The term market analysis is used broadly in economics but has more specific meaning within the appraisal discipline. For appraisers, market analysis is a process for the identification and study of the market for a particular economic good or service. Appraisers generally consider market analysis at two levels:

- From the perspective of a broad market, when a specific property is not the focus of the study the term market study is normally employed
- From the perspective of the market in which a given property competes

Although there is a logical continuum from the general to the specific, market analysis applied to a specific property is of particular importance in the valuation process and should not be confused with general market analysis or related studies. For a specific property, the term applied is marketability study. This market analysis may be either an inferred or fundamental analysis depending on the property type and market conditions. Although the process is commonly referred to as market analysis, all appraisals must include a marketability analysis as well. Marketability analysis includes market analysis as well as an estimate of capture; a market analysis seeks a capture rate.

Market/marketability analysis in real estate valuation is unique because it requires the appraiser to analyze the buyer/seller market as well as the user market (see Figure 9.1). The market area for the buyer/seller market is usually different from the market area for the user market. The market area for the buyer/seller market could be international, say, for a hotel, while the user market for the hotel could be within the local community. Thus, market delineation for valuation has two main parts:

- Analysis of the user market (owners, occupants, and the competition)
- Analysis of the buyer/seller market

market analysis
A process for examining the demand for and supply of a property type and the geographic market area for that property type. This process is sometimes referred to as a use in search of a site.

marketability study
A process that investigates how a particular piece of property will be absorbed, sold, or leased under current or anticipated market conditions; includes a market study or analysis of the general class of property being studied. This process is sometimes referred to as a site in search of a use.
9.2 The Appraisal of Real Estate – Third Canadian Edition

In the appraisal of a specific property, market/marketable analysis must show how the interaction of supply and demand affects the property’s value. If current market conditions do not indicate adequate demand for a proposed development, market/marketable analysis may identify the point in time when adequate demand for the project will likely emerge. Thus, market/marketable analysis helps an appraiser forecast the timing of a proposed improvement and the amount of demand anticipated in a particular period of time. The marketability study helps the appraiser forecast how much the subject property will capture, e.g., future absorption and operations outlook for future occupancy and rents.

Market/marketable analysis also provides a basis for determining the highest and best use of a property. An existing or proposed improvement under a specified use may be put to the test of maximum productivity only after it has been demonstrated that an appropriate level of market support exists for that use. In-depth market/marketable analyses go much further in specifying the character of that support. Such studies may determine key marketing strategies for an existing or proposed property, address the design characteristics of a proposed development, or provide estimates of the share of the market the property is likely to capture and its probable absorption rate.

To measure the market support for a specified property use, the analyst must identify the relationship between demand and competitive supply in the subject real
Chapter 9 – Market and Marketability Analysis

Market/marketability analysis investigates the relationship between the demand for and competitive supply of real estate in a defined market.

Estate market, both now and in the future. This relationship indicates the degree of equilibrium or disequilibrium that characterizes the present market and the conditions likely to characterize the market over the forecast period. Markets are typically in a state of disequilibrium created by market actions, e.g., there is natural lag in meeting demand and reaching a point of equilibrium because of the time that elapses between identifying a need and developing new buildings.

The market value of a property is largely determined by its competitive position in its market. Familiarity with the characteristics and attributes of the subject property (generally called property productivity analysis) enhances the appraiser’s ability to identify competitive properties (supply) and to understand the comparative advantages and disadvantages that the subject offers potential buyers or renters (demand). An understanding of economic conditions, their effect on real estate markets, and the momentum of these markets helps an appraiser appreciate the externalities affecting a property. Therefore, in its broadest sense market/marketability analysis provides vital information needed to apply the three approaches to value, as shown in Table 9.1.

<table>
<thead>
<tr>
<th>Approach to Value</th>
<th>Uses of Market/Marketability Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Market/marketability analysis provides an appraiser with information about current building costs and market conditions. This information helps the appraiser estimate the profit an entrepreneur will expect (or, for an owner-built property, the intangibles associated with owner occupancy) and any economic advantage or obsolescence the property may have suffered since its construction.</td>
</tr>
<tr>
<td>Direct comparison</td>
<td>Market/marketability analysis helps the appraiser identify competitive properties and determine their exact degree of comparability with the subject. With a thorough understanding of current market conditions gained through market/marketability analysis, the appraiser can adjust the sale prices of comparable properties for changes in market conditions that may have occurred since the sales occurred as well as support an adjustment for the economic characteristics of comparable properties.</td>
</tr>
<tr>
<td>Income</td>
<td>In the market/marketability analysis process, an appraiser collects data on vacancy and absorption rates, market rents, current and anticipated rates of return, and the competitive position of the subject property in its specific market. In the income approach, this information is used to determine the anticipated lease-up or sell-out rate for the subject, the share of the market that the subject is likely to capture, the future income stream it is likely to enjoy, and an appropriate discount rate or capitalization rate to apply to the income stream projection or annualized income expectancy. Market/marketability analysis also helps appraisers forecast supply and demand and stabilized revenue, i.e., develop a revenue forecast for the subject.</td>
</tr>
</tbody>
</table>

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FUNDAMENTAL CONCEPTS

Market Definition and Delineation

At the outset of the market/marketability analysis process, the appraiser must clearly identify the real estate product and the real estate market in which the subject competes. These two tasks may be considered complementary. The identification and analysis of the real estate product provides a portion of the information needed in the next step – identifying the market area in which the property competes. In the property productivity analysis, the appraiser identifies the characteristics of the appraised property and further analyzes the physical, legal, and locational characteristics that affect the property’s ability to compete for demand in the defined market area. Analyzing the characteristics and attributes of the real estate product helps the appraiser identify competitive properties that constitute the applicable market. Defining the real estate market for the subject property clearly enhances the appraiser’s understanding of how externalities affect the subject. Through market/marketability analysis, the appraiser breaks down a specific real estate market into market segments (i.e., the market participants), and the appraiser disaggregates the properties by characteristics, e.g., class of property, location.

Demand

Demand reflects the needs, material desires, purchasing power, and preferences of consumers. Demand analysis focuses on identifying the potential users of a subject property, i.e., the buyers, renters, clientele, or customers it will attract. For each particular type of property, demand analysis focuses on the end product or service that the real estate provides. Thus, a demand analysis for retail space would attempt to determine the demand for retail services generated by potential customers in the market area. A demand analysis for office space would attempt to identify businesses in the area that occupy office space and their space or staffing needs.

Demand analyses for residential and retail markets specifically investigate the households in the subject’s market area. In addition to the number of households in the market area, these analyses focus on the disposable income or effective purchasing power of the households and the ages, gender, preferences, and behavioural patterns of household members.

The demand for housing and most retail space is projected based on growth rates in population, income, and employment levels. The four key points discussed below can be especially useful in understanding demand projections for a particular land use.

First, the rate of household formation varies significantly with income and age groups in the existing population. This rate is even more sensitive to migration. Estimating the number of households in an area by dividing the total population by the average household size may result in considerable error. The rate of household formation is much higher for people between the ages of 25 and 34 and those between

\[1\] See Chapter 8 for a discussion of the sources of the data used to estimate the demand for and competitive supply of a specific property type or use.
• Population of the market area, size and number of households, rate of increase or decrease in household formation, composition, and age distribution
• Per capita and household income, mean and median
• Major employers, types of jobs, and unemployment rate
• Percentage of owners and renters
• Financial considerations such as savings levels and lending requirements, e.g., interest rates on mortgages, points charged, and loan-to-value ratios
• Land use patterns and directions of city and area growth and development
• Factors affecting the physical appeal of the neighbourhood, e.g., geography and geology (climate, topography, drainage, bedrock, and natural or man-made barriers)
• Local tax structure and administration, assessed values, taxes, and special assessments
• Availability of support facilities and community services, i.e., cultural institutions, educational facilities, health and medical facilities, fire and police protection

IMPORTANT FACTORS IN DEMAND ANALYSIS FOR A RETAIL MARKET

• Population of trade area(s), size and number of households, rate of increase or decrease in household formation, composition and age distribution of households
• Per capita and household income, mean and median
• Percentage of household income spent on all retail purchases and percentage of disposable income (effective purchasing power) spent on various specific retail categories
• Rate of sales retention in the trade area
• Required volume of sales for a retail facility to operate profitably and existing sales volume per square foot
• Retail vacancy rate and trends in the market
• Percentage of retail purchases captured from outside the trade area
• Land use patterns and directions of city growth and development
• Accessibility (transportation facilities and highway systems) and cost of transportation
• Factors that affect the appeal of the retail centre, e.g., image, quality of goods, and tenant reputation

35 and 54 than for people between the ages of 15 and 24. However, precise data may be difficult to obtain.

Second, household size is not a constant. Over the past several decades, average household size has declined significantly. Between 1970 and 2006, census household size in Canada fell from 3.7 to 3.0.2

Third, while average or median income is generally projected in current dollars, the average real income per capita in Canada that is calculated in constant dollars did not grow between 1976 and 1984, increased very modestly between 1985 and 1989, declined between 1989 and 1993, and then increased steadily until 2007. Income

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2 Source: Statistics Canada, Catalogue no. 91-213-X. Note that the rate of decline occurred mostly during the 1970s; average census household size in 1986 was 3.1, and has since held fairly constant.
projections based on current dollars will thus reflect future, inflated dollars; if real incomes are diminishing, effective demand might be decreasing in spite of the apparent increase in affordability.  

Finally, population projections for small areas are published by public agencies and market research firms, but such projections can be misleading. Therefore, the appraiser should also consult projections for the overall metropolitan area. The availability of land and the adequacy of the infrastructure in the subject area will help determine how much of the overall projected growth will go to that area.

**IMPORTANT FACTORS IN DEMAND ANALYSIS FOR AN OFFICE MARKET**

- Area employers who use office space; current and estimated future staffing needs
- Average square foot area of office space required by an office worker. Requirements vary according to the category of work, the rank of the office worker, and the location of the office, e.g., in the suburbs or the central business district
- Vacancy rate for the specific class of office building
- Move-up demand for space in higher quality buildings (Class A and Class B) or fall-out demand for space in lower quality buildings (Class B and Class C)
- Land use patterns and directions of city growth and development
- Accessibility (transportation facilities and highway systems) and cost of transportation
- Factors that affect the appeal of the office building (quality of construction, management, and tenancy) and the availability of support facilities (shops, restaurants, recreational centres)

**IMPORTANT FACTORS IN DEMAND ANALYSIS FOR AN INDUSTRIAL MARKET**

- Presence of raw materials
- Exchange capability, e.g., currency values and trade barriers
- Area employers who use industrial space; current and estimated availability of skilled and unskilled labor
- Land use patterns and directions of city growth and development
- Accessibility (transportation facilities and highway systems) and cost of transportation
- Employment in manufacturing, wholesale, retail, transportation, communications, or public utilities
- International, national, and regional economic growth that affects local demand
- Overall employment growth
- Retail sales (applicable in market analysis for retail storage and wholesale distribution properties)
- Cargo flows by transport type (e.g., truck, rail, water, air) and product type (e.g., high or low bulk)

Demand in industrial property markets is generally more limited than demand in residential or commercial markets.

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Competitive Supply

Supply refers to the production and availability of the real estate product. To analyze supply, the appraiser must compile an inventory of properties that compete directly with the subject. Competitive properties include the stock of existing units, units under construction that will enter the market, and projects in planning. The appraiser must be careful in developing and analyzing data on proposed or announced projects because ultimately some may not be constructed. The appraiser must also determine the number of units lost to demolition and the number added or removed through conversion. Appraisers gather data in various ways:

- Field inspection
- Review of building permits (issued and acted upon), research into sales of development sites, and surveys of competitive sites
- Commercial data providers
- Interviews with developers, marketers, and city planners

FACTORS STUDIED IN ANALYZING THE SUPPLY OF COMPETING PROPERTIES

- Quantity and quality of available competition (standing stock)
- Volume of new construction (competitive and complementary) – projects in planning and under construction
- Availability and price of vacant land
- Costs of construction and development
- Currently offered properties (existing and newly built)
- Owner occupancy versus tenant occupancy
- Causes and number of vacancies
- Conversions to alternative uses
- Special economic conditions and circumstances
- Availability of construction loans and financing
- Impact of building codes, zoning ordinances, and other regulations on construction volume and cost

Market Equilibrium

Over the short term, the supply of real estate is relatively fixed and prices are responsive to demand. If demand is unusually high, prices and rents will start to rise before new construction can begin. The completion of a building may lag considerably behind the shift in demand. Thus, disequilibrium generally characterizes markets over the short term.

Theoretically, the supply of and demand for real estate move toward equilibrium over the long term. However, this point of equilibrium is seldom achieved or maintained. In some markets, such as those characterized by a very specialized economy, supply responds slowly to changes in demand. Even when an excess in the quantity of
market equilibrium
- The theoretical balance toward which the supply of and demand for real estate move over the long run – a balance that is seldom achieved.
- The balance created at any given point by the interaction of market participants, i.e., sellers representing the supply of properties and buyers representing the demand for properties.

market disequilibrium
A general characteristic of real estate markets over the short term in which the supply and demand for real estate are out of balance.

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active market
A market characterized by growing demand, a corresponding lag in supply, and an increase in prices.
depressed market
A market in which a drop in demand is accompanied by a relative oversupply and a decline in prices.
buyer's market
A depressed market in which buyers have the advantage; exists when market prices are relatively low due to an oversupply of property or a reduced number of potential buyers.
seller's market
An active market in which the sellers of available properties can obtain higher prices than those obtainable in the immediately preceding period; a market in which a few available properties are demanded at prevailing prices by many users and potential users.

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strong market
A market that reflects either high demand and increasing price levels or a large volume of transactions.
weak market
A market characterized by low demand and declining price levels; also called a soft market.

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Trends in Market Activity

Analysts and market participants describe the activity of real estate markets in a variety of ways. An active market is a market characterized by growing demand, a corresponding lag in supply, and an increase in prices. An active market is also referred to as a seller’s market because the sellers of available properties can obtain higher prices. A depressed market is a market in which a drop in demand is accompanied by a relative oversupply and a decline in prices. A depressed market is also referred to as a buyer’s market because buyers have the advantage.

Descriptive terms applied to markets are subject to interpretation. For example, markets are sometimes characterized as strong or weak. Strong markets may reflect either high demand and increasing price levels or a large volume of transactions. Weak, or soft markets may be identified by low demand and declining price levels. Other loosely defined terms include broad and narrow markets, loose and tight markets, and balanced and unbalanced markets.4

Not all markets can be described with simple characterizations. Sometimes supply and demand do not act as expected. Supply may fail to respond to increasing demand because the rate of demolition exceeds the rate of new construction. In this case, prices will continue to rise. Alternatively, supply may outpace rising demand because of a glut of existing properties on the market, and prices will decline.

As shown in Chapter 4, the activity of the real estate market is cyclical. Like the business

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cycle, the real estate cycle is characterized by successive periods of expansion, decline, recession, and recovery. However, the real estate cycle is not synchronized with the business cycle. Real estate activity responds to both long-term and short-term stimuli. The long-term cycle is a function of changes in the characteristics of existing employment, population, income, and shifts in consumer preferences. The short-term cycle is largely a function of the availability of credit.

**LEVELS OF MARKET/MARKETABILITY ANALYSIS**

The principles of market/marketability analysis seem simple, but the techniques and procedures applied by market analysts can be extremely sophisticated. Market/marketability studies can be developed into elaborate analyses. The levels of market/marketability analysis that can be performed reflect a spectrum of increasingly complicated methodologies.5

Estimates of demand are formulated differently depending on the level of analysis. In some cases, demand may simply be inferred from current market conditions, or rates of change may be used to develop projections. Because of short-comings in this simple approach, caution is advised. To perform an in-depth analysis of forecast (fundamental) demand, the analyst must gather and segment extensive data and apply sound judgment to make projections. The analyst refines the forecast demand estimate by considering the perceptions of market participants and assessing the likelihood that current trends will continue.

**Inferred Analysis and Fundamental Analysis**

An appraiser can use current and historical market conditions to infer future supply and demand conditions. In addition, to forecast subject-specific supply, demand, absorption, and capture over a property’s projection period, the appraiser can augment the analysis of current and historical market conditions with fundamental analysis. Table 9.2 summarizes the distinctions between inferred and fundamental demand analysis and indicates the levels of analysis associated with each.

*Inferred analysis*, which is sometimes called trend analysis, is descriptive and emphasizes historical data rather than future projections. The focus can be general, with selected comparable properties representing the larger market, or more specific and include area-wide market data and subject-specific conclusions.

*Fundamental analysis* is a more detailed study of market conditions, focusing on the specific submarket of the subject property and providing strong reasoning and quantifiable evidence for projections of future development. This level of analysis is based on the premise that real estate value is tied to the services the property provides and that a study of the market for those services will reveal influences on the value of the real estate.

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5 For a comprehensive discussion of the various levels of market/marketability analysis, see Stephen F. Fanning, Market Analysis for Real Estate: Concepts and Applications in Valuation and Highest and Best Use (Chicago: Appraisal Institute, 2005).

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### Table 9.2: Types and Levels of Analysis

<table>
<thead>
<tr>
<th>Inferred Demand Studies</th>
<th>Fundamental (Derived) Demand Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level of Study</strong></td>
<td><strong>A</strong></td>
</tr>
<tr>
<td>Inferred subject attributes</td>
<td></td>
</tr>
<tr>
<td>Inferred locational determinants of use and marketability by macroanalysis</td>
<td></td>
</tr>
<tr>
<td>Inferred demand from general economic base analysis conducted by others</td>
<td></td>
</tr>
<tr>
<td>Inferred demand by selected comparables</td>
<td></td>
</tr>
<tr>
<td>Inferred supply by selected comparables</td>
<td></td>
</tr>
<tr>
<td>Inferred equilibrium/highest and best use and capture conclusions</td>
<td></td>
</tr>
<tr>
<td>Emphasis is on:</td>
<td></td>
</tr>
<tr>
<td>- Instinctive knowledge</td>
<td></td>
</tr>
<tr>
<td>- Historical data</td>
<td></td>
</tr>
<tr>
<td>- Judgment</td>
<td></td>
</tr>
</tbody>
</table>

Note: An appraisal without a fundamental demand study – e.g., Level C or D market/marketability analysis – is designed to estimate value only in a certain and stable market.


### TYPES OF ANALYSIS

In addition to different levels of analysis, the discipline of market/marketability analysis comprises several related types of analysis. For a given appraisal assignment, the appraiser must determine which of the following variations of market/marketability analysis is most appropriate for the appraisal problem:

- Economic base analysis
- Market studies and marketability studies
- Feasibility analysis

The types of market/marketability analysis differ more in scope than in procedure. All forms of market/marketability analysis investigate local economic activity and factors influencing the supply and demand of a particular type of property or in a specific market area, not always focusing on a specific property. In addition, the conclusions of these analyses all lead the appraiser into the highest and best use analysis required in the valuation process.
Economic Base Analysis

As defined in Chapter 4, the economic base of a community is the economic activity that allows local businesses to generate income from markets outside the community’s borders. Thus, economic base analysis is a survey of the industries and businesses that generate employment and income in a community as well as of functions of employment such as the rate of population growth and levels of income.

Employment figures serve as a proxy for income in economic base analysis. Basic employment industries provide the economic foundation for a community by producing goods and services that can be exported to bring money into the local economy. Although some segments of the service sector can be considered basic economic activities, most service industries are nonbasic because the service provided and the income generated remain within the community’s borders. Growth in basic employment can reflect changes in population, household income, or other economic factors influencing land use and real estate value.

Often the structure of a community’s business sector can be discussed using the North American Industry Classification System (NAICS) developed in a cooperative effort between the statistical agencies of Canada, the United States, and Mexico and used by Statistics Canada. NAICS is used throughout Statistics Canada reporting for the variety of statistics and surveys requiring industrial activity classification, e.g., census, employment surveys, enterprise and establishment surveys, household surveys, and the System of National Accounts.

Surveys and other data-gathering techniques employed in economic base analysis generate primary data that can be used in other types of market/marketability analysis.

Market Studies and Marketability Studies

A macroeconomic market study provides a broad picture of supply and demand conditions for a specific property type (e.g., residential units, retail space, office space, industrial plant, agricultural operation) or for a specific area. In a market study, the appraiser does not focus on a specific property; for most valuation assignments, a more detailed marketability study is necessary.

In a marketability study, the appraiser investigates how a particular property will be absorbed, sold, or leased under current or anticipated market conditions; a market study or analysis of the general class of property should be included. In contrast to market studies, a marketability study is property-specific. It should identify the characteristics of the subject’s market and quantify their effect on the value of the property. A marketability study includes a market study.

A marketability study is founded on analysis of four factors that create value, i.e., utility, scarcity, desire, and effective purchasing power. The interaction of these four factors will determine the marketability of a property. Utility and scarcity are supply-side factors, while desire and effective purchasing power are demand-side factors.

The development of a property usually entails a construction, conversion, or renovation phase and a marketing phase. The marketability study must describe the

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6 In 1997, the Standard Industrial Classification system (SIC) was replaced by the North American Industry Classification System (NAICS). NAICS is revised on a five-year cycle in order to ensure that the classification continues to reflect the rapidly changing structure of the economy. NAICS 2007 groups economic activity into 20 sectors and 928 Canadian industries. See www.statcan.gc.ca for more information.

market study
A macroeconomic analysis that examines the general market conditions of supply, demand, and pricing or the demographics of demand for a specific area or property type. A market study may also include analyses of construction and absorption trends.

marketability study
• A microeconomic study that examines the marketability of a given property or class of properties, usually focusing on the market segments in which the property is likely to generate demand. Marketability studies are useful in determining a specific highest and best use, testing development proposals, and projecting an appropriate tenant mix.
• Analysis of how a particular property is expected to be sold, absorbed, or leased under current and anticipated market conditions; includes a market study or analysis of the general class of property being studied.

demand and supply situation under current market conditions (for the estimate of “as is” value) as well as the demand and supply situation over the planned construction period (for the value upon completion) and the marketing period (for the estimate of value upon stabilization). In other words, a marketability study for a property must focus on each point on the development timeline for which a value is to be estimated.

Appraisers also use a marketability study for an existing property. Appraisers forecast income and occupancy, e.g., whether the market expects the subject property to maintain or lose tenants and how much rent the owners can expect in the future. Likewise for vacant land, appraisers must forecast the timing for use in order to select and adjust comparables. This too is treated as a marketability study. The demand and supply analysis must investigate market conditions, both current and future, to determine the absorption rate and other factors that will affect value during the marketing period.

An appraiser must be careful not to misinterpret data or use historical data as an absolute prediction of the future. For example, an appraiser can incorrectly assume the absorption rate experienced by competitive projects will indicate the absorption rate for the subject when it is actually an indication of demand. Consider an appraiser who is analyzing a proposed residential subdivision and finds three competitive subdivisions in the subject’s market area. Over the past year, these subdivisions have had average sales rates of three lots per month, five lots per month, and seven lots per month. Simply using the average sales rate for the three competitive subdivisions, five lots per month, as the estimated absorption rate for the subject would most likely be incorrect. However, the appraiser can use the total lot sales for the three competitive subdivisions as an indication of the total historical demand for similarly developed residential lots in the subject’s market area – i.e., 15 lots per month is the implied demand for this type of real estate product. The appraiser should study additional market factors, including growth patterns and the development of new competitive subdivisions, to support the estimate of total demand over the subject’s marketing period.

The subject’s marketing period can be determined by analyzing the supply of competitive residential subdivision lots in the market area, including the subject and all other proposed and existing subdivisions.

Consider the following situation:
• The appraiser expects the three existing subdivisions mentioned above to continue to sell off lots during the subject’s marketing period.

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• Another proposed subdivision will be added to the competition in the subject’s market during this period.
• Total demand is 15 lots per month.

Thus, the average absorption rate for the five subdivisions will be three lots per month. The appraiser can then determine whether the subject’s absorption rate will be the same as, higher than, or lower than the average rate. The appraiser should explain the reasoning for the rate chosen in the appraiser’s conclusion.

If the appraiser uses a marketability study prepared by another party in the valuation, the appraiser must recognize that this study represents secondary data. The appraiser should carefully review the study to determine its validity and whether it can be used.

**A MARKETABILITY STUDY MUST ANSWER THE FOLLOWING QUESTIONS:**

- Who will the end users be, i.e., buyers or tenants?
- What are the characteristics of the expected end users? (e.g., age, family size, space needs, and preferences as to facilities and amenities)
- Does the utility of the improvements, whether proposed or existing, satisfy the requirements of the intended market?
- What is the demand for the proposed or existing property that is to be marketed?
- How many end users would want the property? (desire)
- How many potential users can afford it? (effective purchasing power)
- What share of demand is the property likely to capture? (capture rate)
- What is the supply of competitive properties that will be marketed?
- How many competitive units currently exist?
- How many competitive units are under construction?
- How many competitive units are planned?
- What is the estimated absorption rate for the proposed property to be marketed?
- If already developed, what future rent and occupancy are expected?
- Are there alternative uses for the property that would provide a higher return on the investment?
- What are the relative risks associated with the alternative uses?

**Feasibility Analysis**

Economic feasibility analysis is defined as an analysis undertaken to investigate whether a project will fulfill the objectives of an investor. Thus, the profitability of a specific real estate project is analyzed in terms of the criteria of a specific market or investor. Alternatively, the term may be defined as an investment’s ability to produce sufficient revenue to pay all expenses and charges and to provide a reasonable return on and recapture of the money invested. Economic feasibility is indicated when the market value or gross sellout of a project upon achievement of a stabilized condition equals or exceeds all costs of production. Market value applies to a planned rental property, while gross sellout applies to a project that will be developed as multiple units to be sold to multiple users.

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Analyzing the feasibility of proposed uses requires appraisers to forecast future market conditions and the timing of events such as the sellout of new homes in a subdivision. Inadequate analysis of development projects, large or small, can contribute to a project’s failure.

Highest and best use and feasibility analysis are interrelated, but feasibility analyses may involve data and considerations that are not directly related to highest and best use determinations. Such analyses may be more detailed than highest and best use analyses, have a different focus or require additional research. Generally, the feasibility of developing real estate under a variety of alternative uses is studied. The use that maximizes value represents the highest and best use. Table 9.3 provides a comparison of general market analysis, feasibility analysis, and highest and best use analysis.

### Table 9.3: Comparison of Real Estate Analyses

<table>
<thead>
<tr>
<th>Goal/Purpose</th>
<th>Processes/Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>General market analysis</td>
<td>Perform supply and demand analysis for appropriate potential uses</td>
</tr>
<tr>
<td>Marketability analysis</td>
<td>Follow the six-step process described below</td>
</tr>
<tr>
<td>Feasibility analysis</td>
<td>Calculate NOI/cash flows of appropriate potential uses and select appropriate cap rate/discount rate (based on data collected during market/marketability analysis – e.g., residual land value, rate of return, capitalized value of overall property)</td>
</tr>
<tr>
<td>Highest and best use analysis</td>
<td>Specify terms of use, timing, and market participants (e.g., user of the property, most probable buyer) and compare values of appropriate potential uses</td>
</tr>
</tbody>
</table>

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SIX-STEP MARKET ANALYSIS PROCESS

Most market/marketability analysis assignments can be performed using a six-step process, which is illustrated in Table 9.4. For proposed properties, a seventh step can be added to perform financial feasibility analysis of alternative uses and threshold testing, often using the break-even point of the investment as the threshold.

In Step 1, the property productivity analysis step, the appraiser or analyst identifies which features of the subject property shape productive capabilities and potential uses of the property. Those attributes can be physical, legal, or locational; they will be the basis for the selection of comparable properties as well as shaping conclusions about the capture of forecasted marginal demand.

In Step 2, given the potential uses of the subject property, the appraiser identifies a market for the defined use or more than one market if the property has alternative uses. Economic base analysis is the foundation of this analysis of existing and anticipated market demand.

In Step 3, the appraiser studies population and employment data to analyze and forecast demand. The scope of work required by the assignment (as well as time and budgetary constraints) will dictate to what extent the appraiser must investigate demand-side variables.

In Step 4, the appraiser analyzes the existing and anticipated supply of the property type under investigation.

In Step 5, the analyst investigates the interaction of supply and demand to determine if marginal demand exists and then makes predictions as to when the market will move out of equilibrium.

In Step 6, by comparing the productive attributes of the subject property to those of competitive properties, the analyst can judge the market share the subject is likely to capture given market conditions, demand, and competitive supply.

Market/marketability analysis assignments can be elaborate undertakings, particularly if a large amount of primary research is required. The following examples outline the procedures and thought processes an appraiser will apply in using the six-step process to analyze the markets for various types of property.

Analyzing Housing Demand

For a Proposed Single-Family Residential Subdivision

Real estate developers often want to know how many homes they can build in a subdivision, what prices they could expect to receive for those properties, and the timing of sales over an anticipated holding period. A typical market analysis for a new single-family residential subdivision involves the following considerations in the six-step process:

Step 1. Property productivity analysis. As in any market/marketability analysis, the first step is a preliminary analysis of the legal, physical, and locational attributes of the subject units and units in competitive subdivisions. Important characteristics of a new subdivision include the following:
Table 9.4: Six-Step Process

<table>
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<td>B. Legal and regulatory attributes</td>
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<td>D. Attributes and characteristics of competitive properties</td>
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<td>1. Economic and financial</td>
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<tr>
<td>3. Site</td>
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<td>4. Structure</td>
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</table>
Table 9.4: Six-Step Process (continued)

Step 5. Analyze the Interaction of Supply and Demand

A. Competitive environment
B. Residual demand concepts

Step 6. Forecast Subject Capture (Market Penetration Concepts)

A. Inferred methods
   Comparison of subject to general market indicators
   • Comparable property data
   • Secondary data surveys and forecasts
   • Subject historical performance
   • Local economic analysis
   • Other

B. Fundamental capture methods
   Estimate subject capture potential of fundamental demand forecast by such methods as:
   • Share of market
   • Adjust by quantifiable rating techniques
   • Subject historical capture rate
   • Other

C. Reconcile subject capture indications derived by analysis of inferred and fundamental methods

Use of Study Process (Six Step) Conclusions

• Economic demand data for financial testing of highest and best use alternatives
• Economic demand data for the valuation models

• Infrastructure
• Zoning
• Title restrictions
• Linkages to major employers and amenities
• Public planning for growth
• Population trends

Step 2. Market delineation. To analyze the characteristics of likely buyers of the specified housing units, the analyst develops a consumer profile describing income levels, household size, age, and preferences. The market area of potential buyers may be defined in terms of the following:

• Time-distance relationships, e.g., the commuting time to employment centres and support facilities
• Social or political boundaries, e.g., school districts, voting precincts
• Man-made or natural boundaries, e.g., major thoroughfares, physical barriers
• The location of competitive housing

Step 3. Forecast demand. Demand for single-family homes is generally analyzed using demographic data. Once the market area is defined, the analyst can compile various figures for that area:

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• The current and projected population within the defined market area.
• The current and projected number of households, keeping in mind that household size varies with the age of the head of the household.
• The number of current and projected households headed by owners and those headed by renters. (There may be an overlapping category of renters who can afford to buy.)

With that population information, the analyst can break down the number of owner-occupied households according to their income levels to determine the percentage of households that are or will be able to meet the mortgage payments required by local lending practices and interest rates and other housing costs such as expenses for maintenance, insurance, and taxes. Adjusting the number of owner-headed households that can or will be able to afford the housing by the vacancy rate in the market yields measures of the existing and anticipated demand for the subject property.

Step 4. Competitive supply analysis. An inventory of competitive supply includes identifying the number of the following:
• Existing competitive properties within the subject’s identified market area
• Properties under construction in that area
• Planned properties in the area for which building permits have been obtained
• Proposed properties in the area

The total number of competitive properties in the defined market area for the projection period can be refined by checking the total number of building permits issued against those actually put to use in recent years. In addition to quantitative measures of current and anticipated supply, this step in the analysis process includes comparison of the subject and its competition for specific amenities and attributes that give housing units a competitive advantage or disadvantage.

Step 5. Equilibrium or residual analysis. Analysts can compare existing and potential demand with current and anticipated competitive supply to determine whether demand for additional units or square footage of housing (marginal demand) exists or when it may develop.

Step 6. Forecast subject capture. The final step in the market/marketability analysis process for a proposed subdivision is to analyze the competitive rating to forecast the likely capture rate for the subject, i.e., the market share the subject property is likely to capture. The analyst makes qualitative judgments regarding the relative appeal of the subject property in the marketplace that must be reconciled with the quantitative evidence of marginal demand.

The goal of the market/marketability analysis for a proposed subdivision is often more than just a forecast of subject capture. Many clients also want to know if the project is economically feasible and what prices the market will accept for the product. In the optional seventh step of the market/marketability analysis process, the analyst tests the feasibility of various market scenarios. The break-even point, where expected construction costs and the client’s desired profit margin match the anticipated sale price, often serves as a starting point for testing pricing alternatives. The
For an Existing Apartment Complex

To retain its value over time, an existing apartment complex needs to be able to compete effectively in the marketplace. The subject property’s vacancy rate is one indicator of the relative health of a property, but market/marketability analysis for such a property involves additional considerations.

Step 1. Property productivity analysis. As for most property types, the first step in market/marketability analysis for an apartment building involves a preliminary analysis of the legal, physical, and locational attributes of the subject property and similar buildings in competitive apartment districts. Important characteristics of an existing apartment complex include the following:

- Design and appearance of the property
- Number, size, and mix of units
- Site improvements and amenities (in units and for complex as a whole)
- Parking
- Zoning (particularly the possibility of a zoning change for potential condominium conversion)
- Infrastructure
- Public planning for growth
- Natural features and land use trends
- Linkages to major employers and amenities

Step 2. Market delineation. The market area of potential renters is similar to that of potential home buyers. The boundaries of the market area for an existing apartment are based on the following:

- Time-distance relationships, e.g., the commuting time to employment centres and support facilities
- Social or political boundaries, e.g., school districts, voting precincts
- Man-made or natural boundaries; e.g., major thoroughfares, physical barriers
- The location of competitive housing

In addition, the analyst investigates the tenant profile (e.g., occupational profile, income level, and other demographic information) for the subject property and the market area in this step of the market/marketability analysis process.

Step 3. Forecast demand. Analysts forecast the demand for an existing apartment complex using both inferred and fundamental methods. The inferred (trend) analysis of the subject’s market area includes investigation of the following:

- General growth trends
- Residential construction trends
- Historical absorption figures
- Real rental rates
Relevant information gathered in the fundamental analysis of apartment demand includes the following:

- The current and projected population within the defined market area
- The current and projected number of households (dividing population figures by average household size)
- The number of current and projected households occupied by owners and those occupied by renters
- The number of households that are or will be able to meet the monthly rent on units in the subject property

An adjustment for frictional vacancy in the market may need to be made for proposed construction, but for existing projects, the analysis usually focuses on the ability of the subject property to capture actual occupancy so an adjustment is not necessary. Additional adjustments may be needed for move-up demand, which is generated by the upward mobility of lower-income households, and latent (or pent-up) demand, which is often a result of underbuilding or high financing costs that restrict new construction.

**Step 4. Competitive supply analysis.** The competitive supply of apartments in a market area takes into account the following:

- Existing competitive properties
- Properties under construction
- Planned properties for which building permits have been obtained
- Proposed properties

To complete this step, the analyst compares the location, age, and amenities of the subject to those of the competitive properties.

**Step 5. Equilibrium or residual analysis.** A net excess or shortage of apartment units in the market can be determined by comparing the results of the analyses in Steps 3 and 4.

**Step 6. Forecast subject capture.** The inferred analysis of the market area is revisited along with additional fundamental analysis to generate a subject capture rate. The subject’s current occupancy can be compared to the estimated number of occupied units in the market, or a pro rata share can be calculated by dividing the total number of units in the subject with the total number in the market. In addition, the analyst compares competitive ratings for the subject property and competitive properties. If the analyst uses more than one form of fundamental analysis to calculate a capture rate, the separate conclusions should be reconciled.

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**frictional vacancy**

The amount of vacant space needed in a market for its orderly operation. In a stabilized market, where supply and demand are in balance, frictional vacancy allows for move-ins and move-outs. In markets for income-producing property, frictional vacancy measures the lost rental income as leases roll over and expire.
Analyzing Retail Space Demand

To forecast the demand for an existing or proposed community shopping centre at a specific site over a given period (e.g., 5 or 10 years), an appraiser follows these steps:

Step 1. Property productivity analysis. Analysis of the legal, physical, and locational attributes of the subject retail centre and competitive centres in or near its trade area focuses on current industry standards. Retail properties can become outdated quickly as industry norms change. Analysts pay particular attention to the following attributes of the subject site and improvements:

- Land-to-building area ratio
- Building area
- Parking
- Frontage, visibility, and signage
- Topography
- Utilities
- Landscaping
- Design and building layout
- Amenity features
- Store size
- Store depth
- Tenant mix and marketing

Locational factors are also important for retail properties. The locational attributes that analysts should investigate include the following:

- Land uses and linkages with the surrounding community
- Site location in relation to patterns of urban growth
- Proximity to competitive supply

Step 2. Market delineation. Effective analytical tools for defining the primary and secondary trade areas of a shopping centre have been objects of study for many years. The most commonly used techniques include the following:

- Trade area circles, in which preliminary trade area boundaries are adjusted for the specific geographic, demographic, and economic characteristics of the community
- Gravitational models, a variation of trade area circles that takes into account the effects of competition
- Customer spotting, a more detailed form of trade area circles in which actual customer addresses are surveyed to determine distances and linkages

Step 3. Forecast demand. Inferred analysis of retail demand may include study of the following:

- Economic base and city growth trends
- Citywide retail centre occupancy
- Competitive centre occupancy

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Fundamental demand for retail space requires further scrutiny of market data, including the following:

- Overall population of the trade area
- Number of households
- Average household income
- Percentage of average household income spent on retail purchases
- Percentage of retail purchases typically made at shopping centres similar to the subject
- Percentage of purchases made at the subject shopping centre allocated to primary and secondary trade areas
- Volume of sales per square foot of retail area required to support the subject
- Normal vacancy rate in the market

The estimates of inferred and fundamental demand can be reconciled with a ratio analysis of the trade area in which the analyst compares the current amount of occupied retail square footage per capita to the future population forecast. The conclusions of these analyses may be further adjusted to account for retail income from outside the trade area and leakage of retail income to other areas.

Step 4. Competitive supply analysis. As for other property types, an inventory of competitive retail space covers the following:

- Existing competitive properties
- Properties under construction
- Planned properties for which building permits have been obtained
- Proposed properties

To complete the analysis, the supply of competitive space is rated according to the following:

- Size
- Access and location
- Quality of merchandise
- Reputation
- Rental rates
- Vacancy
- Tenant mix

The analysis of competitive supply should yield estimates of the square footage of specific competition, the market rent the subject can expect to generate in the current market, and a comparative ranking of the subject.

Step 5. Equilibrium or residual analysis. The difference between supportable leasable space and the amount of existing and anticipated retail space will be the estimate of additional space needed. Sales per square foot in individual retail stores may also indicate the performance level of an existing shopping centre, the centre’s share of the market, and whether there is opportunity for expansion. Analysts may use this data to check the reasonableness of the estimate of additional space demanded. If there is a current surplus of retail space, the forecast of market conditions may identify when in the future the available retail space will be absorbed and demand for additional retail space will begin to come on line.
Step 6. *Forecast subject capture.* Since retail concepts can change so quickly, subject capture is especially difficult to forecast for retail properties. In addition to inferred analysis of historical capture rates of the subject and competitive properties, analysts can use several fundamental methods to support an estimate of subject capture:

- Quantitative ratings of the subject and its competition
- The size-of-the-centre technique, in which the drawing power of a shopping centre is related to its size relative to competing properties
- Ratio analysis, which is applied like the size-of-the-centre technique but segments demand to the subject property only

**Analyzing Office Space Demand**

To forecast the demand for existing or proposed office space in a particular node or district over a given period, an appraiser analyzes the relationship between supply and demand in the overall market area and the district’s actual and potential share of the existing and projected demand. The time when a proposed building will reach stabilized occupancy can be forecast in this way. An appraiser can estimate demand for office space in the overall market area with the following steps:

Step 1. *Property productivity analysis.* Tenancy and class are primary identifiers of an office building’s competitive status. Physical items of comparison include the following items:

- Building design and construction materials
- Signage
- Exterior lighting
- Street layout
- Utilities
- Parking
- Lot and building lines
- Landscaping and grading
- Office space layout
- Quality and style of finish in tenancies
- Floor sizes
- Stairways, corridors, and elevators
- Electrical system
- Heating, ventilation, and air-conditioning
- Amenities
- Security
- Building management and tenant mix

Locational considerations for office buildings are often analyzed both in terms of the subject’s location within a cluster of office buildings and that node’s location relative to other nodes in the competitive market area.

Step 2. *Market delineation.* Unlike residential and retail trade areas, which are defined by the consumers they serve, an office market is tied more to the reputation of the businesses housed in the office than by the convenience of the location. The market area for an office building is generally diffused over a broad metropolitan...
area, with law firms and financial institutions often seeking space in prestigious, centrally located buildings, while businesses providing other types of services may prefer suburban offices with ample parking facilities and reasonable rents.

Step 3. Forecast demand. To estimate office demand, the analyst must investigate various types of information:

- Size of the workforce occupying office space, segmented by occupational category
- Size of the workforce occupying office space in the subject’s class
- Requisite space per worker
- Normal vacancy rate

Analysts may make projections in annual, biannual, or multi-year increments. If an appraiser develops a 10-year forecast and steady growth is anticipated, the demand for the first period is subtracted from the demand for the last period and the difference is divided by the number of periods in the forecast to yield an annual demand estimate.

Step 4. Competitive supply analysis. In addition to competitive space under construction or in planning, the competitive supply of office space in a market may be affected by demolitions, renovations, and the adaptation of space now put to other uses. Information on proposed office properties may be difficult to obtain, especially reliable information on the timing of new construction and its completion. Important characteristics of competing properties include the following:

- Size (gross building area or rental area)
- Age
- Vacancy level
- Access
- Parking
- Tenant quality
- Building management
- Building quality and condition
- Amenities
- Support facilities

Step 5. Equilibrium or residual analysis. In comparing the existing and projected demand for office space with the total supply of current and anticipated competitive office space, the appraiser should consider potential move-up or fall-out demand for Class A and Class B buildings. Some tenants move up from Class B to Class A space in a down market with declining rents, while others fall out from Class A to Class B space in an active market where rents are increasing. In an in-depth analysis, an appraiser also

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9 One way to calculate the number of office space occupants in economic and occupational sectors involves establishing the ratio between the number of office workers and the number of total workers in each sector. In a sector such as finance, insurance, and real estate (FIRE), a high percentage (more than two-thirds) of all office workers occupy space in freestanding office buildings, i.e., buildings entirely occupied by office workers. The number of FIRE office workers in freestanding buildings may be estimated by multiplying the total number of workers by this percentage. In sectors such as manufacturing, however, a very low percentage of office workers occupy space in freestanding office buildings. Using these ratios, the number of office workers in each sector can be determined and the aggregate of office workers in all sectors can be calculated. See Ian Alexander, Office Location and Public Policy (New York: Chancber Press, 1979).

10 The average space required for an office worker ranges from 125 to 150 square feet. Very general estimates of average area requirements are published by the Building Owners and Managers Association (BOMA). Because the square foot area required per employee varies widely with community size and the type of employment in the community, market analysts should compare BOMA estimates with area-per-worker data developed as part of the competitive supply analysis. Estimates obtained from other national and local sources may also vary.

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considers space subject to pre-leasing and space that will become vacant when current tenant leases expire. If an appraiser anticipates that demand for space will grow at a steady rate, the total supply that is available for occupancy may be divided by projected annual demand to determine the absorption period. At the end of the absorption period, additional space will be required. This point in time represents a "window" for development.

Step 6. Forecast subject capture. An appraiser must analyze development patterns in the district in order to determine a particular node or district’s share of the overall market projection. Central business districts are characterized by the greatest density of development, while suburban office complexes attract tenants with lower rents and easier access, for both employees and customers. Not all suburbs share equally in the market for office space. Analysts should compare development patterns in areas that closely resemble the subject district. Key demographic features such as total population and educational and income levels are believed to be closely correlated with the ability of a suburban area to support an office building.

The appraiser can develop a ratio by dividing the amount of existing office space in the district by the amount of office space in the overall market area. Such a ratio only reflects the district’s fair share of the market, however, and may not provide an accurate forecast. The appraiser must also consider market preferences in determining the ratio.

To forecast when a proposed building will reach stabilized occupancy, the appraiser can estimate the construction period and an absorption rate based on pre-leasing and the historic performance of competitive buildings. Analysts interpret historic performance and use it to forecast expectations, but this information must be considered in its proper context. Performance may have been especially high during periods of rapid growth and unusually low during periods of stagnation. Detailed data on occupancy may describe not only nodal and district patterns, but also absorption rates for different building types (e.g., low-, mid-, and high-rise) or different building classes (e.g., Class A, Class B, Class C) and different occupants, e.g., anchor tenants or non-anchor tenants, corporate management, research and development departments, professional services.

### Analyzing Hotel Demand

The source of demand for hotel rooms depends largely on the nature of the subject property, i.e., whether it is a commercial establishment, a convention hotel, or a leisure or resort property. A proposed hotel near
an established suburban office park would probably target business travelers, and the future absorption of office space in that submarket may be a good indicator of demand growth in the commercial sector. A large resort hotel in an undeveloped coastal area would draw from a much different demographic, and the market/marketability analysis process would differ as well, if only in the sources of data used by the analyst.

Step 1. Property productivity analysis. In general, the following attributes of a hotel’s site and improvements are important factors in determining the property’s competitiveness:

- Size
- Room rate structure
- Overall decor and physical appearance
- Quality of management
- Chain affiliation
- Quality and character of the market area
- Facilities and amenities offered
- Revenue per available room (RevPAR), which is a common unit of comparison used in the lodging industry to compare the income of competing facilities

The importance of these factors may depend on the type of lodging being analyzed. Access and visibility will be more important factors in the competitive ability of a highway-oriented property, but amenities will be more important for a resort hotel.

The location of a hotel often indicates the likely clientele:

- Airport hotels and highway-oriented hotels cater to transient guests.
- Centre city hotels draw both tourists and business travelers.
- Hotels in suburban locations often rely on adjacent commercial or industrial businesses.
- Convention centre hotels or resort properties are themselves the destination rather than any nearby land use.

Step 2. Market delineation. Defining the market area for a hotel can be difficult because this type of property does not necessarily rely on households in nearby communities to generate demand. Instead, linkages to sources of visitations in the area can be more significant than the characteristics of the surrounding neighbourhood. Hotel development often occurs in clusters, and the emergence of a new cluster nearby can have an impact on the competitiveness of existing properties.

Step 3. Forecast demand. The inferred analysis of demand for hotel rooms may include study of the following:

- Travel and tourism data
- Hotel employment data and convention centre activity
- Office space absorption and employment statistics – particularly regarding wholesale and retail trade; financial, insurance, and real estate (FIRE); and services
- Occupancy rates at competitive lodging facilities in the subject’s class and market area
Fundamental analysis of the demand for hotel rooms is based on historical occupancy and room rate data. Interviews with demand generators such as major employers or officials at chambers of commerce or visitor information centres may yield information that supports an estimate of hotel demand calculated from occupancy figures. Data useful in quantifying hotel demand includes the following:

- Number of nights per stay
- Number of people per room
- Periods of use during the year
- Prices paid for rooms
- Food, beverage, entertainment, and telephone usage
- Methods of travel

Analysts must consider seasonal fluctuations in demand for leisure-oriented properties.

Step 4. Competitive supply analysis. Information on existing hotel properties and developments under construction is generally available, but the difficulty of obtaining hotel financing and the influence of foreign investors complicate the analysis of proposed hotels. Even if market evidence supports demand for a proposed property, new development may be hindered by external factors such as fluctuations in the economies of foreign countries whose citizens invest in Canadian hotel properties. The analysis of all the hotels in the market area concludes with a comparison of the relative competitiveness of all existing and planned properties.

Step 5. Equilibrium or residual analysis. Analysts can compare current and anticipated demand for hotel rooms, measured in total room nights per year with the existing and planned supply of available rooms. There may be a lag between when demand is evident and when supply can be added to the marketplace to accommodate that demand.

Step 6. Forecast subject capture. The ratio of room nights that any hotel in a market area can be expected to capture can be derived from the fair share allotted to the property adjusted for competitive penetration factors. Analysts can refine the allocation of the total number of room nights demanded between competitive properties by considering customer preferences such as the following:

- Room price
- Travel distance
- Quality of facilities
- Amenities
- Management
- Image

Hotels with particularly high market penetration in one segment will generally have lower penetration rates in other segments.

Analyzing Industrial Properties

Market/marketability analysis for industrial properties is complicated by three factors:
• The market areas for these properties are more widely scattered.
• Demand is more limited.
• Supply is highly differentiated according to the operation of the enterprise.

The market for industrial real estate reflects the unique characteristics of the property type. High-priced industrial machinery is generally custom-built, and, except for the flex space in multi-tenant research and development (R&D) facilities, industrial plants are typically custom-designed to the needs of the particular production line. The owners and users of industrial real estate have necessarily made a long-term commitment. Many older industrial firms are precluded from ever moving due to the difficulty and expense of relocation. Newer industrial facilities are less specialized, providing for more flexibility in the marketplace when growing tenants move to larger facilities or tenants leave for other reasons.

Plants are often built with custom financing, which is the result of lengthy negotiation. Transactions may vary considerably even for highly similar properties, particularly when a business is sold along with the real estate. In the latter situation, transactional information may be confidential, so market data will not be readily available.

Market/marketability analysis is generally much easier for multi-tenant warehouses and distribution centres than for facilities housing more specialized industrial operations.

Step 1. Property productivity analysis. Location and access to transportation are primary determinants of a distribution facility’s competitive ability. All industrial properties need access to an adequate supply of skilled labour, to meet both the current demand and any anticipated growth in the industrial sector. If warehouse tenants provide parts or raw materials for manufacturing operations in the immediate area, proximity to those businesses is essential. However, access to major trade routes is more important to large distribution centres that serve a wider market area, such as a regional distribution hub for a major retailer. Manufacturing plants that produce potentially hazardous waste materials need to be located near or have affordable access to disposal sites.

Physical elements of comparison include the following:
• Size (and land-to-building ratio or floor area ratio)
• Ceiling height
• Loading capacity
• Climate control
• Percentage of office space
• Automated operations (including the use of robotics and other evolving technologies)
• Utilities
• Security
• Building management and tenant mix
• Environmental regulations

Step 2. Market delineation. Established trade routes can define the boundaries of the competitive market for multi-tenant industrial space. Since warehouses and distribution
centres must be close to major highways or railroad lines, industrial development will
tend to cluster around those features, especially major freeway interchanges in centrally
located provinces where a large percentage of the region’s or even the country’s popula-
tion can be within a day’s drive.

Step 3. Forecast demand. Demand analysis for industrial space is similar to the
procedure for analyzing office space, but the analysis of industrial demand must take
into account the functional limits on the use of industrial property and the different
physical characteristics of warehouses and distribution centres. Analysts place less
emphasis on general population change. Export activity may be a better indicator of
industrial demand in a market area than population growth because the businesses
that occupy warehouse space generally serve a wider clientele than the local com-
munity. The analyst investigates the following:

• Employment in manufacturing, wholesale, retail, transportation, communi-
cations, or public utilities
• Cost of available labour force in relation to alternative locations
• Patterns and directions of industrial growth and development, which often
  cluster along major highways and around intersections
• Presence of raw materials
• Exchange capability

For retail storage and wholesale distribution properties, the level of retail sales in a
market may serve as an indicator of demand for that type of industrial space.

Step 4. Competitive supply analysis. Because industrial operations are such a funda-
mental part of a community’s economic base, information on the competitive supply
of warehouse space and vacancy levels is often compiled in research reports. Analysts
can compare competing properties in terms of the following items:

• Size, particularly in relation to other industrial buildings
• Age
• Vacancy level
• Access
• Building management and tenant quality
• Building quality and condition
• Building size and tenant quality are particularly important factors. Large,
  single-tenant distribution facilities do not compete with smaller, multi-tenant
  warehouses and a building housing several closely related industrial tenants
  may not be competitive with buildings with more diverse tenant mixes.

Step 5. Equilibrium or residual analysis. Industrial real estate markets can react to
increasing demand with more agility than the markets for other types of properties
because raw storage space is easier to construct than most other sorts of buildings
with more intensive finishes. When comparing the existing and projected demand for
industrial space with the total supply of current and anticipated industrial space and
historical absorption trends, an analyst should keep in mind an industrial real estate
market’s potential for sudden change.

Step 6. Forecast subject capture. As long as the forecast period is not extended too
far into the future, the share of marginal demand that a warehouse or distribution
centre can expect to capture can be estimated with about as much certainty as the capture rate for office space. Historical absorption rates may help support an estimate of the general length of cyclical shifts in demand and supply for industrial space of the subject’s type.

**Analyzing Agricultural Properties**

Like industrial properties, agricultural properties often have large market areas, with limited demand and highly segmented supply based on the agricultural product at a given operation. However, forecasting demand for agricultural land is even more difficult. To conduct market/marketable analysis for agricultural properties, appraisers must examine factors as diverse as national and regional economic trends, ecological and environmental considerations, and the character of the subject agricultural district. Land prices are affected by both short-term commodity prices and long-term federal policy involving farm subsidies and the leasing of adjacent public lands for grazing range or timber stands. The condition of the regional economy generally exerts an influence on land prices also. For example, a boom or slump in an energy or extractive industry that represents a region’s economic base (e.g., oil in Alberta, lumber in British Columbia, or minerals in Quebec and Ontario) may generally enhance or depress property values.

Rural appraisers must consult statistical data on soil productivity and crop yields as well as analyses of the effects of erosion on future soil productivity and forecasts of artesian (aquifer) reserves and water available for irrigation. The appraiser should be aware of current and future environmental legislation and any momentum toward land or wildlife conservation.

Finally, the appraiser must be familiar with the characteristics of the immediate agricultural district and the specific types of agriculture and complementary land uses found in the area (e.g., fodder production for a livestock ranch or dairy farm). Other essential information includes local assessment rates, the principal type of ownership (e.g., family farm or agribusiness), and the level of recent sales activity or foreclosures.