

# 4 Economic Principles

## ■ LEARNING OBJECTIVES

*Students will be able to*

1. understand, be able to differentiate, and give examples of the fifteen economic principles that drive real estate valuation.
2. understand the four agents of production including land, labor, capital, and entrepreneurship, and how they relate to the principle of surplus productivity.
3. understand and give examples of the five economic characteristics of value including utility, scarcity, desirability, effective purchasing power, and demand unit.

## ■ KEY TERMS

|                       |                           |                      |
|-----------------------|---------------------------|----------------------|
| anticipation          | desirability              | land                 |
| balance               | economics of scale        | opportunity costs    |
| capital               | effective purchasing      | scarcity             |
| change                | power                     | substitution         |
| competition           | entrepreneurship          | supply and demand    |
| conformity            | externalities             | surplus productivity |
| consistent use theory | increasing and decreasing | utility              |
| contribution          | returns                   |                      |
| demand unit           | labor                     |                      |

## ■ INTRODUCTION

Literally volumes have been written on economics. It is obviously impossible to convey in this book the total expanse of knowledge related to economics.

It is important to remember, however, that the appraiser is reporting the market and in a sense emulating buyers and sellers in a particular marketplace. An understanding of some basic economic principles that most buyers and sellers intuitively possess is the goal of this Chapter.

This Chapter focuses on the following three basic areas:

1. Economic principles
2. Four agents of production
3. Five economic characteristics of value

## **P A R T O N E Economic Principles**

### **■ SUPPLY AND DEMAND**

In a free market, buyers and sellers tend to set the price or value of an item based on the relative supply of the product and the demand for it. The following three interrelated terms explain the principle of supply and demand:

1. Supply
2. Demand
3. Price

#### *Given Level of Supply*

At a given level of supply, if demand increases, then the price increases. Conversely, given that same level of supply, if demand decreases, then price decreases.

#### *Given Level of Demand*

At a certain level of demand, if the supply increases, then the price decreases. Given the same level of demand, if the supply decreases, then the price increases.

Specifically related to real estate, assume that the population in a certain community is growing by 100 households per year. If there are no additions to the existing housing stock (supply), the demand will certainly increase, and prices will accordingly escalate. If the supply is increased by 200 homes per year, then supply will exceed demand, and prices will tend to decline.

In open and competitive markets, supply and demand tend to fluctuate and get out of balance for short periods of time, but they do tend to be in balance over long periods of

time. This concept is particularly true in real estate markets where supply generally takes a long time to create; also, factors that affect demand are also often broad-based and extend over long periods of time.

## ■ ANTICIPATION

The principle of **anticipation** holds that value is simply a function of the present worth of future benefits, that is, people are paying current dollars for future benefits. These future benefits may take the form of intangibles, as seen in the example below.

For example, when purchasing a home, buyers tend to look for aesthetics, livability, convenience to shopping and employment, neighborhood, and other intangible factors.

When purchasing investment type property (shopping centers, office buildings, hotels), the anticipated benefits are future dollars. In other words, the buyer is exchanging present dollars for property that will hopefully produce more dollars in the future. The principle of anticipation is the basis for the income approach, discussed in Chapter 10.

Under this principle, the past is only important because it tends to give an indication of what is to be expected in the future (see example below).

For example, a purchaser of a 40-unit apartment complex may look at its income and expenses over the last three years to give an indication of what the property can be expected to generate in terms of income and expenses over the next several years.

A buyer for a home may look at standardized school test scores, trends in home prices, and community growth patterns, all of which have occurred in the past, in order to determine which way the neighborhood is likely to continue in the future. This past information gives the buyer insight as to what to pay for the property today.

## ■ BALANCE

The principle of **balance** relates both to the property as well as the environment in which the property is located. Related to the property itself, this principle holds that value is achieved and maintained when all elements are in proper proportion.

Consider a builder constructing a single-family residence in a neighborhood of 2,000 square-foot to 2,500 square-foot homes priced from \$125,000 to \$150,000. Assuming lot prices are consistent, the builder would expect to receive more money for a larger home.

The builder actually experiences the following activity:

| Plan | Size in SF | Total Cost | Cost per SF | Sales Price | Price per SF | Difference | Profit |
|------|------------|------------|-------------|-------------|--------------|------------|--------|
| A    | 2,000      | \$114,000  | \$57.00     | \$126,000   | \$63.00      | \$12,000   | 10.5%  |
| B    | 2,200      | \$123,200  | \$56.00     | \$143,000   | \$65.00      | \$19,800   | 16.1%  |
| C    | 2,400      | \$132,000  | \$55.00     | \$148,800   | \$62.00      | \$16,800   | 12.7%  |
| D    | 3,100      | \$160,000  | \$51.61     | \$182,000   | \$58.71      | \$22,000   | 13.8%  |

Although the builder receives the highest price for Plan D, the greatest return is reflected by Plan B. In this case, the principle of balance would hold that the proper home would be more related to Plan B. Note that Plan D can achieve a \$22,000 profit, but it is only a 13.8 percent return on cost; it also is much riskier given the large size and absolute (\$) cost and price (hence, conformity to the neighborhood would be an issue worth investigating before building Plan D).

The principle of balance also relates to land use. Under the optimum land use concept, there would be a proper blend of single-family residences, apartments, complementary shopping centers, nearby employment centers, and reasonably accessible recreational facilities. Conversely, a neighborhood that features no convenient access to shopping, places of worship, or employment would be considered inferior and result in lower demand and in lower prices.

## ■ CONFORMITY

The principle of **conformity** is similar to the principle of balance, but it relates more to real estate characteristics. It holds that maximum value is achieved and maintained when there is reasonable conformity and not monotonous uniformity among properties.

A Williamsburg or colonial style home in a neighborhood that features all Williamsburg style homes with some individual variance is desirable. A California contemporary ranch style within this neighborhood would be a nonconforming use; the market would likely pay less for this contemporary house in this Williamsburg neighborhood. This California contemporary residence would likely sell for more in a neighborhood that is dominated by California contemporary residences. Conversely, a traditional neighborhood with 300 essentially duplicate houses would be somewhat monotonous and again result in value loss.

## ■ SURPLUS PRODUCTIVITY

The **surplus productivity** principle recognizes the four agents of production, which are subsequently discussed in this Chapter. The four agents of production are as follows:

1. Land
2. Labor
3. Capital
4. Entrepreneurship

In any enterprise, labor must be paid first, with capital paid after that under the surplus productivity concept. Entrepreneurship is then paid. After returns have been made for these three items, the residual income is attributed to the land (including buildings where appropriate). This residual income is attributed to the real estate and tends to set the value of the land and/or buildings.

An example of surplus productivity would be a motel. Income is derived from room rents, telephone charges, restaurant sales, and other departmental sources. All of the motel labor is paid first. After that, payments due on borrowed funds are made (capital). The entrepreneur is usually paid last.

If there is residual income, this residual income is considered to be attributed to the motel itself (building and land). This residual income can then be converted into a current value indication based on the principle of surplus productivity.

## ■ CONTRIBUTION

The principle of **contribution** holds that the value of a component is a function of its contribution to the whole rather than as a separate component. The cost of an item does not necessarily equal its contributory value.

Take a swimming pool. In the vast majority of neighborhoods, swimming pools do not add to property value commensurate with their costs. A swimming pool may cost \$5,000 to \$10,000 to construct, but it may add only \$1,000 to \$2,000 in value, and in some neighborhoods a pool can actually detract from value.

In other instances, contributory value may exceed the cost. An example can be energy conservation features. Insulating windows, extra ceiling and floor insulation, and extra thick walls may result in added construction costs of \$10,000; however, the market may pay a \$15,000 premium for a home with all of these features.

Often, as in the example below, home additions do not reflect contributory value commensurate with their costs.

For example, enclosing a garage may cost \$10,000, but the market may pay little, if any, premium for an enclosed garage if market preference in this neighborhood is to have a garage available for its intended use.

In some instances, a whole building may not contribute to value. In transitional areas, an old deteriorated house may detract from value if the most probable purchaser is a fast food restaurant developer who is seeking only the land.

Related to the principle of contribution is the concept of **interim use**. At a certain point in time, improvements no longer contribute to overall property value because of age, loss in functional utility, change in land economics, or other factors. Identification of the exact point in time when the improvements do not contribute to value is virtually impos-

sible. Properties usually go through a transition period in which the improvements are utilized on an interim basis prior to ultimate site redevelopment. A rental house may generate income for a three-year period if demand for the underlying land for an alternate use is going to be deferred four years to five years because of changing land economics.

## ■ INCREASING AND DECREASING RETURNS

The principle of **increasing and decreasing returns** relates to the principle of balance as well as to the principle of contribution. This principle holds that as capital units are added, a certain point is reached where the added units do not contribute value commensurate with their costs.

An instance of increasing and decreasing returns is adding fertilizer to a row crop field. In this instance, spending \$100 per acre in fertilizer on a field may increase the crop yield by \$120 per acre. Spending \$105 per acre in fertilizer may increase the crop yield by \$130 per acre. If fertilizer is added at a cost of \$160 per acre, however, the crop yield may not increase by the same \$160 per acre spent. In fact, crop yield could decline because of overfertilization. There is no economic reason to spend more than \$105 per acre in this example because this expenditure results in the maximum crop yield.

This represents the point of increasing and decreasing returns; hence, balance and maximum contribution have been achieved. Spending more per acre in fertilizer does not necessarily result in a proportionate increase in the crop yield.

The law of increasing and decreasing returns also applies to the maximum-size building that should be placed on a parcel of land. Adding stories to an office building may result in property value exceeding costs until the point is reached that an elevator must be added. From this point, the added cost may not result in added value commensurate with the cost.

## ■ CHANGE

The principle of **change** holds that as time and market conditions change, so does supply and demand for real estate, and thus, the value of real estate. All elements around us are constantly in a state of change, and a valuation represents a photograph at a certain point in time within its constantly changing environment.

It is important to remember that the appraiser's role is to report market reaction in this constantly changing environment, recognizing buyers' and sellers' anticipation of changing conditions rather than emphasizing the appraiser's own perception.

## ■ SUBSTITUTION

The principle of **substitution** is the basis for all decisions made by real estate buyers and should thus be the basis of every appraisal and every appraiser's thought process. Substitution is the process of identifying alternatives that would satisfy the same need, want, or desire. A prudent purchaser would pay no more for a home than it would cost him or her to build or buy another one. Substitution keeps the market in balance. For

instance, if a buyer could purchase a house for \$100,000, why would the purchaser build one for \$110,000, assuming both offered the same utility and satisfaction?

Substitution is the key to the following three approaches to real estate valuation, all of which will be discussed in detail in Chapter 12 through Chapter 15:

1. The Cost Approach—A buyer would pay no more for a property if he or she could build one for less.
2. The Sales Comparison Approach—A property with the lowest price generally will yield the greatest demand if the properties are competitive and similar in terms of utility.
3. The Income Capitalization Approach—A renter would rent another equal property if it provided the same utility and satisfaction for less money. Likewise, if two properties reflected similar risk, return, and management capabilities, an investor would select the property which is priced less.

## ■ CONSISTENT USE THEORY

**Consistent use theory** involves the concept that land cannot be valued under one highest and best use while the improvements are valued based on another highest and best use.

For example, if a residence is located in a commercial area, it cannot be appraised based on a residential use (improvements) plus another value for the underlying land (commercial). The value must be based on its highest and best use—either as a residence with commercial potential based on sales of similar properties with similar potential, or as a commercial site giving no value to the improvements. There may in fact be some deduction in value because of the required demolition costs of the house.

Recognizing that properties normally undergo an extended period in transition from one use to another, the interim use concept is not a violation of the consistent use principle.

## ■ OPPORTUNITY COSTS

The principle of opportunity costs holds that money allocated to a certain use cannot be used for an alternative.

For example, a bond purchased for \$10,000 may be producing a satisfactory return of 7%. If the purchaser of the bond later finds out that he or she could have invested the \$10,000 in commodity futures and could have received a 25% return, the opportunity cost is the incremental 18% return (25% – 7%). The 18% “lost” is the opportunity cost, although the risk of the other opportunity should also be considered and analyzed.

## ■ EXTERNALITIES

The principle of **externalities** holds that there are the following four major forces outside the property limits that influence value:

1. Social
2. Economic
3. Physical/environmental
4. Governmental

These outside forces are explored more fully in Chapter 1. The important concept is that value is subjective in its nature, and the actions of buyers and sellers that create and maintain value are influenced by forces outside the limits of the subject property's boundaries.

## ■ HIGHEST AND BEST USE

**Highest and best use** is defined as that logical, legal, and most probable use which will yield the greatest net income to the land over a sustained period of time. Simply put, it is the most profitable, logical, and legal use. The four standard tests for highest and best use relate to that use which is physically possible, legally permissible, financially feasible, and maximally productive. Properties are normally appraised at their highest and best use. This is a complex concept that is more fully explored in Chapter 8.

## ■ COMPETITION

The principle of **competition** holds that profits tend to spur competition. The more profitable a venture may appear, the more competition will be created. In other words, success breeds competition, and extremely high success breeds excess competition.

For example, if builders are experiencing 10% to 12% profit margins in a particular suburban expansion area outside a major metropolitan area, and demand increases to the point that builders are able to increase their profit margins to 15% to 20%, there is a high probability that the principle of competition will come into play, and more builders will begin to construct houses in this market.

## ■ ECONOMICS OF SCALE

This theory, **economies of scale**, is based on the idea that the greater the volume of an item, the less each incremental volume should cost. For instance, which would cost less: a single can of cola or each can in a case of colas? Probably the latter, due to the quantity discount. The same holds true for real estate. Which is more expensive per square foot, all things being equal: a 2,000 square foot home, or a 2,800 square foot home?

**P A R T T W O Four Agents Of Production**

To produce anything privately in a capitalistic society, the following four agents of production must be present:

1. Land
2. Labor
3. Capital
4. Entrepreneurship

Regardless of what is produced, whether it be an automobile, single-family residence, office building, or an appraisal report, all four agents of production come into play.

**■ LAND**

**Land** is the real estate component. Land can function by itself, or it can be used to support a building. Land is necessary for any building improvements. The cost or payment for the land and improvements usually is covered by a lease or mortgage payment.

**■ LABOR**

**Labor** relates to the direct and indirect costs and wages associated with workers. In addition, this agent of production includes materials utilized by labor in the production of a commodity.

**■ CAPITAL**

**Capital** is the cost of borrowing money and relates to the availability of credit. Venture capital for startup companies, securitized credit from Wall Street, and a bank loan from the local institution can all be sources of capital. Cash in one's savings account can also be capital, although the management of this capital is done by the bank lending officer.

**■ ENTREPRENEURSHIP**

This term means *coordination* or *management*. **Entrepreneurship** is the process of orchestrating land, labor, and capital to produce an item. It is usually the last position for which a return is paid (see Chapter 10).

A simple example of the four agents of production interacting is the construction of a single-family residence. A land developer acquires a large tract of unimproved land, constructs the streets and utility lines, and subdivides the parcel into smaller lots. A builder purchases a lot (land) and begins construction of a single-family home. During the process, materials are purchased, and all labor is paid (labor). Most of the construction monies come from local bank loans (capital). The builder is expected to pay

fees and interest for use of these borrowed funds. When the house is completed, the builder hopes to sell the home for a profit. This profit becomes the reward for the builder's efforts (entrepreneurship).

## PART THREE Economic Characteristics of Value

For an item to have value, it must possess the following five characteristics:

1. Utility
2. Scarcity
3. Desirability
4. Effective Purchasing Power
5. Demand Unit

### ■ UTILITY

**Utility** relates to a product or service's ability to satisfy a want, need, or desire. It is essential that an item have utility to have value; hence, it must have a use to the consumer. Many items have utility (home) while some items do not (hazardous waste).

### ■ SCARCITY

For an item to have value, it must not be readily available. Air can be seen as a good example of **scarcity**: It is essential that people have air to breathe, yet air is abundant, around us all the time, so no one is willing to pay for air. But when scuba diving in 100 feet of water, air has a tremendous value because in a breathable state, it is scarce. Sand is abundant, but there is little demand for it. Other items are in demand but are very scarce or unavailable (a magic carpet). Real estate, particularly land, is very scarce: It may appear to be abundant, but no additional land is being created.

### ■ DESIRABILITY

For something to have value, it must be desired. Real estate has value because it is a rare commodity that satisfies human desires. It is in demand because of **desirability**.

Certain types of homes may be quite desirable, while others may not be. For instance, an adobe home in Atlanta, Georgia, would more than likely be undesirable, but the standard in Albuquerque, New Mexico. Conversely, one probably should not build a two-story brick traditional or Cape Cod style home in Miami, Florida, but it may be perfectly desirable (and conforming) in Charlotte, North Carolina.

## ■ EFFECTIVE PURCHASING POWER

Although many items may have utility, be scarce, and be in demand, they may not have a realistic, achievable value because there are not enough consumers with adequate purchasing power. Many people would like a ski chalet in Aspen, Colorado, but few can afford it. **Effective purchasing power** is basically the ability to participate, economically speaking, in an activity. The methods of calculating what products people can afford vary from product to product and industry to industry. A general rule-of-thumb is that one-third (33 percent) of a household's income is available for housing, be it for rent or mortgage payments. Other ratios may be based on disposable income. Disposable income is income remaining after deductions made by the government, such as taxes or Social Security payments. It is basically money that can be spent.

## ■ DEMAND UNIT

A **demand unit** is simply the combination of desirability and effective purchasing power, that is, a member of a population of data (person, family, household, business, etc.) that desires a product and can afford it.

## CHAPTER FOUR Review Questions

- The four agents of production are
  - scarcity, utility, desire, and effective purchasing power.
  - land, improvements, labor, and capital.
  - land, labor, capital, and entrepreneurship.
  - land, labor, materials, and entrepreneurship.
- To have value, an item must possess what characteristics?
  - Land, labor, materials, and entrepreneurship
  - Scarcity, utility, demand, and effective purchasing power
  - Scarcity, utility, effective demand, and transferability
  - Scarcity, utility, effective purchasing power, and desirability
- Comparing an item's value to the item's cost is an evaluation of the item's
  - conformance.
  - highest and best use.
  - change.
  - contribution.
- What two components comprise effective demand?
  - Cost and value
  - Desire and effective purchasing power
  - Desire and need
  - Desire and satisfaction
- Appraising an improved property, an appraiser values the improvements as one use and the site as another use. This violates the theory of
  - contribution.
  - conforming use.
  - consistent use.
  - highest and best use.
- Issues concerning a site's physical possibilities, legal permissibility, financial feasibility, and maximally productive uses relate to
  - agents of production.
  - factors that create value.
  - supply and demand.
  - highest and best use.
- Scarcity, utility, effective purchasing power, and desire all relate to
  - agents of production.
  - economic characteristics of value.
  - supply and demand.
  - highest and best use.
- When the yield of a product falls as the cost is increased, this is called
  - decreasing returns.
  - supply and demand.
  - balance.
  - change.
- Assume a swimming pool cost \$15,000 to install; however, the increase in market value of the property is only \$3,000. Which principle is illustrated?
  - Conformity
  - Consistent use theory
  - Contribution
  - Balance
- Which is one of the four criteria of highest and best use?
  - Financially feasible
  - Supply and demand
  - Contribution
  - Competition
- Substitution is the primary basis of which approach to value?
  - Cost approach
  - Income capitalization approach
  - Sales comparison approach
  - All of the above
- Entrepreneurial incentive is the same as
  - contribution.
  - profit.
  - anticipation.
  - competition.

13. Which of the following is NOT one of the four economic characteristics of value?
- Utility
  - Effective purchasing power
  - Anticipation
  - Scarcity
14. The combination of desirability and effective purchasing power is called
- demand unit.
  - supply unit.
  - balance.
  - unit of comparison.
15. The theory that each incremental item becomes less expensive as the volume is increased is called
- efficiency.
  - economies of scale.
  - profit.
  - marginal utility.

