



## Revisiting Kenneth Brown's "10-Point Test"

By Craig S. Maher and Karl Nollenberger

Updating Brown's famous 10-point test with ten indicators of financial condition for 2003 through 2006 provides finance officers with another way to measure financial condition.

Finance officers and managers need to continuously monitor and evaluate the fiscal condition of their jurisdictions. This is especially true in the face of the current recession, coupled with the trend since the 1980s of transferring expenditure responsibilities and revenue assignments to lower levels of government (i.e., from federal to state to local governments). U.S. Census Bureau data show that the sources of local government funding have been shifting away from relatively stable property taxes to more volatile sales and income taxes over the past 20-30 years. And in fiscal year 2006, local governments were responsible for 62 percent of their own revenues, compared with 52 percent in 1978. For example, property taxes accounted for 58 percent of local government own-source revenues in 1978 and accounted for 45 percent in 2006.<sup>1</sup> To make up for this difference, local governments have adopted sales taxes and, to a lesser degree, imposed income taxes and expanded fees and charges.<sup>2</sup>

Most of the academic research on measuring government fiscal health over the past couple of decades has focused on developing and justifying measures of fiscal condition. One of the most commonly used studies is Kenneth Brown's 10-point test, which was based on data from 1989.<sup>3</sup> This article builds on Brown's strengths and addresses the shortfalls mentioned

above by providing ten indicators of financial condition for 2003-2006. This information can help a jurisdiction develop a better understanding of its financial condition, identify hidden or emerging problems, present a picture of strengths and weaknesses, introduce long-term considerations, and provide a starting point for cities to consider financial policies that pertain to their particular city government. It can also help a local government present the state of its financial condition to its policy body, citizenry, employees, and outside entities such as bond rating agencies.

### BACKGROUND

Brown used a large national sample for benchmarking, relying on financial data provided by the Government Finance Officers Association (GFOA) on more than 700 municipalities. Brown's article makes it possible for practitioners and academics alike to follow the calculations for each of the 10 indexes used and to evaluate municipal financial condition relative to national comparisons, based on population size. The strength of Brown's work is its simplicity — the data required for calculating the ratios is easily accessible from audit reports — and that it provides financial condition benchmarks based on community size. Brown did admit two weaknesses associated with his ratios: The data are a snapshot from

1989 and, therefore, may be time sensitive, and the ratios ignore enterprise funds (e.g., public utilities) and focus exclusively on governmental funds. It can also be argued that several indicators Brown included might not be significant in assessing financial condition, including general fund sources from other funds divided by total general fund sources, total general fund liabilities divided by total general fund revenues, and operating expenditures divided by total expenditures. These ratios of financial condition do not provide a long-term comparable perspective or provide insight into the financial condition of the city.

The updated data used for this article were provided by the GFOA, the same source Brown used. As Brown discussed, the strength of the dataset is that it provides a consistent collection of audited financial data for municipali-

ties throughout the country. The weakness is that the data do not reflect a true sample of municipalities, as the municipalities that submitted data did so in hopes of receiving a financial reporting award from GFOA. Therefore, one might think of the respondents as high-performing communities and thus providing a benchmark for all municipalities.

- long-run solvency (the broader sense of finances, addressing the ability to pay all long-term costs of operations such as pensions)
- service-level solvency (the ability to provide services at the level and quality appropriate to ensure the health, safety, and welfare of the community)

This article focuses on the first three measures. Service-level solvency is not addressed because the GFOA database does not include information on it.

## MEASURING FINANCIAL CONDITION

Financial condition — an organization's ability to maintain existing service levels, withstand economic disruption, and meet the demands of growth and decline — can be defined by:

- cash solvency (the ability to pay obligations in the next 30 to 60 days)
- budgetary solvency (the ability to generate enough revenues to pay expenses within the budgetary period)

There are obstacles to measuring financial condition, including the nature of a public entity, municipal financial analysis, and municipal accounting practices. Public entities have a different method of measuring their results than the private sector uses, as public-sector objectives are subjective and multiple. That makes the meas-

### Exhibit 1: 10 Key Financial Indicators

Type	Indicator	Description of Indicator
1 Revenue Indicator	Total Revenues per Capita	Total Revenues for all Governmental Funds (Excluding Capital Project Funds) Divided by Population
2 Revenue Indicator	Intergovernmental Revenues/ Total Revenues Percentage	Intergovernmental Revenues for the General Fund Divided by Total General Fund Revenues
3 Revenue Indicator	Property Tax or Own Source Tax Revenues/Total Revenues Percentage	Total Tax Revenues Levied Locally for the General Fund Divided by Total General Fund Revenues
4 Expenditure Indicator	Total Expenditures per Capita	Total Expenditures for all Governmental Funds (Excluding Capital Project Funds) Divided by Population
5 Operating Position Indicator	Operating Surplus or Deficit/ Operating Revenues Percentage	General Fund Operating Surplus or Deficit Divided by Total General Fund Revenues
6 Operating Position Indicator	General Fund Balance/ General Fund Revenues Percentage	General Fund Unreserved Fund Balance Divided by Total General Fund Revenues
7 Operating Position Indicator	Enterprise Funds Working Capital Coverage Percentage	Current Assets of Enterprise Funds Divided by Current Liabilities of Enterprise Funds
8 Debt Indicator	Long Term Debt/Assessed Value Percentage	Long Term General Obligation Debt Divided by Assessed Value
9 Debt Indicator	Debt Service/Operating Revenues Percentage	General Obligation Debt Service Divided by Total General Fund Revenues
10 Unfunded Liability Indicator	Postemployment Benefit Assets/Liabilities Percentage	Funded Ratio (i.e., Actuarial Value of Plan Assets/Actuarial Accrued Liability)

urement less exact. Municipal financial analysis is frequently concerned with only cash and budgetary solvency, and not with long-term evaluation. In addition, it is difficult to compare financial characteristics among local governments because they different so widely. Municipal accounting practices are based on auditability and legal compliance. There is a lack of cost accounting, and the use of fund accounting provides both benefits and detriments to the analysis of financial data. Most finance reports are for one year of data, with the previous year's financial results for a few items also included in the report.

## 10 KEY INDICATORS

Jurisdictions can use the indicators included in this project (shown in Exhibit 1) to assess their basic financial picture. This information allows government officials to make informed decisions about financial conditions. The indicators are based on those used by Brown in his original article.

**1. Total Revenues per Capita.** This compares the existing revenue base for all governmental funds (excluding capital projects funds because of annual fluctuations) relative to population changes. Decreasing revenues per capita over time (using constant dollars) should be analyzed to assess how significant the reduction is and to devise a strategy to deal with the issue. Comparing one's jurisdiction to other similar governments in the same population category provides a tool for analysis, as revenues per capita tend to differ by population category.

**2. Intergovernmental Revenues/Total Revenues Percentage.** This shows how dependent a jurisdiction is

on other units of government such as the state, national, or local units. A large percentage of intergovernmental revenues should be considered a warning sign. In difficult financial times, the unit of government making the payments might balance its fiscal dilemma by reducing the payments to your organization. In states with large intergovernmental distributions to local governments, the local governments are exposed to external decisions by people who do not have the same stake in the reductions of direct services to the community.

### 3. Property Tax or Own Source Tax Revenues/Total Revenues Percentage.

This shows how dependent a jurisdiction is on tax revenues for its general fund operations. A large percentage of tax revenues to the total revenue can mean the government depends too much on this source of revenue. In difficult fiscal times, the pressure to reduce taxes could have a negative effect on the provision of local services.

### 4. Total Expenditures per Capita.

This compares the existing expenditures for all governmental funds (excluding capital projects funds because of annual fluctuations) to population changes. An increasing expenditure per capita in constant dollars should be analyzed so officials can identify the causes, assess the significance of the increases, and devise a strategy to deal with the issue.

### 5. Operating Surplus or Deficit/Operating Revenues Percentage.

This measure, which reflects the results of each year's general fund operations, is a financial indicator that the credit rating agencies review on a regular basis. Credit agencies are concerned when there are two consecu-

tive years of deficits, a deficit in the current year that is larger than the deficit in the past year, a deficit in two or more of the past five years, or an abnormally large deficit — more than 5 to 10 percent.

**6. General Fund Balance/General Fund Revenues Percentage.**<sup>4</sup> This measures a jurisdiction's capacity to withstand financial emergencies. The unreserved fund balances are those the jurisdiction can use at its discretion. A decreasing percentage of unreserved fund balance over time would be of concern.

### 7. Enterprise Funds Working Capital Coverage Percentage.

This is similar to the unreserved general fund balance in that it measures the enterprise fund's ability to meet the ongoing service needs as well as its ability to withstand financial emergencies. Due to the accrual accounting standards in the enterprise funds, the working capital (current assets minus current liabilities) is a good measure for this financial trend. This financial indicator is frequently overlooked in efforts to measure a city's financial condition, but enterprise funds are a major aspect of operations for many jurisdictions and need to be recognized as such.

### 8. Long-Term Debt/Assessed Value Percentage.

This is the full faith and credit debt of the jurisdiction divided by the assessed value. Most states have limitations on the percentage of debt that a city can issue, compared to assessed or real value. Credit agencies look for warning signs such as debt that exceeds 10 percent of assessed value, an increase of 20 percent over the previous year, an increase of 50 percent over the previous four years,

**Exhibit 2: Quartile Ranges for Each of the 10 Indicators, Based on Population**

<15,000	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Ratio 1	\$1,643 or more	\$1,643 to \$1,055	\$1,055 to \$770	\$770 or less
Ratio 2	20% or more	20% to 10%	10% to 3%	3% or less
Ratio 3	56% or more	56% to 38%	38% to 19%	19% or less
Ratio 4	\$1,785 or more	\$1,785 to \$1,148	\$1,148 to \$811	\$811 or less
Ratio 5	-4% or less	-4% to 4%	4% to 13%	13% or more
Ratio 6	57% or more	57% to 40%	40% to 25%	25% or less
Ratio 7	2.11 or less	2.11 to 3.64	3.64 to 7.68	7.68 or more
Ratio 8	1% or more	1% to 0.3%	0.3% or less	0%
Ratio 9	18.3% or more	18.3% to 7.8%	7.8% to 3.4%	3.4% or less
Ratio 10	69% or less	69% to 81%	81% to 94%	94% or more
<b>15-30,000</b>				
Ratio 1	\$1,345 or more	\$1,345 to \$977	\$977 to \$770	\$770 or less
Ratio 2	18% or more	18% to 10%	10% to 4%	4% or less
Ratio 3	62% or more	62% to 40%	40% to 23%	23% or less
Ratio 4	\$1,504 or more	\$1,504 to \$1,041	\$1,041 to \$822	\$822 or less
Ratio 5	-2% or less	-2% to 4%	4% to 12%	12% or more
Ratio 6	46% or more	46% to 32%	32% to 19%	19% or less
Ratio 7	2.40 or less	2.40 to 3.94	3.94 to 6.76	6.76 or more
Ratio 8	1% or more	1% to 0.4%	0.4% to 0.1%	0.1% or less
Ratio 9	17.2% or more	17.2% to 9.1%	9.1% to 4.9%	4.9% or less
Ratio 10	68% or less	68% to 80%	80% to 92%	92% or more
<b>30-50,000</b>				
Ratio 1	\$1,310 or more	\$1,310 to \$987	\$987 to \$791	\$791 or less
Ratio 2	18% or more	18% to 10%	10% to 3%	3% or less
Ratio 3	62% or more	62% to 39%	39% to 21%	21% or less
Ratio 4	\$1,432 or more	\$1,432 to \$1,039	\$1,039 to \$822	\$822 or less
Ratio 5	-1% or less	-1% to 6%	6% to 14%	14% or more
Ratio 6	19% or less	19% to 32%	32% to 47%	47% or more
Ratio 7	2.28 or less	2.28 to 4.02	4.02 to 7.15	7.15 or more
Ratio 8	1% or more	1% to 0.4%	0.4% or less	0%
Ratio 9	20.7% or more	20.7% to 9%	9% to 5.2%	5.2% or less
Ratio 10	67% or less	67% to 81%	81% to 90%	90% or more
<b>50-100,000</b>				
Ratio 1	\$1,259 or more	\$1,259 to \$976	\$976 to \$787	\$787 or less
Ratio 2	16% or more	16% to 9%	9% to 3%	3% or less
Ratio 3	58% or more	58% to 42%	42% to 24%	24% or less
Ratio 4	\$1,361 or more	\$1,361 to \$1,052	\$1,052 to \$821	\$821 or less
Ratio 5	1% or less	1% to 6%	6% to 12%	12% or more
Ratio 6	19% or less	19% to 29%	29% to 44%	44% or more
Ratio 7	2.41 or less	2.41 to 4.07	4.07 to 6.39	6.39 or more
Ratio 8	0.9% or more	0.9% to 0.3%	0.3% or less	0%
Ratio 9	18.6% or more	18.6% to 11.2%	11.2% to 6.3%	6.3% or less
Ratio 10	74% or less	74% to 82%	82% to 91%	91% or more
<b>&gt;100,000</b>				
Ratio 1	\$1,458 or more	\$1,458 to \$1,046	\$1,046 to \$873	\$873 or less
Ratio 2	17% or more	17% to 8%	8% to 2%	2% or less
Ratio 3	48% or more	48% to 32%	32% to 17%	17% or less
Ratio 4	\$1,458 or more	\$1,458 to \$1,112	\$1,112 to \$926	\$926 or less
Ratio 5	0% or less	up to 6%	6% to 12%	12% or more
Ratio 6	14% or less	14% to 21%	21% to 33%	33% or more
Ratio 7	1.99 or less	1.99 to 3.58	3.58 to 5.75	5.75 or more
Ratio 8	1.6% or more	1.6% to 0.6%	0.6% to 0.1%	0.1% or less
Ratio 9	19.3% or more	19.3% to 12.7%	12.7% to 8%	8% or less
Ratio 10	76% or less	76% to 84%	84% to 92%	92% or more

and debt that exceeds 90 percent of the amount authorized by state law.

### **9. Debt Service/Operating Revenues**

**Percentage.** This measures the level of debt service to total general fund revenues. Increasing debt services reduces the expenditure flexibility and increases the fixed cost percentage in the fund. Credit agencies regard debt service that exceeds 20 percent of operating revenues as a potential problem; 10 percent and below is considered acceptable.

### **10. Funded Ratio of Postemployment Benefit Assets/Liabilities Percentage.<sup>5</sup>**

The funded ratio, or the actuarial value of plan assets/actuarial accrued

liability, shows the level of funding for pension and other postemployment benefits already earned by employees. The actuarial value of plan assets is compared to the actuarial accrued liability of the plan. The level of funding differs significantly among cities, raising important concerns regarding many the future financial condition of many jurisdictions.

### **DATA FOR COMPARISONS**

Exhibits 2 and 3 provide two tables of financial data that enable municipal officials to conduct two core financial condition assessments, relative to peers and over time. Exhibit 2 is comparable

to Brown's exhibit providing quartiles for each of the 10 indicators, based on population. Municipal officials can use this exhibit to compare their fiscal position for each indicator to a national sample. Those familiar with Brown's work will notice that this article does not provide a scorecard based on the rankings. The benefit of the exercise is in evaluating the community's position on each indicator rather than generating some cumulative score.

Exhibit 3 provides the median scores for each of the 10 indicators by population grouping for 2003-2006. To be consistent, median values are presented for only municipalities for which data was

**Exhibit 3: Median Values by Population and Year**

<15,000	Ratio 1	Ratio 2 %	Ratio 3%	Ratio 4	Ratio 5%	Ratio 6%	Ratio 7	Ratio 8%	Ratio 9%	Ratio 10%
2003	\$ 859	11.444	37.333	\$1,002	1.828	37.151	4.03	0.242	4.880	87.880
2004	\$ 897	10.572	37.400	\$1,026	2.551	35.616	3.87	0.250	4.958	84.877
2005	\$ 930	11.763	37.077	\$1,053	3.773	37.480	3.86	0.283	4.580	82.262
2006	\$1,055	10.147	38.166	\$1,148	4.192	40.359	3.64	0.256	7.752	80.797
15-30,000	Ratio 1	Ratio 2%	Ratio 3%	Ratio 4	Ratio 5%	Ratio 6%	Ratio 7	Ratio 8%	Ratio 9%	Ratio 10%
2003	\$811	11.382	41.287	\$ 912	1.409	30.108	3.74	0.370	6.470	86.046
2004	\$841	11.722	40.325	\$ 955	2.156	30.302	3.72	0.421	6.657	84.212
2005	\$904	11.102	40.527	\$ 980	3.686	31.225	3.59	0.375	5.963	82.337
2006	\$977	9.681	39.844	\$1,041	3.796	31.897	3.94	0.371	9.147	80.014
30-50,000	Ratio 1	Ratio 2%	Ratio 3%	Ratio 4	Ratio 5%	Ratio 6%	Ratio 7	Ratio 8%	Ratio 9%	Ratio 10%
2003	\$809	11.837	39.378	\$ 893	2.551	29.962	4.18	0.450	7.128	90.558
2004	\$850	10.022	37.018	\$ 946	3.679	29.454	3.96	0.340	7.255	87.595
2005	\$931	10.341	37.447	\$ 988	4.655	30.612	3.91	0.403	6.837	83.210
2006	\$987	9.608	39.044	\$1,039	6.192	31.649	4.02	0.443	9.047	80.858
50-100,000	Ratio 1	Ratio 2%	Ratio 3%	Ratio 4	Ratio 5%	Ratio 6%	Ratio 7	Ratio 8%	Ratio 9%	Ratio 10%
2003	\$818	11.132	40.580	\$ 906	2.190	26.435	4.13	0.380	6.768	90.548
2004	\$854	10.485	41.192	\$ 950	3.200	26.523	4.08	0.443	6.246	85.348
2005	\$914	9.201	40.542	\$ 953	6.089	28.036	4.19	0.301	6.295	83.689
2006	\$976	8.978	42.190	\$1,052	6.015	28.662	4.07	0.344	11.211	81.957
>100,000	Ratio 1	Ratio 2%	Ratio 3%	Ratio 4	Ratio 5%	Ratio 6%	Ratio 7	Ratio 8%	Ratio 9%	Ratio 10%
2003	\$919	11.320	33.481	\$1,032	3.321	17.142	3.28	0.466	8.807	94.447
2004	\$926	9.525	33.315	\$1,032	4.2120	19.177	3.37	0.528	6.870	88.678
2005	\$988	8.217	36.428	\$1,050	5.253	19.883	3.40	0.592	7.677	84.995
2006	\$1,046	7.931	32.433	\$1,112	5.737	21.496	3.58	0.611	12.687	83.600

available in each of the four years. In addition, while the GFOA has historical municipal financial data beyond 2003, the reporting requirement changes caused by the Government Accounting Standards Board Statement No. 34, *Basic Financial Statements — and Management's Discussion and Analysis — for State and Local Governments*, make it difficult to go back further.

As an example of how to use this data, once can look at the general fund balance/general fund revenues percentage (indicator 6). This indicator measures the jurisdiction's capacity to withstand financial emergencies. As shown in Exhibit 2, in jurisdictions with populations between 50,000 and 100,000 people, the lowest quartile had a ratio of 19 percent or less. Jurisdictions in the second quartile had a ratio between 19 percent and 29 percent. Jurisdictions in the third quartile had a ratio between 29 percent and 44 percent. The ratio for highest quartile was 44 percent or greater. As shown in Exhibit 3, the averages for all jurisdictions in the 50,000 to 100,000 population category increased from 26.4 percent in 2003 to 26.5 percent in 2004; to 28.0 percent in 2005; and to 28.7 percent in 2006. Bond rating agencies value a good percentage of unreserved fund balance based on local needs and policies, but they also view too large a fund balance as a "red flag" that may result in pressures on financial decision-making. Cities should compare their general fund balance/general fund revenues percentage to the data in Exhibits 2 and 3 to assess their current operating position in the general fund. Each of the ten indicators can be used in the same way to help assess a local government's financial condition.

## CONCLUSIONS

This article provides an update with improvements to Ken Brown's seminal work on fiscal condition, which was published more than 15 years ago. The importance of the update has been highlighted by the fiscal crisis currently facing many local governments. Municipalities were more insulated in previous economic downturns, but today, they rely more on a variety of more elastic revenue sources (income and sales in particular) and less on intergovernmental transfers. As a result, analyzing and managing financial conditional is particularly relevant. ■

### Notes

- 1.J.E. Petersen and D.R. Strachota, *Local Government Finance: Concepts and Practices* (Chicago: Government Finance Officers Association) 1991.
- 2.For a summary see B.W. Honadle, J. Costa, and B. Cigler, *Fiscal Health for Local Governments: An Introduction to Concepts, Practical Analysis and Strategies* (Maryland Heights, Missouri: Elsevier) 2004.
- 3.K.W. Brown, "The 10-Point Test of Financial Condition: Toward an Easy-to-Use Assessment Tool for Smaller Cities, *Government Finance Review*; December 1993.
- 4.Beginning June 15, 2010, Governmental Accounting Standards Board (GASB) Statement No. 54, *Fund Balance Reporting and Governmental Fund Type Definitions*, will require more detailed information on fund balances. See: <http://www.gasb.org/st/index.html> for more information.
- 5.In the future, another useful ratio will be other post-employment benefits, or OPEB, which will be phased into audit reports according to GASB Statement No. 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions*, in 2010.

---

**CRAIG S. MAHER** is an associate professor at the University of Wisconsin-Oshkosh. **KARL NOLLENBERGER** is an assistant professor at the University of Wisconsin Oshkosh.

## Further Resources

Barbara A. Chaney, Dean Michael Mead, and Kenneth R. Schermann, "The New Governmental Finance Model: What it Means for Analyzing Government Financial Condition," *The Journal of Government Financial Management*, Spring 2002.

Cal Clark and B. Oliver Walter, "Urban Political Cultures, Financial Stress and City Fiscal Austerity Strategies," *The Western Political Quarterly*, September 1991, Vol. 44, no. 3.

Terry Nichols Clark and James L. Chan, "Monitoring Cities: Building an Indicator System for Municipal Analysis," *Monitoring Local Governments*, Terry Nichols Clark, ed. (Dubuque: Kendall/ Hunt for Urban Innovations Analysis Inc.) 1990.

Ronald F. Ferguson and Helen F. Ladd, "Measuring the Fiscal Capacity of U.S. Cities," *Measuring Fiscal Capacity*, H. Clyde Reeves, ed. (Boston: Oelgeschlager, Gunn & Hain) 1986.

James A. Hough, *The Indikit — The Municipal Financial Indicators Evaluation Kit* (Washington, D.C.: International City/ County Management Association) 2004.

Karl Nollenberger, *Evaluating Financial Condition*, (Washington, D.C.: International City/County Management Association) 2004.

Michael A. Pagano and Christopher W. Hoene, *Fiscal Conditions in 2008*, National League of Cities, September 2008.