Tools for Predicting Municipal Bankruptcy: Indicators of Long-Run Governmental Financial Condition

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Woods Bowman
DePaul University

This paper is not about bankruptcy *per se* but about using accounting information to anticipate it. The most famous municipal bankruptcy case in recent years is Orange County (CA) but, unfortunately, its problems predate GASB Statement 34 which is the basis for this paper's model. Instead the concepts and tools are used to examine the finances of two cities: one with a triple-A credit rating and a growing population, and the other with a credit rating below investment grade and a shrinking population. Yet, as we shall see, their financial conditions are more alike than first meets the eye.

Financial *condition* refers to "a government's ability to provide services and finance obligations as they come due" (Mead 2001, 113), It is "a complex and multidimensional concept with varying time frames" (Hendrick 2004). This paper defines financial condition as a combination of financial *position*, which is a stock of resources at a given moment, and financial *performance*, which refers to a government's ability to maintain a given financial position over time.

Long run financial condition is of particular interest for two reasons: (1) If a government cannot maintain its assets in real terms (i.e., replacement cost) over the long run when it has control of all resources, it will be unable to continue providing services at any given quantity and quality as surely as its services would immediately suffer if it threw away a portion of its assets today. (2) Measurement problems are most acute in the long run, rendering intergovernmental comparisons problematic, regardless of the chosen indicator.

This paper examines measurement issues inherent in Statement 34 and shows why their primary effect is on financial *position*. It proposes a new method of determining whether a government's long run financial *performance* is adequate without reference to a peer group. This paper is a condensed pre-publication version of "Indicators of Governmental Financial Condition in Theory and Practice" which delves into the economic theory of government finance to develop indicators for budgetary condition and liquidity condition.

The next section reviews the recent literature on financial indicators. This is followed by two sections explaining long-term measurement issues and proposing specific indicators. Then, the tools are applied to Phoenix (AZ) and Detroit (MI).

State of the Art

In economic parlance, the *long run* is a time period of sufficient length to permit managers to adjust all resources, capital as well as labor. The International City/County Man-

agement Association (ICMA) identifies service delivery solvency as a government's main long run goal. It refers to a condition whereby a government is likely to indefinitely provide resources for services at the level and quality required for the health, safety, and welfare of the community and that its citizens desire, while paying all costs of doing business (i.e., all liabilities *as they accrue*) (Nollenberger et al 2003).

Until recently it was difficult for analysts to measure long-term financial condition for a government taken as a whole because there were no entity-wide statements prepared using economic resources measurement focus and full accrual basis of accounting. In 1999 the GASB promulgated Statement 34 filling this void.[1]

The two most influential pre-Statement 34 sources of financial indicators which are still in use are (1) a handbook published by the International City/County Management Association (ICMA) (ibid.), featuring 42 indicators of financial condition, of which 26 involve financial variables, and (2) Ken Brown's (1993) 10-point description of financial condition, accompanied by summary statistics of a large sample of cities for use as norms.

Subsequent to Statement 34, researchers took a fresh look at financial indicators.[2] The appendix identifies 69 unduplicated indicators from this literature with 24 indicators germane to the long run in boldface.

Not counting indicators involving population, only three appear on more than one list: (1) current ratio, (2) quick ratio, and (3) ratio of unrestricted net assets to expenses. Ignoring fund group and with some algebraic manipulation, an additional two indicators appear on multiple lists: (4) the ratio of revenues to expenses and (5) the ratio of liabilities to assets, commonly called leverage.[3] I refer to these five ratios as "popular" financial indicators, although popular is a relative term since none is universal.

Fourteen (i.e., 20%) of the indicators listed in the appendix involve population, usually in the denominator as a scale factor adjusting for the size of a government. These include four long run indicators (boldfaced). These indicators are excluded from the overlap analysis because they raise several conceptual and practical issues:

1. Actual headcounts are available only once every 10 years and population estimates during the interim are unreliable, especially in areas of rapid growth or decline, and in small areas.
2. Populations differ in the distributions of age and wealth which may have significant implications for municipal finance.
3. General purpose governments have different legal responsibilities.

[1] It became effective for large governments with fiscal years beginning after June 15, 2001. Comprehensive Annual Financial Reports (CAFRs) using the new model began being published in late 2002 and early 2003.

[2] Curiously the 4th edition of the ICMA handbook, published in 2003, included no new indicators based on entity-wide financial statements. Although the authors of the recent literature are not named here, their publications are identified in the bibliography.

[3] Equation 21 relates to equation 32 as follows: Surplus / Revenue = 1 – (Revenue / Expenses). Equations 18 and 40 relate to equation 49 as follows: Liabilities / Assets = (Net Assets / Assets) – 1.

4. Per capita figures are often ambiguous – a city with more tax revenue per capita than another may have higher tax rates, which is undesirable, or lower tax rates but more real activity per person to tax, which is desirable.

Total expenses of the primary government are a better metric for the size of a government than population because they are more closely related to the scope of a government's responsibilities. New York City, for example, has nearly three times the population of Chicago but it is responsible for the schools, public transit, waste water treatment, and parks, whereas these functions are the domain of non-component units of government in the Chicago area. Thus, New York City's expenses are nearly nine times those of Chicago.[4]

Per capita indicators have their uses but they must be justified in every case. An example consistent with the production function model above is computing change in capital per resident over time. Increasing resident population requires more capital per person in order to maintain the same service levels, so this paper compares growth rates in assets per capita to population growth over the same period to infer whether capital intensity per inhabitant is increasing or decreasing.

Reliability of annual population estimates is an issue in the examples used in this paper. However, if the characteristics of a government and its citizenry change slowly over time, issues (2) and (3) vanish. As for issue (4), it seems clear that increasing resident population requires more capital per person in order to maintain the same service levels.

Long-Run Measurement Issues

Statement 34 took a long step toward presenting a comprehensive view of a government's financial condition over the long term by using an economic resources measurement focus and full accrual basis of accounting. However problems of asset valuation and pension liabilities remain, vexing efforts to measure financial position and performance in ways that are comparable across governments. The following discussion offers some suggestions for improving comparability of financial position indicators over time, and to some extent, between governments. It also addresses related measurement problems related to financial performance.

Financial position: Asset valuation

Statement 34 provides two ways to value infrastructure assets (Mead 2001, 15). The first is the traditional approach of historical cost minus accumulated depreciation and a "modified approach" which reports annual maintenance and preservation expenses in lieu of depreciation. The modified approach requires a government to have a current inventory of assets, regularly assess their condition, estimate the cost of maintaining and preserving them at a given level of its choice, and it must document positive results.

[4] In 2010 New York City had 8.45 million people while Chicago had 2.86 million (Business First 2011). In FY 2009 New York City had $67.4 billion in total primary government expenses whereas Chicago had $7.8 billion (NYC and Chicago CAFRs).

Indicators involving total assets or total net assets are not comparable between governments using different valuation methods. One solution is to compare these indicators only among governments that use the same method – an apples-to-apples comparison. A second solution is to adjust total assets and total net assets by subtracting capital assets from both.[5] The second solution transforms total assets into total *financial* assets and total net assets into total net *financial* assets.

The second solution is preferable because infrastructure assets are not generally available to sell to meet a government's financial obligations. Even assets that are security for revenue bonds are untouchable for political reasons or else there is no ready market for them. Long-term leases of public assets (e.g. Chicago Skyway) are exceptions to the rule, but they do not create interpretive problems under second solution because a long-term lease removes the asset from the government's books and cash received is offset by an equal liability which will amortize over the lease's life.

Financial assets exceed liabilities for pay-as-you governments. Governments that borrow to build will likely have liabilities exceeding their financial assets. However, negative net financial assets do not reflect a financial crisis. They merely indicate that borrowing exceeds financial assets on hand. Borrowing is necessary whenever existing financial assets are inadequate. When used to acquire long-lived assets, borrowing improves intergenerational equity by imposing capital costs on future users as well as current ones. In short, the second solution to the comparability problem produces variables that are useful for financial indicators.

Financial position: Pension liabilities

Pensions are fiduciary funds and neither assets held in a fiduciary capacity nor associated liabilities appear on a statement of net assets.[6] Although Statement 34 requires reporting of unfunded pension liabilities in required supplemental information, governments may differ according to their actuarial cost methods, assumptions and amortization periods. Governments can easily manipulate their apparent financial condition by adjusting their contributions to their pension and other post-employment benefit liabilities. There seems to be no simple clean adjustments to the data that will render all long term assets and liabilities, including those of pension plans, comparable across governments.

Governments differ, however, in their use of pension obligation bonds and related derivative products. Some governments choose to substitute a "hard" bond debt service liability for a "soft" pension contribution obligation, which is essentially an arbitrage play on the interest rate spread.[7] Some of these governments may then enter into derivative agreements to manage the associated interest rate risk.

[5] This does not envision making similar adjustments on the liabilities side of the statement of net assets.
[6] A net pension asset will appear on a statement of net assets whenever a government's annual contributions to its pension plan are higher than the annual pension costs, as calculated according the GASB Statement 27.
[7] Between the rate of return on plan assets determined by the trustees of the plan and the tax exempt borrowing rate.

Although one cannot adjust the data on a statement of net assets to improve comparability of long term financial condition between governments, one can improve comparability of any given government's financial condition over time by subtracting pension liability bonds from total liabilities.[8] Thus, financial indicators involving total liabilities do not change merely as a result of substitution of a "hard" liability a "soft" one.

However it is probably best not to go further and adjust liabilities by subtracting the value of derivatives because (1) it may not be possible to distinguish between derivatives associated with pensions and derivatives used for other purposes, and (2) derivatives are technically risk management techniques which should be scored against long term financial condition, regardless of the sources of risk.[9]

Financial Performance: Change in Net Assets

Given that a change in total net assets is reported on the government-wide statement of activities and a leading metric of financial performance, we must ask how the above static measurement issues affect *changes* in total net assets.

At the margin, different methods of asset valuation do not create major problems because both methods report capital consumption expenses. The historical cost method reports them as depreciation whereas the modified approach reports them as repair and replacement expenses.[10] The difference between these two amounts in a given situation is likely to be small relative to total expenses and even small to change in total net assets. Moreover, there is no way to determine whether one method will systematically overstate or understate the result relative to the other. Therefore no adjustments to change in total net assets are feasible and probably not necessary.

Regrettably, change in total net assets gives little or no information about new pension costs but nothing can be done about this. The only question is whether financial indicators should include pension obligation bonds (POBs) because a pension liability exists regardless of the form it takes. Does ignoring them when calculating indicators of financial position require us to adjust change in net assets as an indicator of financial performance?

At the margin, the difference between including or excluding POBs is the interest expense on POBs. The interest expense on POBs is likely to be small relative to total expenses but it may be material relative to change in total net assets. Fortunately, it will systematically overstate expenses relative to a situation without POBs, so we can say that the observed change in net assets is a conservative estimate of the true change including increase in unfunded liability. Therefore, although indicators of long run financial position

[8] This adjustment assumes that all bond proceeds are reported in fiduciary funds, so that adjusted total liabilities on the statement of financial position and fiduciary funds remain constant.
[9] The word "technically" signals that some governments may inappropriately enter into derivate agreements motivated primarily by eagerness to gain cash for their operating budgets.
[10] Under the historical cost method repair and replacement are treated as depreciable capital investments.

are not comparable between governments, indicators of financial performance are at least approximately comparable.

Long Run Indicators

Service Delivery Solvency (ICMA's term) refers to a condition whereby a government is likely to indefinitely provide resources for services at the level and quality required for the health, safety, and welfare of the community and that its citizens desire, while paying all costs of doing business (i.e., all liabilities *as they accrue*).

Government-wide financial statements adopt an economic resources measurement focus and full accrual basis of accounting (Mead 2001) which takes into account all assets and liabilities (including capital assets and long-term liabilities) and their changes over time. Analysts and citizens may then assess the impact of fiscal decisions that create future liability. Therefore, government-wide financial statements are ideal for evaluating long term financial position and performance.

Despite the problems discussed above, long run analysis can reveal whether a government is cutting costs or merely deferring them into the future – although manipulation of pension funding must be examined separately. We begin with one of the popular indicators, *leverage ratio* which is customarily defined as total liabilities divided by total assets.[11]

Given the proposed adjustments, we redefine the leverage ratio to be total liabilities, net of pension bonds, divided by total assets, net of capital assets. When the numerator grows relative to the denominator, the leverage ratio increases, and the inescapable conclusion is that more resources will be needed in the future to pay existing debt, creating a situation generally regarded as undesirable.

When using multiple indicators, interpreting results is less confusing if variables are defined such that high values are more desirable than low values. Therefore we convert the leverage ratio into a net financial asset ratio as follows: net financial asset ratio = net financial assets divided by total financial assets = 1 – leverage ratio. This is the fraction of financial assets that a government owns free and clear of long- and short-term liabilities, other than pension related liabilities. A high value of this new variable is more desirable than a low value. (If the number is negative, values closer to zero are larger.)

- Financial Position: *net financial assets per dollar of total financial assets*. Owning assets free and clear eliminates the need for future resources (like taxes) to pay for debt service. The issue of asset valuation is discussed extensively above where the component variables are defined. The next section, which applies the six financial indicators proposed in this section, also calculates total net assets per dollar of total assets to show the effects of making the suggested adjustments to assets and liabilities.

[11] Some authors define leverage as long term debt divided by total assets. The definition in the text is more comprehensive because it will detect when a government is using short term debt to cover budget deficits while rolling over old short term debt year-to-year. It is also easier to locate on a statement of net assets.

This paper has explored various problems in comparability of key elements of long run financial position between governments. In addition, different governments have different legal responsibilities and different service delivery systems. Nevertheless, individual governments should develop indicators of long run financial position to monitor themselves.

- Financial Performance: c*hange in net assets per dollar of total financial assets*. This is the well-known business indicator, *return on assets* (ROA).[12] The long term rate of inflation is the floor under long term financial performance, consistent with a government's legal responsibilities, values, service delivery model, and political tolerance for taxes that come into play when it chooses a target financial position.

  A government is financially sustainable in the long run if and only if its ROA is greater than the long run rate of inflation of 2.5%.[13] When assets grow below this rate, their real value will gradually shrink, which will compromise a government's ability to produce output with its existing capital stock. The next section further calculates ROA relative to population change.

A Tale of Two Cities

This section applies the model to two well-known American cities: Detroit, MI and Phoenix, AZ. Detroit has just over half of Phoenix's population (907 thousand *vs*. 1.64 million) but, interestingly, they are almost the same size as measured by total expenses of the primary government ($2.9 billion *vs*. $3.1 billion).[14] Table 1 shows the raw long run data for 2010. Note that all variables are found on the government-wide statements which use full accrual basis of accounting. Table 2 shows the results of calculations for each year between 2006 and 2010 with summary statistics for the period as a whole.[15]

These cities offer a stark contrast for purposes of calibrating our model. Detroit has about 40% of Phoenix's total assets and 40% of its capital assets. Furthermore, its net assets are shrinking much faster ($266 million per year *vs*. $74 million per year). Therefore, it is little wonder that Detroit's bond rating is below investment grade while Phoenix enjoys the top rating (Ba3 *vs*. AAA by S&P).

As this paper has stressed, comparisons of long term *financial position* between governments is fraught with measurement issues. However, for the record: Phoenix's existing

[12] Although the business version includes capital assets.

[13] To calculate the long term inflation rate for non-defense capital expenditures, we use corresponding implicit price deflators reported in the federal budget for FFY 2000, which is the last year they were published (U.S. Office of Management and Budget 2000). The long term CAGR of inflation between 1940 and 2007 was 2.5%.

[14] Population growth is from Business First (2010). All figures are estimates. The U.S. Bureau of Census has not yet released actual 2010 data. Fiscal data are taken from the respective CAFRs.

[15] The 5-year financial position in each time frame is the simple arithmetic average of the annual financial positions and performance.

financial assets, if liquidated in 2010, would have been sufficient to retire half of its non-pension debt whereas Detroit could retire no more than 3%.

To illustrate the effect of making the adjustments proposed above, financial position is shown two ways on Table 2 by the *net asset ratio* (total net assets divided by total assets) *and* by the *net financial asset ratio* (net assets minus capital assets plus pension bonds divided by total assets minus capital assets). The former is positive for all five years whereas the second is negative, as expected. Although these variables are highly correlated for both cities, they show slightly different patterns.

- Phoenix's net asset ratio appears stable (between 0.54 and 0.50). However, its net financial asset ratio is unstable (between -0.40 and -0.61); it deteriorated between 2006 and 2009 before jumping up in 2010.

- Detroit's net asset ratio steadily deteriorates over the entire 5-year period whereas its net financial asset ratio improves in the first year of the period but then deteriorates through 2010.

Because capital assets do not fluctuate greatly from year to year, they help stabilize the net asset ratio. Financial assets and bonded pension liabilities can change suddenly, so the net financial asset ratio is more volatile. Using the recommend net financial asset ratio, Phoenix and Detroit appear to be more alike than they appear by using the net asset ratio.

Phoenix's long-run *financial performance* is better than Detroit's but the gap between them closes considerably after adjusting for population change between 2006 and 2010.

- Phoenix has a 5-year average return on assets of 3.3% which is greater than the 2.5% long run rate of inflation for government non-defense capital spending, implying that its real capital is growing by 0.8% per year. However, because its population is growing by 1.6% per year, its real capital *per inhabitant* is *falling* at a rate of 0.8% per year (0.8% minus 1.6%).

- Detroit's return on assets is a negative 1.6%, but its population is shrinking by 0.3% per year, so its real capital per inhabitant is falling by 1.9% per year (negative 1.6% minus a negative 0.3%). It too will be providing services with less capital per inhabitant in the future.

First impressions can be misleading. On Table 2, Phoenix's 5-year average ROA is +3.3% and Detroit's is -1.6%, a spread of 4.9 percentage points in Phoenix's favor. However, after adjusting for inflation and population changes, Phoenix's real capital per inhabitant is decreasing by 0.8% per year and Detroit's is decreasing by 1.9% per year, or a spread of 1.1 percentage points in Phoenix's favor.

It may be surprising that real capital per inhabitant is falling in both Phoenix and Detroit, but upon reflection it is quite plausible. "The Phoenix-Mesa-Glendale area ranked 93th out of 100 metropolitan areas struggling through unemployment, job losses and a crum-

bling housing market. Between 2007 and the first quarter of this year [2010], the Phoenix area lost 11.9 percent of its jobs" (*Phoenix Business Journal*, June 15, 2010). The Brookings Institution ranks both Detroit and Phoenix metro areas among the 20 weakest in overall performance (Brookings 2011). Moreover, like cities nationwide, both Phoenix and Detroit are caught in the throes of prevalent anti-tax sentiment. Less public capital accumulation per person is an unavoidable consequence, whether a city's population is growing or shrinking.

Conclusion

Despite difficulties in creating and interpreting a long-run indicator of financial *position*, this paper shows how to construct an unambiguous indicator of long run financial *performance* which can be interpreted on an absolute scale – meaning that it can be compared to an objective benchmark like the inflation rate and is not dependent upon the performance of peers. The results of applying these indicators to two very different cities give confidence in the model.

Table 1

Financial Data for Two Cities, FY 2010

($1,000,000)

CAFR Exhibit	Element	Phoenix	Detroit	
1	Primary Government: Total: Capital Assets	11,337	7,026	**a**
1	Primary Government: Total: Total Assets	16,207	10,371	**b**
1	Primary Government: Total: Pension Obligations (bonded)	-	1,202	**c**
1	Primary Government: Total: Total Net Assets	8,345	265	**d**
2	Primary Government: Total: Change in Net Assets	-74	-266	**e**

Table 2

Long Term Indicators of Financial Condition for Two Cities, 2006-2010

Phoenix	**Average 2006-10**	**2006**	**2007**	**2008**	**2009**	**2010**
Net Asset Ratio	**0.50**	0.53	0.54	0.53	0.51	0.50
Net Financial Asset Ratio	**-0.51**	-0.40	-0.47	-0.58	-0.61	-0.51
Return on Assets	**3.3%**	4.5%	5.4%	5.3%	1.5%	-0.5%
Real Per Capita Return on Assets	**-0.8%**					

Detroit	**Average 2006-10**	**2006**	**2007**	**2008**	**2009**	**2010**
Net Asset Ratio	**0.11**	0.17	0.16	0.12	0.09	0.03
Net Financial Asset Ratio	**-1.26**	-1.07	-1.00	-1.12	-1.42	-1.66
Return on Assets	**-1.6%**	0.7%	0.4%	-3.0%	-3.5%	-2.6%
Real Per Capita Return on Assets	**-1.9%**					

Formulas keyed to Table 1:

Net Asset Ratio = d/b

Net Financial Asset Ratio = (d-a+c)/(b-a)

Return on Assets (%) = 100% * e/(b-a)

Appendix

Financial Indicators in the Literature

(long term in boldface; forward slash indicates division)

1. (Actual Revenues – Budgeted Revenues) / Net Operating Revenue (ICMA)
2. **(Change in Net Assets + Interest Expense) / Interest Expense** (C1)
3. (General Revenues + Intergovernmental Transfers) / Expenses (C1)
4. **Capital Outlay from Operating Funds / Net Operating Expenditures** (ICMA)
5. Capital Projects Fund Expenditures / Expenditures (H)
6. **Capital Projects Fund Expenditures / Population** (S)
7. **Capital Projects Fund Revenue / Population** (S)
8. **Change in Net Assets / Net Assets** (C1)
9. Current Liabilities / Net Operating Revenue (ICMA)
10. Current Ratio (C2)(K)(W)
11. **Debt Service / Expenditures** (H)
12. **Debt Service / Total Revenue** (B)
13. **Direct Long Term Debt / Population** (B)
14. Elastic Operating Revenues / Net Operating Revenues (ICMA)
15. Enterprise Income / (Enterprise Income + Own Source Revenue) (H)
16. Enterprise Working Capital or Enterprise Operating Income (ICMA)
17. Entity Expenses / Population (W)
18. **Entity Liabilities / Assets** (K)
19. Entity Liability of Post-Employment Benefits / Number of Employees (ICMA)
20. Entity Revenue / Population (B)(W)
21. Entity Revenue / Total Expenses (W)
22. Entity Taxes / Population (W)
23. Expenditures for Repair and Maintenance of General Fixed Assets / General Fixed Assets (ICMA)
24. Fees and User Charges / Expenditures for Related Services (ICMA)
25. **Fixed Costs / Net Operating Expenditures** (ICMA)
26. Fringe Benefit Expenditures / Salaries and Wages (ICMA)
27. General Fund Sources from Other Funds / Total General Fund Sources (B)
28. General Fund: Cash and Investments / Total General Fund Liabilities (B)
29. General Fund: Expenditures/ Population (S)
30. General Fund: Fund Balance / Revenue (S)
31. General Fund: Liabilities / Total General Fund Revenue (B)
32. General Fund: Operating Surplus or Deficit / Net Operating Revenues (ICMA)
33. General Fund: Operating Surplus or Deficit / Population (W)
34. General Fund: Own-Source Revenue / Total General Fund Revenue (B)
35. General Fund: Revenue / Population (S)
36. General Fund: Unreserved Fund Balance / Revenue (B)(S)
37. General Fund: Unreserved, Undesignated Fund Balance / Revenue (S)
38. Governmental Funds: Expenditures/ Population (S)
39. **Governmental Funds: Fund Balance / Revenue** (S)
40. Governmental Funds: Revenue / Total Expenditures (B)

41. Governmental Funds: Revenue / Population (S)
42. Governmental Funds: Unreserved Fund Balance / Expenditures (H)
43. Governmental Funds: Unreserved Fund Balances / Net Operating Revenue (ICMA)
44. **Hirschman-Herfindahl Index of Revenue Diversification** (H)
45. Intergovernmental Operating Revenues / Gross Operating Revenues (ICMA)
46. Intergovernmental Revenue / Total Revenue (H)
47. **Long-term Debt / Assets** (C1)
48. **Long-Term Popular Bonded Debt / Assessed Valuation** (ICMA)
49. **Net Assets / Total Assets** (W)
50. **Net Direct Bonded Long-Term Debt / Assessed Valuation** (Or Personal Income) (ICMA)
51. **Net Direct Debt Service / Net Operating Revenues** (ICMA)
52. **Non-current Liabilities / Population** (W)
53. **Non-current Liabilities / Total Assets** (W)
54. One-Time Operating Revenues / Net Operating Revenues (ICMA)
55. Operating Expenditures / Population (ICMA)(S)
56. Operating Expenditures / Total Expenditures (B)
57. Operating Expenditures for One Function / Total Net Operating Expenditure (ICMA)
58. Operating Revenue / Population (S)
59. **Pension Obligations / Salaries and Wages** (ICMA)
60. **Pension Plan Assets / Annual Pension Benefits Paid** (ICMA)
61. Property Tax / Own Source Revenue
62. Quick Ratio (C1)(K)(W)
63. Quick Ratio calculated without Receivables (W)
64. Restricted Operating Revenues / Net Operating Revenues (ICMA)
65. Revenue / Population (ICMA)
66. Sales Tax / Own Source Revenue (H)
67. Tax Revenues (ICMA)
68. **Uncollected Property Taxes / Net Property Tax Levy** (ICMA)
69. Unrestricted Net Assets / Expenses (C1)(K)

Note 1: operating revenue consists of the sum of revenues into the General Fund, Special Revenue Fund and Debt Service Fund. Operating expenditures are the sum of expenditures in these funds.

Note 2: (B) = Brown, 1993; (C1) = Chaney et al , 2002; (C2) = added by Chaney 2005; (H) = Hendrick, 2004; (ICMA) = Nollenberger et al 2003; (K) = Kamnikar et al, 2006; (S) = Sohl et al, 2009; (W) = Wang et al, 2007.
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