TX Marketing I: Building a Real Estate Practice
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Module Description

Asset Management is the term used for the decision-making process involved in maximizing returns on real property investments. This process includes such decisions as whether or not to renew a lease for a tenant, purchase or lease more assets, improve, sell, or rent one’s current assets, etc. The asset manager must be aware of market trends and indicators and must be able to accurately predict the cash inflows and outflows of his or her own holdings. This module provides an introduction to the basics of asset management. It introduces the student to the key ideas and concepts of management as well as the techniques a manager will use to evaluate the market and evaluate the financial impact of alternatives in order to make properly informed decisions. The student will learn how to handle distressed properties and how to successfully market a revenue-increasing strategy.
The module ends with case studies and real world practice, which will aid the student in becoming confident and familiar with the various aspects of asset management.

Module Learning Objectives

Upon completion of this module, you should be able to:

- Discuss the basic concepts of asset management.
- Discuss the common decisions faced by an asset manager.
- State what a Real Estate Investment Trust (REIT) is and list the benefits of investing in one.
- Identify the risks and rewards associated with real estate investment.
- Describe how to conduct a useful market study.
- Explain how interest rates affect the real estate market.
- Calculate the depreciation of residential and commercial real property held for business or investment.
- Comprehend the financial ratio methods of valuation, including Price to Earnings Ratios and Cap Rates.
- Create a pro forma projection for a real estate investment alternative.
- Identify the basics of a Discounted Cash Flow (DCF) analysis.
- Demonstrate how to use the Net Present Value (NPV) and Internal Rate of Return (IRR) to compare the values of several alternatives.
- Discuss distressed properties and how to handle them.
- State the important factors to consider when refinancing.
- Explain the importance of advertising and rent concessions in an investment property.
- Apply these concepts learned in the real world.
Key Terms

Adjustable Rate Mortgage (ARM): A loan whose interest rate varies with some market rate, such as Treasury Securities.

Beige Book: An analysis of market trends compiled by the Federal Reserve’s Open Market Committee.

Capitalization Rate: The ratio of NOI to net present value, used to estimate the value of a property. It is sometimes referred to as the cap rate.

Cash Flow: The movement of funds into or out of an investment.

Discounted Cash Flow (DCF) Analysis: A method of valuing real estate by discounting future cash flows to a present value.

Distressed Property: Property that is in poor physical or financial condition.

Effective Market Area (EMA): The area from which an investment draws one-half to two-thirds of its business.

Equity: The difference between a property’s present value and the loan balance still remaining on the property.

Free Cash Flow (FCF): The amount of free cash a company has, equal to the sum of after-tax profits, depreciation, after-tax interest, and non-cash losses in net working capital.

Inflation: A general rise in prices that results in reduced purchase power.

Interest: The rent paid on money.
**Internal Rate of Return:** The discount rate that reduces all cash inflows and outflows to and from an investment to zero.

**Leasehold Improvement:** Any alteration or renovation that increases the worth or utility of the property.

**Multiple Listing Service (MLS):** An arrangement in which brokers agree to share their listings with other brokers by pooling the information in a database in exchange for a share of the commission earned by a transaction.

**Net Operating Income (NOI):** Equal to gross income, less vacancies, credit losses, and operating expenses.

**Net Present Value (NPV):** A value for an investment calculated by discounting its future cash flows to a present value.

**Opportunity Cost:** The value of the next best alternative. If someone can eat either a cookie or a cupcake, but not both, the opportunity cost of eating the cookie is the enjoyment she or he would have received from eating the cupcake.

**Price to Earnings Ratio (P/E):** A financial ratio used in valuing stocks and REITs, equal to the price of one share divided by the amount of earnings that share receives in a year.

**Pro Forma Projections:** Financial statements for a property, given certain assumptions or hypothetical situations.

**Real Estate Investment Trust (REIT):** A publicly traded company that owns and operates commercial real estate.
Rent Concessions: Offers that a landlord uses to entice tenants to rent or lease his or her property, such as reduced rent or free amenities.

Variable Operating Expenses: Operating expenses that are dependent on the occupancy rate.
Lesson 1: Introduction to the Concept of Asset Management

Lesson Topics

This lesson focuses on the following topics:

- Introduction
- Cash Flow
- Decisions
- Real Estate Investment Trusts
- Investment Risks
- Market Study
- Interest Rates
- Inflation
- Taxes and Depreciation
Lesson Learning Objectives

By the end of this lesson, you should be able to:

- Discuss the basic concepts of asset management.
- Discuss the common decisions faced by an asset manager.
- Explain the decisions involved with the brokerage’s office facility.
- Explain the cash flow generated by the brokerage and how it occurs.
- Explain the elements of a Real Estate Investment Trust.
- Identify the risks and rewards associated with real estate investment.
- Demonstrate how to conduct a useful market study.
- Explain how interest rates affect the real estate market.
- Calculate the depreciation of residential and commercial real property held for business or investment.
- Integrate inflation, taxes and depreciation in evaluating the market condition.

Introduction

The goal of any investor is to maximize profit. A stock market investor buys those stocks she or he thinks likely to return the greatest amount in dividends or have the greatest resale value. Real estate investors have a slightly different task. Real property is often purchased with large amounts of borrowed money; in order to create a return on investment, it must produce significant cash flows that can pay off the debts the owners have accrued in their purchase with profit to spare. To establish these significant cash flows it requires a good asset management plan. Asset management is the term used for the decision-making process involved in maximizing returns on real property investments. This process can often be quite complex, requiring knowledge of the real estate market and of the economy in general, as well as familiarity with commonly used market research and cash flow evaluation techniques.
Real estate investments come in many different forms, including malls, strip malls, offices, apartments, hotels, golf courses, ski lodges, residential rental property, and warehouses. These investments, however, are not without risks. Good decision making requires an accurate market study and a working knowledge of the principles of economics.

It should be noted that the information contained within this lesson may become dated and the student may need to update his or her knowledge on the issues presented here.

**Cash Flow**

Investments in real estate have three main cash flows: from rent, from appreciation, and from an increase in equity. Rent is the price a tenant pays to use the property. In many situations, this is a straightforward charge; but some lessors charge percentage rents, which involve a base rent, rather than a rent per square foot, plus a percentage of the gross sales of the lessee.

Real estate investments also pay off through appreciation. Appreciation is the increase in the present value of a property over time. A property can increase in value without appreciating, through inflation. Inflation is a rise in general prices; the future value of a property must be adjusted for inflation before its appreciation can be determined. Properties that are well-kept and located in desirable areas will appreciate over time. This can lead to a lower vacancy rate, higher rents, and a higher resale value. One decision of an asset manager is whether to make capital improvements in a property that will increase its value and cause it to appreciate in the future.
The final cash flow from real estate is equity build-up. Equity is the amount of a property that the investor has actually paid for. Investors increase their equity through amortization of the property's mortgage. Amortization is the decrease in the principal balance on a loan over time.

**Decisions**

In this section, we will consider several decisions asset managers commonly face, including the decision to rent or lease a property, to renew or replace a tenant, to improve or convert a property, to sell or hold one, etc.

**The Decision to Rent or Lease**

There are different advantages and disadvantages associated with tenant agreements that involve month-to-month rents (periodic tenancy) and those that involve long-term leases. Monthly rent schedules allow the landlord to raise rents with the market. However, the landlord who rents his property is at a greater risk for vacancy, as his tenant’s contract only runs through the month.

Property managers must be familiar with the needs and desires of their individual tenants. Generally, long-term leases are offered at lower rates, because tenancy is more or less guaranteed during the term of the lease. This decreases the cost to the landlord of marketing and improving the property. Some long-term leases that allow the tenant to get out of the agreement by giving a 30-day notice have penalty fees to make up lost profits from these unrealized benefits. The structure of a particular lease will be dependent on each tenant and the prevailing market conditions at the time.
The Decision to Renew or Replace
At the end of a tenant’s lease, the manager may be faced with the decision to either renew the lease with the current tenant or find a replacement tenant. Current tenants may pressure the manager for lower rents or other benefits. The cost of making changes in the lease must be weighed against the cost of finding a new tenant, including improving and repairing the property to marketable quality, the period of vacancy after the current occupant leaves, and the cost of marketing the property.

Risk assessment is important in such decisions. A manager can only estimate the time it will take to find a replacement tenant, or the terms that will be necessary to reach an agreement.

The Decision to Improve or Convert
A manager often has to make improvements to a property. The cost of improvements is typically less for renewing tenants than for new tenants, because renewing tenants face the difficulty of accommodating the improvements during their tenancy, and the difficulty and expense of moving if improvements are not made. New tenants, however, must be enticed to rent or lease the manager’s property over other, competing properties. For this and other reasons, landlords are more likely to charge lower rates to tenants with long-term leases and to provide incentives for renewing tenants.

Improvements can include such things as new insulation, building extensions, retiling, repainting, etc. The improvements a manager makes can be crucial to a sale. A radio station looking to rent a building may be far more likely to buy one that already has its own broadcasting antenna than one that does not. Of course, the manager must weigh the cost of making any improvements, especially specific ones, against the likelihood that a new tenant will decide to rent or lease the property.
A manager should also weigh the cost of improvements against the cost of conversion. Sometimes the purpose a building was designed to execute is not the most profitable use of the space the building occupies. For example, a luxury apartment complex may be situated in an area with rapidly declining demand for such living. The property might be better off if it were converted to a center containing professional offices for dentists and attorneys. The investor must decide whether the cost of conversion will be made up by the increased occupancy rate it creates. This decision is, of course, constrained by time limits: the time the decreased demand for the building’s current use is expected to continue and the time the investor intends to hold the property. It may be more profitable to sell the building to another investor who is willing to make the required conversions and take on the risk herself or himself.

Sometimes it can be more cost efficient to completely demolish a building and construct a replacement. For example, a small office building might be torn down to make room for a towering skyscraper. Again, no decision is an easy one, or without its own risk.

**The Decision to Hold or Sell**
Deciding whether to hold or sell a property is not as easy as just determining whether or not the property turns a profit. In real estate, as well as in the rest of the economy, there are costs that do not show up on any financial statement, known as opportunity costs. An opportunity cost is the value of the next best alternative. If someone can eat either a cookie or a cupcake, but not both, the opportunity cost of eating the cookie is the enjoyment that person would have received from eating the cupcake. It may be that one investment or asset allocation decision is profitable, but not as profitable as another. This can be as simple as receiving an offer of $5 per sq. ft. from one prospective tenant and $5.25 from another; or it can be as difficult as comparing the discounted present values of several income producing properties based on 10-year projections of their cash flows.
There are also nonmaterial reasons that can influence an investor's decision to hold or sell, such as tenant satisfaction, risk avoidance, or intuition. If a landlord's tenants have a high level of satisfaction, she may be less likely to sell the property. Other investments may seem more risky than their projected payoff. However, an investor holding a single, large property, no matter how likely future profits seem, may be desirous to sell it and diversify his holdings. At other times, an investor's intuition steers him ahead. As any gambler will tell you, if you do not chase the flush sometimes, you will never get it.

**Real Estate Investment Trusts**

The principles of asset management are not only of benefit to investors who hold real property for investment purposes. A Real Estate Investment Trust (REIT) is a publicly traded company that owns and operates commercial real estate. Investors can take advantage of the benefits of owning real estate, such as hedging against inflation, by buying and selling REITs. Deciding which REITs to purchase works much the same way as deciding how to maximize one's own cash flow: the investor must evaluate the market and examine the benefits and risks each company undertakes in its investments.

There are three types of REITs: equity REITs, mortgage REITs, and hybrid REITs, which are hybrids of the first two. Equity REITs hold income-producing properties, while mortgage REITs extend credit to the owners of real estate.

**Benefits**

Real estate investments have several drawbacks resulting from their physical immobility and the sizeable investment required for their purchase. An investor who puts a significant amount of money into, for example, an office building, cannot liquidate the asset in any short period of time without likely incurring a loss; and, moreover, she stands to lose a lot should a disaster befall her particular investment. Holding REITs eliminates some of the drawbacks to holding real estate.
Since most REITs are traded on the stock market, they are easily liquidated, and since they have many, diverse holdings, the investor whose portfolio includes REITs is not subject to the risk of having his or her money tied up in just a few properties.

**Investment Risks**

The goal of any investor is to maximize the profit an investment returns. Unfortunately, the opportunity for increased profit often goes hand in hand with an increased investment risk. If there were profit without risk, everyone would be rich.

Real estate investments have their own unique set of risks and rewards. For example, real estate is considered to be a good hedge against inflation, meaning that during periods of rising prices, real estate rarely costs much more than it is worth.

On the other hand, real estate investment has its downsides. Most real estate is purchased with large amounts of borrowed money and to be profitable must return enough money to pay back any loans taken out to purchase it and then some. If high vacancy rates or low rents make this impossible, it can lead to a loss for the investor and possible foreclosure of the property. Since loans take many years to repay, an investment must be profitable through all, or most of, those years to pay for itself. Though accurate market analysis and property valuation techniques can help to minimize risk, many factors cannot be foreseen.

For example, suppose an investor purchases a small strip mall next to a large grocery store. The strip mall’s tenants are all small businesses that derive most of their clientele from the grocery store’s patrons. If the grocery store decides to move its location to a larger, newly built store down the street, the smaller businesses are likely to follow it; the investor who owns the building, however, is stuck with it. He must charge lower rents to attract clients, and if he decides to sell the property, he is likely to receive less than what he originally paid for it.
Some seemingly excellent asset management decisions can result in disaster. For instance, an owner could notice a trend in other investor’s decisions to convert their small apartment complexes in the area to business offices, but decides herself not to convert her property, expecting that with the reduced apartment space available, she will be able to capitalize on the demand. If, however, the demand drops out of the residential market in that area, the investor will be left holding an unprofitable investment. Similarly, if an investor chooses to convert his property to follow a market trend, he may soon realize he has become the victim of a passing fad and be left with a converted property that no longer has any value.

**Market Study**

Property produces income through renting space. A market study evaluates the current supply and demand for space, in order to predict the return of an investment alternative. In order to evaluate the market, the manager must be aware of what his or her particular market is. For example, an apartment complex manager needs to consider the effective market area (EMA) for his particular complex. The EMA is the area from which the property is expected to derive one-half to two-thirds of its business. If the complex offers affordable housing near a bus route to a major university, it may draw a significant portion of its business from that university. The manager should consider the location of the property in relation to business centers, grocery stores, schools, parks, etc., when she or he considers the demographic to market to.

The other properties in the EMA should be taken into account. A manager should determine what demand exists and how that demand can be satisfied. Managers can do this by examining the current market trends. If business in the area is expanding, what demographic is that business geared to?
What types of business are expanding and which, if any, are contracting? Is any significant change in the nature of the market expected in the future? For instance, the construction of a highway through the area or a large outlet mall may alter the market’s demand for space.

In some situations, the type of space required may not have too much of an impact on the price of a property. For example, in a rapidly expanding business center, the individual lot that a property is situated on may be worth far more than the cost of demolishing the property and constructing one that meets current demand. Similarly, a property in high demand that requires improvements might be leased before improvements are made, or with the lessee agreeing to pay for those improvements.

The market is also subject to the political climate in which it is situated. There may be a high demand for nuclear power in an area, but those living near a potential site may object to the construction of a facility there. Real property is subject to zoning laws, building codes, and land-use regulations, and any changes in these are likely to have an impact on the demand for space and the types of space that are demanded in an area.

**Interest Rates**

Interest is the rent paid on money. Interest rates are determined by the market—the individual lenders—but are influenced by the Federal Reserve’s open market activities and its primary lending discount rate (the interest rate the Federal Reserve charges to other banks). They are also limited by usury laws, which prohibit lenders from charging excessive interest on loans.

Interest rates are inversely correlated with property values. That is, rising interest rates cause falling property values, and falling rates cause raised values.
This is because most real estate is purchased with borrowed money: a borrower must pay more money to a lender during periods of high interest rates, and thus is willing to spend less on the property itself.

Investors should be aware of the signs that interest rates will increase. Important economic trends and indicators can be found in the actions of the Federal Reserve. Before every Federal Open Market Committee meeting, Federal Reserve economic analysts compile a report called The Beige Book, which is available on the Federal Reserve's website.

**Inflation**

Inflation is a general rise in prices; it results in a decrease of purchasing power. That is, because of inflation, what a dollar could buy in 1900 is more than what a dollar can buy today. Inflation is a normal part of the operation of a free market and there are many indexes used today to measure it, such as the Consumer Price Index and the Producer Price Indexes. It is important for an asset manager to be able to accurately predict rising or falling inflation, especially if it occurs at a quicker than average rate.

**Inflation Predictors**

Economists, market analysts, and investors are highly concerned with predicting inflation. Unfortunately, it is one of the most difficult aspects of the economy to predict accurately, and there are several indicators, all of which are imperfect, that can be considered.
**P**

One reliable predictor of inflation is known as P*. It is published by the Federal Reserve Board and is equal to the quotient of long-run aggregate demand and the Board’s estimate of potential domestic output. Thus, P* is the projected price level that should exist, given the accuracy of the variables. If P* is greater than the current price level P, inflation is expected; if P* = P, no inflation is expected; and if P* is less than P, deflation is expected.

**The Exchange Rate**

The exchange rate is the amount of a foreign currency that a dollar can buy. For example, if one dollar can buy 11 Mexican pesos, then the exchange rate is 11 pesos on the dollar. When one currency buys less foreign currency than before, it is said to be depreciating. Depreciation of the dollar is a good indicator of a high inflationary risk.

**GDP**

Strong economic growth can also indicate future inflation. Growth, measured by the Gross Domestic Product, or GDP, is often accompanied by an increase in aggregate demand. Greater demand leads to rising prices, that is, to inflation. One-year GDP growth is a more reliable predictor of inflation in the United States than it is in many other countries and can be monitored to an investor’s benefit.

**Unemployment**

Falling unemployment often accompanies economic growth as well. When more people have jobs, there is more disposable income in circulation, thus greater demand and higher prices. Economists use a function called the Phillips curve, which states that high unemployment is correlated with deflationary pressures and low unemployment with inflationary pressures. The point along the curve at which there is no pressure for either inflation or deflation is known as the NAIRU or Non-Accelerating Inflation Rate of Unemployment.
The Effect of Inflation on Real Estate Investments

Real estate is recognized by most investors as a good hedge against inflation. That is, real estate investments are less likely than many other investments to suffer the ills of rising inflation. But it is not immune to such ills: during periods of high inflation, investors may rush to real estate to hedge against inflation, and end by causing higher real estate prices through excessive demand.

Inflation and Interest

High inflation can also be damaging to the real estate market. When inflation is low, interest rates are usually low as well. The opposite is also true: high inflation and high interest rates go hand in hand. Investors may desire to purchase real estate to hedge against high inflation, only to be deterred by the interest rates necessary to make a purchase. This can, however, be an advantage if the current owner holds an assumable loan at a rate lower than the market rate. An investor may be enticed to buy the property at a level much higher than market value in order to assume the favorable loan and hedge against inflation.

Taxes and Depreciation

An important element of decision making in real estate is taxes. Income from income-producing properties is taxed at normal income-tax rates (that is, according to the rates of the property's owner), but income from long-term capital gains, such as the sale of a property held for more than one year, is taxed according to the capital gains rates.

The gain realized on the sale of real estate is based on the investor's taxable basis in the property. The basis when an investor acquires a property is usually the price he or she paid for the property. This basis is adjusted for depreciation over the life of the asset. Depreciation is a decrease in the value of an asset that has a limited life.
For example, land is not depreciable because it is not considered to have a limited life; though the property built on that land is depreciable. Only property used in business or held for investment is depreciable.

The IRS publishes the depreciation rates for various types of investments. Many assets can be depreciated using several methods of the taxpayer’s choice, but investment property, both residential and commercial, must be depreciated using the straight-line method. This means that the rate of depreciation does not increase or decrease over the useful life of the property. Nonresidential property, for example, is considered to have a useful life of 39 years and depreciates at a constant rate of 2.564% annually. Suppose an investor purchases an office building for $80,000 in April 2004. What is her basis in March 2014? To determine the investor’s basis we must use the rates provided by the IRS, in the table below:

**Depreciation Rates for Nonresidential Property**

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<th>Year 1</th>
<th>Year 2 up to 39</th>
<th>Year 40</th>
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<tr>
<td>January</td>
<td>2.461%</td>
<td>2.564%</td>
<td>0.107%</td>
</tr>
<tr>
<td>February</td>
<td>2.247%</td>
<td>2.564%</td>
<td>0.321%</td>
</tr>
<tr>
<td>March</td>
<td>2.033%</td>
<td>2.564%</td>
<td>0.535%</td>
</tr>
<tr>
<td>April</td>
<td>1.819%</td>
<td>2.564%</td>
<td>0.749%</td>
</tr>
<tr>
<td>May</td>
<td>1.605%</td>
<td>2.564%</td>
<td>0.963%</td>
</tr>
<tr>
<td>June</td>
<td>1.391%</td>
<td>2.564%</td>
<td>1.177%</td>
</tr>
<tr>
<td>July</td>
<td>1.177%</td>
<td>2.564%</td>
<td>1.391%</td>
</tr>
<tr>
<td>August</td>
<td>0.963%</td>
<td>2.564%</td>
<td>1.605%</td>
</tr>
<tr>
<td>September</td>
<td>0.749%</td>
<td>2.564%</td>
<td>1.819%</td>
</tr>
<tr>
<td>October</td>
<td>0.535%</td>
<td>2.564%</td>
<td>2.033%</td>
</tr>
<tr>
<td>November</td>
<td>0.321%</td>
<td>2.564%</td>
<td>2.247%</td>
</tr>
<tr>
<td>December</td>
<td>0.107%</td>
<td>2.564%</td>
<td>2.461%</td>
</tr>
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Depreciation for the first year is 1.819% x $80,000 = $1,455.20, since the property was acquired in April. Depreciation for 2005-2013 is based on the original value, not on the depreciated value of the previous year, so we can just multiply the rates 2.564% annual rate x 9 years = 23.076%. Thus, depreciation over that time is equal to 23.076% x $80,000 = $18,460.80. The property cannot be depreciated in the year of sale, because it is no longer possessed by the investor when taxes are due.

\[
$1,455.20 + $18,460.80 = $19,916.00
\]

If the investor sells the property in March, her basis will be:

\[
$80,000 − $19,916 = $60,084
\]

Therefore, if she sells the building for $90,000, she has realized $90,000 − $60,084 = $29,916 in capital gains.

In addition to the tax on capital gains, there is a 50 percent tax on recovered depreciation. The amount of depreciation recovered is equal to the original purchase price of the property less the adjusted basis at the time of sale, if the property is sold for more than its original purchase price. If it sells for less, the recovered depreciation is the final sale price less the adjusted basis at the time of sale. Properties sold at a loss recover no depreciation. So if the investor’s basis is $60,084 at the time of sale, the recovered depreciation equals $80,000 − $60,084 = $19,916. So her total taxes are:

Capital Gains: $29,926 x 0.36 tax rate = $10,773.36
Recovered Depreciation: $19,916 x 0.5 tax rate = $9,958
Total: = $20,731.36
Lesson Summary

Asset management is the term used for the decision-making process involved in maximizing returns on real property investments. This process can often be quite complex, requiring knowledge of the real estate market and of the economy in general, as well as familiarity with commonly used market research and cash flow evaluation techniques. Investments in real estate have three main cash flows: from rent, from appreciation, and from an increase in equity. The asset manager’s job is to maximize these cash flows through accurate and informed decision making. She or he does this by considering the several alternatives: renting or leasing, renewing or replacing, improving or converting, holding or selling, etc., and determining the most profitable course of action.

Another method of investing in real estate is the Real Estate Investment Trust or REIT. These are publicly traded companies that own and operate real property. Investing in these companies involves the same decision-making process as investing directly in real estate and comes with many of the same benefits and drawbacks. REITs avoid some of the risks, such as small diversity, involved in real property, though they are less likely to see the same sort of payoff.

Real estate investments come in many different forms, including malls, strip malls, offices, apartments, hotels, golf courses, ski lodges, residential rental property, and warehouses. These investments have their own unique set of risks and rewards, arising from real estate’s high cost and long economic life. Real property produces income through renting space. Investors can use a market study to evaluate the current supply and demand for space, in order to predict the return of an investment alternative. These studies must be conducted with the Effective Market Area (EMA) of the property in mind. The EMA is the area from which the property is expected to derive one-half to two-thirds of its business. A manager should determine what demand exists and how that demand is satisfied.
A good knowledge of the economy, such as the influence of interest rates and inflation on the market, can be of great use.

Interest is the rent paid on money. Interest rates are inversely correlated with property values. That is, rising interest rates cause falling property values, and falling rates cause raised values. For this reason, investors should be aware of the signs that interest rates will increase.

Inflation is a general rise in prices; it results in a decrease of purchasing power. Real estate is recognized by most investors as a good hedge against inflation. That is, real estate investments are less likely than many other investments to suffer the ills of rising inflation. When inflation is low, interest rates are usually low as well. The opposite is also true: high inflation and high interest rates go hand in hand.

Another important element of decision making in real estate is taxes. The gain realized on the sale of real estate is based on the investor’s taxable basis in the property. The basis when an investor acquires a property is usually the price she or he paid for the property. This basis is adjusted for depreciation over the life of the asset. When the asset is sold, the seller pays taxes on all recognized capital gain and on recovered depreciation.
Lesson 2: Weighing Alternatives

Lesson Topics
This lesson focuses on the following topics:

- Introduction
- Financial Ratio Analysis
- Pro Forma Projections
- Discounted Cash Flow Analysis
Lesson Learning Objectives

By the end of this lesson, you should be able to:

- Discuss the financial ratio methods of valuation, including Price to Earnings Ratios and Cap Rates.
- Create a pro forma projection for a real estate investment alternative.
- Identify the basics of a Discounted Cash Flow (DCF) analysis.
- Be able to use the Net Present Value (NPV) and Internal Rate of Return (IRR) to compare the values of several alternatives.
- Explain variable factors of investment property reports.

Introduction

Given the knowledge of the market, and of an investment, how does an asset manager then use that knowledge to make a decision? There are two basic approaches to the problem. First, a manager can use certain financial ratios to predict the value of an investment. This method, using the cap rate, is the most widely used, though the Discounted Cash Flow Analysis is gaining ground with many investors. This analysis predicts the future cash flows of an investment through the use of pro forma projections and discounts them to a present value that can be compared with the value of other alternatives.

It should be noted that the information contained within this lesson may become dated and the student may need to update his or her knowledge on the issues presented here.

Financial Ratio Analysis

Two financial ratios that can be used in estimating the value of an investment are the price to earnings ratio and the capitalization rate.
The Price to Earnings Ratio

A common method of predicting the price of a stock is the price to earnings ratio (P/E). However, the method is less widely used as a predictor of the price of Real Estate Investment Trusts (REITs).

The P/E tells investors how much in dividends they will receive per dollar of stock purchased. For example, if a REIT is selling at $144 a share and its expected dividends for the next fiscal year are $12 per share, then the P/E is $144/$12 = 12. As of this writing, P/Es at or below 16 are generally considered to be low ratios; those above 16 are high. Low ratios indicate solid earnings in the near future, but usually belong to companies that are more established and less likely to expand in the long run. High P/E stocks are usually found in rapidly expanding sectors, and may be indicative of fast growth and higher future yields. These latter stocks, of course, are, in general, riskier.

The Cap Rate

Capitalization rates or cap rates are the most widely used method of valuing income-producing real estate. The cap rate is equal to the Net Operating Income (NOI) divided by the Net Present Value of the property. NOI can be calculated from the Annual Gross Income as follows:

\[
\text{Scheduled Gross Income} - \text{Vacancies} - \text{Credit Losses} = \text{Effective Gross Income}
\]

\[
\text{Effective Gross Income} - \text{Operating Expenses} = \text{NOI}
\]

A cap rate valuation works like this: suppose the current fair market value of a property is $90,000 and its NOI is $8,100 or 9%. Based on the current market trends, an investor then estimates the average cap rate that investors will desire in 10 years.
This average rate is not tied directly to the NOI of the particular property being valued; but an investor can use information about comparable properties to estimate a rate. In this case, let us suppose our investor estimates a future cap rate of 8.5%. Finally, the investor estimates the NOI of his investment in 10 years, let us say $9,000. The future value will be:

\[
\text{Future Value} = \frac{\text{Projected NOI}}{\text{Projected Average Cap Rate}} = \frac{9,000}{8.5\%} = \frac{9,000}{0.085} = 105,882
\]

The investor, therefore, expects to make a profit of $14,882 from his original purchase price. A projected decrease in cap rates makes profit likely, under good management; this, however, does not mean a property should be purchased merely because it has a low current cap rate. In many cases, high cap rates are good indicators of greater returns, though they bespeak a greater risk as well.

The cap rate analysis overlooks the deeper reasons behind NOI. If a property is converting its capital at a low rate, there must be some cause—either through poor management, ill repair, high vacancy from low demand, etc. The Discounted Cash Flow Analysis, however, is concerned with precisely those factors that lead to the production of income, and is, therefore, gaining ground in the valuation of real property.

**Pro Forma Projections**

DCF analyses are conducted through the use of pro forma projections. These are financial statements for the property, given certain assumptions or hypothetical situations. They can be done by hand, with a spreadsheet program like Excel, or with special DCF programs available on the market today. Typical pro formas have projections for the next 10 years’ revenue and expenses.
The Elements of a Pro Forma Projection

Potential Gross Revenue

The potential gross revenue for a particular year is the sum of all the rents for that year, less vacancy and concessions (such as a tenant’s free-rent period).

Suppose a real estate salesperson is composing a pro forma for an office building to show to an interested investor. The building has three offices: office A, 600 sq. ft., currently under lease for 4 more years; office B, 1200 sq. ft., currently under lease for 1 more year; and office C, 600 sq. ft., currently vacant. Suppose further that the rents for the three offices are $3.50, $3, and $3.50 per square foot per month, respectively. The licensee expects that there will be low demand in the next two years and that office C will remain vacant for those years, even if the landlord offers three months’ free rent. Furthermore, office B will not have a new tenant until Year 3. She also expects that the tenant currently leasing office A will not renew in Year 5, and that the office will be vacant for half the year.

### Potential Gross Revenue

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office A</td>
<td>$25,200</td>
<td>$25,200</td>
<td>$25,200</td>
<td>$25,200</td>
<td>$25,200</td>
</tr>
<tr>
<td>Office B</td>
<td>$43,200</td>
<td>$43,200</td>
<td>$43,200</td>
<td>$43,200</td>
<td>$43,200</td>
</tr>
<tr>
<td>Office C</td>
<td>$25,200</td>
<td>$25,200</td>
<td>$25,200</td>
<td>$25,200</td>
<td>$25,200</td>
</tr>
<tr>
<td>Vacancy</td>
<td>-$25,200</td>
<td>-$68,400</td>
<td>-$0</td>
<td>-$0</td>
<td>-$25,200</td>
</tr>
<tr>
<td>Concessions</td>
<td>-$0</td>
<td>-$0</td>
<td>-$6,300</td>
<td>-$0</td>
<td>-$0</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$68,400</td>
<td>$25,200</td>
<td>$87,300</td>
<td>$93,600</td>
<td>$68,400</td>
</tr>
</tbody>
</table>

Note, for instance, that Year 1’s rent for office A is calculated with the formula:

Monthly Rate x Square Footage x 12 months = $3.50 x 600 x 12 = $25,200
Operating Expenses

Operating expenses are the costs of maintaining the investment—for example, paying the property manager, fixing the air conditioner, cutting the grass, etc. Some operating expenses are fixed, meaning they are costs incurred regardless of occupancy, while others are variable, meaning they are dependent upon occupancy.

Suppose the office building for which we are creating a pro forma has current operating expenses of $2 per sq. ft., which are expected to increase by 2% annually. Further suppose that 80% of the expenses are fixed, and the others are variable. So the maximum current operating expense is $2 per sq. ft. x 2,400 sq. ft. = $4,800. However, only 80% of these costs are fixed: that is, the owner is paying $3,840 in fixed expenses and ($4,800 − $3,840) x 0.75 = $720 in variable expenses (since only 1800/2400 sq. ft. = 75% of the building is occupied) for a total of $4,560. Of course, by the time the new owner takes over, the expenses will have risen by 2%.

The licensee adds the operating expenses to the pro forma projection as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Maximum</th>
<th>Fixed</th>
<th>Vacancy</th>
<th>Variable</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$4,896</td>
<td>$3,917</td>
<td>25%</td>
<td>$734</td>
<td>$4,651</td>
</tr>
<tr>
<td>2</td>
<td>$4,994</td>
<td>$3,995</td>
<td>75%</td>
<td>$250</td>
<td>$4,245</td>
</tr>
<tr>
<td>3</td>
<td>$5,094</td>
<td>$4,075</td>
<td>0%</td>
<td>$1,019</td>
<td>$5,094</td>
</tr>
<tr>
<td>4</td>
<td>$5,196</td>
<td>$4,157</td>
<td>0%</td>
<td>$1,039</td>
<td>$5,196</td>
</tr>
<tr>
<td>5</td>
<td>$5,300</td>
<td>$4,240</td>
<td>25%</td>
<td>$795</td>
<td>$5,035</td>
</tr>
</tbody>
</table>
Some sample calculations are given below.

Year 3 Maximum = Year 2 Maximum x 1.02 = $4,994 x 1.02 = $5,094

Year 2 Fixed Expenses = Year 2 Maximum x 0.8 = $4,994 x 0.8 = $3,995

Year 1 Variable = (Year 1 Maximum − Year 1 Fixed) x (1 − Vacancy)

= ($4,896 − $3,917) x (1 − 0.25)

= $734

An actual pro forma will generally be more specific, including the types of fixed and variable costs: landscaping, utilities, permits, zoning, legal work, etc.

**Net Operating Income**

The Net Operating Income (NOI) figure is important to investors for several aspects of analysis, including cap rates and cash flows. It is the difference between the effective gross income (rent less vacancy) and total operating expenses.

Given the calculations we have made already, we can add NOI to our pro forma:

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>$68,400</td>
<td>$25,200</td>
<td>$87,300</td>
<td>$93,600</td>
</tr>
<tr>
<td>Expenses</td>
<td>-$4,651</td>
<td>-$4,245</td>
<td>-$5,094</td>
<td>-$5,196</td>
</tr>
<tr>
<td>NOI</td>
<td>$63,749</td>
<td>$20,955</td>
<td>$82,206</td>
<td>$88,404</td>
</tr>
</tbody>
</table>
Total Pre-Tax Cash Flow

Several payments are not considered in the calculation of NOI, such as debt service and leasing commissions, which must be subtracted from the NOI to determine the total pre-tax cash flow of an income-producing property.

Loans for income-producing property are often based on a 75% loan-to-value (LTV) ratio, meaning that the investor pays 25% of the purchase price of the investment and borrows the rest of the funds. Suppose that the purchase price of the investment property we have been considering is $200,000 and the investor, if he decides to purchase it, will take out a 75% LTV loan for $150,000 over a term of 15 years at an annual rate of 7.5%. We can use an amortization calculator to determine the annual payments on the loan. In this case, monthly payments will be $16,686.

Another recurring expense not included in the NOI is the commission of the real estate broker. Brokers often earn commission based on the rent received from tenants. If the commission rate is 8%, we can calculate our pre-tax cash flow on the pro forma as follows:

<table>
<thead>
<tr>
<th>Total Pre-Tax Cash Flow</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rent</td>
<td>$68,400</td>
<td>$25,200</td>
<td>$87,300</td>
<td>$93,600</td>
<td>$68,400</td>
</tr>
<tr>
<td>NOI</td>
<td>$63,749</td>
<td>$20,955</td>
<td>$82,206</td>
<td>$88,404</td>
<td>$63,365</td>
</tr>
<tr>
<td>Loan</td>
<td>-$16,686</td>
<td>-$16,686</td>
<td>-$16,686</td>
<td>-$16,686</td>
<td>-$16,686</td>
</tr>
<tr>
<td>Commission</td>
<td>-$5,472</td>
<td>-$2,016</td>
<td>-$6,984</td>
<td>-$7,488</td>
<td>-$5,472</td>
</tr>
<tr>
<td>Pre-Tax Cash Flow</td>
<td>$41,591</td>
<td>$2,253</td>
<td>$58,536</td>
<td>$64,230</td>
<td>$41,207</td>
</tr>
</tbody>
</table>
**After-Tax Cash Flow**

Many expenses can be deducted from the property owner's annual taxes, including the interest on the loan, improvements made to the property, any loan fees that are amortized over the course of the loan, and the commissions paid to the broker(s).

To determine the annual interest paid on a loan with fixed rate payments, we can use an amortization schedule, which can be calculated at several online sites, such as [http://www.hsh.com](http://www.hsh.com). For a $150,000 loan at 7.5% interest over 15 years, the schedule looks like this:

<table>
<thead>
<tr>
<th>Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest</td>
<td>$11,059</td>
<td>$10,622</td>
<td>$10,152</td>
<td>$9,644</td>
<td>$9,098</td>
</tr>
<tr>
<td>Principal</td>
<td>$5,627</td>
<td>$6,064</td>
<td>$6,535</td>
<td>$7,042</td>
<td>$7,589</td>
</tr>
<tr>
<td>Total</td>
<td>$16,686</td>
<td>$16,686</td>
<td>$16,686</td>
<td>$16,686</td>
<td>$16,686</td>
</tr>
<tr>
<td>Balance</td>
<td>$144,373</td>
<td>$138,309</td>
<td>$131,774</td>
<td>$124,733</td>
<td>$117,144</td>
</tr>
</tbody>
</table>

Thus, the final, after-tax cash flow for the property we are considering is:

<table>
<thead>
<tr>
<th>Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOI</td>
<td>$63,749</td>
<td>$20,955</td>
<td>$82,206</td>
<td>$88,404</td>
<td>$63,365</td>
</tr>
<tr>
<td>Interest</td>
<td>$11,059</td>
<td>$10,622</td>
<td>$10,152</td>
<td>$9,644</td>
<td>$9,098</td>
</tr>
<tr>
<td>Commission</td>
<td>$5,472</td>
<td>$2,016</td>
<td>$6,984</td>
<td>$7,488</td>
<td>$5,472</td>
</tr>
<tr>
<td>Taxable Income</td>
<td>$47,218</td>
<td>$8,317</td>
<td>$65,070</td>
<td>$71,272</td>
<td>$48,795</td>
</tr>
<tr>
<td>Taxes@27%</td>
<td>$12,749</td>
<td>$2,246</td>
<td>$17,569</td>
<td>$19,243</td>
<td>$13,175</td>
</tr>
<tr>
<td>Pre-Tax CF</td>
<td>$41,591</td>
<td>$2,253</td>
<td>$58,536</td>
<td>$64,230</td>
<td>$41,207</td>
</tr>
<tr>
<td>After-Tax Cash Flow</td>
<td>$28,842</td>
<td>$7</td>
<td>$40,994</td>
<td>$44,987</td>
<td>$28,032</td>
</tr>
</tbody>
</table>
Some sample calculations are given below.

Year 3 Taxable Income = Year 3 NOI – Year 3 Interest – Year 3 Commission
  = $82,206 – $10,152 – $6,984
  = $65,070

Year 3 Taxes = Year 3 Taxable Income x 0.27 = $65,070 x 0.27 = $17,569

Year 3 ATCF = Year 3 PTCF – Year 3 Taxes = $58,563 – $17,569 = $40,994

Using the Pro Forma Projection

Pro Formas are used to determine the cash flows for alternative investments or asset management decisions. The Discounted Cash Flow analysis allows an investor or manager to compare several alternatives by discounting the cash flows of each to a net present value, which can then be compared.

Discounted Cash Flow Analysis

A Discounted Cash Flow (DCF) analysis can be used to evaluate the price of a property and the return of several alternatives. An owner’s cash flow is the net income he or she receives, plus expenditures for non-cash charges, such as depreciation or a decrease in net working capital. A DCF analysis takes projected future cash flows and discounts them to a net present value. The DCF figures for several alternatives can then be compared to determine the best plan of action.

Net Present Value

The first method of DCF analysis compares the net present value (NPV) of alternatives. The NPV is calculated by subtracting the discounted present value of an investment alternative from the cost of implementing that alternative.
The formula for NPV is:

\[
NPV = \sum_{i=0}^{n} \left( \frac{\text{Cash Flow at } i}{(1 + \text{Discount Rate})^{t(i)}} \right)
\]

Here, i is the date of each cash flow, t(i) is the time elapsed since the first cash flow, and Discount Rate is the rate used to discount the cash flow, which can be the inflation rate, the market interest rate, or the rate of an alternative investment.

We can use Microsoft’s Excel spreadsheet software to perform difficult NPV calculations for us. Excel uses a set of pre-defined formulas that are represented to the user as functions. The user specifies a range of values for the function and Excel spits out an answer. Suppose we have the following information entered into our spreadsheet about a particular investment we are considering, property A, and the expected returns for the first four years of operations:

<table>
<thead>
<tr>
<th>NOI: First Four Years</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>1 First Year Operations</td>
<td>$8,500</td>
</tr>
<tr>
<td>2 Second Year Operations</td>
<td>$9,200</td>
</tr>
<tr>
<td>3 Third Year Operations</td>
<td>$9,500</td>
</tr>
<tr>
<td>4 Fourth Year Operations</td>
<td>$9,800</td>
</tr>
<tr>
<td>5 Net Present Value</td>
<td></td>
</tr>
</tbody>
</table>

We want the program to calculate the NPV for our investment on the basis of our desired rate of return. The function is:

\[=\text{NPV}(\text{rate, values})\]
If our desired rate of return is 10%, we enter the following into cell B5:

\[ =\text{NPV}(0.1, \text{B1:B4}) \]

And the program will return our NPV, $29,161. Essentially, this figure tells us that if we were to invest $29,161 at 10% per annum for four years, we would receive the same amount of money that we received through our first four years of operations.

Most investment calculations for real estate are based on a 10-year holding period, but for the sake of simplicity, let us suppose we plan to sell property A after four years. If the purchase price is $86,500 and we estimate an average of 3% appreciation per year, we expect to sell the property for:

\[ $86,500 + $86,500 \times 0.03 \times 4 = $96,880 \]

We can calculate the NPV by adding $96,880 to our fourth year operations figure in the spreadsheet. Our new NPV is $95,331.94. Suppose our alternative to investing in property A is investing in the stock market at an expected rate of 5%. The NPV to receive the same amount of returns from the stock market at this rate is $112,412.27. The required stock purchase well exceeds the cost of buying property A for $86,500, so property A is the better alternative.

**Internal Rate of Return**

The internal rate of return (IRR) of an investment is the yield of the investment within itself, i.e., when all the cash inflows and outflows to the investment have been discounted to zero. The IRR can be used to make asset allocation decisions. Investors consider a decision to be a good one if the IRR is greater than the opportunity cost of the capital required to implement it.
IRR can be difficult to calculate. We have to use our formula for NPV and estimate rates. The formula, as above, is:

\[
\text{NPV} = \sum_{i=0}^{n} \frac{\text{Cash Flow at } i}{(1 + \text{IRR})^t(i)}
\]

Since the NPV is the discounted value of all cash flows, and IRR is the rate of return independent of all cash flows, we have to find the value for IRR that makes NPV = 0. Unfortunately, there is no mathematical formula we can use to do this for us. We have to estimate a value for IRR and see how close our NPV is to 0, and then use that knowledge to estimate a closer value, etc. Software is available that does this for us, and by far the most prevalent is Microsoft's Excel spreadsheet software that is included with many people's computers. If you have Excel, you can use the formula:

=IRR (values, guess)

To calculate IRR, record the payments as negative values and the income as positive values in the order paid or received in a column. Suppose the values you enter are in column B, cells 2 through 37 and your estimated IRR is 10%. You would write in cell B 38 the following formula:

=IRR (B2:B37, 0.1)

The software would then give you an IRR figure. Your estimated rate of return does not have to be too close to the original; if you do not enter a figure, Excel will use a 10% initial estimate and work from there.

To use the Internal Rate of Return, simply compare it to the other investment opportunities available. If the interest rate for fixed-rate securities is 8%, the typical return on stock market portfolios is 9%, and the IRR of a different investment
opportunity is 8.5%, stick with the 10% IRR. With the aid of software, this method is simple, though not foolproof.

**Modified Rate of Return**

The Internal Rate of Return can be inaccurate because it neglects to consider the actual rate that cash flows from the investment will be reinvested at. To compensate for this, some investors use the Modified IRR, or MIRR, which calculates a rate of return on the basis of the finance rate (determined from the cost of the investment) and the rate the investor expects to receive on reinvestment. The formula for MIRR is too complex to consider here, but it, like the IRR, can be calculated with Excel, or other investment programs.

**Lesson Summary**

In order to make informed decisions about asset allocation, a manager must be able to use the available valuation techniques for real estate, including both financial ratio methods and the discounted cash flow (DCF) analysis. Two financial ratios often used in valuation are the price to earnings ratio (P/E) and the capitalization or cap rate. P/E ratios are widely used in valuing stocks and have some merit in the valuation of Real Estate Investment Trusts (REITs). Cap rates are by far the most widely used method of valuing real estate investments. The cap rate is equal to the Net Operating Income (NOI) divided by the Net Present Value (NPV) of the property. So, to determine the NPV of an income-producing property, an investor must simply divide the NOI by her or his projected cap rate.

Another method of valuation, which is gaining ground in the market today, is the DCF analysis. These analyses use pro forma projections—future financial statements incorporating certain assumptions and hypotheses—to determine an alternative’s cash flows. These cash flows are then discounted to an NPV using a complex equation that many software programs, such as MS Excel, can perform.
The investor or manager then compares the difference between the discounted present value and the cost of several alternatives, to determine the best asset allocation strategy. This type of NPV analysis is closely related to the Internal Rate of Return (IRR). This rate can be compared with other available rates, such as stock market returns or securities investments, to determine an asset allocation strategy. Some investors use the Modified Internal Rate of Return (MIRR) instead, considering it a more accurate assessment of value.
Lesson 3: Property in Distress and Marketing & Real Estate Practice

Lesson Topics

This lesson focuses on the following topics:

- Introduction
- Liquidating a Distressed Property
- Holding a Distressed Property
- Refinancing
- Rent Concessions
- Advertising
- Insight into Tax-Favorable Real Estate Transactions
- Case Studies
Lesson Learning Objectives

By the end of this lesson, you should be able to:

- Discuss distressed properties and how to handle them.
- State the important factors to consider when refinancing.
- Describe the considerations in liquidating a distressed property.
- Describe the considerations in holding on to a distressed property.
- Describe the considerations in financing a distressed property.
- Explain the importance of advertising and rent concessions in an investment property.
- Explain the reasons in offering reduced deposits as incentives to prospective tenants.
- Explain how incentives such as reduced rents and free rents can be used as a marketing strategy.
- Explain how leasehold improvements can be used as a marketing strategy.
- Explain how other advertising outlets may be used to attract prospective tenants to a property.
- Apply these concepts concerning real estate practice in the real world.

Introduction

A property in distress is one that is in poor condition either physically or financially. The task of managing these properties often falls to a lender who has foreclosed on a property for default. In such a case, the lost loan amount is a sunk cost—it is irrecoverable—and should not affect the manager’s decisions. The manager must decide whether to hold the property or sell it. When the manager chooses a plan of action, her or his next step is to market it. Occupancy rates can be increased through rent concessions and advertising, the topics of this lesson.

A physically distressed property may be in poor repair: it may be dilapidated, infested with termites, have a mold problem, etc., or it may have environmental liabilities, such as lead-based paint, asbestos, radon, or other toxic hazards.
A financially distressed property may have low returns or even be running at a loss. It may have several years of taxes in arrears and be completely unmarketable. The owner of such a property is faced with the difficult task of making the property a financially viable asset, either to increase his or her own cash flow or to liquidate it. It should be noted that the information contained within this lesson may become dated and the student may need to update his or her knowledge on the issues presented here.

**Liquidating a Distressed Property**

In some cases, it will be best to liquidate a property in distress. If operation of the property would result in a loss—that is, total cost would exceed total revenue—selling the property is advisable. It is important to remember that the total cost of retaining the asset should not include any amount the lender lost on the loan, as that is a sunk cost.

A distressed property may be worth no more than the land on which it is situated, if its problems are such that the cost of managing it would exceed the rent it would return. Sometimes, however, improvements can make the difference in selling the property as raw land and selling it as an income producer. The owner must compare the expected sale price of the property in its current condition with the expected sale price of the improved property, less the cost of improvement.

The owner should also keep an eye on opportunity cost. Even if an owner could increase her yield by improving the property, if the money that would be used for improvements could turn a greater profit elsewhere, the improvements may not be worth the trouble. In general, the owner should improve the property only if the return of selling it as-is and investing the improvement money elsewhere is less than the return of making improvements and selling it.
As with any investment decision, the market should be taken into account. If there is small demand for rental property, even minor improvements may be a bad investment. The owner should always take into account the availability of buyers, which is dependent on the profitability of the investment. If vacancy rates are high, investor demand for rental property will be low; and if inflation is high, demand will be high as well. Improvements should be made only after a market study has been conducted (see Lesson 2). Sometimes a study will indicate that converting a property from its current or intended use is economically more valuable than improvement.

Even if improvements or conversions can be made to make the property profitable, it may not generate enough net operating income to allow a potential buyer to receive financing.

Improving a distressed property may include rehabilitation or refinancing. In the case of a physically distressed property, remediation of a hazard, such as lead-based paint, may be necessary. Even if remediation is necessary before the property can be sold or turned to value, the asset manager is faced with several options. For example, if a particular apartment complex is foreclosed, in part because the tenants recognized an asbestos exposure risk, the cost of reducing the risk to safe residential levels may be more than the cost of converting the complex to hold small offices and reducing the risk to 40-hour work week levels. This is known as risk-driven remediation.

**Holding a Distressed Property**

Some distressed properties may be turned to profitable use for their owners through intelligent asset management.
As a general rule, an owner should hold the property if the net present value of all its future cash flows exceeds the net present value of the owner’s best alternative investment opportunity. However, certain conditions may make holding the property undesirable. For example, its current tenants may be upset with past management and desirous to leave, or the owner may want to diversify his or her investment portfolio with other assets.

If the title of a distressed property falls to a lender who has foreclosed the property, she or he may not have the managerial experience necessary to run the property. Such a titleholder may seek to hire a property manager—a licensed real estate professional who specializes in running the day-to-day affairs of the property. Property managers are different from asset managers, in that they do not make decisions involving the sale or financing of a property.

**Refinancing**

Refinancing a property may be valuable during periods of low interest rates. A lower rate, however, is not always enough to make refinancing a good option. The loan process is not costless: in refinancing, the owner must pay for a property appraisal, inspections, taxes, document preparation, attorney’s fees, and more. The lower interest rate the owner receives must be able to save him or her more money than it costs—and, even then the owner must be able to absorb the cost of refinancing until the new rate can pay for itself. Determining the proper time to refinance and the proper method of refinancing can be a complex and involving process for an asset manager.

**Loan Types**

First, a manager should have some familiarity with the types of loans available. Loans traded on the secondary market must meet the requirements established by the Federal National Mortgage Association (Fannie Mae) such as the maximum loan limits and the criteria for loans with high LTVs.
These are known as conventional loans. Conventional loans have fixed monthly payments that go toward the principal and interest on the loan, and slowly amortize the loan balance until it is completely paid off.

Other loans are available as well. One type popular with investors is the adjustable rate mortgage or ARM. This loan starts at an interest rate typically lower than the market rate for conventional loans, and the rate is adjusted at set intervals known as adjustment periods. These adjustments are based on the market fluctuations of some economic indicator external to both the lender and the borrower, such as Treasury Securities, called the index. The lender adds a fixed rate called the margin to the index to determine the ARM rate for any particular adjustment period.

ARMs can have several benefits to the investor who is willing to take the risk. Since the initial interest rates for ARMs are lower than for conventional loans, if the rates remain constant or decrease, the price of the loan can be less over its term. The loan carries a risk as well: payments can increase to levels well above conventional rates, and if the rates reach the payment cap, negative amortization—an increase in the principal—can occur.

It will be very important to ask a lender some basic questions about an ARM loan including the following:

**What is the initial rate of interest?** This is also called a “teaser rate” and is often low to entice a borrower. The initial rate period is usually short, such as one year, but can be longer.

**What is the adjustment interval?** This is how often the interest rate on the ARM is adjusted. A common adjustment period is one year.
What is going to be the index? Most often lenders use the London Interbank Offered Rate (LIBOR) but may also elect to use the Treasury Bill Index. The Index always fluctuates.

**What is the Margin?** The margin is the lender's profit and is always fixed. The margins can range anywhere from 2.00% to 4.75%.

**What is the Fully-Indexed Accrued Rate (FIAR)?** This is the rate for the forthcoming adjustment period and is determined by adding the index at the adjustment period plus the margin.

**What is the Adjustment Period Cap?** Most ARMs have limits on how high a rate can increase during an adjustment period. A good example is 2%.

**What is the Life of Loan Cap?** Most ARMs have a limit on how high the rate can increase during the entire life of the loan. This is usually 5% to 6%.

**Discount Points**
Lenders are often willing to offer discount points—percentages of the loan amount that the buyer can pay upfront to reduce the interest rate. In technical terms, one discount point is equal to 1 percent of the loan amount. Lenders will offer these points when the net present value of the future cash flow from interest is less than the value of the discount. An investor who takes out the loan must determine the opportunity cost for the discount and compare it with the interest savings over time.
Rent Concessions

Rent concessions, also known as abatements, are offers of cash, reduced rent, or amenities to entice potential tenants to rent a property, increasing the occupancy rate. These concessions can include reduced deposits, reduced or free rent periods, free merchandise, amenity upgrades, or leasehold improvements. A landlord should be willing to offer concessions when the increased cash flows from the higher occupancy the concessions bring, has a greater net present value (or IRR, or MIRR, etc.) than the cash flows without the concessions.

Reduced Deposits

The security deposit is a fund held in trust by the landlord for the tenant. The Uniform Residential Landlord and Tenant Act provide that the amount of the deposit may not exceed one month’s rent, which is a common deposit many landlords will ask for. However, a landlord can entice certain tenants to move in by offering reduced deposits. This does not reduce the landlord’s income, because he or she does not own the deposit, unless it is required at the end of the tenant’s tenancy to clean or repair the property, or to recover damages from a tenant who violated the terms of her or his lease. The downside of offering such reductions is that it becomes more difficult for the landlord to recover the requisite funds for damages, if that becomes necessary. In such an event, a landlord might have to take the tenant to court, which could prove time consuming and even costly. Sometimes a tenant screening process can help, but it is by no means foolproof. A landlord must weigh the possibility of losing funds to damages against the increased likelihood that a potential tenant who is offered a deposit reduction will rent the property.
Reduced Rents
A landlord may consider reducing the rent of a tenant who agrees to sign a long-term lease. The landlord should weigh the alternative costs—the cost of vacancy and of improvements, if the current tenant does not have a long-term lease—against the cost of a reduction in income from rent over the duration of the lease.

Free Rent Periods
Instead of spreading the discounted rent over the term of the lease, a landlord can offer periods of rent-free tenancy, usually at the beginning of the lease. This can be troublesome. However, as it may significantly reduce the amount of income a landlord receives from the property for a short period. For example, if the owner of a large apartment complex offers one month free rent to all new or renewing tenants, he or she will lose all the income from those tenants for an entire month. On the other hand, offering free rent to tenants may be beneficial: if the units had remained vacant, they would have generated the same amount of income; this way, at least, the landlord is guaranteed income after the one-month period.

Free Merchandise
A landlord may also offer free merchandise or amenities to attract tenants. This is more helpful in some situations than in others. For example, the offer of a free television set is not likely to induce a corporation to rent an office building as its main headquarters, but it may be enough to induce a college student to rent a one-bedroom unit in an apartment complex. Waiving the fees for certain amenities like washers and dryers, refrigerators, internet service, or covered parking, or even waiving the application fee, can make certain prospective tenants more likely to rent. Landlords should be aware of their EMA and its demographic, as well as their target demographic, before deciding to offer amenity concessions.
Leasehold Improvements

A property often requires improvements to encourage tenancy. An improvement is any alteration or renovation that increases the worth or utility of the property. These can include electrical wiring, cable, high-speed internet, fiber optics, retiling, repainting, plumbing, drywall, additions, partitions, etc. Leasehold improvements are most often owned by the lessee; the landlord may want to consider an allowance to the lessee for improvements, based on the square footage of the leasehold property.

 Whoever owns the improvements depreciates them. Improvements are depreciated over 39 years, even though many have shorter useful lives. The depreciable life of improvements is a big legislative issue today. In 2002, President Bush signed a Tax Act that allowed an extra 30 percent depreciation deduction in the first year of ownership for certain types of property, including 5- and 7-year property, and leasehold improvements. This benefit was extended in 2003 by Congress to a 50 percent first-year deduction. To qualify for the bonus deduction, depreciable leasehold improvements must:

- Be in the interior of the property (that is, neither exterior improvements nor additions that extend the property qualify).
- Be made on nonresidential (i.e., commercial) property.
- Be made by the landlord, tenant, or sub lessee.
- Be made at least three years after the construction of the property.
- Not be improvements to the internal structure of the building that benefit a common area, such as elevators.
- Not be made by or for a tenant related to the landlord.

When depreciating improvements, the owner should be careful to make sure they qualify as improvements and not personal property. Only rather permanent changes that are affixed to the property can be considered leasehold improvements.
Advertising

Advertising is not only an integral part of encouraging tenancy, it is also part of the entire asset management decision-making process. Advertising can be costly and comes with its own opportunity costs. An unadvertised property, no matter what improvements have been made, is unlikely to find an occupant. Similarly, a property that fills no demand, no matter how much advertising is used in promoting it, is just as unlikely to find an occupant. A manager must weigh the cost of advertising against the other investment opportunities that exist, and then weigh the various types of advertisement against one another, before reaching an effective marketing strategy. Click each arrow to view the details.

Signs

Signs placed directly on a property for rent or lease can be effective tools in increasing the occupancy rate. Signs should be in bold-face and easily read from a distance. They should be placed facing a street or sidewalk, where passersby are likely to see them. Signs should be brief and emphasize an important aspect of the property. Some examples might be:

- For Lease
- $99 Move-In Special
- 3 Months Free Rent
- 12,500 Sq. Ft.
- $2.75/ Sq. Ft.
- Free Cable
- Pets Allowed

Signs should contain contact information, such as a phone number or website. If an apartment complex is being advertised, the leasing office's hours of operations should be included. Billboards and other signage not on the property itself should contain the name and location of the property, in addition to the other information.
Print
Newspapers, magazines, local real estate publications, pamphlets, mailings, and fliers can all be effective means of finding new tenants. Ideally, an ad should contain a picture and physical description of the property, an address, reasons why someone should desire to occupy it (amenities or concessions), and a telephone number for interested parties. Leasing office hours and the availability of showings/tours should be included too, if applicable.

Television, Radio, and the Internet
Television, radio, and Internet advertisements can all help the property to reach a wider audience. Some public television stations have specific blocks of programming, on the weekend for example, that show advertisements for real estate. The Internet, too, is becoming an expanding marketplace for property. Advertising on the web allows potential tenants to take virtual tours of the property and find more information than is typically available in a newsprint ad, such as the proximity of the property to schools, parks, and business centers. An online application process is easier for many people and might encourage them to apply.

Referral
In some circumstances, tenant referral can be an important source of new tenants. Apartment complexes, for instance, can increase their business significantly through tenant referrals. Generally, content tenants may refer others they know to be in search of an apartment, but it is best to offer incentives to referring and referred tenants, to increase the likelihood of a successful referral. A manager could give $100, for instance, to both the tenant making the referral and the tenant being referred. This may be a negligible amount in the complex’s cash flows, considering the increased occupancy, but it may also be just enough to entice potential tenants to sign a lease.
The Multiple Listing Service
A Multiple Listing Service (MLS) is an arrangement in which brokers agree to share their listings with other brokers by pooling the information in a database in exchange for a share of the commission earned by a transaction. This arrangement is beneficial to all the parties involved, because it expedites the listing process and allows more potential tenants access to information about the property, resulting in a speedier tenant location period and decreased vacancy rates. Any listing agreement an owner signs with a real estate broker should include a provision stipulating that the property to be advertised will be placed on an MLS.

Critical Thinking Questions
1. Which of the following situations involves appreciation?

A. An investor puts up the capital to build a shopping center near a recently constructed highway. Over time, more and more property is built in the area, and business begins to flourish. The shopping center sees increased demand for its space, and its market value grows significantly.

B. An investor purchases an office building during a time of general economic expansion. Unemployment is low and the demand for goods and services increases. The value of the dollar depreciates in comparison to foreign currency, and the investor finds that his office building sells for a much higher price than it was purchased for.

Feedback:
A is correct. Appreciation is an increase in a property's value. Property that is well-located and well-maintained, such as the investor's shopping center, can be expected to appreciate, or gain value, over time. Inflation occurs during times of economic growth and low unemployment. It causes a general rise in prices, but no rise in the value—and sometimes a decrease in the value—of real property.
2. Which of the following is a reason that an investor might consider adding Real Estate Investment Trusts (REITs) to her portfolio?

A. The investor does not have much current capital, but expects to receive a large loan for investment in REITs. She hopes to see a significant economic payoff for the greater risk of investing in REITs rather than in real property directly, and hopes to receive an annual depreciation reduction for the REITs' holdings.

B. The investor does not want the added risk of a single, large real property investment, but rather desires the diversity of an REIT. The investor knows that these securities still act as a hedge against inflation, and that he or she can liquidate them quickly and easily when she or he sees a new investment opportunity.

Feedback:
B is correct. REITs, like stocks, are governed by the Securities Act of 1933 and cannot be purchased with borrowed money. REITs have many of the benefits of real estate, such as an ability to hedge against inflation, without many of the drawbacks, i.e., high risk and illiquidity. They are less risky than direct investment in real estate and typically have a lesser payoff than good real estate investments. Finally, the holdings of the REIT cannot be depreciated by its shareholders, as they are still owned by the Trust.

3. Which of the following accurately describes the effect of interest rates on property values?

A. Rising interest rates cause rising property values, because landlords see the opportunity to charge higher rents to tenants who cannot afford the higher interest on a loan to purchase their own homes.
B. Rising interest rates cause falling property values because most property is purchased with borrowed money, and the purchasers who are paying more in interest are willing to pay less for the property itself.

Feedback:
B is correct. Interest rates and property values are negatively correlated. When interest rates are high, consumers are paying more rent toward interest and thus have less money for rent on real estate. This is true even for tenants who do not hold loans because the landlords pass the increased interest payments on to their tenants. The fact that landlords may charge higher rents during periods of rising interest rates is mitigated by the fact that the landlords themselves must pay higher interest payments on their loans. When consumers in general are paying a greater rent on money (interest) they have less to make payments with on real property, and property values fall.

4. How does a cap rate analysis work?

A. The investor uses a projection of the Net Operating Income of a property in 10 years and the expected rate at which a future investor will desire to capitalize his or her income to determine a future value for the property. The investor can then compare this future value with the sale price of the property to predict her or his return on investment.

B. The investor uses the expected rate of capitalization that a future investor will desire to discount the projected 10-year cash flows of the property to a net present value. The investor can then compare the present value of the property with the present value of other investment alternatives.
Feedback:
A is correct. Cap rate analyses are based on the plausible assumption that when a property is resold, the purchaser will be willing to pay only so much money as will make the capitalization of the property's NOI a desirable rate. So the future value of a property, under this analysis, is just the projected NOI divided by the cap rate we expect a future investor to desire. Cap rates are not used to discount cash flows to present values, but rather to project a future resale value for an investment property. The discounted cash flow analysis, on the other hand, uses a discount to find a comparable net present value for an investment.

5. For which of the following reasons might a borrower NOT want an adjustable rate mortgage (ARM)?

A. ARM rates can increase to levels well above the market interest rates for conventional loans. Though these loans have payment caps, they often do not have rate caps and there is a chance for the borrower to realize negative amortization, or an increase in the principal balance of the loan.

B. ARMs typically have initial interest rates that are 1-3 points higher than the market interest rates for conventional loans. Though these rates may decrease in the future, they may remain the same or increase, causing even greater payments. The rate for the loan is tied to an index, which varies at the lender's discretion, and may move in a direction unfavorable to the borrower.

Feedback:
A is correct. A is correct. ARMs are attractive because they have initial interest rates lower than those for conventional loans (typically 1-3 points lower). However, these loans are tied to an independent economic index, which can fluctuate upward, causing higher payments and, in some cases, negative amortization.
Insight into Tax-Favorable Real Estate Transactions

The following information present broad questions intended to help you reflect on the information we have covered in this module.

Q: What is a 1031 Exchange?
A: Section 1031 exchanges are available for real and personal property held for investment or used in a trade or business. The exchange of property under Section 1031 of the Internal Revenue Code allows the exchanger (i.e., the taxpayer) to avoid the depletion of equity that can result from paying taxes on the sale of her or his property. 1031 exchanges are based on the principle of continuity of investment, under which the exchanger’s investment in the replacement property is seen to be substantially a continuation of his or her investment in the relinquished property. Thus, the exchanger may invest the entire equity accrued in her or his investment property in the replacement property.

Q: What are the requirements of a fully deferred exchange?
A: The general rule is that a fully deferred exchange requires that the exchanger’s replacement property must amount to a trade for equal or greater equity and for equal or greater fair market value. One important effect of this rule is that the exchanger must use the entire net proceeds from the relinquished property as a down payment on the replacement property. Also, the exchanger must replace any mortgage paid off at the sale of the relinquished property with an equal or greater mortgage on the replacement property.
Q: What is “boot?”
A: “Boot” is a term that describes anything of value that a taxpayer receives in an exchange other than a replacement property. When parties make a like-kind exchange, sometimes it is necessary to include cash (cash boot) or other dissimilar assets (such as a reduction of debt through the exchange [mortgage boot]) in the transaction to balance the value of the exchange. The party receiving these dissimilar assets is taxed for their value.

If the exchanger fails to purchase a replacement property of equal or greater value than the relinquished property, then there is a strong possibility that tax law will judge that he or she has received mortgage boot. An exchanger can also receive other property which will be deemed boot. For example, if an exchanger receives an automobile, art work, or any other thing of value as part of an exchange, then this non-like-kind property will be deemed boot and taxed on the fair market value of the property received.

Q: Can the exchanger take cash out of a 1031 Exchange?
A: You cannot take cash out of an exchange without creating a taxable event. If an exchanger elects to take some of the equity out of the sale proceeds in the way of cash or a note, then this is called “cash boot” and is taxable. To avoid taxable boot, an exchanger should opt to refinance after the exchange transaction is completed, rather than taking cash out of the sale proceeds.

Q: What are the basic rules for determining whether one parcel of real estate is of like kind to another?
A: In the case of real estate, all property is considered to be of like kind to all other real estate. For example, farm land can be exchanged for an office building, and a condominium can be exchanged for a trailer park. Certain other tangible personal property can be exchanged, like airplanes and equipment.
Whether one piece of personal property is of like kind to another is usually determined by evaluating whether they fall within the same General Asset Class or Product Class.

**Q: What does Section 1031 tell us about when replacement properties should be identified?**

A: Section 1031 tells us that replacement properties must be identified within 45 days after the sale or transfer of the relinquished property. This requirement is strictly enforced, even if the 45th day falls on a holiday. This identification must be put in writing; it must be signed and dated by the exchanger; and it must received by the qualified intermediary no later than 45 days after the sale of the relinquished property.

Replacement property must be identified unambiguously. Usually a legal description or a mailing address is sufficient to clearly indicate the chosen property. The identified replacement property must be purchased within 180 days of the date that the relinquished property was sold, or the due date of the exchanger’s tax return, which occurs first.

**Q: Can an exchanger legally trade multiple relinquished properties for a single replacement property?**

A: Yes—several relinquished properties may legally be exchanged for a single replacement property. It is also true that one relinquished property may be exchanged for several replacement properties. The important thing in a 1031 like-kind exchange is not that a person trades the same number of properties, but that all of the transactions should be part of a unified exchange agreement from the beginning. The 45-day identification rule and 180-day replacement rule will start running from the date of the sale of the first relinquished property. Because timing can be an issue in these kinds of transactions,
It is often better to structure the exchange as a series of exchanges rather than one transaction in which all of the properties are transferred as a group (sometimes called a “multiple leg exchange”).

**Q: How is the 1031 exchange reported to the IRS?**

A: The 1031 exchange is reported on IRS Form 1099S (Proceeds from Real Estate Transactions), which should indicate that one is effecting a 1031 exchange and will receive property as consideration for the sale of relinquished property. IRS Form 8824 (Like-Kind Exchanges) must also be completed as part of the annual federal return.

In addition to determining realized gain, recognized gain, and the new basis in the replacement property, this form will ask for the date that the relinquished property was sold, and the dates that the replacement property was identified and acquired. Form 8824 is actually a supporting form for IRS Form 4797 (Sales of Business Property). Any income received on rental properties must be reported on Schedule D of Form 1040.

**Q: Is it possible to close on replacement property before the exchanger has found a buyer for the relinquished property?**

A: It is possible to close on replacement property before the exchanger has found a buyer for the relinquished property. This type of exchange process is known as a “reverse exchange.”
Case Studies

Case Study 1: Cap Rates

Suppose an investor is deciding which of two properties she will purchase, Property A or Property B. She has $100,000 for investment. The following chart gives the statistics for her three best alternatives:

<table>
<thead>
<tr>
<th></th>
<th>Property A</th>
<th>Property B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$80,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Current NOI</td>
<td>$6,400</td>
<td>$8,000</td>
</tr>
<tr>
<td>Avg NOI Increase</td>
<td>9.625%</td>
<td>9.1%</td>
</tr>
<tr>
<td>Cap Rate in 10 yrs</td>
<td>8%</td>
<td>8%</td>
</tr>
</tbody>
</table>

The investor decides to use a cap rate analysis to determine the best investment strategy. If she invests in Property A, she will use the remaining $20,000 she has to invest in the stock market. She expects the stocks to return an average of 7% annually over the next 10 years:

\[ \text{Return} = 20,000 \times 0.07 \times 10 = 14,000 \]

To determine the future value of Property A in 10 years, the investor needs to calculate the NOI at that time. If the NOI increases at an average rate of 9.625%, in 10 years it will be:

\[ \text{NOI of A in 10 years} = 6,400 + (6,400 \times 0.09625 \times 10) = 12,560 \]

This NOI can be used in conjunction with the expected cap rate in 10 years:

\[ \text{Future Value of A} = 12,560/0.08 = 157,000 \]
Profit from Property A = $157,000 − $80,000 = $77,000

Total Profit = $77,000 + $12,560 = $89,560

The investor’s other option is to invest all $100,000 in Property B. In 10 years, the NOI for B will be:

NOI of B in 10 years = $8,000 + ($8,000 x 0.091 x 10) = $15,280

Using this figure, we can calculate both the value of B in 10 years and the total profit the investor will make in the transaction:

Future Value of B = $15,280/ 0.08 = $191,000

Profit from Property B = $191,000 − $100,000 = $91,000

The investor’s second alternative, according to the cap rate analysis, is more profitable by $1,440. This is a significant amount, but not so much that she might not consider her first alternative, which diversifies her assets and thus alleviates some of the risk.

**Case Study 2: Net Present Value**

Suppose an apartment owner is faced with two improvement decisions. Implementing Decision A would cost approximately $5,200. Implementing B, however, would cost around $11,000. Decision A is likely to cause a gradual increase in NOI, whereas Decision B will likely cause sharply increased profits that diminish over time, as shown in the chart below:
## 10-Year NOI Projections

<table>
<thead>
<tr>
<th>Year Operations</th>
<th>Decision A</th>
<th>Decision B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Year Operations</td>
<td>$12,600</td>
<td>$15,000</td>
</tr>
<tr>
<td>2nd Year Operations</td>
<td>$11,500</td>
<td>$14,600</td>
</tr>
<tr>
<td>3rd Year Operations</td>
<td>$11,800</td>
<td>$14,400</td>
</tr>
<tr>
<td>4th Year Operations</td>
<td>$12,000</td>
<td>$13,600</td>
</tr>
<tr>
<td>5th Year Operations</td>
<td>$12,700</td>
<td>$13,100</td>
</tr>
<tr>
<td>6th Year Operations</td>
<td>$12,900</td>
<td>$12,600</td>
</tr>
<tr>
<td>7th Year Operations</td>
<td>$13,100</td>
<td>$12,000</td>
</tr>
<tr>
<td>8th Year Operations</td>
<td>$13,100</td>
<td>$11,400</td>
</tr>
<tr>
<td>9th Year Operations</td>
<td>$12,700</td>
<td>$10,000</td>
</tr>
<tr>
<td>10th Year Operations</td>
<td>$13,000</td>
<td>$9,800</td>
</tr>
</tbody>
</table>

The owner wants to discount these cash flows to determine which decision has the greater net present value. To do this, he enters the figures into an Excel spreadsheet document and uses the formula = NPV (rate, values) to do the calculations for him. The owner uses a discount rate of 10% for both decisions. Using this rate, he determines that Decision A has an NPV of $76,419 and Decision B has an NPV of $80,552.
To determine the better alternative, the owner still must subtract the cost of implementing each from the present value of its cash flows. Thus,

NPV of A = $76,419 – $5,200 = $71,219

NPV of B = $80,522 – $11,000 = $69,522

So, even though Decision B creates greater cash flows, Decision A is more cost effective. Indeed, there are more reasons to prefer A; Decision B has diminishing cash flows that may deter future buyers, should the owner decide to sell the property, or which may become even more costly to the current owner, if he keeps the property for a long period of time.

**Case Study 3: Internal Rate of Return**

Suppose an investor wants to calculate the Internal Rate of Return after 5 years for a property that cost him $50,000. The following table contains the cash flows for the first 5 years:

<table>
<thead>
<tr>
<th>Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

As the student may recall, IRR must be calculated through trial and error, using the formula for NPV. We must find the rate that makes NPV = 0.
The formula is:

$$\text{NPV} = \sum_{i=0}^{n} \left( \frac{(\text{Cash Flow at } i)}{(1 + \text{IRR})^t(i)} \right)$$

If we estimate the IRR at 10%, we have:

$$\text{NPV} = -\frac{50,000}{1.100} + \frac{10,000}{1.101} + \frac{10,800}{1.102} + \frac{10,400}{1.103} + \frac{12,000}{1.104} + \frac{12,200}{1.105}$$

$$\text{NPV} = -50,000 + 9,091 + 8,926 + 7,814 + 8,196 + 7,575 = -8,398$$

Of course, this NPV is far from 0. Since the number is negative, we need to estimate a lower rate of return, say 5%:

$$\text{NPV} = -\frac{50,000}{1.050} + \frac{10,000}{1.051} + \frac{10,800}{1.052} + \frac{10,400}{1.053} + \frac{12,000}{1.054} + \frac{12,200}{1.055}$$

$$\text{NPV} = -50,000 + 9,524 + 9,796 + 8,986 + 9,872 + 9,559 = -2,263$$

This is much better, but still not close enough. We need a lower rate, but we do not want to overcompensate. Let us try 3%:

$$\text{NPV} = -\frac{50,000}{1.030} + \frac{10,000}{1.031} + \frac{10,800}{1.032} + \frac{10,400}{1.033} + \frac{12,000}{1.034} + \frac{12,200}{1.035}$$

$$\text{NPV} = -50,000 + 9,709 + 10,180 + 9,517 + 10,662 + 10,524 = 592$$

This is close enough. We know that 3% < IRR < 4%, and we can use this knowledge in future investment decisions.
Case Study 4: Depreciation

Suppose an investor purchases a house for $80,000 in June, which she desires to rent out. If she sells the house in 15 years for $100,000, what capital gain does she realize in the sale?

To calculate the capital gain, we must first determine the investor's basis in the property. Originally, this basis is the price paid for the house, or $80,000. As the property depreciates, and the investor claims the depreciation deductions, her basis decreases. Below is a chart of the depreciation rates for residential property:

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2-9, odd years from 11-27</th>
<th>Even years in Year 10-26</th>
<th>YEAR 28</th>
<th>Year 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>3.485%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>1.970%</td>
<td>0%</td>
</tr>
<tr>
<td>Feb</td>
<td>3.182%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>2.273%</td>
<td>0%</td>
</tr>
<tr>
<td>Mar</td>
<td>2.879%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>2.576%</td>
<td>0%</td>
</tr>
<tr>
<td>Apr</td>
<td>2.576%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>2.879%</td>
<td>0%</td>
</tr>
<tr>
<td>May</td>
<td>2.273%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>3.182%</td>
<td>0%</td>
</tr>
<tr>
<td>Jun</td>
<td>1.970%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>3.485%</td>
<td>0%</td>
</tr>
<tr>
<td>Jul</td>
<td>1.667%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>3.636%</td>
<td>0.152%</td>
</tr>
<tr>
<td>Aug</td>
<td>1.364%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>3.636%</td>
<td>0.455%</td>
</tr>
<tr>
<td>Sep</td>
<td>1.061%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>3.636%</td>
<td>0.758%</td>
</tr>
<tr>
<td>Oct</td>
<td>0.758%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>3.636%</td>
<td>1.061%</td>
</tr>
<tr>
<td>Nov</td>
<td>0.455%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>3.636%</td>
<td>1.364%</td>
</tr>
<tr>
<td>Dec</td>
<td>0.152%</td>
<td>3.636%</td>
<td>3.637%</td>
<td>3.636%</td>
<td>1.667%</td>
</tr>
</tbody>
</table>
She purchased the home in June. According to the depreciation table, she can claim a 1.970% deduction for that year. If she sells the house in exactly 15 years, she holds it into June of the 16th tax year. For the years 2-9, 11, 13, and 15 she deducts 3.636% annually, or:

\[ 11 \times 3.636\% = 39.996\% \]

Then, she deducts 3.637% for years 10, 12 and 14:

\[ 3 \times 3.637 = 10.911\% \]

For a total depreciation deduction of:

\[ 1.970\% + 39.996\% + 10.911\% = 52.877\% \]

This reduces her basis to:

\[ $80,000 - (52.877\% \times $80,000) = $42,301.60 \]

Thus, when she sells the property in year 16 for $100,000, the capital gain she realizes is equal to:

\[ $100,000 - $42,301.60 = $57,698.40 \]

Her taxes for this sale are based on the realized capital gain (provided that it is recognized in that tax year) and the recovered depreciation.
Because she sells the property for more than what she paid for it, her recovered depreciation is the original purchase price less the adjusted basis:

$80,000 − $42,301.60 = $37,698.40

Thus her total taxes are:

($57,698.40 \times 0.36) + (37,698.40 \times 0.5) = 39,620.62

**Case Study 5: Refinancing**

Suppose an investor owns a single-family residence that he rents out for extra income. He purchased the property with a loan for $80,000 at 8% for 30 years. After 15 years, he wonders if he should refinance the property at a lower rate of 7%.

The investor’s balance at the end of 15 years will be $61,425.25, and his monthly payment will be $587.01. He uses an amortization schedule to figure out what his new monthly payments will be, given his current balance. He figures that the new payments will be $552.11/month, a savings of $34.90 each month. This may not seem like a lot, but it adds up. Overall, the investor will save:

$34.90 \times 12 \text{ months} \times 15 \text{ years} = 6,282

The savings may look more appealing now, but the investor still must weigh the cost of refinancing against the savings. He estimates the following charges:

<table>
<thead>
<tr>
<th>Fee</th>
<th>Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Fee</td>
<td>$25</td>
</tr>
<tr>
<td>Appraisal Fee</td>
<td>$250</td>
</tr>
<tr>
<td>Attorney’s Fee</td>
<td>$100</td>
</tr>
<tr>
<td>Credit Report</td>
<td>$50</td>
</tr>
</tbody>
</table>
| Document Preparation Fee | $100  
| Home Inspection Fee     | $200  
| Loan Origination Fee (1.5%) | $921  
| TOTAL                    | $1,646 |

The $1,646 that the investor pays to refinance lessens his overall savings. It also may become a burden to him in the short run, in that he must pay all the fees upfront and wait to recoup the charges. Suppose the investor rents the house out for $730/ mo. It will take him 10 months until he begins to see the savings:

<table>
<thead>
<tr>
<th>Month</th>
<th>Rent</th>
<th>Loan Pmt</th>
<th>Profit</th>
<th>Charges</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$730.00</td>
<td>$552.11</td>
<td>$177.89</td>
<td>-$1,646.00</td>
<td>-$1,468.11</td>
</tr>
<tr>
<td>2</td>
<td>$730.00</td>
<td>$552.11</td>
<td>$177.89</td>
<td>-$1,468.11</td>
<td>-$1,290.22</td>
</tr>
<tr>
<td>3</td>
<td>$730.00</td>
<td>$552.11</td>
<td>$177.89</td>
<td>-$1,290.22</td>
<td>-$1,112.33</td>
</tr>
<tr>
<td>4</td>
<td>$730.00</td>
<td>$552.11</td>
<td>$177.89</td>
<td>-$1,112.33</td>
<td>-$934.44</td>
</tr>
<tr>
<td>5</td>
<td>$730.00</td>
<td>$552.11</td>
<td>$177.89</td>
<td>-$934.44</td>
<td>-$756.55</td>
</tr>
<tr>
<td>6</td>
<td>$730.00</td>
<td>$552.11</td>
<td>$177.89</td>
<td>-$756.55</td>
<td>-$578.66</td>
</tr>
<tr>
<td>7</td>
<td>$730.00</td>
<td>$552.11</td>
<td>$177.89</td>
<td>-$578.66</td>
<td>-$400.77</td>
</tr>
<tr>
<td>8</td>
<td>$730.00</td>
<td>$552.11</td>
<td>$177.89</td>
<td>-$400.77</td>
<td>-$222.88</td>
</tr>
<tr>
<td>9</td>
<td>$730.00</td>
<td>$552.11</td>
<td>$177.89</td>
<td>-$222.88</td>
<td>-$44.99</td>
</tr>
<tr>
<td>10</td>
<td>$730.00</td>
<td>$552.11</td>
<td>$177.89</td>
<td>-$44.99</td>
<td>$132.90</td>
</tr>
</tbody>
</table>

If the investor can afford refinancing and can afford not to make a profit on the refinanced property for 10 months, it might be a good idea. In the end, he would save $6,282.00 - $1,646.00 = $4,636.00.
Case Study 6: Adjustable Rate Mortgage

An investor is considering whether to finance a purchase with a conventional loan or with an Adjustable Rate Mortgage (ARM). The market rate for a conventional loan is currently 8%, and for an ARM, 6%. The property being purchased sells for $100,000, and the investor plans to put $25,000 toward a down payment, for a total loan amount of $75,000, to be paid out over 15 years.

The payment for the conventional loan is $716.74 monthly or $8,600.88 annually. Over the course of the loan the investor will pay $54,013.03 in interest.

The ARM loan’s index is the market interest rate of T-Bills, which mature about one year after purchase. The current rate is 4%. To determine the ARM’s interest rate, the lender adds a margin of 2%. The interest rate is adjusted annually over the course of the loan. Payments are capped at $900/month. The investor predicts that T-Bill rates will increase by 1% every three years (this, in fact, is unlikely, but it serves our illustration).

He creates the following chart:

<table>
<thead>
<tr>
<th>Year</th>
<th>T-Bills %</th>
<th>Rate %</th>
<th>Mo. Pmt.</th>
<th>Annual Interest</th>
<th>Principal Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>6</td>
<td>$632.89</td>
<td>$4,413.36</td>
<td>$71,818</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>6</td>
<td>$632.89</td>
<td>$4,217.25</td>
<td>$68,441</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>7</td>
<td>$669.40</td>
<td>$4,684.81</td>
<td>$65,093</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>7</td>
<td>$669.40</td>
<td>$4,442.78</td>
<td>$61,503</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>7</td>
<td>$669.40</td>
<td>$4,183.25</td>
<td>$57,653</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>8</td>
<td>$699.49</td>
<td>$4,470.95</td>
<td>$53,730</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>8</td>
<td>$699.49</td>
<td>$4,144.81</td>
<td>$49,481</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>8</td>
<td>$699.49</td>
<td>$3,792.14</td>
<td>$44,879</td>
</tr>
<tr>
<td>9</td>
<td>7</td>
<td>9</td>
<td>$722.06</td>
<td>$3,843.85</td>
<td>$40,058</td>
</tr>
<tr>
<td>10</td>
<td>7</td>
<td>9</td>
<td>$722.06</td>
<td>$3,391.18</td>
<td>$34,784</td>
</tr>
</tbody>
</table>
The total interest payment on the ARM loan is thus $50,835.85, about $3,200 less than the interest on the conventional loan.

**Case Study 7: Buy vs. Lease**

An investor is weighing two alternative strategies: whether to buy a particular property for $80,000, or to lease the property and invest the $80,000 in stocks at an average expected return of 7.6% annually. The property is a 2000 sq. ft. office building that leases for $3/ sq. ft. annually, including expenses. The building’s NOI is projected to be $28,000 the first year, with a 10% increase annually. If the investor buys the property, he will have to pay $2/ sq. ft. annually for expenses, but he will receive a depreciation deduction each year he owns it.

The investor wants to calculate the IRR for each investment. If he buys the property, he pays $80,000 initially (at year 0). He expects to sell the property in 10 years for $95,000. The property would be placed in service in January, so his depreciation deduction for year one is 2.461% x $80,000 = $1,968.80. For years 2-10, the rate for commercial property is 2.564%, and the deduction, $2,051.20. When he sells the property, his basis is:

\[
80,000 - 1,968.80 - (9 \times 2,051.20) = 59,570.40
\]
Thus he realizes:

\[95,000 - 59,570.40 = 35,429.60\]

In capital gains, the taxes are as follows: 36% for capital gain and 50% for all recovered depreciation. Total depreciation is $80,000 − $59,570.40 = $20,429.60. So the investor's total taxes are:

\[($35,429.60 \times 0.36) + ($20,429.60 \times 0.5) = 22,969.46\]

In his spreadsheet, then, he adds $95,000 sale price to the 10th year's cash flow, and subtracts $22,969.46 in taxes. For each year he subtracts $2/ sq. ft. x 2,000 = $4,000 in expenses, but adds in his depreciation deduction of $2,051.20. The IRR for this investment is 41%.

Now he calculates the IRR for a lease. The basic cash flows remain the same, except the expenses become $3/ sq. ft. x 2,000 = $6,000 a year. A stock market investment of $80,000 that returns 7.6% annually will return $60,800 over 10 years. At the end of the 10-year lease, then, the investor adds $80,000 + $60,800 = $140,800 to the final cash flow. The IRR for this investment is only 38%, however, so he decides to purchase the building.

**Case Study 8: Discount Points**

Suppose a lender is considering offering a discount to a borrower. The loan is a 15-year loan at 8% interest for $50,000. The borrower is willing to buy two points, if the lender will lower the rate to 7.5%.
Initially, this may seem like a bad investment. Two points is equal to 2% of the loan, or:

\[ \$50,000 \times 0.02 = \$1,000 \]

But the total interest on an 8% loan for $50,000 is $36,008.69; and for a loan at 7.5%, $33,431.11. This is a savings to the borrower of $2,577.58, which she buys for only $1,000. However, the lender knows she can reinvest the $1,000 in an account that will return her 7.5% compound interest annually, and she will have a balance of $2,958.87 at the end of 15 years. This is $381.29 more than the lost interest to the borrower. So which decision is the most profitable?

The lender decides to use a discounted cash flow analysis to determine her best strategy. She knows that her next best investment has an expected return of 6%, so she plans to use this rate to discount the cash flows from the 8% loan, the 7.5% loan, and the 7.5% account. The monthly payment for the 8% loan is $477.83, so the annual cash flow is 12 times this, or $5,733.96. The annual cash flow from the 7.5% loan is $5,562.12, based on a monthly payment of $463.51.

The 15-year cash flows (interest) from the reinvested $1,000 are:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75.00</td>
<td>9</td>
<td>133.76</td>
</tr>
<tr>
<td>2</td>
<td>80.63</td>
<td>10</td>
<td>143.79</td>
</tr>
<tr>
<td>3</td>
<td>86.67</td>
<td>11</td>
<td>154.58</td>
</tr>
<tr>
<td>4</td>
<td>93.17</td>
<td>12</td>
<td>166.17</td>
</tr>
<tr>
<td>5</td>
<td>100.16</td>
<td>13</td>
<td>178.63</td>
</tr>
<tr>
<td>6</td>
<td>107.67</td>
<td>14</td>
<td>192.03</td>
</tr>
<tr>
<td>7</td>
<td>115.75</td>
<td>15</td>
<td>206.43</td>
</tr>
<tr>
<td>8</td>
<td>124.43</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
He uses an NPV calculator with the 6% rate to determine that the NPV for the undiscounted loan is $55,689.65, while the combined NPV for the discounted loan and the reinvested $1,000 is only $55,193.87. Consequently, the lender decides not to offer the discount.

**Case Study 9: Met Life Building**

The Met Life Building in Manhattan was the first building to be purchased using discounted cash flow techniques. At the time—July 1980—the purchase came as a surprise to many investors, as the building’s cap rate was below that of comparable properties sold around the same time. Despite this, Met Life Insurance was willing to pay the owner, Pan Am Airways, a record-setting $177/ sq. ft. The Seagram building, a few blocks away, had just sold for $135/ sq. ft.—and it had more than double the first-year rate of capitalization of the Met Life building.

What attracted the Met Life company to the building was its Internal Rate of Return. The computer projections of the time predicted a 10% IRR after 10 years, or 12% after 15 years. The purchase turned out to be an extremely good investment, with increasing rent, revenue, and returns. The success of this purchase partially paved the way for the common acceptance of discounted cash flow analyses. Cap rates are still very important to investors, but they tend nowadays to look at both cap rates and IRR or NPV, realizing the value of all three as predictors of future returns.

**Case Study 10: Park 128 Apartments**

In 2003, Park 128 Apartments, a 108-unit complex in Seattle, WA, decided to seek a mortgage refinance. They took their case to a real estate broker, Jim Claeys, working with CB Richard Ellis, a worldwide real estate service provider. The broker used a financial analysis to determine the complex's current Net Operating Income of $468,355 and capitalization rate of 7%. With these figures and the anticipated loan amount, he was able to secure over $4 million in financing from GMAC Commercial Mortgage Company.
This case study illustrates the importance of the broker’s role in asset management, as well as the importance of the cash flow and cap rate analyses discussed in this module. Brokers with a thorough understanding of the market and the current means of valuation can serve their clients with success and continue to run a profitable business.

**Lesson Summary**

A property in distress is one that is in poor condition either physically or financially. A physically distressed property may be in poor repair: it may be dilapidated, infested with termites, have a mold problem, etc., or it may have environmental liabilities, such as lead-based paint, asbestos, radon, or other toxic hazards. A financially distressed property may have low returns or even be running at a loss. It may have several years of taxes in arrears and be completely unmarketable. In some cases, it will be best to liquidate a property in distress. If operation of the property would result in a loss—that is, total cost would exceed total revenue—selling the property is advisable. Sometimes, however, improvements can make the difference in selling the property as raw land and selling it as an income producer. At other times, the value of the property may warrant a decision to hold it. As a general rule, an owner should hold the property if the net present value of all its future cash flows exceeds the net present value of the owner’s best alternative investment opportunity. Refinancing a property may be valuable during periods of low interest rates. A manager should have some familiarity with the types of loans available, such as conventional loans and adjustable rate mortgages (ARMs). When contemplating refinancing, the manager should weigh the opportunity cost of available discount points, as well.

When the asset manager chooses a plan of action, the next step is to market it. Successful marketing strategies may include rent concessions and an intensive marketing campaign. Rent concessions are offers of cash, reduced rent, or amenities to entice potential tenants to rent a property.
A landlord can reduce the amount a tenant has to pay by reducing the required security deposits, or by reducing the rental rate—either by reducing the rent over the course of the lease or by offering free-rent periods at the beginning of the lease. Other tenants may be enticed by offers of free merchandise or amenity upgrades. In certain circumstances, the landlord should offer an allowance for leasehold improvements the tenant will make for the property. These are permanent changes that alter the utility or worth of the leasehold property and revert to the landlord's ownership at the end of the lease.

A successful advertising campaign has many aspects. At all events, signs should be placed on the property indicating vacancy and including a number that interested parties may call to obtain information. Ads in print, on television, on the radio, or on the Internet allow a landlord to reach a greater base of prospective tenants. This can also be achieved by placing the listing on a Multiple Listing Service or MLS. An MLS is an arrangement in which brokers agree to share their listings with other brokers by pooling the information in a database in exchange for a share of the commission earned by a transaction.

*Please return to the course player to take the Module Quiz.*