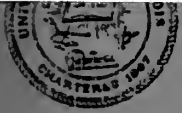


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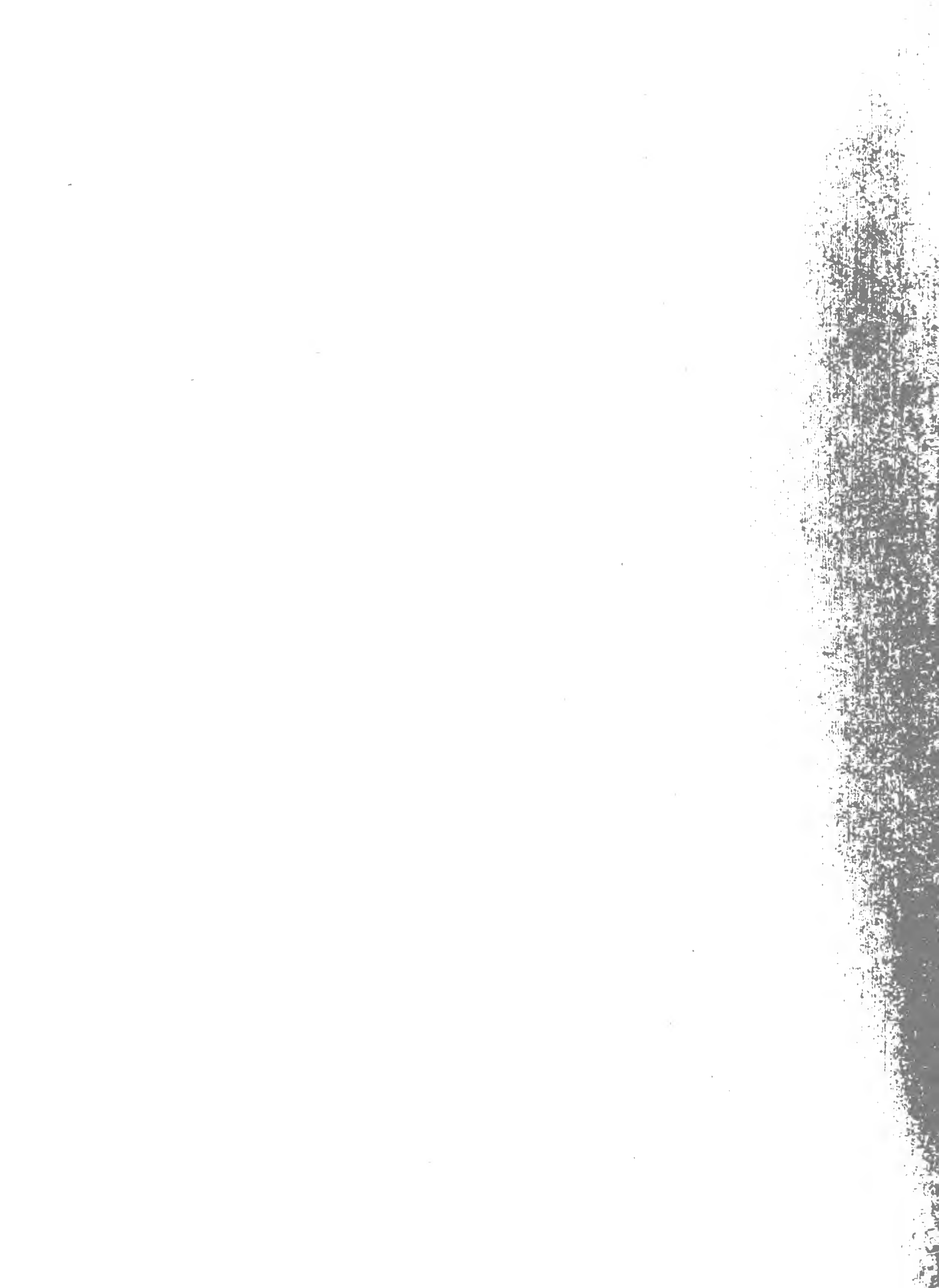
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An Examination of the Depreciation
Controversy in Municipal Accounting

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ABSTRACT

There is a continuing controversy in municipal accounting over whether depreciation of fixed assets should be reported in the financial statements of a municipality. This paper examines some of the arguments supporting current practice, in which there is no depreciation of these assets, and offers some counterarguments. The use of debt service as an alternative to or as a surrogate for depreciation is considered. Several issues regarding the usefulness of depreciation as a cost determinant are discussed briefly. No final judgment is made on which method is "right." Instead, the assumptions which appear to suggest the use of each method are summarized in hopes that they may provide some evidence for making the choice.

There is a continuing controversy in municipal accounting over whether depreciation of fixed assets should be reported in the financial statements of a municipality. This paper examines some of the arguments supporting current practice, in which there is no depreciation of these assets, and offers some counterarguments. The use of debt service as an alternative to or as a surrogate for depreciation is considered. Several issues regarding the usefulness of depreciation as a cost determinant are discussed briefly. No final judgment is made on which method is "right." Instead, the assumptions which appear to suggest the use of each method are summarized in hopes that they may provide some evidence for making the choice.

GAAP for Municipalities: No Depreciation

Generally accepted accounting principles (GAAP) are set forth in Governmental Accounting, Auditing, and Financial Reporting (GAAFR), the 1980 publication of the Municipal Finance Officers Association (MFOA). While GAAFR recommends depreciation of fixed assets belonging to enterprise funds, which are accounted for as profit-making entities, it specifically states that depreciation should not be recorded in the accounts of governmental funds. It points out that these funds take a "financial flow" measurement focus, facilitating control over government spending.¹

This approach has been challenged by many people. For example, a 1977 report prepared by a multidisciplinary team from the University of Chicago concluded:

The public has a right to know . . . the cost of present programs and services provided by the governmental unit. Proper depreciation accounting is necessary for this purpose.²

In a presentation at the Conference on Local Financial Management, Edward Lehan, finance director of the City of Rochester, New York insisted that depreciation data should be presented to a city council whenever financial matters are discussed.³

Arguments and Counterarguments on the Depreciation Question

The Not-for-profit Entity

In adopting the "financial flow" measurement focus, GAAFR identifies differing objectives of a municipality and a business. It points out that, because there are no transferable ownership interests in or individual owners of governments, governments need not report "earnings."⁴ Steinberg adopts this approach, arguing that, since a municipality has no need either to determine the equity inuring to owners or to pay an income tax, allocation of depreciation to specific periods is needless.⁵

The limitation of the profit concept as a means to compute distributions to owners and income taxes, however, overlooks the traditional claim that it can be used to evaluate management, a need common to all organizations. In fact, GAAFR points out the incentives to inefficiency posed by concentration on the annual budgetary cycle. This would suggest a need for cost comparison. Yet, GAAFR states that governmental fund GAAP is not intended to provide cost of services information. It goes on to suggest a possible need for cost measurement outside GAAP reporting, perhaps implying an unsatisfied objective.

Pricing Decisions and Cost Considerations

Steinberg states that cost including depreciation would not need to be determined by a government in order "to establish prices for their

services since services are provided by governments without regard to cost."⁶ Vatter suggests that tax payers may share this view:

The basic point of California's Proposition 13 is that there is no way to provide motivation for governmental cost reduction and efficiency except the supply of resources.⁷

While a municipality may not make a direct pricing decision, one would hope, nonetheless, that it would consider alternative costs. For most services rendered, there is the opportunity for a make-or-buy decision. The fact that many cities subcontract services such as garbage collection and emergency medical services indicates that these decisions are being made. Full cost information should be useful in facilitating these decisions and, in fact, might prompt these types of decisions.

The Doctrine of Sunk Cost

Steinberg argues that once initial acquisition and related debt service are incurred,

the capital cost is a sunk cost and the amount of or lack of depreciation does not affect costs the manager or taxpayer should be considering.⁸

This familiar managerial argument takes the point of view that capital expenditures, once made, cannot be changed and are thus irrelevant for making managerial decisions.

It seems, however, that including the taxpayer in this category might be inappropriate. Suppose, for example, that two cities in the state of Illinois have the same fire insurance rating. Taxpayers might be interested in comparing the efficiency of one city with another in achieving that rating. If one city spent most of its budget in a five-year period for fire trucks while the other hired personnel as fire

inspectors and educators, their costs would be difficult to compare. One might imagine that, in the purchase year, the city using trucks would have much higher costs relative to benefits than its competitor; its costs might then fall below the other city for the next four years. How should the cities be compared in their achievement of the same benefit? Reporting an annual cost for use of the trucks in the form of depreciation might facilitate this comparison.

It may be more important, however, to consider just one municipality which is allocating scarce resources (for which it taxes the public) among many alternative services such as police protection, arts and crafts classes, meals to senior citizens, health services, library services, and street repairs. The city can expand its activities in existing areas or add new services, within the confines of its budget. The taxpayer (or council person) can hardly choose among alternative services based entirely on the "goodness" of benefits provided; some sort of cost-benefit evaluation must be made. Recreational activities which require \$1000 of city resources will hardly be evaluated in the same manner as they would be if they required \$100,000 of city resources. It seems reasonable to expect that taxpayers who evaluate and influence city services will ask, "What does it cost?" A complete answer, it seems, should include some measure of the use of capital assets.

Funding Depreciation

Lloyd Morey advanced the idea that for a municipality

[a] reserve for depreciation would be useful only if it could be funded and carried forward to provide for replacement of the property when worn out. This is impossible; first because governmental revenues for the most part are fiscal in character and must be expended during the fiscal period; and, second,

because the greater part of public property is acquired through bond issue and it would be impossible to raise by taxation an amount to provide for depreciation in addition to paying the principal of the bonds.⁹

This was also a "major" argument offered against depreciation by the American Accounting Association Committee on Accounting Practices of Not-for-Profit Organizations in 1972. Several writers have pointed out that funding is illegal in many states.

This argument implies a redefinition of depreciation. There is certainly no provision in financial accounting for funding of depreciation. Welsch and Anthony explain that the acquisition cost of a fixed asset is viewed as the "prepaid cost of a bundle of future services or benefits. The matching principle requires that the acquisition cost of such assets be apportioned as expense to the periods in which revenue is generated as a result of using those assets."¹⁰ Required funding would confuse the use of the asset with the financing of the asset. The municipality, instead, raises taxes annually to meet its cash expenditure needs for that period.

Let us consider, however, the manipulative possibilities of cash demands in the short run. By putting off needed periodic capital replacements such as police and fire trucks, sewage pumps, or playground equipment a mayor may keep taxes down, earn the reputation as a great controller of spending, and move on to higher elective office on his/her reputation. The person succeeding him/her in office can quickly become a "careless spender" because he/she must raise taxes to maintain the city's already faltering operations. The blame for allowing physical facilities to deteriorate will fall on the one restoring them if cash

flows alone are reported. Perhaps taxpayers would be interested in some measure of physical deterioration as a clue to future demands. They already know, after all, what taxes they have paid.

Debt Service Versus Depreciation

Lloyd Morey's mention of the double-counting aspect of debt service and depreciation is echoed by other writers in a slightly different context. Steinberg has suggested that debt service, which includes payment of both principal and interest on bonded debt as expenditures, is the real measure of the current use of taxpayers' resources for the use of fixed assets. He does not believe depreciation expense should be reported in municipal financial statements.¹¹

Anthony suggests debt service be used in lieu of depreciation.

Some capital assets are financed by borrowed funds. The annual payment of principal and interest on these borrowings often approximates the amounts that would be charged under a depreciation mechanism, and it might therefore be desirable to record such payments as an item of current spending, in lieu of depreciation. This has the effect of making current fund providers pay for the cost of the asset currently used, which is said to be equitable.¹²

The intent of this approach is somewhat ambiguous. On the one hand Anthony seems to confuse depreciation of the asset and financing of the asset much like Morey. However, he goes on to suggest that debt repaid in an uneven manner could be "smoothed" to reflect even charges. And at another point he describes this alternative for handling depreciable assets as follows:

Record debt service payments as an expense, in lieu of depreciation, for assets whose acquisition is

financed by bond issues with a maturity substantially equivalent to the useful life of the asset (emphasis added).¹³

This comment implies that reporting debt service may be desirable only as a surrogate for depreciation of the assets acquired.

If the intent of this alternative is to use debt service as a surrogate, then the decision simply seems to be a case of determining if asset life and life of the bonds are reasonably close. However, if one accepts that debt service itself is of value as a measure of resource consumption, then it may be worthwhile to examine results of using this representation.

Debt Service: An Example

Let us assume that City A decides to modernize its fire department. To finance the purchase of \$300,000 of new equipment, the City issues serial bonds paying five percent interest. The equipment has an expected life of fifteen years. Table I illustrates the different annual debt service expenditures which will result from retiring the bonds over ten, fifteen, and twenty years.

By financing the equipment over a fifteen year period, City A has debt service costs for each year the equipment is in use. This matches payment for the asset with deterioration of the asset in slightly declining amounts. Comparing this with traditional financial accounting, which reports interest expense on the income statement, we get a cash flow equivalent of straight-line, historical cost depreciation. Viewed from the taxation standpoint, only the actual users of the service bear the cost of the equipment. At the end of the life of the bonds and the

TABLE I

ANNUAL DEBT SERVICE EXPENDITURES ON
\$300,000 5% SERIAL BONDS WITH DIFFERENT LIVES

Year	Asset Financed With 5%, 10-Year Bonds			Asset Financed With 5%, 15-Year Bonds			Asset Financed With 5%, 20-Year Bonds		
	Principal	Interest	Total	Principal	Interest	Total	Principal	Interest	Total
1	\$30000	\$15000	\$45000	\$200000	\$15000	\$35000	\$150000	\$15000	\$30000
2	30000	13500	43500	200000	14000	34000	150000	14250	29250
3	30000	12000	42000	200000	13000	33000	150000	13500	28500
4	30000	10500	40500	200000	12000	32000	150000	12750	27750
5	30000	9000	39000	200000	11000	31000	150000	12000	27000
6	30000	7500	37500	200000	10000	30000	150000	11250	26250
7	30000	6000	36000	200000	9000	29000	150000	10500	25500
8	30000	4500	34500	200000	8000	28000	150000	9750	24750
9	30000	3000	33000	200000	7000	27000	150000	9000	24000
10	30000	1500	31500	200000	6000	26000	150000	8250	23250
11				200000	5000	25000	150000	7500	22500
12				200000	4000	24000	150000	6750	21750
13				200000	3000	23000	150000	6000	21000
14				200000	2000	22000	150000	5250	20250
15				200000	1000	21000	150000	4500	19500
16							150000	3750	18750
17							150000	3000	18000
18							150000	2250	17250
19							150000	1500	16500
20							150000	750	15750
TOTAL	300000	82500	382500	300000	120000	420000	300000	157500	457500

equipment, future users will have to provide for their own fire fighting service, possibly through a similar transaction.

If the equipment is financed over ten years, two interesting things occur. First, as expected, the expenditures for debt service in the ten-year period are higher for each of the ten years. In Year 2, the expenditure is \$43,500, \$9,500 higher than the same year's expenditure on fifteen-year bonds. Second, for the last five years the equipment is in use, there is no related expenditure, contrasted with expenditures in the \$20,000-\$25,000 range. In effect, from the taxpayer's perspective, the first ten years' users have provided the service for the last five years' users. Looking beyond this period, the taxpayers in Year 16 may be faced with a sizable tax increase to fire equipment facilities for which they have had no financial demands over the last five years.

If the equipment is financed over twenty years, the annual debt service is, as expected, lower than that for the other two financing methods. Principal payments are \$5000 less than those required by the fifteen-year bonds. After the equipment has worn out, debt service payments ranging from \$18,750 to \$15,750 will continue for five more years. Presumably, at that time, current taxpayers will have to finance new assets while continuing to pay for services used by taxpayers of previous periods.

While analysis of these alternatives may be interesting, it cannot resolve the question of what should be reported. Financing over fifteen years may meet Anthony's criterion of equitability, but the city may not choose that method. This is a political decision which could be

affected by motives such as a desire to minimize current taxes (twenty-year financing) or to minimize total outlay (ten-year financing). Debt service does reflect current cash demands on the taxpayer; it reports no charge for consumption of assets purchased with operating funds in other periods or for donated assets or for assets on which the debt is retired. Only in the case of financing over the useful life does debt service appear to represent a reasonable surrogate for depreciation; otherwise, debt service cost is simply an application of cash basis accounting. Whether, in fact, municipalities report a reasonable surrogate for depreciation through debt service in their financial statements is an empirical question.

Depreciation--Some Related Issues

Earlier in this paper, it has been suggested that depreciation can be used to obtain a measure of cost of services. Two issues, however, should be considered in evaluating that cost measure: price changes and allocation problems. It is beyond the scope of this paper to cover these topics in detail or to resolve the problems, but several pertinent points will be presented for consideration.

The Problem of Changing Prices

Depreciation is computed by allocating the historical cost of an asset to the revenues it produces, according to commercial GAAP. Applying this definition of depreciation in the prevailing inflation, depreciation charges will be smaller for older assets than for comparable new assets. This means that it may be difficult to compare the

efficiency of health departments of two cities when one has new building facilities and equipment and the other has older assets.

Returning to the fire department example earlier, depreciating the equipment over a fifteen-year period will provide taxpayers with a measure of the use of that equipment in terms of what it cost, for example, in 1970. But it will not prepare taxpayers for a jump in taxes in 1985 to fund the next set of equipment which could cost sixty percent more than the last.

In terms of physical resources consumed, then, the use of historical depreciation will report what the lost resources cost in the past, not what will be necessary to restore them. This may be consistent with one view of equitable treatment of resource providers discussed by Anthony:

when the needs of additional fixed assets arise in the future, future generations have an implied commitment to provide for these needs. Current users should not be expected to provide for future needs. . . .¹⁴

If, however, the municipality were viewed as an on-going entity (and history suggests this is true) rather than an annual gathering of taxpayers, a concept of maintenance of physical capital might be appropriate. Revsine and others have suggested that replacement cost asset valuation and depreciation is appropriate in accounting for physical capital.

Allocation Problems

Proponents of depreciation claim that it offers the benefit of a definition of the total cost of each program or service. This argument does not mention that fixed asset costs are sometimes very difficult to

assign to a specific program and that arbitrary charges may result. If, for example, three city programs are administered from one building, is each charged one-third of the depreciation? If one program is discontinued, is its depreciation expense added to the costs of the remaining two?

Patton argued that the AAA Committee on Accounting Practices of Not-for-Profit Organizations had overlooked the allocation problem in its discussion of the depreciation question and that recording depreciation in municipal accounts would be "fostering the inclusion of arbitrary elements in accounting where none existed before, perhaps decreasing the information content of governmental accounting reports."¹⁵ Managerial accountants have been unable to completely solve the allocation problems of joint and common costs in developing cost determination systems. It should be noted, however, that they continue to compute a cost estimate.

The AAA Committee argued that "an informed estimate of the periodic expiration of fixed asset costs is much more objective and useful information about resource use than information developed by many of the methods."¹⁶

Summary

Several of the arguments for and against reporting depreciation in municipal financial statements have been examined. Some problems with the use of depreciation expense in any system were discussed as well. A choice between reporting depreciation or not reporting depreciation, however, would seem to depend less on those arguments than on the objectives of the users.

Depreciation does not seem appropriate if the financial statements are intended to report how taxpayers' dollars were spent during the year. From this point of view, cash demands, not resource consumption, are important, and compliance with budgetary constraints would seem to be of paramount importance. Interest in the "cost of service" would be confined to current cash requirements, and the problems of restoring physical resources would fall on the taxpayers who desire service when those resources are used up. This approach seems to consider each fiscal year and its taxpayers separately from the next. Taxpayers are treated as consumers of services without much concern for how those services are delivered.

Depreciation seems to be appropriate if the financial statements are intended to report the total resources that were used in delivering municipal services. Assuming price change and allocation problems are solved, it answers the question, "What does it cost?" It seems to be more consistent with the view of the municipality as an ongoing entity with physical resources (or capital) to be maintained throughout its life. Although funding is not required, the implication for future planning emerges. This approach also seems to view the taxpayer as a monitor of efficiency as well as a consumer of services.

FOOTNOTES

¹Municipal Finance Offices Association, Governmental Accounting, Auditing, and Financial Reporting (Chicago: Municipal Finance Officers Association, 1968), p. 12.

²Sidney Davidson et al., Financial Reporting By State and Local Government Units (Chicago: The Center for Management of Public and Nonprofit Enterprise, Graduate School of Business, The University of Chicago, 1977), p. 46.

³Edward A. Lehan, "Tying Together Budgeting, Accounting, and Auditing," presentation delivered at the Conference on Local Financial Management, Detroit, Michigan, June, 1979.

⁴MFOA, GAAFR, p. 5.

⁵Harold I. Steinberg, "A New Look at Governmental Accounting," Journal of Accountancy (March, 1979), p. 53.

⁶Steinberg, p. 53.

⁷William J. Vatter, "State of the Art--Non-Business Accounting," Accounting Review Vol. 54, No. 3 (July, 1979), p. 575.

⁸Steinberg, p. 53.

⁹Lloyd Morey, Introduction to Governmental Accounting (New York: John Wiley and Sons, Inc., 1927), p. 196.

¹⁰Glenn A. Welsch and Robert N. Anthony, Fundamentals of Financial Accounting (Homewood, Ill., Richard D. Irwin, Inc., 1977).

¹¹Harold I. Steinberg, telephone interview, July 26, 1979.

¹²Robert N. Anthony, Financial Accounting in Nonbusiness Organizations: An Exploratory Study of Conceptual Issues (Stamford, Conn.: Financial Accounting Standards Board, 1978), p. 146.

¹³Anthony, p. 137.

¹⁴Anthony, p. 142.

¹⁵James M. Patton, "The Allocation Problem in Governmental Accounting," Governmental Finance (May, 1974), p. 27.

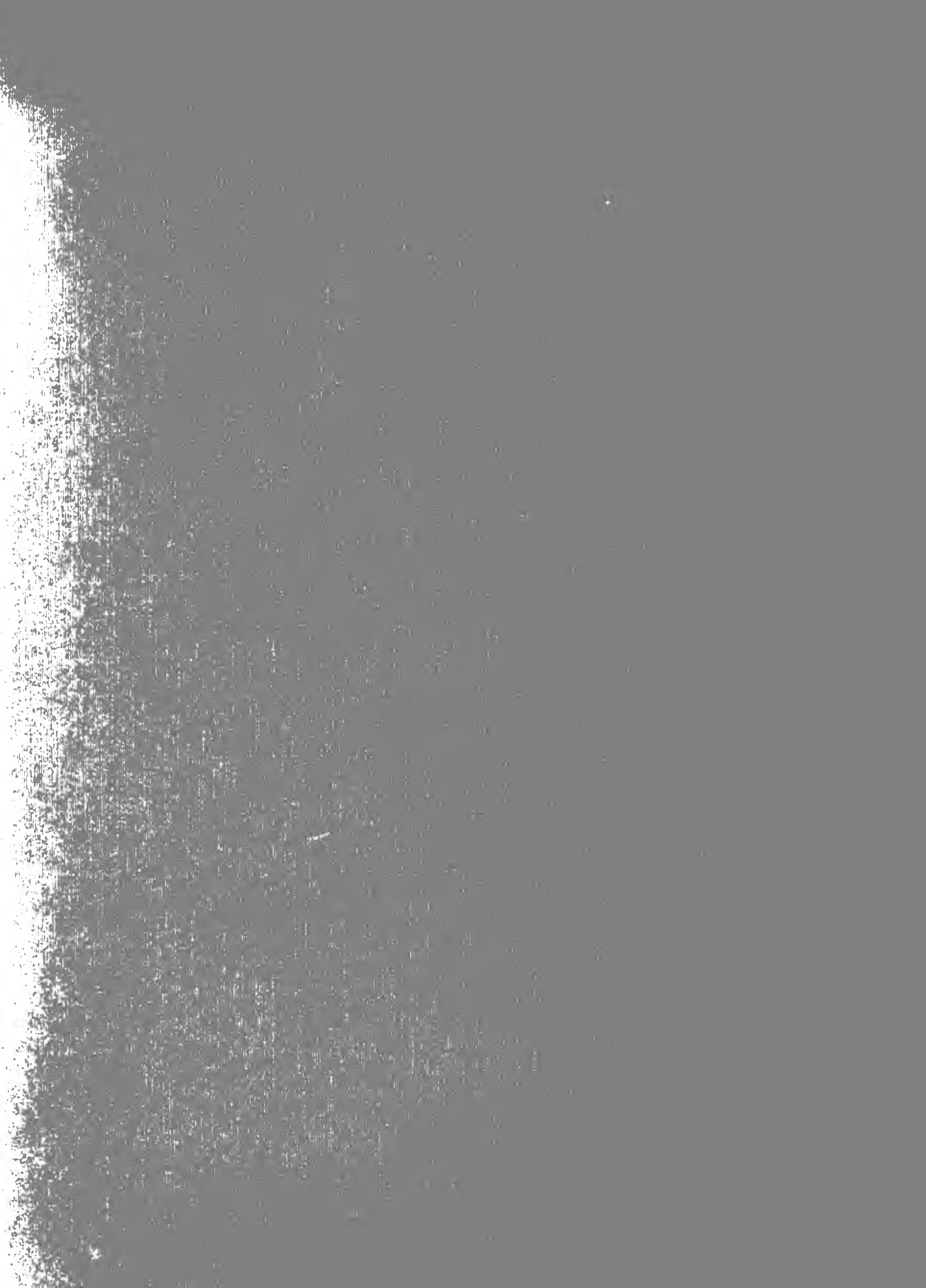
¹⁶Robert J. Freeman, et al., "Report of the Committee on Accounting Practices of Not-for-Profit Organizations," The Accounting Review (1971 Supplement), pp. 113-114.

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