Financial Analysis for County Government

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When budgets are squeezed yet public services must be maintained, county and city government must take a closer look at their fiscal management. The oil boom of the 1970s and early 1980s brought rapid revenue growth to numerous Oklahoma counties. Since that time, many municipal governments in Oklahoma have experienced a significant decline in their revenue base. The decline in the petroleum industry took away jobs and the loss of jobs caused a decline in general economic activity, population, and property value in many areas. This is particularly true in the more rural areas. For example, outside the two most metropolitan and populous counties (Oklahoma and Tulsa Counties) the average county population declined over 1,100 people between fiscal 1986 and 1992 (Table 1). During this period, average county government general fund revenue increased 11% yet inflation rose 23%.

Ad valorem taxes provide the majority of the average county's revenue. Within these seventy-five counties, the assessed value of taxable property rose 11% from 1986 to 1992 (Table 1). Since the mill levy is fixed at 10 mills for county general fund use, the 23% rise in prices resulted in reduced county purchasing power. In this climate, county officers are challenged to maintain the quality and quantity of services with shrinking financial resources. A similar story could probably be told for many small towns and cities experiencing declining or insufficient revenues due to declining population, declining economic activity, and the accompanying loss in sales tax revenues. The purpose of this paper is to present some financial analysis tools that may be employed to assist fiscal policy decision making. Although county government examples are used, parallel analysis can be performed for cities and towns.

Financial Analysis

Horizontal Analysis

Four commonly used techniques for financial analysis are horizontal, vertical, trend, and ratio analysis (Needles). These techniques are widely used although their names may not be familiar. Horizontal analysis, as its name implies, focuses on changes from one year to the next on each item of a comparative financial statement, that is, across years or "horizontally" across the printed financial statement. For example, a comparative financial statement for a county shows two years data listed side by side down the page. Total revenue in 1993 is shown to be $100,000 and for 1992 is $80,000. Horizontal analysis answers the questions (1) what was the amount of change from one year to the next? and (2) what was the percentage change from one year to the next? In this case, the dollar change was +$20,000 and the percentage change was +25%. Total revenue was $20,000 greater in 1993 than it was in 1992, an increase of 25% ($20,000/$80,000). The advantage of horizontal analysis is the information provided with regard to changes in the entity in the most recent fiscal years. That is, it reveals the most current trends.

Table 1. Average Population, Revenue, and Assessed Value for All Oklahoma Counties excluding Oklahoma and Tulsa, plus the Gross National Product Implicit Price Deflator.

	1986	1992	% Change
Population	28,525	27,397	-3.96%
Total Revenue	1,349,309	1,498,569	11.06%
Net Assessed Value	77,886,086	86,187,315	10.66%
GNP IPD Index	109.6	135	23.18%

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Table 2 is a horizontal analysis of actual expenditure accounts for an Oklahoma county. The expenditures in fiscal years 1991 and 1992 are listed side by side. The third column shows the actual dollar amount of change from 1991 to 1992. The fourth column shows the change as a percentage of the 1991 amount. This horizontal analysis makes clear things such as:

- Which account expends the largest number of dollars (General Government)
- Which account spent less in 1992 than in 1991 (County Clerk)
- The total change in expenditure from one year to the next ($49,343 or 9.72%)

Horizontal analysis of expenditures, revenue sources, changes in cash carry-over, and other financial data is not only informative, but may serve to raise relevant managerial questions. The information in Table 2, for example, may prompt county decision makers to ask:

1. Why did the Treasurer have a 17% increase when the county as a whole spent only 10% more?
2. How did the Clerk manage to get by with less money in 1991 than in 1992 and are further decreases possible?
3. What are the individual items within "All Other Expenditures" that caused such a large increase in expenditures?

The information summarized in this horizontal analysis is a significant step toward raising significant financial management questions. The answers to these questions may be of considerable help in budgeting for the future.

Vertical Analysis

Vertical analysis, as its name implies, focuses on the various items listed up and down the page of a financial statement for a given year. On the income statement of a business, for example, gross revenue may be shown at the top, followed by each of the expenses of the business and net income at the bottom. Vertical analysis answers the question, what portion does each item contribute to the whole? More specifically, in the case of an income statement, vertical

Table 2. Horizontal Analysis of County Expenditures, Fiscal Years 1991 and 1992.

Expenditure Account	1992	1991	Dollar Change	Percentage Change
County General	185,614	170,381	15,233	8.94%
County Sheriff	150,897	149,716	1,182	0.79%
County Clerk	54,990	56,298	-1,308	-2.32%
County Treasurer	36,429	31,066	5,363	17.26%
All Other Expenditures	129,016	100,143	28,873	28.83%
Total Expenditures	556,946	507,603	49,343	9.72%

analysis tells what percentage each item is of gross income. If net income is $100,000 and gross income is $500,000, then net income is 20% of gross income. One benefit of vertical analysis is that by converting all numbers to percentages, it is much easier to compare differently sized entities whether they be private businesses or local governments. Once the numbers have been converted to percentages, they can be compared directly. This is especially true when large numbers are involved. Using percentages assists in understanding the relative importance of each item. Table 3 presents a vertical analysis of two years' revenue for an Oklahoma county.

Table 3 indicates that this county derived almost 65% of its general fund revenues from ad valorem taxes in fiscal 1991 and almost 67% in 1992. Hence, it is obvious that the county is very dependent upon this revenue source. Another item of interest is that the "Other Sources of Revenue" declined in relative importance from 1991 to 1992. In 1991 other sources composed almost 19% of revenues but in 1992 provided almost 11%. Such an analysis brings to mind questions such as: What are the particular revenue sources within "Other Sources of Revenue" that declined so radically and what action can be taken to change the situation?

Vertical analysis is probably of greatest help when used to compare the subject entity (in this case a county) to a comparable entity or groups of entities. For example, it may be helpful for county officials to compare their county to the sum of all counties in Oklahoma (Table 4). The comparison reveals that the subject county is more dependent on the ad valorem tax for revenue than the average county. The average county in Oklahoma derives 55% of its revenue from ad valorem taxes, whereas, the subject county derives almost 67% of its revenue from this source. The typical county relies more heavily on county sales tax dollars and on "Other Sources" that are not explicitly shown in Table 4. Also, the subject county receives a larger portion of its revenue from county clerk fees.

Armed with this information, a decision maker in the county has a better picture of the similarities and differences of his/her county to all counties. This may raise questions such as:

1. What "other sources" of revenue are we missing out on or getting too little of?
2. Why have some counties turned to a sales tax?

Table 3. Vertical Analysis of Various County Revenue Sources, Fiscal Years 1991 - 1992.

Revenue Source	1992	1991	1992 Percentage	1991 Percentage
Ad Valorem Revenue	325,669	335,542	66.78%	64.51%
County Clerk Fees	80,385	72,181	16.48%	13.88%
Interest on Investments	29,851	15,581	6.12%	3.00%
Other Sources of Revenue	51,795	96,849	10.62%	18.62%
Total Revenue	487,699	520,153	100.00%	100.00%

Table 4. Vertical Analysis to Compare a County to All Counties, Fiscal Year 1992.

Revenue Source	1992 County	1992 State Total	County Percentage	State Percentage
Ad Valorem Revenue	325,669	62,180,784	66.78%	55.32%
County Clerk Fees	80,385	8,129,636	16.48%	7.23%
Interest on Investments	29,851	6,581,635	6.12%	5.86%
Sales Tax	0	14,208,213	0.00%	12.64%
Other Sources of Revenue	51,795	21,292,441	10.62%	18.94%
Total Revenue	487,699	112,392,710	100.00%	100.00%

Trend Analysis

Trend analysis of county revenues and expenditures have proven to be very beneficial to county officers across the state. Presented in tabular and graphic form, changes over time provide useful management information to county officials and other local leaders trying to efficiently manage public funds and to provide adequate services on a tight budget. Historical trends are often helpful in educating the citizenry about the need for additional tax revenues.

Trend analysis is much like horizontal analysis in that it looks at changes over time. However, trend analysis examines changes over several years in an attempt to see where an entity is headed. A trend index or a graph provides the analyst with a good method of seeing the direction an entity is headed and how fast it is headed there. It may also indicate changes that raise questions for further investigation. The primary advantage of trend analysis over horizontal analysis is the greater amount of information. Even though a historical trend does not assure continuation in the future, a multi-year trend provides a better indicator of future events than does a single-year change. Table 5 presents a trend analysis of the same county for which horizontal and vertical analyses have already been performed.

The top half of Table 5 contains the actual dollar amounts of revenue from several sources over the six year period. The bottom half of the table contains the trend indices which are computed by dividing each dollar amount of revenue by the base year revenue. In this case the base year is 1987. Hence, the indices for ad valorem revenues are computed by dividing the amount in any given year by $312,855, the amount of ad valorem revenue in fiscal 1987. For instance, the index number for ad valorem revenues in 1987 is 1.00 (312,855/312,855). The index number for 1988 is 1.08 (337,282/312,855). The 1989 index number for county clerk fees is 0.80 (87,644/110,211). Once index numbers are computed, the change from the base year to the year in question is easily read. The index number for ad valorem revenues in 1988, 1.08, indicates that ad valorem revenues in 1988 were 108% as much as in 1987. The 1.15 in 1989 indicates that ad valorem revenues in 1989 were 115% (or 1.15 times) the amount in the base year, 1987. The decision maker can easily see that ad valorem revenues rose from 1987 to 1989, declined in 1990 and 1991, and finally rose a bit in 1992. Not only can this trend pattern be observed, but the percent change relative to the base year is also presented.

The indices presented in Table 5 give a clear picture of

Table 5. Trend Analysis on Revenues of an Oklahoma County, Fiscal Years 1987 - 1992.

Revenue	1987	1988	1989	1990	1991	1992
Ad Valorem Revenues	312,855	337,282	358,680	340,279	325,669	335,542
Co. Clerk Fees	110,211	101,143	87,644	85,664	80,385	72,181
Interest on Investments	29,800	14,743	32,621	28,082	29,851	15,581
Other Sources	83,907	46,290	48,253	50,246	51,795	96,849
Total Revenue	536,773	499,458	527,198	504,271	487,699	520,153

TREND INDICES

Revenue	1987	1988	1989	1990	1991	1992
Ad Valorem Revenues	1.00	1.08	1.15	1.09	1.04	1.07
Co. Clerk Fees	1.00	0.92	0.80	0.78	0.73	0.65
Interest on Investments	1.00	0.49	1.09	0.94	1.00	0.52
Other Sources	1.00	0.55	0.58	0.60	0.62	1.15
Total Revenue	1.00	0.93	0.98	0.94	0.91	0.97

how each general fund revenue stream has changed since 1987. For example, the only revenue stream that was greater in 1988 than in 1987 was ad valorem revenues. The last row indicates that total revenues were smaller every year following 1987 and were at their lowest in 1991. Managers and decision makers may find it enlightening to examine trend indices and try to understand why the trends have occurred. Understanding the economic, political, managerial, or other forces behind the trends may help managers plan for the future and, perhaps, attempt to change the policies impacting the trends.

Graphs are another useful tool for communicating trends to decision makers. Notice how a graph of the revenue data communicates the same information as the indices (Figure 1). The relative importance of each revenue source is also readily observed in the figure. Ad valorem revenues are clearly the primary revenue source. Each of the other three revenue streams are less than a third the size of ad valorem revenues.

Ratio Analysis

The name, ratio analysis, also implies the obvious - the ratio of one statistic or measure to another. Return on investment or return on equity is a familiar financial ratio. In simple terms this is just the ratio of financial benefit (such as net income) divided by the amount of money invested. For example, a person buys a rent house for $50,000 and after one year receives net rental income after expenses of $4,000. The ratio, $4,000 / $50,000, indicates a return on investment of .08 or 8%. The natural question to ask is, how does this "ratio" compare to the normal or typical ratio for return on equity for rental housing? This is precisely the type of thought process that analysts use in ratio analysis.

Various ratios can be computed, but to be meaningful, they must be compared to some standards or benchmarks. Caution must be exercised in making such comparisons because differences in accounting methods and differences in size of the entity may cause various degrees of noncomparability. Yet business analysts continually find it useful to compare ratios of one company to the average ratio of the typical or average company in a particular industry group. Hence, the 8% return on

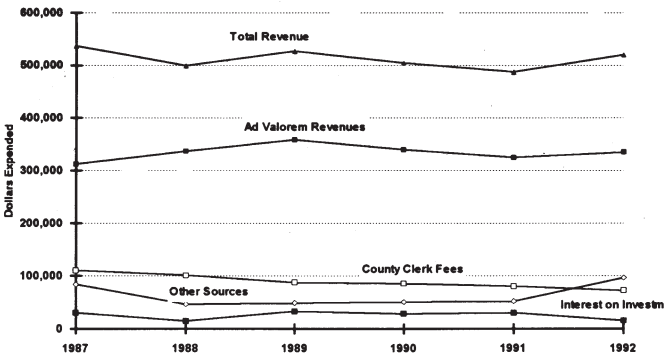

Figure 1. General Fund Revenues for an Oklahoma County, Fiscal 1987 - 1992.

the rental house should be compared to the normal or average return on similar rental housing. If the normal return is 10%, the 8% return is low and management may take appropriate steps to get a larger return on investment. If the normal return is 7%, the owner/manager may be quite satisfied with the 8% return and seek to continue management of the rent house as in the past.

Local government is not in the business of making a profit and generating a monetary return on investment. Nevertheless, local officials may employ some financial ratios in an effort to make local government as efficient as possible and maximize the services and benefits to the taxpayers.

Financial ratios are commonly used in the private sector but use of ratios in local government is uncommon and will require some creative thinking on the part of local officials. The following is a list of possible ratios. It is neither a comprehensive list of ratios that might be used nor the best ratios that might be used. It is a beginning point to stimulate thought and discussion.

1. Ad Valorem Revenue / Total Revenue

This ratio provides a measure of the degree of dependence of the county on ad valorem tax receipts to finance operations. The larger the ratio, the larger is the county's dependence on ad valorem dollars. In fiscal 1992, the average ratio for Oklahoma counties (excluding Tulsa and Oklahoma) was 0.54.

2. Co. Sheriff Expenditure / Population

3. Election Expense / Population

4. Revaluation Expense / Population

These three ratios plus any number of additional ratios could be derived to show the cost per person of a particular county government service. The Co. Sheriff Expenditure to Population ratio is one way of measuring the amount of law enforcement provided for each citizen. If the ratio is too low it is possible that too little law enforcement is being provided. On the other hand, if the ratio is too high, perhaps an excessive amount of law enforcement is being provided. Each county should compare its ratio to the average ratio of other, similar counties. The average ratio for Oklahoma counties (excluding Tulsa and Oklahoma) in fiscal 1992 was 14.45.

Election Expense / Population gives an indication of the degree of efficiency in holding elections. The fiscal 1992 average is 2.15. Revaluation Expense / Population gives an indication of the degree of efficiency in

revaluing the county's taxable property. The fiscal 1992 average is 4.30.

5. Insurance Expense / Employment

If each county would compute the amount of health insurance or liability insurance premium it pays per employee, then compare it to the amount paid by other counties for similar insurance, each county could get a better indication of the relative cost of their insurance coverage. County officials would get a better understanding of the cost relative to the benefits of their insurance policy.

6. County Sales Tax Revenue / Population

For those counties that have a county sales tax, this ratio would give an approximation of the average amount of sales tax paid by each person. That is, it would give an idea of the sales tax burden borne by each citizen. Of course, the county sales tax rate directly affects the amount of sales tax paid. Therefore, counties imposing a one-cent-sales tax would compare their ratio to that of other counties levying a one-cent tax.

In fiscal 1992, seventeen counties levied a 1% sales tax for the entire year. The average amount per person was $35.81. Six counties levied a 0.5 cent tax for all are part of the year and another levied a 0.625 cent sales tax. Among these seven counties, the annualized average amount per citizen was $19.62. This is very close to half the amount paid in counties levying a full percent. Hence, if a county finds that its sales tax per person is relatively small, this may be a sign that the citizens are either relatively poor (having little money to spend) or that the citizens make a lot of purchases outside the county or both. If, for example, local leaders find that citizens are doing a lot of shopping outside the community, then they may launch a campaign with local chambers of commerce to promote local shopping.

On the other hand, if a county finds that it collects a relatively large amount of sales tax per citizen, it may be that the county has a significant number of visitors. In this case, the economic health of the entire community is enhanced by actions that promote continued visitation. Regardless of the particular situation, careful analysis is needed to insure that local officials are well informed before taking action. As mentioned above, any number of ratios may be computed and compared to the ratios of other counties. Which ratios are most appropriate is beyond the scope of this paper. Local officials in each community may find it useful to compute a number of ratios and over time, decide which ones are the most useful.

Summary and Conclusions

Upon completion of horizontal, vertical, trend, and ratio analysis, the analyst is ready to summarize the findings and draw conclusions. General statements can usually be made about the trend in revenues and expenditures, the ad valorem tax base, which activities require the greatest amount of money, and what particular items, such as health care insurance, are growing the fastest. Probably just as important, if not more so, are the questions that may be raised:

1. Why are motor vehicle license revenues increasing more rapidly than other sources of revenue?
2. Why did general fund expenditures for county treasurer functions increase at the same time that county clerk expenditures decreased?
3. How did the county treasurer manage to earn more interest income in 1992 than in 1991 during a time when interest rates were falling and can this trend be maintained?
4. How long can the county continue to maintain all current services with the amount of inflation exceeding the growth in revenues?
5. What services will be cut if revenue growth continues to be insufficient?
6. How will new legislation change county cash flows?

Answering such questions and prescribing policies and plans of actions to face the underlying problems is the heart of financial analysis. The methods of analysis described in this paper are simply the tools to help managers and decision makers identify the real problems. Once the underlying problems are correctly identified and understood, then they can be dealt with appropriately.

Data for a community and for the state can be obtained from county and city offices and several state agencies. Each city, county, and school district annually files an "Estimate of Needs and Financial Statement" with the State Auditor and Inspector. Copies of this report are available in local government offices or at the State Auditor and Inspector's office. Copies of the financial report for past years are kept in the State Archives section of the State Library. Other reports, such as "State Payments to Local Governments are produced by the Oklahoma Tax Commission and may be available in libraries. Oklahoma Cooperative Extension Service compiles and publishes county financial data that is available upon request.

For further assistance call your county office of the Oklahoma Cooperative Extension Service or the author at Oklahoma State University, Stillwater, OK 74078-0505, Phone (405) 744-6159.

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