing the roof will likely increase the value of the building by at least as much as the cost of the roof. The cost of fixing curable items is subtracted from replacement cost.

Cost Approach

- An item is incurable if the problem is not economically feasible to remedy. For example, the cost of fixing a structural problem might exceed the benefit of the repair.
- Since an incurable defect would not be fixed, depreciation can be estimated based on the **effective age** of the property relative to its total **economic life**.
- **Economic life** is the expected period of time during which an asset remains useful to the average owner.
- The **effective age** is the estimated age of a structure based on its utility and physical wear and tear.

Cost Approach

- Physical deterioration implicitly incorporates incurable costs.

$$Physical\ deterioration = \\ = \frac{effective\ age}{total\ life}(replacement\ cost - curable\ costs)$$

Cost Approach

- *Functional obsolescence* is the loss in value resulting from defects in design that impairs a building's utility. For example, a building might have a bad floor plan. As a result of functional obsolescence, NOI is usually lower than it otherwise would be because of lower rent or higher operating expenses.
- *Locational obsolescence* occurs when the location is no longer optimal. For example, five years after a luxury apartment complex is completed, a prison is built down the street making the location of the apartment complex less desirable. As a result, lower rental rates will decrease the value of the complex.

Cost Approach

- *Economic obsolescence* occurs when new construction is not feasible under current economic conditions. This can occur when rental rates are not sufficient to support the property. Consequently, the replacement cost of the subject property exceeds the value of a new building if it was developed.

Cost Approach

- The value of a structure under the cost approach:

$$Value = Market\ value\ of\ land + replacement\ cost - curable\ costs - physical\ depretiation - functional\ obsolescence - locational\ obsolescence - economic\ obsolescence$$

Cost Approach

- **Example:** Twin Towers is a 200,000 square foot high-rise apartment building located in the downtown area. The building has an effective age of 10 years, while its total economic life is estimated at 40 years. The building has a structural problem that is not feasible to repair. The building also needs a new roof at a cost of €1,000,000. The new roof will increase the value of the building by €1,300,000. The bedrooms in each apartment are too small and the floor plans are awkward. As a result of the poor design, the estimated loss in value of €5,000,000. When Twin Towers was originally built, it was located across the street from a park. Five years ago, the city converted the park to a sewage treatment plant. The negative impact on the value is € 7,500,000.

Cost Approach

- Due to recent construction of competing properties, vacancy rates have increased significantly resulting in an estimated loss in value of €1,200,000. The cost to replace Twin Towers is estimated at €400 per square foot plus builder profit of €5,000,000. The market value of the land is estimated at €20,000,000. An appropriate cap rate is 8%. Using the cost approach, estimate the value of Twin Towers.

Cost Approach

- **Answer**:
- Replacement cost including builder profit: (200,000 s.f. × €400 per s.f.) + 5,000,000 = 85,000,000
- Curable physical deterioration – new roof = 1,000,000
- Physical deterioration: (10-year effective age / 40 year life) × 84,000,000 = 21,000,000
- Functional obsolescence – poor design = 5,000,000
- Locational obsolescence – sewage plant = 7,500,000
- Economic obsolescence – competing properties = 1,200,000
- Market value of land = 20,000,000

Cost Approach

- **Answer**: Estimated value using the cost approach = 85,000,000 – 1,000,000 – 21,000,000 – 5,000,000 – 7,500,000 – 1,200,000 + 20,000,000 = €69,300,000

Sales comparison Approach

- The premise of the sales comparison approach is that a buyer would pay no more for a property than others are paying for similar properties in the current market.
- Ideally, the comparable properties would be identical to the subject but, this is impossible since all properties are different.
- Consequently, the sales prices of similar (comparable) properties are adjusted for differences with the subject property. The differences may relate to size, age, location, property condition, and market conditions at the time of sale.

Sales comparison Approach

- **Example**: An appraiser has been asked to estimate the value of a warehouse and has collected the following information:

Unit of Comparison	Subject Property	1	2	3
Size, in square feet	30,000	40,000	20,000	35,000
Age, in years	5	9	4	5
Physical condition	Average	Good	Average	Poor
Location	Prime	Prime	Secondary	Prime
Sale date, months ago		6	18	12
Sales price		$9,000,000	$4,500,000	$8,000,000

Sales comparison Approach

- Each adjustment is based on the unadjusted sales price of the comparable.
- Properties depreciate at 2% per annum. Since comparable #1 is four years older than the subject, an upward adjustment of $720,000 is made [$9,000,000 × 2% × 4 years].
- Condition adjustment: Good: +5%, average: none; poor: –5%. Because comparable #1 is in better condition than the subject, a downward adjustment of $450,000 is made [$9,000,000 × 5%].
- Similarly, an upward adjustment is made for comparable #3 to the tune of $400,000 = $8,000,000 × 5%.

Sales comparison Approach

- Location adjustment: Prime – none, secondary – 10%. Because both comparable #1 and the subject are in a prime location, no adjustment is made.
- Over the past 24 months, sales prices have been appreciating 0.5% per month. Because comparable #1 was sold six months ago, an upward adjustment of $270,000 is made [$9,000,000 × 0.5% × 6 months].

Sales comparison Approach

Adjustments	Subject Property	1	2	3
Sales price		9,000,000	4,500,000	8,000,000
Age		+720,000	-90,000	-
Condition		-450,000	-	+400,000
Location		-	+450,000	-
Sale Date		+270,000	+405,000	+480,000
Adjusted Sales Price		9,540,000	5,265,000	8,880,000
Size in s.f.	30,000	40,000	20,000	35,000
Adjusted sales price per s.f.		238.5	263.25	253.71
Average sales price per s.f.	251.82			
Estimated value	7,554,600			

Exercises

- Which real estate valuation method is likely the *most appropriate* for a 40- year-old, owner-occupied single-family residence?
- A. Cost approach.
- B. Sales comparison approach.
- C. Income approach.

Exercises

- **Answer**: B
- The sales comparison approach is likely the best valuation approach because of the number of comparable transactions. The cost approach is not as appropriate because of the difficulty in estimating depreciation and obsolescence of an older property. The income approach is not appropriate because an owner-occupied property does not generate income.

Exercises

- You are provided the following data for a property:
  - Building size 50,000 square feet
  - Replacement cost €75 per square foot
  - Actual age 10 years
  - Effective age 12 years
  - Total economic life 20 years
  - Economic obsolescence €400,000
  - Land market value €900,000
- Using the cost approach, calculate the estimated property value of the building.

Exercises

- Replacement cost = €3,750,000 = [50,000 s.f. × €75 per s.f.]
- Physical deterioration = 2,250,000 = [3,750,000 × (12 eff age / 20 life)]
- Economic obsolescence = 400,000
- Land value = 900,000
- Total value = 3,750,000 - 2,250,000 – 400,000 + 900,000 = €2,000,000

Due diligence

- Real estate investors, usually perform due diligence to confirm the facts and conditions that might affect the value of the transaction. Due diligence may include the following:
  - Review of rental history.
  - Confirm the operating expenses by examining bills.
  - Perform a physical/engineering inspection to identify structural issues and check the condition of the building systems.
  - Inspect the title and other legal documents for deficiencies.
  - Have the property surveyed to confirm the boundaries.
  - Verify compliance with zoning laws, building codes, and environmental regulations.
- Due diligence can be costly, but it lowers the risk of unexpected legal and physical problems.

Real Estate Investment Trusts (REIT)

- The main types of REITs are the following:
- **Equity REITs** are actively managed, own income-producing real estate, and seek to profit by growing cash flows, improving existing properties, and purchasing additional properties.
  - REITs often specialize in a particular kind of property, while still diversifying holdings by geography and other factors.
- **Mortgage REITs** invest primarily in mortgages, mortgage securities, or loans that are secured by real estate.

Advantages

- **Superior liquidity**. Investors in publicly traded real estate securities enjoy far greater liquidity than do investors in physical real estate, because REIT shares trade daily on a stock exchange. The low liquidity of a direct real estate investment stems from the relatively high value of an individual real estate property and the unique nature of each property.
- **Lower minimum investment**. While a direct investment in a real estate property may require a multi-million dollar commitment, REIT shares trade for much smaller dollar amounts.

Advantages

- **Access to premium properties**. Some prestigious properties, such as high profile shopping malls or other prominent or landmark buildings, are difficult to invest in directly. Shares in REITs that have invested in these properties represent one way to take an ownership stake in these assets.
- **Active professional management**. While a direct investment in properties requires a degree of real estate investment expertise and property management skill, REIT investments do not. REITs employ professional management to control expenses, maximize rents and occupancy rates, and sometimes to acquire additional properties.

Advantages

- **Greater potential for diversification**. Because of the high cost of a single property, it is difficult to achieve adequate diversification though direct investments in real estate. Through REITs, however, an investor can diversify across property type and geographical location

Disadvantages

- **Taxes versus direct ownership**. Depending on local laws, investors that make direct investments in properties may be able to deduct losses on real estate from taxable income or replace one property for a similar property ("like-kind exchange" in the U.S.) without taxation on the gains. For investors in REITs, these specific tax benefits are not available.
- **Lack of control**. REIT investors have comparatively little input into investment decisions compared to investors that make direct investments in real estate.

Disadvantages

- **Limited potential for income growth**. REITs' high rates of income payout limit REITs' ability to generate future growth through reinvestment.

Types of equity REITs

- **Retail or Shopping Center REITs**. REITs in this category invest in shopping centers of various sizes and sometimes in individual buildings in prime shopping neighborhoods.
- **Office REITs**. Office REITs own office properties that typically lease space to multiple business tenants. Leases are long (generally 5 to 25 years) and rents increase over time. In analyzing office REITs, analysts must consider properties' location, convenience and access to transportation, and the quality of the building.

Types of equity REITs

- **Residential (Multi-Family) REITs**. This category of REITs invests in rental apartments. An important variable that will affect rental income is the overall strength of the local economy. Other factors to consider include local demographic trends, availability of alternatives (i.e., home ownership) and factors related to the portfolio properties themselves, such as the age of the properties and how appealing they are to renters in the local market compared to other competing properties.

Types of equity REITs

- **Health Care REITs**. Health care REITs invest in hospitals, nursing homes, retirement homes, rehab centers, and medical office buildings. Health care REITs are relatively unaffected by the overall economy but, other factors are important, such as government funding of health care, demographic shifts, new construction versus demand and increases in the cost of insurance.

Types of equity REITs

- **Industrial REITs**. Industrial REITs own properties used in activities such as manufacturing, warehousing, and distribution. In analysing industrial REITs, an analyst needs to closely examine how new properties coming on to the market and the demand for such space by tenants, will affect the value of existing properties. Location and availability of transportation links (airports, roads, and ports) are also important considerations for industrial REITs.

Types of equity REITs

- **Hotel REITs**. Hotels are exposed to revenue volatility driven by changes in business and leisure travel.
- **Storage REITs**. Properties owned by storage REITs rent self-storage lockers to individuals and small businesses. In analysing storage REITs, it is important to look at the local factors that drive demand for storage, such as housing sales and new business start-ups. Seasonal demand should also be considered.
- **Diversified REITs**. Diversified REITs own more than one category of REIT.