

## **CHAPTER 6**

### **COST INDEX AND SALES RATIO**

#### **COST INDEX**

The cost approach to valuation of improvements is an effective method of valuation in the mass appraisal process. Cost consists of direct labor, materials, indirect expenditures, architectural and engineers design fees, miscellaneous expenses, contractors' overhead and profit which are included in the price of the building. Cost is considered the avenue to value.

Cost manuals are generally used by every state in the appraisal of improvements. There are current cost manuals and historical cost manuals. The Alabama Appraisal Manual is based on historical cost and a classification system. Alabama uses a base cost year and a cost index (time and location adjustment) to arrive at the current cost. The classification system recognizes that buildings of similar design and construction quality have similar cost per construction unit. This system has the advantage that, in cost determination, the class of a building would remain constant regardless of the market. The process we use to determine the cost index is called the "Index Study".

#### **INDEX STUDY**

In order to convert the base year cost to current replacement cost new, there must be data collected and a study made of the current construction cost by types of improvements, building components, and material. New construction and building cost will be gathered from the six-month period preceding the October 1 for which the index is being established. Where there is not sufficient data from the six-month period, additional period of time, and/or expansion of geographical area may be used if approved by the Property Tax Division. The development of the cost index is the responsibility of the county. However, the Alabama Department of Revenue, Property Tax Division, makes the final approval of the cost index, or any change in a current index.

The data required to develop a cost (county) index should be gathered and verified in the regular course of business as the appraiser measures and inventories new and old properties. Sales should be gathered on a regular basis and confirmed as soon as possible because parties to sales tend to forget the details as time passes. All data collected and used in establishing the cost index must be maintained in a separate file.

The basic procedures for the index study are as follows:

1. Locate and identify parcels with new construction.
2. Measure and list the improvements on an Alabama Property Record Card and attach a photograph of the subject improvement.
3. Verify the land value (whenever possible) and enter on the PRC.

4. Contact the architect, contractor or owner and obtain a breakdown of all cost involved.
5. Compute the base year cost of the improvement in strict accordance with the Alabama Appraisal Manual to determine the Base Cost.
6. Statistically analyze the data to determine if any special conditions exist. (Additional research may be needed on the “outliers”.)
7. Analyze the data again after it has been “cleaned up” and determine the proposed index.
8. Utilize the CAMA package to perform a “what if” test to further validate the proposed index.
9. Proof the index using samples other than those used in the development of the index.
10. Submit the proposed index and all data used to determine and proof the index to the Property Tax Division for final approval prior to use.

## DEVELOPMENT OF THE COST INDEX

### Discovery

The first step in the development of a cost index is the process of discovery. Discovery simply means locating and identifying as many new construction samples as possible. The most obvious source of this information is from the records kept in the tax office itself. New splits recorded on the mapping register, annual appraisal maintenance updates, new assessments, BOE hearing records, etc. Outside sources may include building permits, local contractors and realtors.

### Field inspection

Each improvement used in the study must be visited. The improvement must be measured and listed in strict accordance with the Alabama Appraisal Manual. Every effort should be made to obtain any available sales or cost information concerning the land and the improvements thereon. The information is then recorded on an Alabama Property Record Card and a sketch and photograph of the subject improvement attached. All properties used in the index study are to be maintained in a separate file for future reference; therefore, it may be necessary to make more than one copy of the required information.

### Verify the land value

If the sample is derived from a sale, rather than from construction cost, the current market value of the land must be determined and entered on the property record card and abstracted from the property sale price. Determination of the land value can also be from market data collected on the sale of comparable residential lots and then abstracted from the property sale price.

### Obtain cost breakdown of improvements

Architects, contractors and builders have a cost breakdown for each improvement that they build. Every attempt should be made to obtain a copy of these cost breakdowns as they provide the most accurate information for calculating the current cost of the improvement. Care should be taken to ensure that the cost breakdown contains all the cost involved in the project, both direct and indirect. For example, a contractor's breakdown on a residence may not contain some of the indirect ("soft") cost such as architect's fees or cost of permits and testing that are a legitimate expense in the calculation of cost. On the other hand, a cost breakdown may contain expense items that should be excluded such as earth moving expenses for extensive site preparation or demolition cost for a preexisting building.

### Computation of samples

Compute the base cost of the improvement in strict accordance with the Alabama Appraisal Manual to determine the base year cost. Calculate the current cost of the improvement by the appropriate method. When cost breakdowns are available, the current cost is derived by totaling all legitimate expenses. When sales are involved, the current cost of the improvement is extracted from the sale by removing the value of the land. Divide the current cost of the improvement by the base year cost (calculated using the Alabama Appraisal Manual) to obtain the index between base year and current year cost.

Example: Property sold for \$111,250; the land value was determined to be \$20,000; Property value \$111,250 minus the land value of \$20,000 leaves an improvement current cost of \$91,250. Divide the improvement current cost by the base year cost to obtain the "index" for this property.

$$\frac{\text{current cost ----- } \$91,250}{\text{base year cost --- } \$89,880} = 1.02$$

Perform this computation for as many samples as you have been able to collect.

### Statistically analyze the data

After the index computations have been performed, analyze the data to determine if any special conditions exist.

Example: The following sample indexes have been calculated and arrayed from low to high

0.62	1.01	1.03
0.89	1.02	1.03
0.91	1.02	1.04
0.93	1.02	1.04
0.94	1.02	1.05
0.95	1.03	1.05
0.99	1.03	1.06
1.00	1.03	1.26

This array of the data shows an “outlier” at both the low end and the high end of the array. These two samples require additional research to determine if they are valid samples and whether or not they should be included in the data sample. After this determination has been made and the data is considered “cleaned up”, the data should be analyzed again and the proposed index determined. The example above produces a mean of 1.00, a median of 1.02 and a mode of 1.03, therefore the most likely index indicated by this data would be 1.02.

#### What if

Utilize the Computer Assisted Mass Appraisal (CAMA) software to perform a “what if” test to further validate the proposed index. Those CAMA systems that meet the State of Alabama Department of Revenue Computer Assisted Mass Appraisal Specifications will have the capability to perform “what if” testing. This testing, simply put, allows the appraised value of recent sales file samples to be recalculated using the proposed new index, a sales ratio computed, and the results statistically analyzed to see if the new index will bring appraised values up to current indicated market values.

#### Proof the index

Samples of recent sales of various ages, class and improvement type properties should be collected and the appraised value recalculated using the new index. A sales ratio analysis is then performed to determine if the new index brings the properties’ appraised values up to indicated current market values. Note: this step must be performed manually if sufficient and appropriate computer software is not available.

#### Submit the proposed index for approval

Submit a letter requesting approval of the proposed index to the Alabama Department of Revenue, Property Tax Division. Copies of all data used to determine and proof the index should be submitted. This data should include, as a minimum, copies of property record cards for each sample, pictures of the improvements, copies of cost breakdowns and copies of any other spreadsheets or information pertinent to the determination and proofing of the index.