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SOLUTIONS

Overview

Seminar Description

Advanced Land Valuation: Sound Solutions to Perplexing Problems focuses on unusual and complex land valuation assignments and uses a combination of lecture, discussion, question and answer, and sample case studies to lead participants to suggested solution strategies. The seminar was developed for residential and commercial real estate appraisers and consultants, real estate agents, landowners, land use planners, developers, and investors. Given the advanced nature of the topics to be covered, attendees are expected to have familiarity with discounted cash flow concepts and general valuation approaches, specifically yield capitalization.

Land can be appraised using several methods, which include the sales comparison approach, allocation, extraction, land residual technique, ground rent capitalization, and subdivision development analysis. All six methods are described in *The Appraisal of Real Estate*, 15th edition, and covered in various Appraisal Institute courses. This seminar focuses on the last three methods and in some cases presents more advanced methodology than the courses. For the land residual technique, this seminar uses a dynamic methodology employing discounted cash flow analysis. The presentation of ground rent capitalization uses yield capitalization to discount multiple forms of ground rent consideration into value. Lastly, for subdivision development analysis, the seminar includes complex properties and the incorporation of market analysis conclusions in highest and best use analysis. (See the table on the next page, which is a summary of the applicability and limitations of land valuation methods.¹)

The case study material will be demonstrated primarily in Excel, and a basic working knowledge of Excel is helpful but not required. Excel screenshots are provided in the handbook for attendees who are not familiar with Excel. Laptops are highly recommended but not required. The Excel models that are downloaded with the course materials can be used by participants in their day-to-day work. Class participation is strongly encouraged, since much can be learned from the collective experiences of the participants.

1. *The Appraisal of Real Estate*, 15th ed. Chicago: Appraisal Institute 2020, Page 340.

Table 19.1 Applicability and Limitations of Land Valuation Methods

Sales Comparison

Procedure	Sales of similar, vacant parcels are analyzed, compared, and adjusted to provide a value indication for the land being appraised.
Applicability	Sales comparison is the most common technique for valuing sites, and it is the preferred method when comparable sales are available.
Limitations	A lack of sales and the comparability of the available data may weaken support for the value estimate.

Market Extraction

Procedure	An estimate of the contributory value of improvements is deducted from the total sale price of a property to arrive at an indicated land value for the comparable. The indicated land values of the comparables are then compared to provide a value indication for the land being appraised.
Applicability	This technique is most applicable when the contribution of the improvements to total property value is generally small and relatively easy to identify. (The technique is frequently used in rural areas.)
Limitations	The appraiser must be able to determine the value contribution of the improvements.

Allocation

Procedure	A ratio of site value to property value is extracted from comparable sales in competitive locations and applied to the value of the improved subject property or comparable properties to develop the site value.
Applicability	This technique is applicable when <ul style="list-style-type: none">Valuing one-unit residential lots where ample sales of improved properties are available and the ratio of site value to improved property value can be supported. This method tends to be less accurate for commercial properties, especially when the number of vacant land sales is inadequate.For commercial properties or where relatively few sales are available, allocation can provide a test of reasonableness rather than a formal opinion of site value.
Limitations	The allocation method does not produce conclusive value indications unless ample sales data is available. The method is rarely used as the primary land valuation technique for properties other than residential subdivision lots. Also, land-to-property value ratios can be difficult to support.

Land Residual Analysis

Procedure	The net operating income attributable to the land is capitalized or the cost to construct an improvement is deducted from the value as if completed to produce an indication of the land's contribution to the total property.
Applicability	This technique is applicable in the financial analysis of alternative uses of a particular site in highest and best use analysis and when land sales are not available.
Limitations	When used as an income capitalization technique, the following conditions must be met: <ol style="list-style-type: none">Building value is known or can be accurately estimated.Net operating income to the property is known or can be estimated.Both building and land capitalization rates are available from the market. When using a cost-based technique, the appraiser must be able to determine the value contribution of the improvements, estimated at their depreciated cost

Ground Rent Capitalization

Procedure	A market-derived capitalization rate is applied to the ground rent of the subject property.
Applicability	This method is useful when comparable rents, rates, and factors can be developed from an analysis of sales of leased land or sales of unleased land for which the market rent can be credibly determined.
Limitations	An adjustment to the value indication for property rights may be necessary.

Subdivision Development Analysis (Discounted Cash Flow Analysis)

Procedure	Direct and indirect costs and entrepreneurial incentive are deducted from an estimate of the anticipated gross sales price of the finished lots or units, and the net sales proceeds are discounted to present value at a market-derived rate over the development and absorption period. If entrepreneurial incentive is not deducted as a line-item expense, then the discount rate must reflect the full effect of any profit.
Applicability	This technique is applicable when subdivision development is the highest and best use of the land and there is market support for immediate absorption.
Limitations	Discounted cash flow analysis requires significant amounts of data such as development costs, profit margins, sales projections, and the pricing of developed lots or units, together with a supportable forecast of market absorption.

Note: Certain US states do not recognize subdivision development analysis as an acceptable valuation method for purposes of litigation valuation.

Learning Objectives

At the conclusion of the seminar, participants should be able to

- ❑ Utilize a land residual technique based on DCF analysis, the latter of which also incorporates the conclusions of a market analysis, to value land intended for two alternative, competing uses – for-rental apartments versus for-sale condominiums
- ❑ Determine the highest and best use of land when the legally permissible, physically possible, and financially feasible use(s) are very uncertain and cannot be determined using traditional methodologies
- ❑ Determine land value when its value is a function of a curvilinear relationship with its appropriate unit of comparison – in this case, determining the value of land suitable for apartment development as a function of density (allowable units per acre)
- ❑ Determine land rent using a nontraditional unit of comparison – in this case, land rental value based on average traffic volume
- ❑ Estimate the value of land subject to a long-term ground lease with multiple forms of financial benefits accruing to the landowner

Learning Enhancements

The seminar has been designed with a variety of elements to enhance your learning experience.

- **Preview.** To give you a taste of what is to come, you will find a *Preview* page, which begins each Part. Included on the *Preview* page is a brief overview of the content, learning objectives to consider as you move through the content, and learning tips that will assist you in understanding the information you're about to learn in the class.
- **Learning Objectives.** Each learning objective covers essential information you need to know to fully understand the concepts in the seminar. Look them over before each part begins so that you have a frame of reference as you move through the material. At the end of each Part, reread the objectives. Are you able to perform what is stated? If not, this is the time to ask your instructor for help. Or, review the concepts that you do not understand.
- **Examples, Problems, and Discussion Questions.** Supplementing the discussions, we've included examples, problems, and discussion questions to help you visualize and practice what you are learning.
- **Case Studies.** The case studies in the seminar contain exercises and problems that allow practical application of the methods used to appraise unusual and complex land valuation assignments.

- **Review.** Each part concludes with a review. Included in the review are the learning objectives and key terms and concepts that have been covered. Also, we've included recommended readings from textbooks, which will reinforce what you have learned in class.
- **Suggested Solutions.** A tabbed section of suggested solutions appears at the end of the seminar handbook. This component contains solutions to the discussion questions, problems, and case studies.

Classroom Guidelines

- 100% attendance is required. No exceptions.
- Limit use of laptops and wireless devices to classroom projects.
- Communicate with business associates during break time instead of class time.
- During class, do not read materials that are not used in class, such as news, email, and social media.
- Silence cell phones and other communication devices.
- Please do not record the lectures. Recordings are not permitted.
- If attending a classroom offering, refrain from ongoing conversations with those seated near you and other distracting behavior.

General Information

- **Laptop.** A laptop is recommended but not required, and a basic working knowledge of Excel is helpful but not required. Excel screenshots for the Excel worksheets are provided throughout the handbook, and participants can use those to participate in the case study. Following registration, participants can log into their accounts and download the four Excel files used with Case Studies 1, 3, 4, and 5. These worksheets could be useful models in day-to-day appraisal practice. If bringing a laptop, participants will need to install the Excel Analysis ToolPak add-in prior to class.
- **Breaks.** There will be two 10-minute breaks during the first session and two 10-minute breaks during the second session unless noted otherwise by the program sponsor. The lunch break is one hour.
- **Attendance sheets** will be distributed during class to verify your attendance during both sessions.
- **Certificates of completion** may be downloaded upon completion of the seminar.
- Attendance for the entire seminar is required.

Excel and Analysis ToolPak

If you plan on bringing a laptop to class, you must have installed Excel 2010 or a later version. These directions apply to Excel 2010, 2013, and 2016. The Analysis ToolPak should have installed with Excel, but some steps may be necessary to make it operational. If the Analysis ToolPak is operational, you will see a Data Analysis choice displayed in the Analysis group on the Data tab at the far right of the menu ribbon at the top of the worksheet. Click on Data Analysis, and a small Data Analysis window will open in front of the worksheet. If you are able to open the Data Analysis window, then the Analysis ToolPak is operational, and you can skip the directions below.

Installing the Analysis ToolPak: Using the computer that you intend to bring to class, open Excel and click on the **File** tab. Click the **Options** link on the left-hand menu bar. Then click the **Add-Ins** category. In the **Manage** box, select **Excel Add-ins**, and then click **Go**. If you are using Excel for Mac, in the file menu go to **Tools > Excel Add-ins**.

In the **Add-Ins** box, check the **Analysis ToolPak** checkbox, and then click **OK**.

If **Analysis ToolPak** is not listed in the **Add-Ins available** box, click **Browse** to locate it. If you are prompted that the Analysis ToolPak is not currently installed on your computer, click **Yes** to install it.

Note to Mac users: Microsoft does not support the Analysis ToolPak in Mac Office Excel 2008 or Mac Office Excel 2011. However, they do suggest free third-party add-ins with similar functionality. For more information, see

2008: <http://answers.microsoft.com/en-us/mac/forum/macoffice2008-macexcel/what-happened-to-the-data-analysis-toolpak-or/7a9e9491-cb73-4496-ac06-3ada487c719a>

2011: <http://answers.microsoft.com/en-us/mac/forum/macoffice2011-macexcel/what-happened-to-the-data-analysis-toolpak-or/740ff33a-6ed9-4553-bc09-5cef06ce5f23>

Recommended Textbooks

- Stephen F. Fanning, *Market Analysis for Real Estate*, 2nd ed., Chicago: Appraisal Institute, 2014.
- *The Appraisal of Real Estate*, 15th ed. Chicago: Appraisal Institute, 2020.
- *The Dictionary of Real Estate Appraisal*, 7th ed., Chicago: Appraisal Institute, 2022.

Prerequisites

- None.