revenue bonds from a region where economic growth has lagged and municipalities have been experiencing financial problems.

Burden of Debt

The size and composition of the total debt held by Ohio's major cities have significance largely in relation to the debt service payments and the debt-carrying capacity of the cities. For the most part, the long-term debt burden of Ohio's cities in 1978 was in line with that of other large cities of the nation (see table 2). For example, total annual interest payments plus long-term debt retirement (long-term debt burden) tended to be less than one-fifth of revenues from own sources. However, the ratios for most of Ohio's cities exceeded those values over the ten-year period. Akron's ratio appeared to be substantially larger (averaging 0.32, compared with 0.12 for major U.S. cities). Most of the Ohio cities thus lowered their ratios in 1978. However, adding short-term debt to long-term debt service payments presented a much different picture. Only Cincinnati was below the debt-burden ratio (0.41) attained for major U.S. cities on average over the ten-year period. Indeed, except for Dayton, the remaining five Ohio cities had ratios that were more than twice as large as the average for all major U.S. cities. Therefore, not only was the level of long-term debt burden in Ohio's large cities out of line, but total indebtedness and total debt service payments also were consistently high relative to their overall debt-carrying capacity.

In addition to the relative debt burden, short-term debt also poses another potential problem for the fiscal management of Ohio's large cities. The percentage of cash and security holdings currently on hand to cover short-term debt repayment generally has been a sensitive measure of a city's ability to meet its short-term debt obligation in a fiscal emergency. A general rule is that the closer the ratio of short-term debt to cash and security holdings is to 1.00, the greater the possibility of fiscal stress. This rule of thumb may be inappropriate for growing cities with low budget surpluses. For major U.S. cities, an average value of 0.27 over the ten-year period has been an acceptable margin of safety and comparable with the average of all state and local governments. With the shift away from short-term debt in 1978, the ratio was reduced to 0.10 for major U.S. cities. However, three of the four Ohio cities for which data are available had short-term debt to cash and security holdings at least twice as high as those for major U.S. cities. Relatively sluggish growth in the state's economy might be expected to produce increasingly tight budgets and liquidity strains for Ohio's cities. Except for Toledo, the ratio of debt to cash and security holdings showed significant improvement by 1978 for the Ohio cities, but not as much as achieved by other major U.S. cities. Thus, while Toledo was the only Ohio city actually to exceed the 1.00 rule of thumb, Cleveland and Columbus also had abnormally high debt to cash and security ratios.

Table 2 Ratios of Interest and Debt Retirement Payments to Own Source Revenues

	Long-term debt burden,[a] 1978	10-year average, 1968-77	Short- and long-term debt burden,[a] 1978	10-year average, 1968-77	Short-term debt to cash and security holdings, 1978	10-year average, 1968-77
Major U.S. cities	0.15	0.17	0.23	0.41	0.10	0.27
Akron	0.18	0.32	0.78	1.40	NA	NA
Cincinnati	0.15	0.15	0.20	0.38	0.06	0.22
Cleveland	0.20	0.25	0.44	0.83	0.21	0.53
Columbus	0.19	0.24	0.76	1.46	0.66	0.96
Dayton	0.12	0.16	0.21	0.65	NA	NA
Toledo	0.11	0.11	1.07	1.01	2.39	1.56
Youngstown	0.14	0.19	0.36	0.97	NA	NA

a. Debt burden represents debt retirement plus total annual interest payments divided by revenues from own sources. The ratios measure debt service payments relative to the debt-carrying capacity of the city. See J. Richard Aronson and Arthur E. King, "Is There a Fiscal Crisis Outside of New York?," *National Tax Journal,* vol. 31, pp. 153-63.

SOURCE: U.S. Bureau of the Census, *City Government Finances in 1977-78* (and previous issues).

Conclusion

Because of the complexity underlying any city's financial structure, there is no conclusive way of stating whether a particular debt position is within acceptable limits of municipal debt management. Thus, financial ratios that measure relative debt levels and servicing capacity can only suggest signs of fiscal strain in a city's debt position. Within the limits of the data available for analysis, the size of debt suggests a potentially troublesome situation for the major cities of Ohio. Each of the seven Ohio cities has at some point exceeded the average levels of long- and short-term debt of major U.S. cities. Even though the economic environment differs among various Ohio cities, access to the municipal bond market remains vital to their fiscal operations. Despite some financial restructuring in Cleveland since its default, the financial position of Ohio's cities had not improved substantially by 1978. Moreover, the economy of the state of Ohio and of many of its major cities has deteriorated much more than has been the case for many other areas of the United States since 1978. Such deterioration in the face of unfavorable debt ratios provides a clear warning that careful management of both long- and short-term debt is still required to preserve the financial soundness of Ohio's major cities.

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Debt Management of Ohio's Major Cities

by Robert H. Schnorbus

Municipal debt grew dramatically between 1968 and 1978—a period when gross capital formation by state and local governments was ebbing. The relative decline in public capital formation by state and local governments has been attributed to several factors, including lessening need for new capital (particularly with declining school enrollments) and rising interest rates. Furthermore, cutbacks in capital spending have been steepest among older cities suffering from long-run decline in economic activity, especially in the industrial Northeast. Despite the decline in investment, however, debt has risen rapidly, as a larger share of capital formation has been financed through long-term debt. In addition, new financing devices (mostly non-guaranteed revenue bonds) have encouraged state and local governments to use the municipal bond market to attract industry. Because the new financing devices often have been backed only by the "moral obligation" of the governmental unit, their increased use has been a matter of growing concern in municipal bond markets. An even greater cause for concern has been the heavy volume of short-term borrowing (i.e., with a maturity of one year or less), caused largely by spiraling interest rates and the resulting postponement of long-term debt issues.[1]

Local governments in Ohio have been confronted by mounting fiscal strain. Compared with other large U.S. cities, total debt and short-term debt of Ohio's cities are high relative to some standard measures of municipal debt management. Roughly one-half of the short-term debt of local governments in Ohio is held by municipalities. (The bulk of the remainder is evenly distributed between school and special districts.) While imprudent management of debt, especially short-term debt, is difficult to define, the state auditor of Ohio recently indicated that at least six Ohio cities (Ashtabula, Niles, Norwood, Cleveland, Plymouth, and Youngstown) have had fiscal emergencies of varying degrees.[2] This *Economic Commentary* examines the long-term and short-term debt positions of Ohio's major cities in 1978 and

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The opinions stated herein are those of the author and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.

1. The abuse of short-term debt, more so than long-term debt, has been an important causal factor in many past municipal financial crises. For case studies of cities that have defaulted, see Advisory Commission on Intergovernmental Relations, *City Financial Emergencies: The Intergovernmental Dimension,* U.S. Government Printing Office, 1973.

2. See "Auditor Unsure of City's Future," *Youngstown Daily Vindicator,* September 16, 1980, p. 1.

the previous ten-year period relative to comparably sized cities in the nation.

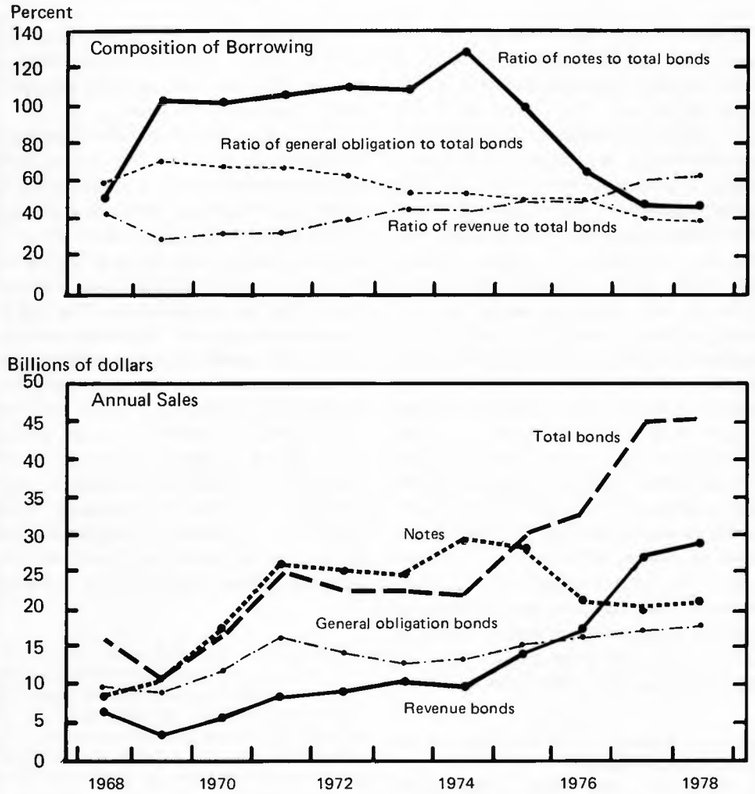
Municipal Bond Market

The municipal bond market is the ultimate barometer of a city's debt position.[3] Bonds (i.e., debt with a maturity of longer than one year) generally are considered to be the appropriate instrument for financing long-term capital expenditures. Indeed, in 1978 a record high of 65 percent of all municipal capital expenditures was financed with bonds. However, long-term debt for capital formation has been highly volatile on a year-to-year basis because of fluctuations in interest rates and the availability of capital.

Since 1968, there has been a dramatic shift by municipal borrowers toward revenue bonds and greater reliance on short-term debt (see chart 1). Indeed, by 1978 revenue bonds constituted well over one-half of total bond sales. With the increased issuance of non-guaranteed revenue bonds, municipal debt has become a source of finance for a range of activities that have extended far beyond such traditional purposes as schools, highways, and sewer projects. Non-guaranteed bonds are used for such purposes as financing housing projects often owned or operated by private entities, pollution-control facilities, and industrial development. Non-guaranteed bonds have become increasingly popular with municipal governments, partly because these instruments typically have been excluded from debt limitations and voter referendums and partly because of the desire to stimulate local economic development. After the financial difficulties of New York's state agencies, quality of debt has become a primary concern of the municipal bond market.[4]

3. The term *municipal* indicates both state and local governments.

Chart 1 Municipal Borrowing: 1968-78



SOURCE: John Peterson, "Changing Conditions in the Market for State and Local Governments," Joint Economic Committee, April 16, 1976. Data updated from *The Bond Buyer*.

4. General-obligation bonds are debts of the municipality itself, with full taxing powers of the municipality, if necessary, pledged to meet payments on interest and principal. Non-guaranteed bonds, or pure revenue bonds, are not an obligation of the state; instead, they are obligations of the issuing agency, and depend solely on the revenues available to the issuing agency from the loan that the bond issue finances. The municipality extends a "moral obligation" to revenue-type bonds as a form of a guarantee. See Ralph C. Kimball, "States as Financial Intermediaries," *New England Economic Review*, Federal Reserve Bank of Boston, January/February 1976.

Table 1 Ratios of Debt and Capital Outlays

	Long-term debt issued to capital outlays, 1978	10-year average, 1968-77	Short-term debt to total debt issued, 1978	10-year average, 1968-77	Non-guaranteed debt to total debt, 1978	10-year average, 1968-77
Major U.S. cities	1.04	0.80	0.25	0.48	0.54	NA
Akron	0.12	0.18	0.79	0.81	0.19	0.13
Cincinnati	0.37	0.30	0.30	0.72	0.07	0.16
Cleveland	1.98	0.72	0.27	0.75	0.47	0.21
Columbus	0.83	1.18	0.68	0.81	0	0.07
Dayton	0.84	0.53	0.34	0.69	0.10	0.05
Toledo	0.33	0.33	0.74	0.89	0.50	0.50
Youngstown	1.19	0.26	0.46	0.92	0.20	0.16

SOURCE: U.S. Bureau of the Census, *City Government Finances in 1977-78* (and previous issues).

Short-term borrowing increased from roughly $5 billion annually from 1960-68 to $25 billion annually from 1970-75. One reason for this sharp increase has been the use of short-term debt to smooth out revenue flows in anticipation of tax payments or intergovernmental grants that are due but not yet received (tax anticipation notes). Second, many municipalities use short-term debt in the form of bond anticipation notes as a means of postponing bond offerings until long-term interest rates have improved. Some of the increase in short-term debt also stems from the sale of U.S. government-backed public housing and urban renewal notes.

Debt Position of Ohio's Major Cities

Use of both long- and short-term debt is appropriate as long as the volume outstanding is kept in some sensible balance with the overall ability of the issuing governmental unit to service the debt. Perhaps the most prominent abuse of debt is reliance on short-term debt to cover operating expenses and excessive borrowing in anticipation of tax collections (requiring frequent renewals and refunding). In short, liabilities often are incurred without making proper provision for their payment. The actual situation varies greatly among state and local governments, making definitive conclusions difficult, if not impossible, until abuses go uncorrected long enough to become critical.

The vulnerability of governmental units to unexpected events may be assessed by comparing ratios of debt with revenues and with other relevant dimensions of municipal debt management. In this article several of these ratios are compared for all cities in the nation with populations in excess of 300,000, a group that includes seven Ohio cities but excludes New York City.[5] Six debt ratios have been selected to highlight the change in the size and composition of debt for the municipalities. The ratios for any given year can be misleading because of the low level of aggregation and the lumpiness of both capital spending and debt issues at the municipal level. Generally speaking, the seven Ohio cities were further in debt than other major U.S. cities.

Composition of Debt

Major U.S. cities tended to fund a larger portion of their yearly capital expenditures out of new long-term borrowing than all municipalities. For example, proceeds from the sale of bonds and other long-term debt instruments by major U.S. cities contributed 80 percent of the funds needed for capital expenditures from 1968 to 1977, compared with roughly 60 percent of all municipalities. In this respect, the seven Ohio cities behaved more like smaller U.S. cities, relying less on new long-term borrowing than most major U.S. cities (see table 1). Only Cleveland and Columbus had ratios comparable with major U.S. cities over the ten-year period. By 1978, however, Cleveland's ratio was nearly double the ratio for major U.S. cities. The reliance on bond issues to fund capital outlays also rose substantially for Dayton and Youngstown to a level comparable with major U.S. cities in 1978. The remaining Ohio cities (Akron, Toledo, and Cincinnati) typically funded slightly more than one-third of their capital expenditures with new borrowing.

Low long-term debt-to-capital outlay ratios are generally a sign of financial strength, especially if capital outlays are funded from current operating budgets or sinking funds. Assuming that a city has access to credit markets, the use of current revenues or funds accumulated from past bond sales would suggest relatively healthy city finances. Avoidance of long-term debt can result in over-reliance on short-term debt to fund capital outlays—and greatly complicate a city's ability to manage the level of short-term debt. Among major U.S. cities, short-term debt averaged 10 percent of total debt outstanding and accounted for nearly one-half of the total debt issued from 1968-77. The seven Ohio cities exceeded both the average short-term debt outstanding and that issued for major U.S. cities over the ten-year period; with the exception of Toledo, they reduced those ratios in 1978. Nevertheless, the dependence of Ohio cities on short-term debt may be caused by factors other than the postponement of long-term borrowing until interest rates decline.

The composition of new long-term borrowing of Ohio's cities increasingly shifted to potentially higher-risk non-guaranteed bonds. Major U.S. cities utilized this source of funds heavily, as revenue bonds rose to an average of 54 percent of all long-term debt outstanding by 1978. Ohio's cities behaved similarly. Youngstown, Dayton, Cleveland, and Akron raised their 1978 ratio above their ten-year average, suggesting an upward trend. By 1978, Cleveland and Toledo were approaching the ratio of major U.S. cities, although Toledo's ratio was high over the ten-year period. Still, the lower-than-average ratios suggest that Ohio's larger cities may have greater future maneuverability in the financing of capital expenditures than other large cities in the nation. The lesser reliance on revenue bonds also could be an indication of difficulty in securing investor confidence in purchasing

5. Because of the overwhelming size of New York City's debts and its loan financial problems, the city was eliminated from the composite of major U.S. cities. The sample comprised all other cities with populations of over 300,000, including seven Ohio cities—Akron, Cincinnati, Cleveland, Columbus, Dayton, Toledo, and Youngstown. The composition has changed over time: the total number of cities was 42 between 1967 and 1969, 47 between 1970 and 1976, and 46 between 1977 and 1978.