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Appraisal Accuracy and the Accountant

BY REINHARD M. FISCHER

Appraisal has fallen upon evil days. Many valuations are viewed with suspicion by bankers, accountants and investors with sad experiences, who are unlikely soon to forget an unsatisfactory record of past performance. But values are undergoing radical changes under the influence of fluctuating levels of commodity prices, inadequacy of plant facilities due to restricted use and relentless technical progress, causing obsolescence. Whatever justice may be in the indictments of persons or organizations, appraisals of the fixed assets of industrial and commercial enterprises will be an urgent need of the near future and they should command increased attention by management and the accountant, when the task of re-stating property accounts is undertaken with the return of stabilized business conditions. A better understanding of the basis of information, usually contained in appraisal certificates, summaries and inventories, will materially assist in avoiding some of the errors of the past by eliminating haphazard estimates, lacking in method and consistency.

This does not imply that the accountant should attempt a detailed check of appraisals, because they are technical in nature and require engineering knowledge, specialized records and organization, not generally available to the accounting practitioner. Yet he should insist on a definite answer to the test of accuracy of figures, which so often form an important portion of capital structure. He will then be surprised to learn how little information is readily available, demonstrating the failure of the average appraiser to give sufficient thought to the matter. This is in marked contrast to other branches of engineering. The designer of a structure can tell off-hand the safety factors used in his computations. Of course, economics is not an exact science; but the determination of an approximate range of accuracy is not a goal impossible of achievement, provided the findings represent the outcome of methodical and painstaking investigation.

The impression gained from a superficial review of most certificates is that the values shown are 100 per cent. accurate, down to

fractional dollars, even though the total may run into millions. Yet no assumption could be less sensible, as I hope to show by an outline of the great number of hazards to which all such estimates are of necessity subject. It is my contention that it would be preferable to acknowledge given limitations of performance instead of detracting from the value of the information contained in an appraisal by obscuring the sources of potential discrepancies.

Let me relate a strange happening. A surveyor appears at a street intersection and proceeds to set up his instrument. He seems bent upon unusual precision, judging from the number of observations and readings of auxiliary apparatus for scientific corrections. After spending a good deal of time and effort in this manner, he suddenly tires at the slow rate of progress, and in the middle of the block he starts measurement with a steel tape. Evidently this method does not yield quite the required speed, and so he paces off the remainder, nonchalantly taking only mental note of the estimated distance around an obstruction where the sidewalk is under repair. Yet his conscience awakens as he approaches his goal, so he sets up his instrument with diligence for the last few feet. Now he turns to his tables, slide-rule and calculating machine and in due course presents us with the result of these endeavors—a computed length of 685 feet 7 and $1\frac{3}{64}$ inches. Here we probably regain consciousness in a cold perspiration.

A wholly unreal dream, one may say. Yet exactly comparable procedure and findings are accepted every day without comment in most appraisal certificates. Heterogeneous elements of value are often united under the dollar sign without any indication of the range of accuracy inherent in the methods used in ascertaining the figures.

To illustrate the problem I give below an example from actual practice, reproductive costs found in the appraisal of a large gravel plant:

Gravel deposits, including attached business value	\$304,800.00
Land	25,400.00
Land improvements	2,648.47
Railroad sidings	40,786.15
Building construction and building fixtures	56,800.75
Machinery and equipment	102,129.78
Marine equipment	237,035.00
Total	<u>\$769,600.15</u>

Three widely differing principles are used in producing these figures. The value of the deposits is based on capitalization of expected future income or relative advantages, depending on whether allocated profits or fair royalties were used. In this case inclusion of business intangibles indicates the former method.

Land values are generally comparatives, reconciling opinion and judgment in a confusing range of more or less frequent bid and asked prices. Often transactions in the past or immediate neighborhood furnish no representative standard of measurement, because the specific real estate exists only once under the given conditions of the present, so that there can be no such thing as "reproductive cost."

The remaining classifications are composites, built up by summation of details, which supposedly represent competitive cost of replacing their utility. Generally the various items are extensions of surveyed quantities at a unit cost—for instance 20,000 brick at \$10 a thousand—so that accuracy is mainly dependent on how representative quoted market prices are for the case. Physical data can ordinarily be determined within known limits of precision in accordance with time and effort or expense.

A fortunate factor for the accuracy of totals is the averaging of errors. As the number of items in the composite increases, the result becomes more trustworthy. Yet this is only true of independent items within a reasonable range of weighted importance towards the total. Proper grouping would therefore avoid combining a large number of small tools with a few very expensive special attachments to preserve the possibility of judging the consistency and accuracy of the total. If this principle should be more closely followed in the presentation of appraisals, it would be of much help to persons who have only occasional contacts with valuation problems. At present variations of more than 10,000 per cent. between items in one column are a familiar sight, as the example shows, where land improvements represent less than $\frac{7}{10}$ per cent. of the figure for deposits. This applies as well to real-estate valuations which throw together large and small parcels of widely differing unit cost.

Returning to the original query—the range of accuracy in the summary figures—let us examine the various property groups in more detail. With few exceptions the largest single item in any appraisal inventory determines the accuracy of the total, so that

in the test the gravel deposits are likely to furnish the desired criterion.

The limiting considerations in this case are the cost of acquiring equivalent but undeveloped gravel acreage or quantities by outright purchase or the right for depletion on the basis of royalty contracts. The physical volume of production is limited by the general layout, plant capacity, shipping facilities and rates and markets. From such indications it may have been concluded that a minimum of \$250,000 is assignable to the available quantity under the given conditions, while any value above \$325,000 would seem unwarranted, even when discounting future possibilities with the utmost optimism. A range of \$75,000 may appear excessive and unusual at first glance, but it is justified in this instance by the hazardous and volatile intangible elements of value, tied to quickly disturbed earning power in this industry. Subsequent events only too often demonstrate the hazard in the estimate of earnings, even where they seem to possess assurance of continuity, judging from past records. Therefore a range of plus or minus 15 per cent. is not at all out of line with conditions of accuracy, unadmittedly prevailing in practice in the valuation of this class of asset, because the inclusion of such factors as management, customer goodwill, fair return on investment in facilities and working capital and the background of local and national business conditions injects a definite uncertainty into informed judgment interpreting these factors and trends. The multiples applying to anticipated earning power must accordingly vary in a wide range, and this in no way discredits the appraiser, who fully understands the circumstances.

The next classification covers two parcels of agricultural land, reserves and protection for the other holdings, the larger one consisting of 150 acres at \$120. Prices in a range of from \$110 to \$135 could as well be justified—yielding a maximum of \$20,250, the largest probable deviation would be \$2,250. While this is a substantial amount, it is insignificant compared to the uncertainty in the value of the deposits. On the other hand land improvements are separately accounted for at \$2,648.47, closely within the range of possible inaccuracy in the land. In turn, their probable precision depends on a quantity survey as well as on unit costs, because the main item here is a dam, forming an embankment created by dredging and filling. Its cubic contents are computed after a somewhat arbitrary decision in regard to a natural grade

line—a questionable point often encountered in valuing excavations and other earthwork. A further problem, frequently presenting complications, is the selection of a proper method of reproduction, cheapest under prevailing local conditions at the date of appraisal, which may differ greatly from those under which the work was originally performed. Whether the dam would be duplicated today by hand labor or with the assistance of excavating machinery and various transportation mediums may cause a substantial variation in the unit cost to be applied, up to 30 per cent.

Railroad sidings can not be approximated closer than plus or minus 10 per cent., with the information ordinarily available. Even under favorable conditions 5 per cent. must be considered a fairly accurate range for building construction estimates with an average amount of detail. These percentages are borne out by the wide discrepancies, often reaching 50 per cent. and more, generally found in the bids of contractors for a given and definitely specified piece of work. While this may be partly due to considerations of activity and availability of men and equipment, the corresponding sacrifice in overhead and profits explains only partly this wide range, which is more frequently the result of difficult estimating problems. These are quite as hard to solve for the appraiser as for the man with continuous specialized experience.

This is no less true, when one considers those classifications where competitive quotations are usually obtained from manufacturers of standardized or special machinery and tools. "Reproductive cost" is generally understood to mean "cost of replaced service and utility," and this injects the necessity of exercising engineering judgment in those frequent instances where obsolescence or inadequacy has decreased the original cost of equipment, rendering equivalent service. Installation costs and the selection of proper labor and transportation rates under given local conditions add to the uncertainties. Substitute materials, products and processes may enter the broad scope of the considerations of the conscientious appraiser.

In the so-called "minor classifications"—plumbing, piping, electric wiring for power and light, ventilating and heating systems, sprinkler systems and other installations found occasionally—the trustworthiness of the appraisal is influenced by the time spent in investigation, accessibility of details or availability of cor-

rect plans and specifications for concealed portions of the equipment as well as familiarity with the peculiar requirements of industries. Some chemical plants in which piping is subject to heavy corrosion may have special lead-lined fittings and runs, and if this is not properly recognized a discrepancy of over 200 per cent. is certain to result.

I have so far considered merely the hazards inherent in estimates of reproductive costs, which are at least matched by those governing the amount of accrued depreciation deducted in determining "sound values." Depreciation has been the awe-inspiring subject of much learned, academic discussion, and the mental process, which decides between 10 per cent. and 20 per cent. on an item of \$11,347 in the every-day practice of the average appraiser would probably be a revelation to those who tend to view the resulting fractional dollars as the outcome of scientific research and reasoning. As a rule, age in years combined with certain habitual annual rates for various classes of property often form the predominant background for the decision, somewhat influenced by outward appearance and occasionally by operating records and specific tests. This should not be taken as an indictment of all appraisers, because on the whole the results obtained by an experienced man with common-sense prove as acceptable as figures in accordance with highly theoretical investigation of deferred maintenance, inadequacy, utilization and obsolescence. In some instances, notably in patterns, dies, drawings, etc., further in major cases of functional obsolescence, mere "looking" at objects can not possibly reveal the facts, of course. The point I wish to emphasize is that lessening in value due to age, physical deterioration or any other cause introduces into all appraisals an element of uncertainty which even under favorable conditions is hardly less than plus or minus 5 per cent.

Again, the breakdown into smaller units is an important factor in judging the potential benefits of the law of averages, especially if the work has been performed by more than one person. A flat rate of 25 per cent. accrued depreciation, applied to a building as a whole, instead of individual percentages for walls, framing, roof, plumbing, etc., is unsatisfactory, unless the total amount involved is small in comparison to the total appraised investment.

At a time when many bankrupt enterprises continue operations by the good graces of creditors or bondholders, the question of assigning going-concern value to the fixed assets of a business be-

comes of outstanding importance. Even the busiest mill in the course of time accumulates unused and useless machinery and buildings, for which often market and salvage value do not differ materially. The accountant is in a strategical position to judge the degree of activity from records accessible only to himself. Unless the appraiser has previously obtained such information directly from the management, it must be the duty of the accountant to call attention to questionable situations. This applies not only to the liquidity and immediate prospects of the concern for profitable operation but, as well, to abnormal conditions in specific departments or products, so that inactive portions of the property investment may be segregated accordingly.

What are the conclusions that may be drawn from this evidence of limited certainty in the results of appraisal procedure in its present status? If they are understood by the accountant he may at once question the wisdom of the designation of results of non-mathematical compilations in units which lead to an erroneous impression of accuracy. If the limitations were indicated, the relative position of adopted figures within a range would furnish a welcome criterion of conservatism. It is further obvious that for purposes of ascertaining the total value of assets in a business enterprise, it is utterly useless to go into much detail in minor property classifications, if land, intangibles or other large single items are included.

However, it should be kept in mind that generally appraisals serve more than one purpose. Property control in all its phases, determination of depreciation rates and reserves, allocation of departmental overhead and other accounting uses may require extensive detail. To be effective as a proof of potential losses, appraisals for insurance purposes must contain a great amount of detailed information. But I have yet to find an instance where final extension of unit costs into fractional dollars adds anything to the value of an appraisal. This widespread nuisance causes substantial and often unrealized clerical expense in compilations and detracts from legibility of crowded summaries. No radical departure from present practice would be necessary to indicate the estimated degree of accuracy by consistent rounding off of totals and subtotals. While we are utterly in the dark when presented with a statement showing a total value of \$769,600.15, a figure of \$750,000 would be a good deal more informative and satisfactory, without in any way reflecting on the ability of the

appraiser. The desirable and justified degree of accuracy and consequently the scope of time, effort and cost of an appraisal must be determined by its intended utilization, when the extent of the investigation arrangement and presentation is decided. Many are apt to overlook in their striving for accuracy that appraisals are extremely perishable goods, especially in these days of rapid economic changes.

The most important conclusion from all the foregoing is the apparent need not to accept appraisals at face value, without some study of their background of method and accuracy. The inventory items, however voluminous or lacking in detail, deserve the attention of the accountant as evidence of care and technical skill exercised in the investigation and compilation. The sources of possible uncertainties furnish an effective medium for checking the consistency of valuations. Where logic is not apparent, questions should be asked. Definite answers will be forthcoming if a competent appraiser has been selected.