Factors Affecting the Lease-Purchase Decisions of Municipalities

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I interviewed 53 municipal administrators to determine what factors they consider in lease-purchase decisions. These factors are discussed in order of importance: budget constraints, technology, lifetime dollar outlay, maintenance availability, quality and cost of service, grant restrictions, future funding uncertainty, implicit interest rates, and tradition. In contrast to business administrators' concern with implicit interest rates, the major concern of municipal administrators is budget compliance. When they consider long-run costs, it is usually in total dollars. These differences between municipalities and businesses may be explained by municipalities' reporting expenditures rather than expenses and by lack of training in present value techniques.
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The lease versus purchase decision in the private sector has been studied extensively from a number of vantage points. In 1980, the NAA published a study of 541 firms by Ferrara, Thies and Dirsmith that examined, among other things, the factors businesses considered in making lease-purchase decisions. [1] The current study investigates lease-purchase decisions of municipalities. A group of municipal administrators was interviewed to determine the factors they consider in making their lease-purchase decisions.

The result of discussing asset acquisition decisions with these administrators produces an interesting contrast to decision-making in the private sector. The overwhelming concern with implicit interest rates in the business environment was replaced by a concern for annual budgetary control by municipal administrators. This may be explained by the difference in reporting emphasis in the two areas: businesses concentrate on net income and municipalities concentrate on annual expenditure control. Furthermore, municipal administrators appear to be less likely than business administrators to use present value techniques when evaluating long-term costs of acquisition.

In order to determine what factors municipal administrators consider in making their asset acquisition decisions, I interviewed 58 administrators in three cities located in three different states. These cities are referred to as City A, City B and City C. In each city, all department administrators, individuals with responsibility for supervising performance and administering the budget related to a specific activity, were interviewed.
My research approach was different from that of Ferrara, Thies and Birsith. Their questionnaire asked respondents to choose from a list the factors they used in making lease-purchase decisions. Rather than provide suggested answers, I asked interviewees to name the factors they considered and used follow-up questions when answers seemed incomplete. For example, when administrators provided reasons that justified leasing, I asked if any additional factors prompted their purchase decisions. Each administrator then ranked the level of importance of each factor as very high (4), high (3), moderate (2) or low (1). The results of these responses are discussed below.

Factors of Importance to Municipal Administrators

From a total of 245 responses by 58 administrators, 40 different factors were identified. Nine of these factors were dominant (see Table 1). Of the other 31, 25 were noted by no more than three administrators, and six others involved special short-term problems, limitations in available alternatives or materiality considerations.

The factors in Table 1 are listed in descending order of importance, beginning with Annual Budget Constraints, which was mentioned by 40 of the 58 respondents. In addition to presenting the number of responses, Table 1 shows three other measures of the relative significance of the nine factors. The percentage of the 58 respondents mentioning each factor is noted, and the average value of the ranking (1 to 4) is indicated. Finally, a weighted average of these two measurements is presented. For Annual Budget Constraints, this is a product of the 69% choosing this factor and the 3.625 ranking it earned, or 2.501. This statistic results in an ordering of the factors similar to the total
<table>
<thead>
<tr>
<th>NUMBER OF RESPONSES</th>
<th>Percentage Total/Respondents*</th>
<th>Value** of Response</th>
<th>Weighted Average Percentage X Average Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>City A</td>
<td>City B</td>
<td>City C</td>
<td>Total</td>
</tr>
<tr>
<td>1. Annual Budget Constraints</td>
<td>19</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>2. Obsolescence/Technology</td>
<td>17</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>3. Lifetime Dollar Outlay or Payout Period</td>
<td>16</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>4. Maintenance Availability</td>
<td>7</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>5. Quality &amp; Cost of Service</td>
<td>4</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>6. Grant Restrictions</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>7. Uncertainty of Future Funding</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>8. Implicit Interest Rate or Net Present Value</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>9. Tradition</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

*Fifty-eight respondents participated in the study.

**Values assigned to responses for the level of importance of the factor:

Very High = 4  
High = 3  
Moderate = 2  
Low = 1
responses.

Important Lease-Purchase Factors

The nine factors in government lease-purchase decisions provide an interesting contrast to the decision factors in the private sector. According to the study by Ferrara, Thies and Dirsmith, the major factors in business lease-purchase decisions are, in order of importance:

1. Rate of interest implicit in lease financing
2. Threat of technological change or obsolescence
3. Income tax considerations
4. Ability to maintain flexibility by avoiding ownership commitments
5. Conservation of working capital
6. Ability to use leasing as a less restrictive form of financing
7. Financial reporting implications, i.e., potential to use leasing as "off balance sheet" financing.

The first three factors were "substantially more significant than the rest."[2] The rankings of the decision factors by both groups are contrasted in Table 2. The following discussion examines how municipal administrators might be expected to rank these factors and how, in fact, they did rank them. Some of their observations are discussed as well. The factors are discussed in order of their appearance in Table 2.

Annual Budget Constraints

The concept of budget compliance in the government context is comparable to working capital conservation in the business context. Municipal budgets are adopted by ordinance annually, and in most cases, they are forbidden by law to exceed budgeted spending levels.
**TABLE 2**

Different Rankings of Lease-Purchase Factors by Business and Municipal Decision-Makers

<table>
<thead>
<tr>
<th>Factor</th>
<th>Municipal Ranking</th>
<th>Business Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Budget Constraints or Conservation of Working Capital</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Obsolescence/Technology</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Lifetime Dollar Outlay</td>
<td>3</td>
<td>*</td>
</tr>
<tr>
<td>Maintenance Availability</td>
<td>4</td>
<td>*</td>
</tr>
<tr>
<td>Quality &amp; Cost of Service</td>
<td>5</td>
<td>*</td>
</tr>
<tr>
<td>Grant Restrictions</td>
<td>6</td>
<td>N/A</td>
</tr>
<tr>
<td>Uncertainty of Future Funding</td>
<td>7</td>
<td>*</td>
</tr>
<tr>
<td>Implicit Interest Rate</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Tradition</td>
<td>9</td>
<td>*</td>
</tr>
<tr>
<td>Income Tax Considerations</td>
<td>N/A</td>
<td>3</td>
</tr>
<tr>
<td>Flexibility</td>
<td>*</td>
<td>4</td>
</tr>
<tr>
<td>Lease—Less Restrictive Financing</td>
<td>*</td>
<td>5</td>
</tr>
<tr>
<td>Reporting Implications</td>
<td>*</td>
<td>6</td>
</tr>
</tbody>
</table>

*Not ranked

N/A Not applicable to the type of entity
Department administrators' performance is reported in the financial statements by a comparison of actual expenditures, both capital and operating, to budgeted expenditures.

Budgetary (expenditure) accounting takes a short-run view of the asset acquisition process. While accrual accounting attempts to measure long-run cost by charging a portion of asset cost to each period in which it is used,

[Governmental fund type GAAP financial reporting is intended to facilitate effective control over a government's "available spendable resources" by reporting its detailed sources and uses of net current assets. If cost of services information on governmental fund type activities is desired, it must be presented as supplementary data outside of governmental GAAP financial statements.[3]

Because of the emphasis of municipal reporting on expenditures, it is likely that governmental administrators are evaluated on this criterion, for municipal GAAP provides no formal incentive to consider long-run costs. Therefore, budget compliance would appear to be very important in asset acquisition decisions. If budget compliance overshadows other factors, long-term inefficiencies in asset acquisition can result. For example, short term leases that carry a high implicit interest rate would be one simple, but inefficient, way to drive expenditures down to a budgeted amount.

Within municipal governments, some activities use commercial accounting; proprietary funds measure net income and use accrual accounting. Because the reports that measure their performance focus on cost of asset use during a period (depreciation), rather than expenditures, proprietary administrators probably attach more importance than governmental administrators to long-run costs and less importance
to expenditures or budgetary control.

As expected, more municipal administrators (69%) considered annual budget constraints in making lease-purchase decisions than any other single factor. The 3.625 rating in Table 1 results from 27 (47%) administrators ranking this factor "very high" in importance. This result provides an interesting contrast to the apparent secondary importance assigned to "working capital considerations" by businesses in the Ferrara, Thies and Dirsmith study, though their study did indicate smaller, financially weaker firms showed more interest in this factor.

Several administrators made comments consistent with with short-term goal acceptance. For example, the director of emergency medical services in City A stated, "A department's concern has to be within a twelve-month period." The director of public works in City B observed that leasing would "probably be easy to get by" because of the smaller annual outlay required. The director of information systems, the department doing the most leasing in City A, estimated his budget would be 40% smaller if his department purchased assets. But he said he chooses to lease equipment to avoid shocking the City Council with major purchases.

A difference in emphasis placed upon budget constraints by governmental and proprietary administrators tends to support the suggestion that the type of reporting used influences the factors of importance to the decision maker. Seventy-six percent of the 45 governmental administrators noted this factor, while only 46% percent of the 13 proprietary administrators did so. The concentration of governmental administrators on short-term goals is supported by both the
internal findings and the external comparison.

**Technological Change and Obsolescence**

It is reasonable to expect that technological change would be a relevant factor in the lease-purchase decisions of a municipality. If equipment is likely to become obsolete in the near future, there is an incentive to lease and shift the risk of obsolescence to the lessor. With an operating lease, the lessee can terminate the contract whenever better or less expensive equipment is available, but the cost advantage may be offset by more expensive leases. Lessors demand a premium for the higher risk of obsolescence and often make front-end payments higher on these leases for early recovery of their investment. [4]

The development of "better" equipment may be more important to businesses than to municipal governments. Most governmental functions do not involve competition in the market to generate revenues; most products (services) demanded of governments do not become obsolete, nor do they change drastically from year to year. It seems, therefore, that technological-change considerations would involve more straightforward evaluations of expected cost in the municipal government than in the business environment.

Fifty percent of all administrators interviewed stated that obsolescence or technology changes are important factors in lease-purchase decisions, and the average importance rating of 3.069 attached to this factor is "high." It is not surprising that 14 (67%) of the 21 leasing departments noted this factor compared to only 15 (41%) of the 37 nonleasing departments.

The perception of technology factors seems to manifest itself in
rather unusual ways in some departments, particularly the three departments doing most of the leasing in City A. While technology changes may have been used to justify leasing in these departments, there appears to be little evidence of more careful consideration of this factor in choosing the term or type of lease. The most common lease term in the information systems department, for example, was 30 days. The public information department negotiated a contract setting monthly lease rates for all departments for copy machines that may be exchanged or turned in at will. Yet, I found experience rates for the use of these machines were often much longer; the planning, finance and recreation departments had used the same copiers for five years or more. It seemed little use had been made of past trends in technological change in choosing lease terms. The hospital administrator in City A explained "anything costing over $100,000 we lease due to technology changes." The hospital had three five-year "noncancellable" leases that resulted in leasing costs (net present value) that far exceeded purchase price without conferring title. These examples suggest there may be a problem in municipal governments with the perception of technological change in making optimal asset acquisition decisions.

Long-term Cost Considerations

Consideration of the implicit interest rate in a lease contract implies a long-run view of the cost of acquiring assets for long-term use. To the degree that municipal administrators are concerned with long-run costs, this factor should be important in making asset acquisition decisions. The lack of emphasis on long-run costs in the financial reports of municipalities, however, suggests that this
assumption may not be valid.

Because governmental departments are devoted to the provision of public services rather than to the generation of revenue, implicit interest rate can usually be determined solely from the lease payments required and the estimated life of the asset for an operating lease. The implicit interest rate, \( r \), may be computed using the formula:

\[
P = \sum_{n=1}^{N} \frac{L}{(1+r)^{n-1}}
\]

where \( P \) is the purchase price of the asset at the beginning of the lease period, \( L \), the annual lease payment and \( N \), the term of the lease, set equal to the life of the asset.

The response of municipal administrators with regard to this factor was surprising. Only ten percent of the respondents considered implicit interest rates or net present values important in making lease-purchase decisions. Based upon studies of lease-purchase decisions in the past, it would be reasonable to expect long-term cost considerations to be taken into account using such techniques. Instead, when they did consider long-term costs, municipal administrators seemed far more interested in absolute dollar differences than in present values. Table 1, factor 3 reports that 48 percent of the administrators were concerned with differences in total dollar outlays or payout periods, compared to the ten percent concerned with implicit interest rates. An emphasis on total dollar outlay would create a bias toward purchasing, even in cases where the implicit interest rate is near zero.

The explanation of this finding is not clear, though there were
suggestions that it is simply lack of training in present value techniques. The finance director of City B, who had several years experience in industry, stated that they are not sophisticated enough to do lease vs. buy analysis as it is done in business, and, instead, total dollar outlays would probably be compared. The director of management and budget in City C stated that he thought the assistant director of finance had used present value analysis in planning an acquisition, but that he personally did not know how to do it.

The difference between governmental and proprietary administrators in ranking other long-term cost considerations is consistent with their reporting emphasis. Although 48% of all administrators mentioned this factor, 62% of the 13 proprietary administrators, whose departments report depreciation of assets rather than expenditures, noted that lifetime dollar outlay is an important factor in making lease-purchase decisions; 44% of 45 governmental administrators noted this factor. The 3.071 importance ranking of this factor in Table 1 consisted of a 3.375 ranking by proprietary administrators and 2.942 by governmental administrators. Consideration of implicit interest rates or net present values was also more popular with proprietary administrators (15%) than with governmental administrators (9%), though both were small representations. Overall, proprietary administrators noted some form of long-term cost measurement (present value, implicit interest, total outlay) in 77% of the cases while governmental administrators noted these factors in 53% of the cases.

Service and Maintenance

The factors mentioned in the fourth and fifth order of frequency
dealt with service and maintenance of the assets. The first concerns availability of maintenance for the asset and was mentioned by 14 (24\%) of the administrators. Some administrators felt leasing might be necessary to obtain service if the city had no means of servicing an asset. This suggests that either some vendors fail to provide service on assets they sell or administrators are not aware service contracts can be purchased.

The other side of this issue is efficiency. When a city does have the means of servicing and maintaining assets, such as a vehicle maintenance shop, it may be more efficient to buy a vehicle and avoid maintenance charges built into a lease. One administrator added that scrap value of assets increases if old equipment can be used for repair parts.

Twelve (21\%) administrators perceived a difference in the quality and cost of services offered by asset suppliers. The director of data services in City B indicated service is available during more hours of the day for leased computer equipment. If the cost or quality of service varies depending upon the acquisition method, this would affect total cost comparisons. If the businessmen shared this perception, perhaps it was reflected in their concern with implicit interest.

Grant Restrictions

Grant restrictions represent an important factor to be considered in asset acquisition decisions of some administrators. Nine departments in the cities studied received at least some grants with asset acquisition restrictions, and their administrators ranked this factor "very high" (4) for use of those funds. Federal and state grants vary from
prohibiting use of grant funds for capital acquisitions to requiring that funds be used for capital acquisitions. Urban Mass Transit Authority grants have provided for almost complete reimbursement (93%) of capital expenditures while they paid only half of operating (leasing) expenditures. This factor is probably unique to decisions made in the public sector, but it is important in understanding some of the decisions made here.

**Uncertainty of Future Funding**

Uncertainty of future funding for departments or programs influences lease-purchase decisions of seven administrators (12%). These administrators usually indicated they prefer purchasing assets in one year to trying to fund lease payments in several successive years, suggesting that these administrators take a long-term management view. Most were administering departments, such as community development, that have received a considerable amount of funding from grants for specific programs. If the level of budgeted services of a department is extremely variable, an administrator might be tempted to take action, such as acquisition of fixed assets, that would contribute to stabilization of those services. This is an opposing viewpoint to the business administrators' concern with flexibility discussed later.

**Tradition**

Tradition, factor 9 in Table 1, was mentioned by six (10%) of the administrators. This factor was accorded the lowest rating (2.167) of any factor, suggesting it may not be used to the exclusion of others. If tradition is a factor influencing municipal administrators' asset acquisition decisions, these individuals appear to lack some
sophistication in decision-making suggested by the Ferrara, Thies and Dirsmith survey. Their survey, however, did not explicitly suggest tradition as a decision factor to be selected.

**Income Taxes**

In the business context, the income tax effects relevant to lease-purchase decisions are effects on taxable income and the investment tax credit, neither of which is directly relevant to municipalities. Internal Revenue Code Section 48(a)(5) specifically excluded property used by states and their political subdivisions (municipalities) from treatment as Section 38 property qualifying for the investment tax credit, thus eliminating availability of the tax credit to lessors.

Because interest on municipal debt is exempt from taxation [5], the amount by which the cost of an operating lease, whose implicit interest is not exempt, exceeds the cost of a financing lease, whose interest is exempt, should be even greater for municipalities than it is for businesses. But if municipal administrators are concerned with the tax effect, it will be manifested in consideration of long-term cost (e.g. the implicit interest rate). As a separate consideration, it is irrelevant, and, as expected, it was not mentioned in the interviews.

**Flexibility**

A demand for flexibility suggests the user may need to exchange an asset or dispose of it altogether sometime during its useful life. Some of the reasoning that applies to technology changes seems to apply to the importance of flexibility. But because the services rendered by many municipal departments are not in competition with the private
sector, and because their services tend to be somewhat constant, their need for flexibility is less important.

Flexibility might be important, however, if a department has special projects funded by grants for limited time periods. If a city offers a service such as "meals on wheels" primarily because it is supported heavily by Federal funds, then it may not wish to purchase the fixed assets required to provide the service once outside funding ceases. On the other hand, one might expect grant funds to be spent on fixed assets if the program is one the city would wish to continue, regardless of outside support.

Flexibility was not found important to municipal administrators as it was to business administrators. Instead, as discussed earlier, they seemed concerned with stability.

Lease—A Less Restrictive Form of Financing

The restrictions placed upon a municipality associated with long-term debt, particularly bonds, can be numerous. These may include compensating balances and sinking fund requirements. For many municipalities, the restrictions imposed by bond covenants are compounded by local ordinances or state laws limiting total indebtedness to some percentage of their assessed valuation.

This factor would certainly be expected to influence the lease-purchase decisions of municipal administrators in cities where the debt limit has been reached. Only acquisition alternatives that do not add to the existing debt would be legally acceptable, and leases are not included in the legal definition of debt.[6] Not only has this exemption been applied to operating leases, it has also been applied to
financing leases.[7] Thus, a lease may be the only acquisition option available to some municipalities, but the long-term costs could vary greatly with the type of lease chosen.

One criterion for selection of the cities studied was they not be near their debt limits because of the chance that this would be the only determining factor in their asset acquisition decisions. Therefore, the interviews did not provide evidence to support the importance, or lack of importance, of this factor.

Reporting Implications

The Ferrara study found that some firms used leasing as a form of off-balance sheet financing. Lease reporting requirements for municipal governments are the same as those for businesses.[8] Though municipal financing leases usually contain a fiscal funding clause, allowing cancellation of the lease if the city council fails to appropriate funds, FASB Technical Bulletin No. 79-10 requires they be capitalized in the same manner as business leases. Thus, the reporting incentives for a governmental entity should be comparable to those of a business. But because leases do not apply to debt ceilings, as discussed above, the impact of reporting implications may be reduced. And for the administrators interviewed, this was not an important factor.

Conclusions

Further research will indicate whether this sample of municipal administrators is representative of the group as a whole. If it is, two possible problems confront municipal governments. First, if the level of sophistication of municipal administrators is to be increased, municipalities must provide training in cost analysis and in present
value techniques useful in comparing alternative acquisition methods. Second, if the emphasis on short-term optimization suggested by primary concern with budget control is considered undesirable, governments must offer incentives to administrators to adopt long-term optimization as a goal. That incentive might be provided by an expansion of municipal accounting reports to include a measurement of the annual cost of using capital assets through depreciation, rather than simply reporting the purchase of those assets.
FOOTNOTES


