CHAPTER EIGHT

THE COST APPRAISAL APPROACH

8.1 INTRODUCTION

Some types of real property are not valued very accurately with the market data appraisal approach. The cost method can be useful in certain circumstances. Since all appraisers should perform all appraisal approaches in any appraisal, it is imperative that you understand the cost approach.

The cost appraisal approach is a valuation technique utilizing the principle of substitution. The value of a subject property can be determined by examining the cost of reconstructing the present structure on a vacant site. This is the foundation of this approach.

The cost method is most applicable when valuing specialty property. This can include such real estate as a library or a museum. This is due to the fact that direct market comparison is very difficult. Also, the income approach is not as accurate for these situations.

8.2 COST APPROACH METHODOLOGY

The initial step in this method is to determine the value of the site as though it were vacant and used for its highest and best use. The replacement or reproduction cost of the existing property improvements as of the appraisal date is then determined. The amount of accrued depreciation for the improvements is estimated.

This amount is subtracted from the value of the improvements. This figure is then added to the value of the site. The resulting value is the value of the subject property.

8.3 TYPES OF COST

There are three possible ways of classifying property cost. They include replacement cost new, reproduction cost new, and indexed historic cost. We need to examine the utility of all three types.

The replacement cost new is by far the most universally used type of property cost. With it, the cost of reconstructing a building with modern procedures and materials to replace the use of the structure is calculated. The information for this procedure is readily available. However, a problem can occur if the subject property is very old.

The reproduction cost new estimates the cost to exactly construct a replica of the subject property. It has the advantage of better representing the unique characteristics of the property being appraised. However, it is very difficult to make estimates of outdated techniques and materials.

The indexed historic cost of a property takes the actual cost of the subject real property when constructed. This cost is then indexed to make it current. If the structure under appraisal is fairly new, this cost value can be useful. However, because of its inherent disadvantages, the replacement cost new is more widely used.

8.4 COST ESTIMATION TECHNIQUES

In order to find the cost of duplicating a building, the appraiser can employ one of the cost estimation techniques. They include the index method, the quantity survey method, the square foot method, and the unit-in-place method.

I. Index Method

This technique indexes the original cost of a structure to its present cost. The precise formula for this calculation is: Present Index/Index at the Time of Construction x Original Cost = Present Cost. This method is useful as a check against some of the other techniques. It is not usually performed alone.

II. Quantity Survey Method

The quantity survey method estimates the cost of installing or erecting the component parts of a structure. Both indirect and direct costs are included. Direct costs are related to

construction materials and labor. Indirect costs are necessary expenditures but not construction related.

The quantity survey method is a very accurate technique. This method is very useful for the appraiser.
It is important to itemize the various costs associated with a building with the quantity survey method. The following is a sample cost sheet for a building. It illustrates some of the more common costs.

1. Accounting.
2. Advertising.
3. Alternating current.
4. Architect.
5. Blinds.
6. Brokerage.
7. Carpentry.
8. Carpet.
9. Caulking.
10. Cleaning.
11. Concrete.
12. Driveway.
13. Electrical fixtures.
14. Electricity.
15. Excavation.
16. Fill.
17. Flooring.
18. Foundation.
19. Framing.
20. Grading.
21. Hardware, finish.
22. Hardware, rough.
23. Heating.
24. Insulation.
25. Insurance.
26. Kitchen cabinets.

27. Labor.

28. Land.

29. Landscaping.

30. Legal fees.

31. Lumber.

32. Masonry.

33. Medicine cabinets.

34. Mortgage.

35. Nails.

36. Offsite improvements.

37. Painting.

38. Permits.

39. Plumbing.

40. Range.

41. Roofing.

42. Sewer connection.

43. Sheetrock.

44. Shower doors.

45. Stairs.

46. Steel.

47. Supervision.

48. Survey.

49. Taxes.

50. Tile.

51. Title fees.

52. Trim.

53. Vanity.

54. Weatherproofing.

55. Weatherstrip.

56. Windows and doors.

57. Wrought iron.

III. Square Foot Method

With this technique, the square footage of the subject real property is calculated. Next, the square footage of a comparable property is calculated. The cost per square foot for the comparable property is estimated. This figure is multiplied by the square footage of the subject property. This will yield the cost estimation. For a better understanding of the application of this method, examine **Figure 8-1** at the end of this chapter.

IV. Unit-in-Place Method

This estimation approach calculates the cost per component unit. All components are itemized. The figure is then multiplied by the number of measured units of that component.

It is important to identify the various units of a structure. The following is a sample listing of possible construction units. In addition, the chart gives the method of unit measurement for each component.

1. **Doors** - per door.
2. **Electrical, fixtures and wiring** - per square foot of building area.
3. **Exterior walls** - per square foot.
4. **Floor construction** - per square foot of floor.
5. **Foundation** - per linear foot.
6. **Framing** - per square foot of support area.
7. **Heating and A/C** - per square foot of building area.
8. **Interior walls** - per square foot.
9. **Parking facilities** - per square yard.
10. **Plumbing** - per square foot of building area.
11. **Roof construction** - per square foot.
12. **Windows** - per square foot.

8.5 DEPRECIATION

When using the cost appraisal approach, the amount of accrued depreciation is subtracted from the value of the improvements.

There are various forms of depreciation which the appraiser must take into account. Physical deterioration occurs when there is material damage to the property. This damage can be curable or incurable. A leaky roof is an example of physical deterioration. Economic obsolescence is caused by incurable locational difficulties. A change in a zoning law is an example of this. Functional obsolescence is caused by outmoded architectural designing. It can be curable or incurable. A building material which is no longer used is an example.

The degree of the present deterioration must be estimated. This is then subtracted from the replacement cost of the structure under appraisal. To estimate this degree of deterioration, two methods can be employed. They include the straight line method and the observed condition method.

With the straight line method, the effective life of the structure is estimated. This figure is then applied to the following formula: 1/effective life equals depreciation for a single year. If the number of effective years is 50, then the depreciation for one year would be 2 percent. In theory, the building will depreciate by 2 percent each and every year.

Because a structure does not actually depreciate at the same rate each year, the observed condition method is a useful tool by means of which the appraiser can determine the actual amount of depreciation which has occurred. This is accomplished by estimating the cost of rectifying any present depreciation.

The appraiser can, however, combine each of the two methods to arrive at the depreciation figure. The straight line method is employed as demonstrated above. Any excess deterioration and obsolescence can then be determined by applying the observed condition method.

8.6 SOURCES OF COST DATA

There are many different sources that the appraiser can use when acquiring cost data. The appraiser can personally inspect structures of known cost. This can be quite time consuming. Building contractors can also be consulted for cost data. Finally, a cost book can be consulted.

There are various such books available for this purpose. Examples include the following:

1. **"Building Construction Cost Data,"** R.S. Means Co., Inc., 509 Construction Plaza, Duxbury, Massachusetts 02332.
2. **"Marshall Valuation Service,"** Marshall and Swift Publication Company, Los Angeles, Calif. 90026.
3. **"National Construction Estimator,"** 542 Stevens Ave., P.O. Box 109, Solana Beach, Calif. 92075.
4. **"Residential Cost Handbook,"** Marshall and Swift Publication Company, Los Angeles, Calif. 90026.

Such books provide cost data such as pictures, descriptions, and average cost figures for a variety of buildings. The appraiser can then find like structures to the subject property and make necessary cost adjustments.

There are also many online resources, including books, software, and reporting tools. One example AARCA ("The Appraiser Assisted Residential Cost Analysis Report"), part of Bluebook International's InsureBASE product, is a Web based, appraiser designed reporting tool that provides up-to-date, accurate information on replacement cost, actual cash value, depreciation by trade with property condition, age, quality, etc., along with supporting details. For more information, visit:

http://www.bluebook.net/

8.7 ADVANTAGES AND DISADVANTAGES

The cost appraisal approach is effective in finding a property value for new buildings and specialty buildings. It is also useful as a check against the other two appraisal methods. Finally, certain appraisals normally use the cost approach. These include insurable value estimates, tax assessments, and test market feasibility estimates of a project.

However, there are several problems associated with this method. It is difficult to identify every proper cost item. The subjectivity of the depreciation process also is troublesome. The use of standard cost estimates reduces the accuracy of the final estimate of value. Finally, differences often appear in the area of overhead expenses.

FIGURE 8-1
COST APPROACH EXAMPLE

SECTION 1
SQUARE FOOTAGE CALCULATIONS

TYPE OF IMPROVEMENT	MEASUREMENTS	SQUARE FOOTAGE
Main Building	25' x 40'	1,000 sq. ft.
Porches	10' x 20'	200 sq. ft.
Auxiliary bldgs.	20' x 20'	400 sq. ft.
Other (None for this example)		
TOTAL SQUARE FOOTAGE		**1,600 sq. ft.**

SECTION 2
ESTIMATION OF NEW REPRODUCTION COSTS

Main building: (1,000) sq. ft. @ $ (150.00) per sq. ft. = $ 150,000

Porches: (200) sq. ft. @ $ (25.00) per sq. ft. = $ 5,000

Auxiliary bldgs.: (400) sq. ft. @ $ (40.00) per sq. ft. = $ 16,000

TOTAL ESTIMATED COST NEW **$ 171,000**

SECTION 3
DEPRECIATION

Physical deterioration: 10%

Functional obsolescence: None

Economic obsolescence: None

TOTAL DEPRECIATION **$ 171,000 x .10 = $ 17,100**

SECTION 4
ESTIMATED LAND VALUE

3,000 sq. ft. @ $ 30.00 per sq. ft. = $ 90,000

$ 171,000 - $ 17,100 + $ 90,000 = **$ 243,900**

8.8 CHAPTER SUMMARY

Some types of property are difficult to appraise. Because of their unusual nature, comparable properties cannot be located. The income appraisal approach is not very useful for them. Therefore, you must do extensive calculations to recreate the cost of building a like structure. This is accomplished through the cost appraisal approach.

With its incumbent cost analysis, calculations are necessary. You must be very careful with each component of this process. A small error in determining a component cost can create a greater margin of error in the final value estimate. Cost analysis is a difficult task. Be particularly careful when choosing component values.