

GFOA BUDGETING SERIES

Volume 1

# **Benchmarking and Measuring Debt Capacity**

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GOVERNMENT FINANCE OFFICERS ASSOCIATION

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# Foreword

State and local governments issue debt to finance a number of important activities from schools to infrastructure. When utilized appropriately, the issuance of debt can lead to a more equitable tax burden across generations of citizens and taxpayers. Although most governments issue debt for service provision and infrastructure maintenance and support, a few governments use debt to cover current operating deficits. Like the personal credit card of an individual consumer, debt financing can be used to improve social welfare or to destabilize it. The keys to sound debt management relate to establishing how much debt a government can afford and to disciplining the fiscal process by utilizing a debt policy.

***Benchmarking and Measuring Debt Capacity*** is the first volume of the series related to the recommended budget practices of the National Advisory Council on State and Local Budgeting (NACSLB). This book provides a useful analytic approach to implementing NACSLB recommended budget practices on measuring debt capacity and implementing debt policies. Using a case study of the City of Pittsburgh, Pennsylvania, the authors illustrate how analytical techniques utilizing simple spreadsheets and data collection can produce important information for the design of fiscal policy.

The Government Finance Officers Association (GFOA) would like to thank the authors for writing this publication. Rowan Miranda, GFOA Director of Research, formerly served as Budget Director for the

City of Pittsburgh. Ronald D. Picur, Professor of Accounting at the University of Illinois at Chicago, was formerly the Comptroller and Chief Fiscal Officer for the City of Chicago. Picur is also a Partner with Pandolfi, Topolski, Weiss & Co., Ltd. GFOA also thanks Mark Roukous, Deputy Budget Director, Allegheny County, Pennsylvania; David Miller, Associate Dean, Graduate School of Public and International Affairs, University of Pittsburgh; and Myles Harrington, President, MuniAuction for reviewing this publication and offering their comments and insights into debt issuance and capital budget planning.

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We hope that governments can utilize and build on the techniques presented here to implement NACSLB recommended practices related to debt issuance and capital planning.

Jeffrey L. Esser  
Executive Director  
Government Finance Officers Association



# Introduction

***“The power to tax is the power to destroy.”*** Justice John Marshall would have been as leery about the power to issue bonds had he suspected that, nearly 200 years later, governments could use debt for circumventing short-run pressures to raise taxes or to cut spending. Today the issuance of debt has expanded from its traditional purpose of financing infrastructure to underwriting private-sector initiatives ranging from subsidizing economic development to constructing new sports facilities. This book outlines an approach by which governments can evaluate and redesign their debt issuance policies.

Debt policy can be a powerful governmental tool but it must be employed judiciously. Effective debt management is critical to the overall financial management effort of a local government. Many jurisdictions have adopted debt policies, but once established, few regularly evaluate their effectiveness or currency. In fact, governments seldom revise debt policies to take into account changes in the economic environment or financing techniques. As former finance officers, the authors have found that a successful debt management program uses benchmarking techniques to develop new policies or revise existing policies to guide and discipline debt issuance.

## THE CONTEXT OF CAPITAL BUDGETING

Before proceeding directly into benchmarking and measurement issues, it is important to understand the context of capital budgeting. The

need for periodic benchmarking and revision of debt policy stems directly from the characteristics of capital budgeting. Capital spending pressures are simply harder to control than those of the operating budget. This difference increases the temptation to use debt.

## **Political Imperatives**

Increasingly, state and local governments are funding a broad range of services through the capital budget and debt finance. A major category of the “new capital budgeting” is the temptation politicians face to “jump start” economic growth by stimulating private projects with public investment. Moreover, the alliances between politicians and pro-growth businesses also put pressure on the fiscal policy process to fund new projects. Finally, especially in election years or to buttress “no new taxes” promises, politicians may fund current expenditures through debt financing.

## **Difficulty Establishing Budget Ceilings**

Municipal operating budgets are primarily revenue driven. While aggregate operating budget authorizations are restricted by current revenues, aggregate capital budget authorizations are limited by both the availability of revenues (e.g., programs financed by federal grants) and bond proceeds. This difference in funding sources influences the behavior of internal and external participants in the two budgeting systems. Organizational theorists describe heightened organizational conflict when resources are limited (i.e., operating budgets as described here) and less conflict when budget resources are stable or increasing (i.e., typical capital budget situations).

The ability to meet debt service requirements acts as the overall ceiling on capital program expansion. Yet there is considerably less spending discipline in debt-financed capital programs because far more spending power is created up-front through debt financing than a similar allocation of revenues for operating budget programs. Since even the most fiscally stressed governments are seldom excluded from the bond market altogether, the behavior of actors (e.g., economic development, engineering, and planning staff) in the capital budgeting system resembles a “blank check” mentality — i.e., if resources to fund capital programs are scarce, borrow more.

## Long-term Projects and Impacts

Operating expenditures generally produce benefits in the current period only and are thus funded by current operating revenues. By contrast, capital expenditures produce long-term benefits and are consequently funded by debt issuance. Many capital projects also spill over into future years; funding a capital project in a given year in effect commits future resources. The annularity characteristic of operating budgets makes it easier to track and control expenditures; operating budget programs “begin” when new appropriations are used at the start of the fiscal year and “lapse” at the end of the fiscal year with the introduction of a new budget. The multi-period nature of capital programs makes it more difficult to define program start and end points and to lapse project authorizations.

## Incrementalism is Not the Norm

Many financial managers use incrementalism as the main approach for establishing operating budget priorities. Incrementalism is a budgetary pattern where resources dedicated to programs increase or decrease a small amount each year (e.g., 2 percent per year growth in the public works budget). Incrementalism is a feasible strategy, at least in the short-run, when operating budget programs are routine and non-discretionary (e.g., police, fire, and sanitation). Although evaluation of priorities in operating budgets is important, priorities seldom significantly change from year to year because of the non-discretionary nature of many state and local services.

By contrast, capital budgets do not follow an incrementalist logic—some programs are repetitive, but many are not. Economic development initiatives, in particular, can have major impacts on capital budgets. Departures from budgetary incrementalism for capital programs heighten the need for a comprehensive evaluation of budget priorities. Capital budget systems seldom reevaluate priorities annually; instead, it is likely that new priorities will be added on top of programs already in place.

## Fragmentation of Financial Controls

Financial controls for operating budgets are more centralized; capital budget controls are more fragmented. Take project management: once the budget office authorizes a project to proceed, the engineering or

public works department typically takes over the financial control process. Many students of capital budgeting have argued that authority over capital budgeting decisions should be strategically placed and centralized. Yet centralization is difficult to achieve because, for many large-scale projects, budget analysts lack the expertise to determine why funding exceeds original estimates or to question forecasts of project cash needs. The decision to continue capital project funding often becomes a technical exercise because of the engineering and construction aspects of a project.

Expenditure controls for the operating budget are more successful at restricting spending than in capital budgets. Once funding levels are established for specific operating budget line-items, transfers of authorization power may occur from one account to another, but seldom is the aggregate budgetary appropriation increased. Increasing aggregate budgetary appropriation in the middle of the year is a problem financial managers seek to avoid because supplemental revenue sources would have to be identified. For capital project line-items, intermittent spending pressures weaken financial controls. If the city council determines that new fire stations are a priority in the middle of the year, a supplemental capital budget appropriation is all that is needed. Financial control is difficult to establish when actors can spend now and pay later.

The context and characteristics of capital budgeting itself place pressure on the fiscal policy process to issue debt. While funding capital needs, increases in debt lead to higher principal and interest costs and eventually can “crowd out” other services funded by the operating budget. Benchmarking and measuring debt capacity, and then appropriately changing debt policy, is therefore critical to effective debt management.

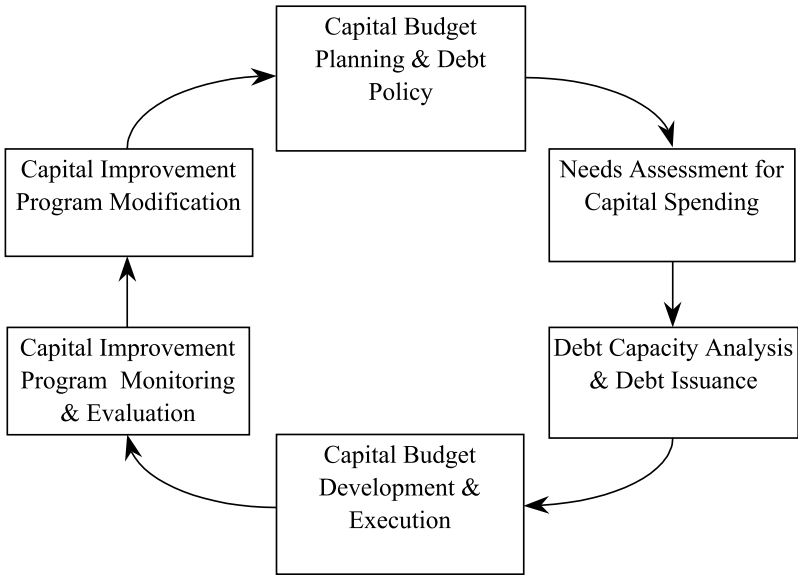
## **GFOA’S RECOMMENDED PRACTICES ON DEBT**

This book also provides analytical tools and techniques to implement two of the Government Finance Officers Association’s (GFOA) recommended practices on debt management: (1) analyzing debt capacity and establishing associated debt limits, and (2) developing a debt policy.

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**EXHIBIT 1-1 ■ Debt Capacity Analysis and Capital Budget Planning**


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## Analyzing Debt Capacity

The GFOA recommends that government “*issuers undertake an analysis of their debt capacity prior to issuing bonds.*” The rationale for this recommendation is that a “*comprehensive and routine analysis of debt capacity provides assurance that the amount of debt issued by a government is affordable and cost-effective.*” In so doing, government officials are able to keep debt at affordable levels. Further, assessing debt on an ongoing basis is essential for effective debt management and for ensuring that debt-planning activities are integrated with the capital improvement process. Debt capacity analysis, in short, ensures that “*an appropriate balance is struck between a jurisdiction’s capital needs and its ability to pay for them.*”

In analyzing its debt capacity, the GFOA recommends that government officials address the following:

- Debt service obligation (e.g., existing debt service requirements and debt service as a percentage of expenditures);

- Evaluation of trends relating to the government's performance (e.g., revenues and expenditures, reliability of revenues expected to pay for debt service, and unreserved fund balance);
- Measures of debt burden on the community (e.g., debt per capita, debt as a percentage of personal income, and overlapping debt);
- Measures of the tax and revenue base (e.g., projections of key economic variables, population trends, and utilization of services);
- Statutory or constitutional limitations affecting the amount that can be issued (e.g., legally authorized debt limits and tax or expenditure ceilings); and,
- Market factors affecting tax-exempt interest costs (e.g., interest rates, market receptivity, and credit rating).

## **Developing a Debt Policy**

The GFOA recommends that all governments “*intending to issue debt develop a comprehensive debt policy.*” The rationale for a debt policy is that it enhances the quality of decisions, rationalizes the decision-making process, identifies objectives for staff to implement, demonstrates a commitment to long-term financial planning, and is viewed favorably by rating agencies. In designing a debt policy, the document should “*recognize a long-term commitment to full and timely repayment of all debt as an intrinsic requirement for entry into the capital markets.*” Additionally, the debt policy should establish parameters for issuing debt and setting an appropriate balance between debt issuance limits and providing management responsibility to respond to unforeseen circumstances.

According to the GFOA, the debt policy should address the following:

- Authorized methods of sale (e.g., competitive, negotiated, or private placement);
- Compliance with federal tax law provisions (e.g., arbitrage requirements);
- Credit objectives;
- Integration of capital planning and debt financing activities;
- Investment of bond proceeds;
- Legal debt limits or limitations established by policy;

- Policy of refunding debt;
- Structural features (e.g., maturity of the debt, use of zero coupon bonds, and redemption provisions);
- The purpose for which debt may be issued;
- Types of debt permitted to be issued (e.g., short-term debt, general obligation and revenue debt, and leased back debt); and,
- Use of moral obligation pledges.

## NACSLB'S RECOMMENDED BUDGET PRACTICES

This book is also useful for implementing some of the recently issued National Advisory Council on State and Local Budgeting (NACSLB) recommended practices related to debt management and capital planning:

- **Recommended Practice (RP) 4.3—Develop Policy on Debt Issuance and Management:** A government should adopt policies to guide the issuance and management of debt;
- **RP 4.3a—Develop Policy on Debt Level and Capacity:** A government should adopt a policy on the maximum amount of debt and debt service that should be outstanding at any one time;
- **RP 5.2—Prepare Policies and Plans for Capital Asset Acquisition, Maintenance, Replacement, and Retirement:** A government should adopt policies for capital asset acquisition, maintenance, replacement, and retirement;
- **RP 6.2—Develop Options for Meeting Capital Needs and Evaluate Acquisition Alternatives:** A government should develop specific capital projects options for addressing capital needs that are consistent with financial, programmatic, and capital policies and should evaluate alternatives for acquiring the use of capital assets;
- **RP 9.6—Develop a Capital Improvement Plan:** A government should develop a capital improvement plan that identifies its priorities and time frame for undertaking capital projects and provides a financial plan for those projects; and,
- **RP 11.3—Monitor, Measure, and Evaluate Financial Condition:** A government should monitor and evaluate its financial condition.

Chapter 6 provides a brief discussion of how the tools and techniques in this book can promote the implementation of NACSLB recommended practices 4.3, 4.3a, and 11.3.

## COMPARATIVE CASE STUDY

The comparative analysis used in this study reflects the standard analytical approach of *benchmarking*. This approach is fundamental to analyses conducted and to ratings assigned by the bond rating agencies. However, with the exception of a handful of measures published by one agency (*Moody's Medians*), there is little comparative data publicly available. What data is available (i.e., tax-supported debt) differs between rating agencies because of alternate definitions employed in collecting and analyzing such indicators. Thus, the findings of this study permit a much more extensive set of comparisons than are otherwise possible.

To illustrate the benchmarking, measurement, and analysis process in undertaking a debt capacity study, a case study of the City of Pittsburgh is presented. Several years ago the City of Pittsburgh's Office of Management and Budget undertook a study to evaluate the city's debt management practices. Motivation for the study resulted from severe fiscal strain facing Pittsburgh as well as perceptions that the city's indebtedness posed additional problems. Policy makers in the capital budget process, in particular, had difficulty assessing how much additional debt Pittsburgh could support. Moreover, an ambitious economic development agenda—one that planned to utilize debt financing—also pressured the city to examine its debt position.

The study's principal objective was to provide a comprehensive examination of the city's general obligation (G.O.) long-term debt. The study also would compare Pittsburgh's debt structure with that of similar jurisdictions. Study results were to be used to revise the city's existing debt policy. *Although a case study approach is utilized, the findings and methodology presented in this book, especially as they relate to benchmarking, modeling of debt affordability and the debt policy checklist, are applicable to governments across the United States.*



## ORGANIZATION OF THE BOOK

**Chapter 2** describes in detail the debt indicators, data collection, and comparison group design used in the study.

**Chapter 3** describes how to compare debt burden across jurisdictions. In particular, an analysis compares the debt indicator measures calculated for the case study city against its peer group.

**Chapter 4** addresses the question of “*How much debt can a government afford in the future?*” A simulation model is developed and utilized to evaluate the impact of alternate scenarios for future G.O. bond issuance using an analytical method the authors developed and termed the *break-even year* approach. By attaining the break-even level, the debt burden of a particular city can be used as one measure of “affordability.”

**Chapter 5** contains an analysis of common factors found in debt policies. The section describes how conclusions based on debt capacity analyses can be used to develop or revise debt policies.

**Chapter 6** concludes by discussing how the tools and techniques in this book can be used to implement NACSLB’s recommended budget practices that relate to debt management and capital budgeting.



# A Framework for Debt Capacity Analysis

This chapter presents the methodological framework used for measuring and analyzing debt capacity. It also addresses the purpose for conducting a debt capacity analysis. Data sources and collection issues and strategies also are discussed in this chapter. The chapter concludes with an overview on constructing debt indicators.

## **DEBT CAPACITY ANALYSIS FRAMEWORK**

There are eight major steps to comprehensively benchmarking and measuring debt capacity:

- (1) Define study objectives;
- (2) Collect data;
- (3) Construct indicators;
- (4) Define comparison groups for benchmarking;
- (5) Compare key indicators against peer group;
- (6) Establish debt issuance scenarios;
- (7) Utilize the “break-even year” methodology; and
- (8) Develop or revise formal debt policy.

Each step is discussed in this and the following chapters. Exhibit 2-1 illustrates this framework.

## **Objectives of the Study**

The first step in analyzing a government's debt affordability is to define the objectives of the study. In so doing, the following questions need to be addressed:

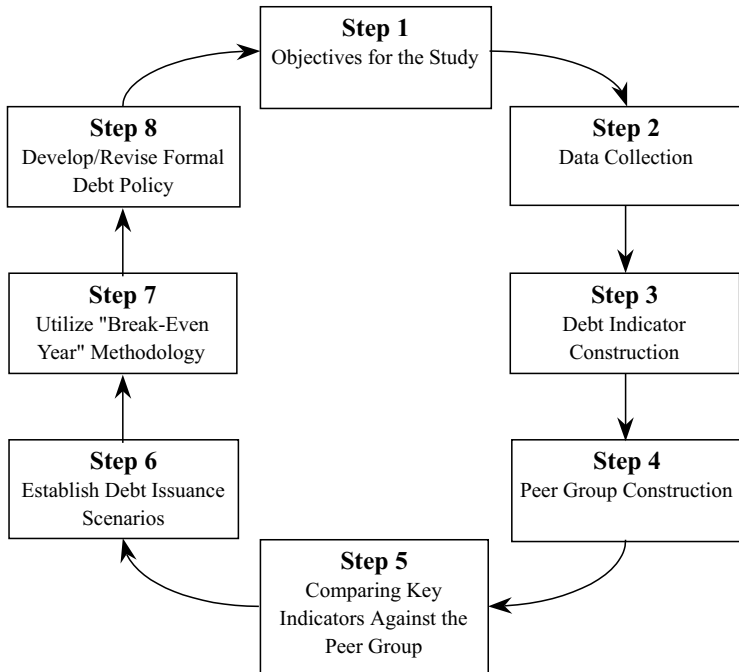
- How will findings from the study be used?
- How will the debt affordability study impact the capital budgeting process?
- Who is the target audience of the study (i.e., high government officials, media, rating agencies, and/or taxpayers)?
- How will rating agencies and investors use the study?
- Should legislative and executive office representatives be involved?
- What policies will be acted on once the conclusions of the study are released?
- What debt and financial management policies will it influence?

Although these issues seem simple, they need to be considered before proceeding directly into the data collection phase of the study.

## **Data Collection**

Once the objective and audience are determined, the second step is to collect financial data and construct indicators of debt burden. Data collection is the process of gathering, entering, and validating information that can be used in the study. This step is often the most time consuming, but also the most important. Part of the strategy involves deciding on the instrument that should be used for data collection (i. e., mail survey, telephone survey, or financial statement analysis).

Because a standard database of information on debt indicators across jurisdictions is not readily available, original data collection efforts are often necessary. Although rating agencies such as Moody's collect their own information, it is ordinarily reported in aggregate form (e.g., one figure for cities with a population range of 300,000 to 550,000). In the absence of better alternatives, comprehensive annual financial re-

**EXHIBIT 2-1 ■ Debt Capacity Analysis Framework**

ports (CAFRs) provide the best available source of reasonably comparable debt information.

In this study, a standard form was developed listing all financial variables required for debt indicator construction. Each CAFR was then reviewed. The data was manually entered onto the forms and into a database and checked several times throughout the process. Population and personal income were extracted from the *1992 City/County Data Book* and added to each city record.

### *Using CAFRs for Debt Analysis*

Widespread differences exist in financial disclosure practices of debt information within CAFRs. Yet CAFRs provide the most comprehensive picture of long-term debt obligations. The following section discusses some of the problems encountered in attempting to construct debt measures from CAFRs.

**Disadvantages.** The disadvantages in the use of CAFRs have implications for financial reporting and presentation. One serious impedi-

ment found in CAFRs was the commingling of refundings with scheduled debt service.

In the data for this study, although most cities clearly separated the amounts associated with refundings, many did not. Debt backed by the “full faith and credit” of a city was sometimes unavailable in CAFRs; in those instances, several sections had to be examined to identify the true amount. Similarly, debt service schedules were often combined, making it difficult to separate enterprise fund debt service from that of the general government. At times it was also difficult to ascertain how much general obligation debt was accounted for in enterprise funds or component units.

Another difficult data collection issue was determining the outstanding pension liability. Accounting standards provide a general government liability in the general long-term debt account group (GLTDAG), but if the actuarial unfunded pension obligations were used, there would be a lack of consistency. For municipalities that participate in multi-employer pension plans, usually in combination with state plans, the plans often do not distinguish the city’s portion of the liability. This practice is questionable and for purposes of this study, it was assumed that those instances do not affect the pension accrual in the GLTDAG.

**Advantages.** Aside from the problem areas discussed above, CAFRs still enable analysts to extract more comprehensive numbers than many other sources. Debt service payments can usually be distinguished in terms of general obligation or “G.O.” and “other.” Property tax figures are not limited just to the general fund, but are available across funds. Similarly, long-term debt is not limited to just the GLTDAG. Although most cities account for debt activity in the GLTDAG, some used an internal service fund (i.e., fleet management or data processing).

As complicated as CAFRs are to interpret, they do offer fairly complete financial information. Careful analysis can provide some comparable and useful information. Once the data has been extracted from the CAFRs, indicator construction can begin.

## **Indicator Construction**

Indicator construction is an important element of the overall methodology of this book. For example, indicators of “debt burden” must be

valid and reliable. *Validity* concerns whether an indicator is measuring what it is supposed to measure. For instance, “debt per capita” is not a valid measure of the impact of debt on the operating budget. Instead, “debt service as a percentage of the operating budget” would be a better measure. *Reliability* concerns quality of the data (i.e., would repeated attempts at gathering data lead to the same indicators?). Thus, data from audited financial statements would be more reliable than survey data from department heads about municipal indebtedness.

### *Measures of Debt*

This study relied on multiple measures of debt including the following:

**Accrued Pension Liability.** This amount is disclosed in a government’s GLTDAG; as such, it represents the portion of pension obligation expected to be paid in the future from general revenues. The figure is an *accounting* estimate and is often much lower than *actuarial* estimates of unfunded pension obligations. However, the accounting accrual is preferable because it is comparable across cities and is limited to the general government portion.

**Debt Margin.** Most municipalities are limited by state legislation regarding how much debt may be issued. Although debt limits and applicable debt are not comparable across states, debt margins are nonetheless informative as a measure of “slack” remaining in debt issuance.

**Direct Debt.** Direct debt is a comprehensive measure of a municipality’s long-term obligations directly supported and backed by general revenues and taxes. Enterprise fund and component unit revenue bonds are properly excluded since a distinct revenue stream is usually pledged for repayment. Similar to rating agency measures, direct debt includes non-G.O. debt instruments such as tax increment finance (TIF) bonds and special assessment bonds, where some other type of government commitment is required. It also reflects capital leases and certificates of participation (COPs). However, unlike rating agency measures, this study considers other types of obligations to be direct debt, such as accrued pension liability and landfill closure costs. Using CAFRs enables a more realistic measure of liabilities not limited to indebtedness arising from debt issuance. Long-term debt implies that the general government is *obligated* in some manner to make payments in the future. Exclusion of such liabilities is misleading.

**General Obligation (G.O.) Debt.** This measure is the broadest and most encompassing measure of bonded debt for which taxpayers are responsible through the “full faith and credit” guarantee associated with the general obligation debt of the municipality. General taxes and the ability to raise taxes secure the debt rather than a distinct revenue stream. The debt instruments include long-term bonds, warrants, and certificates of obligation. Self-supporting G.O. debt, usually found in enterprise funds or component units, is included because theoretically, taxing power and general revenues have been pledged to secure repayment.

**Bonded Debt.** This measure reflects all bonded debt, which includes G.O. debt, enterprise fund revenue bonds, and component unit revenue bonds. This measure reflects all debt that must be serviced on a regular and defined basis (i.e., on the exact date that interest and/or principal payments are due). Inclusion of enterprise and component unit bonded debt reflects moral obligations as well as general obligations of a municipality. Some argue that bonded debt is the most important basis for measuring debt affordability since the failure to pay debt service on any type of debt would effectively prohibit a government from entering capital markets to issue new debt.

**Total Debt Service.** This is the annual debt service paid by the government excluding enterprise funds. Regardless of the type of debt, this number represents the cost of debt paid from general revenues and taxes.

**General Obligation (G.O.) Debt Service.** This measure represents the annual debt service paid for G.O. debt instruments. Enterprise fund and component unit G.O. debt service is excluded since it is paid from operating fees rather than from general revenues and taxes; the latter has been pledged but not used for repayment if still accounted for in the enterprise fund. General revenues and taxes are assumed to be the sources of repayment for G.O. debt service in this study.

**Bonded Debt Service.** This measure includes all G.O. debt service payments plus enterprise and component unit revenue bond debt service. It is the annual cost of a municipality’s total bonded debt.

Traditional debt measures focus on tax-supported debt. Unfortunately, there is no agreed upon method on how to calculate the figure. Moody’s and Standard & Poor’s often have significant variations in the calculation of tax-supported debt. Differences may be due to the treat-



ment of self-supporting or partially self-supporting debt instruments. It is not uncommon for a city to pledge a revenue stream *primarily* and to pledge their full faith and credit *secondarily* (i.e., “double-barreled” bonds). Rather than relying on judgment calls, and for the purposes of this study, it was more consistent and logical to group *any* pledge of full faith and credit as pure “G.O.” debt.

### *Debt Burden Indicators*

The comparisons that are made in this study reflect two primary measures of debt burden: *debt outstanding* and *debt service*. Rather than simply using absolute amounts of each—which would not reflect such differences between cities as the economic base and total population that must service the debt—both measures were stated through a series of relative terms. The debt burden indicators and brief descriptions of each follow.

**Debt Outstanding.** Debt outstanding measures the total dollar amount of principal that must be paid. This debt burden measure is stated in relative terms using three concepts of the tax base: property value, population, and personal income.

***Debt as a percentage of the fair market value (FMV) of taxable property.*** The fair market value of all taxable property within the jurisdiction is an important measure of a municipality’s wealth available to support present and future revenue/taxing capacity in order to meet obligations. This tax-base concept reflects the predominant use by municipalities of property taxes as the earmarked source of debt service for G.O. bonded debt.

***Debt per capita.*** This tax-base concept reflects the philosophy that all taxes, and therefore the total principal on outstanding debt, are paid by the citizenry.

***Debt per capita as a percentage of personal income per capita.*** This concept, a direct extension of the previous population measure, incorporates an *ability to pay* component into the assessment of debt burden.

**Debt Service.** Debt service (i.e., principal and interest payments) is the second measure of debt burden. This measure represents an allocation of current resources that are otherwise unavailable for other expenditure purposes. This measure is stated relative to public- and private-sector resources available.

***Debt service as a percentage of property tax revenue.*** Property tax revenue is particularly useful for evaluating cities that rely heavily on property taxes and includes all types of property taxes the municipality levies. This resource measure reflects the traditional source of debt service payments for G.O. bonds.

***Debt service per capita.*** This relative measure reflects the annual per capita burden on the citizens of the city, under the presumption that all taxes and therefore all debt are paid by the citizenry.

***Debt service per capita as a percentage of personal income per capita.*** This concept, which is a direct extension of the previous population measure, incorporates an *ability to pay* taxes component into the evaluation of debt service burden.

***Debt service as a percentage of general fund revenues.*** This concept reflects a relatively narrow measure of resources that are available for day-to-day operations of the municipality; this measure would be appropriate when debt service is essentially paid for with general fund revenues.

***Debt service as a percentage of general fund budgeted expenditures.*** This concept is an extension of the last and reflects that total resources appropriated by a municipality can exceed revenues. For example, the fund balance can be “spent-down,” resources can be transferred in from another fund, or the budget can be balanced through other borrowings. This measure also identifies relative spending priorities of the municipality, such as how much is being spent on debt service versus current services like public safety.

***Debt service as a percentage of operating expenditures.*** This concept is the most encompassing measure of day-to-day spending since it includes expenditures from the general fund, special revenue funds, and debt service funds. The measure eliminates budgetary and accounting idiosyncrasies associated with practices where individual governments budget and record debt service. Arguably, this is the broadest concept of spending for operating purposes.

## **Comparison Groups**

Using the debt burden indicators constructed above, the fourth step is to define a comparison group for benchmarking. Comparison groups include jurisdictions that share particular characteristics. A comparison group may be established simply on the basis of population or geo-

graphic region. Alternatively, it may be useful to establish comparison groups on the basis of similarity of experience. Careful thought in the design of comparison groups is important if the conclusions of the study are to be generalized.

For the case study, a sample of cities was developed based upon membership in the GFOA. Membership information was provided by the GFOA for all municipalities with a population of 25,000 or more. A resulting sample of 930 municipalities was identified.

The sample of municipalities was further qualified to those having comparable characteristics to the City of Pittsburgh, such as populations in excess of 100,000 and significant general fund revenues. CAFRs were requested from the sample. A few cities and city-county entities were considered too large for a fair comparison. Ultimately, 105 cities (the “full sample” group) were identified for the comparative analysis. Fifteen cities (the “peer group”) were selected for a direct benchmark comparison to Pittsburgh based on characteristics such as city age, geographic region, and population. That group included Boston, Buffalo, Cincinnati, Cleveland, Columbus, Erie, Flint, Hartford, Milwaukee, Minneapolis, Richmond, Rochester, St. Louis, St. Paul, and Toledo. Similar criteria could be used to construct a peer group for any municipality.

## SUMMARY

This study’s CAFR analysis identified a trend in cities moving away from G.O. debt to a proliferation of alternative debt instruments. Rating agencies have recognized this trend and are using more complex debt measures. However, they may be too quick to not include self-supporting G.O. debt in their assessments of debt burden. In practice, general revenues may not *pay* the debt service initially, but in theory they very well *could*, if circumstances warrant it.

This study considers all debt instruments backed by the full faith and credit of a city to be “pure” G.O. debt. Reality dictates, however, that some municipalities rely more heavily on this type of financing than others. The more burdened a city is with G.O. debt, the less flexibility it has to keep taxes low. State laws can significantly affect a municipality’s capital structure. Restrictive state laws and voter-mandated statutes have led to “innovative” debt financing solutions that may or may not be in the best interest of taxpayers. The effect of this recent phe-

nomenon is yet to be determined, but among the cities with notable exceptions to the traditional G.O. financing forms are those in California and Florida. Regional trends in the use of particular debt instruments lend credence to the peer group comparisons used in this study.

# Benchmarking Techniques for Comparing Debt Burden

This chapter explains the method for conducting a comparative analysis between a single municipality and its peer group. The purpose of this analysis is to provide an objective and empirical set of comparative data that highlights the extent of debt burden being serviced by the citizens of a municipality and its tax base. Comparisons should be made to the direct peer group created for the municipality being studied. The comparisons should be based upon debt indicators calculated utilizing the financial and demographic data collected per the methodology described in Chapter 2.

## **FINDINGS**

The case study was originally conducted for the City of Pittsburgh. To highlight the methodology used, the results of Pittsburgh's benchmarking will be presented here. Pittsburgh serves only as an example and the methodology can easily be applied to any city or county. The data used for this study was from 1994.

Exhibit 3-1, "Comparative Debt Burdens," presents the actual values for Pittsburgh's peer group sample of each burden indicator for the

## EXHIBIT 1 ■ Comparative Debt Burdens

	PEER GROUP SAMPLE			PITTSBURGH
	AVERAGE	PGH RANK	PGH %	
<b>I. DIRECT DEBT</b>				
<i>VARIABLE</i>				
Direct Debt	450,771,907	13	201%	905,508,714
<i>INDICATORS</i>				
Direct debt/ taxable property value	0.038	16	256%	0.098
Direct debt per capita	1,275	14	192%	2,448
Direct debt per capita/ income per capita	0.102	15	191%	0.195
	<b>Median</b>	<b>15</b>	<b>192%</b>	
<i>VARIABLE</i>				
Debt service	43,015,870	11	139%	59,806,734
<i>INDICATORS</i>				
Debt service/ property tax revenue	0.413	8	123%	0.51
Debt service per capita	118	11	137%	162
Debt service/General Fund (GF) revenue	0.173	11	125%	0.215
Debt service/GF budgeted expenditures	0.169	11	100%	0.168
Debt service/operating expenditures	0.107	13	153%	0.164
Debt service per capita/income per capita	0.010	12	134%	0.013
	<b>Median</b>	<b>11</b>	<b>131%</b>	
<b>II. GENERAL OBLIGATION DEBT</b>				
<i>VARIABLE</i>				
General Obligation(GO) debt outstanding	323,054,771	13	164%	531,100,000
<i>INDICATORS</i>				
GO debt/ taxable property value	0.028	14	209%	0.058
GO debt per capita	935	13	154%	1,436
GO debt per capita/income per capita	0.074	13	154%	0.114
	<b>Median</b>	<b>13</b>	<b>154%</b>	
<i>VARIABLE</i>				
GO debt service	31,076,477	12	156%	\$48,495,544
<i>INDICATORS</i>				
GO debt service /property tax revenue	0.335	9	123%	0.413
GO debt per capita	82	12	161%	131
GO debt service/GF revenue	0.105	12	167%	0.174
GO debt service /GF budgeted expenditures	0.105	9	130%	0.137
GO debt service/operating expenditures	0.072	14	186%	0.133
GO debt service per capita/ income per capita	0.007	13	153%	0.010
	<b>Median</b>	<b>12</b>	<b>157%</b>	
<b>III. BONDED DEBT</b>				
<i>VARIABLE</i>				
Bonded debt outstanding	496,470,635	13	180%	896,089,187
<i>INDICATORS</i>				
Bonded debt/property tax value	0.043	16	226%	0.097
Bonded debt per capita	1,360	13	178%	2,423
Bonded debt per capita/income per capita	0.113	14	171%	0.193
	<b>Median</b>	<b>14</b>	<b>178%</b>	
<i>VARIABLE</i>				
Bonded debt service	44,618,004	9	181%	80,812,954
<i>INDICATORS</i>				
Bonded debt service per capita	125	11	175%	218
Bonded debt service/operating expenditure	0.112	11	199%	0.222
Bonded debt service per capita/income per capita	0.010	11	169%	0.017
	<b>Median</b>	<b>11</b>	<b>175%</b>	
<b>IV. MISCELLANEOUS DEBT STATISTICS</b>				
<i>INDICATOR</i>				
Percentage of debt margin remaining	0.72	15	78%	0.56
<i>VARIABLE</i>				
Overlapping debt	124,256,269	15	282%	350,641,000
<i>INDICATOR</i>				
Overlapping debt/population	366	15	259%	948

nate measures of debt: direct debt, general obligation (G.O.) debt, and bonded debt. A clear and unambiguous conclusion emerges: *debt burden, as represented by either principal outstanding or debt service payments, is uniformly higher for Pittsburgh when compared to the averages for the peer group.*

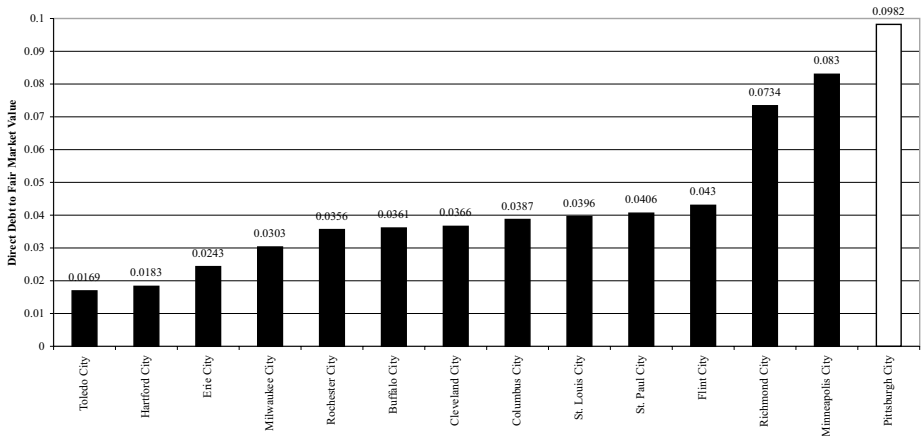
It should be noted that the above conclusion only speaks to average values for each indicator. There are individual municipalities in the peer group that have higher values for each indicator.

To better understand the general findings, two additional statistics of relative debt burden—relative percentage and rank order—were calculated and incorporated into Exhibit 3-1. Each is described and analyzed below. (*Note: Charts 3-1 to 3-4 are bar-chart comparisons of Pittsburgh to other peer group cities for selected indicators.*)

### Relative Percentages

The first statistic, relative percentages, restates the basic findings by dividing the value for each Pittsburgh indicator by the average value of the peer group. For example, the direct debt per capita values were \$1,275 and \$2,448 for the peer group and Pittsburgh, respectively (see Exhibit 3-2). Thus, Pittsburgh’s relative percentage is 192 percent ( $\$2,448/\$1,275$ ) of the peer group’s average value for that indicator. A median value for each group of debt burden measures was also calculated and included in Exhibit 3-1.

**CHART 3-1 ■ Direct Debt as a Percentage of Fair Market Value**  
Peer Group Benchmarking Analysis

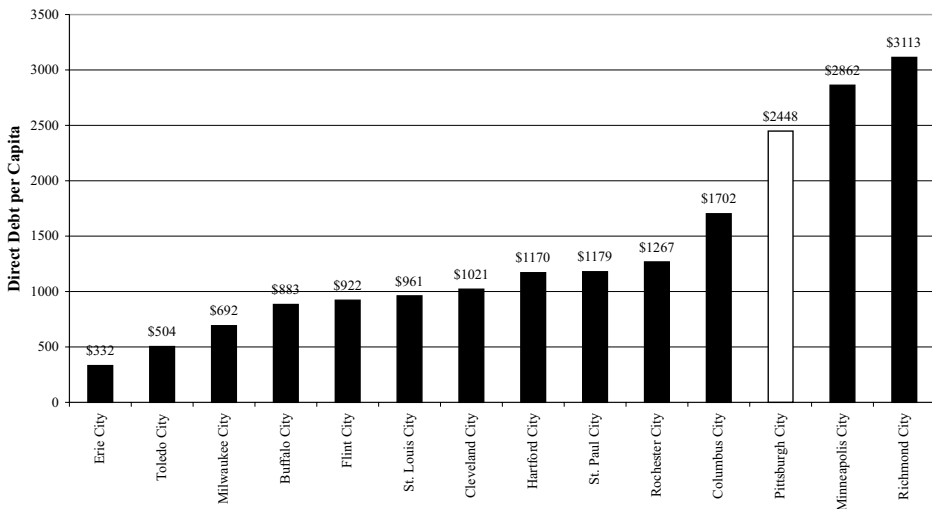


**EXHIBIT 3-2 ■ Debt Indicators for Peer Group Cities**

City	Direct Debt as a Percentage of Fair Market Value	Direct Debt Per Capita for Peer Group	General Obligation Debt Outstanding as a Percentage of Fair Market Value	General Obligation Debt Per Capita
Buffalo City	3.6%	\$883	3.1%	\$751
Cleveland City	3.7%	\$1,021	2.1%	\$598
Columbus City	3.9%	\$1,702	3.6%	\$1,577
Erie City	2.4%	\$332	2.1%	\$290
Flint City	4.3%	\$922	3.5%	\$757
Hartford City	1.8%	\$1,170	1.4%	\$862
Milwaukee City	3.0%	\$692	2.6%	\$602
Minneapolis City	8.3%	\$2,862	6.1%	\$2,103
Pittsburgh City	9.8%	\$2,448	5.8%	\$1,436
Richmond City	7.3%	\$3,113	6.9%	\$2,911
Rochester City	3.6%	\$1,267	3.0%	\$1,050
St. Louis City	4.0%	\$961	0.2%	\$43
St. Paul City	4.1%	\$1,179	2.0%	\$586
Toledo City	1.7%	\$504	1.0%	\$302

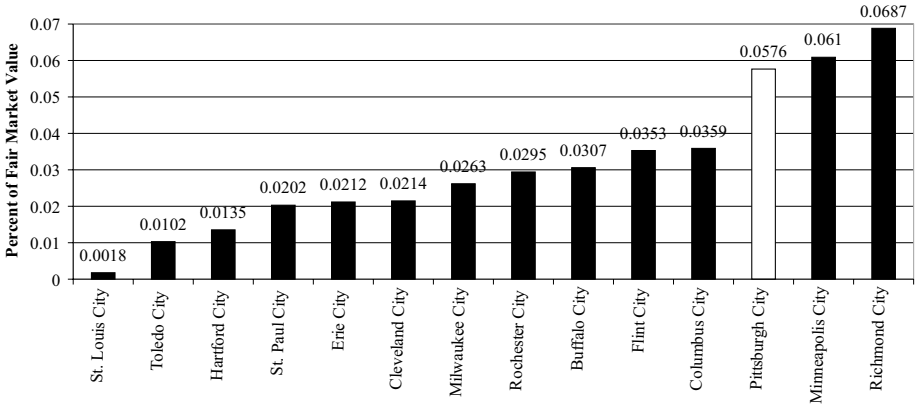
Given the large number of individual debt burden measures and indicators found in Exhibit 3-1, a summarized version of that table is presented in Exhibit 3-3, “Debt Burden: Relative Percentages—1994.” Exhibit 3-3 includes the range of relative percentages for each group as well as the median value for that group. For example, the debt outstanding

**CHART 3-2 ■ Direct Debt Per Capita**  
*Peer Group Benchmarking Analysis*



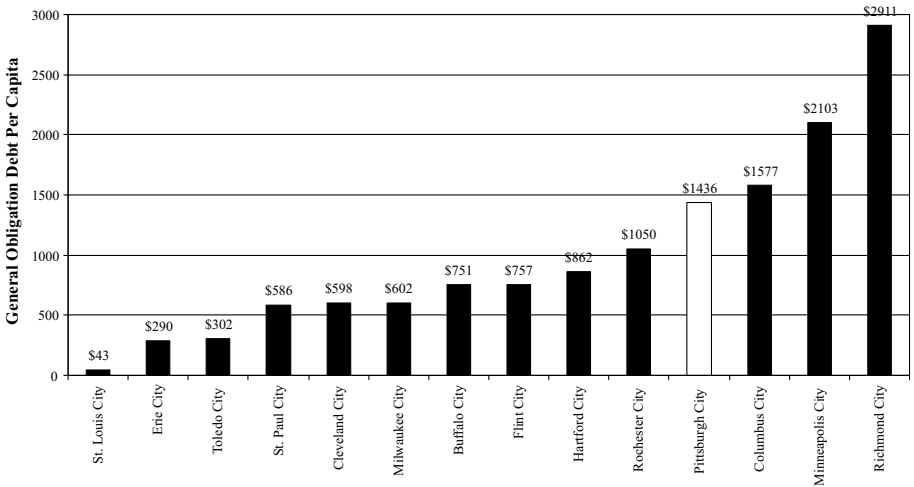


**CHART 3-3 ■ General Obligation Debt Outstanding as a Percentage of Fair Market Value**  
Peer Group Benchmarking Analysis



measures for direct debt for the peer group included the following indicators and values (noted parenthetically): (a) debt as a percentage of fair market value of taxable property (256 percent), (b) debt per capita (192 percent), and (c) debt per capita as a percentage of personal income per capita (191 percent). Accordingly, Exhibit 3-3 reflects a range of 191 to 256 percent, and a median value of 192 percent for this particular grouping of debt burden measures.

**CHART 3-4 ■ General Obligation Debt Per Capita**  
Peer Group Benchmarking Analysis



**EXHIBIT 3-3 ■ Debt Burden: Relative Percentages—1994**

Debt Measure	Debt Burden Category	PEER GROUP	
		Range	Median
Direct Debt	Debt Outstanding	191% to 256%	192%
	Debt Service	100% to 153%	131%
G.O. Debt	Debt Outstanding	154% to 209%	154%
	Debt Service	123% to 186%	157%
Bonded Debt	Debt Outstanding	171% to 226%	178%
	Debt Service	169% to 199%	175%

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**Rank Order**

Exhibit 3-1, “Comparative Debt Burdens,” also identifies for each debt indicator the rank order position of Pittsburgh, relative to the peer group of 15 cities. In each case, a lower number is preferable since it suggests a lower debt burden. As can be seen from Exhibit 3-1 and as illustrated below in Exhibit 3-4, “Debt Burden: Rank Order—1994,” Pittsburgh’s debt burden consistently places the city at the upper end of each comparative group. However, a closer examination of Exhibit 3-1 identifies some positive findings as reflected by the median values. Arguably, the more relevant comparison of the peer group suggests that with the exception of only two (out of a total of twenty-four) specific debt burden measures, one finds cities whose debt burden is greater than Pittsburgh’s. In effect, the most comparable sample implies that *Pittsburgh’s overall debt burden is not as excessive as first impressions might indicate*. This conclusion suggests that further analysis is warranted.

**EXHIBIT 3-4 ■ Debt Burden: Rank Order—1994**

Debt Measure	Debt Burden Category	PEER GROUP	
		Range	Median
Direct Debt	Debt Outstanding	14 to 16	15
	Debt Service	8 to 13	11
G.O. Debt	Debt Outstanding	13 to 14	13
	Debt Service	9 to 14	12
Bonded Debt	Debt Outstanding	13 to 16	14
	Debt Service	11	11

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## Debt Outstanding Versus Debt Service

Since this study utilizes two main debt burden measures, debt outstanding and debt service, one logical extension is to analyze each set of indicators. The purpose of this analysis is to see if any notable patterns emerge. Accordingly, Exhibit 3-5, “Comparative Debt Burden Measures,” compares median values of debt outstanding with debt service indicators for each sample. In this table, the lower value for each comparison is indicated in bold face type. A clear pattern emerges: Pittsburgh’s debt service measures are closer to both comparative groups than its debt outstanding measures. This pattern holds for five of the six comparisons made in Exhibit 3-5. In effect, this suggests that based upon the two comparative benchmark groups, *resources earmarked for debt service are less taxing upon the fiscal position of Pittsburgh than the resources earmarked for the total principal, which must be paid back over the long term. Put differently, the findings demonstrate a lack of intergenerational equity in Pittsburgh’s debt structure.*

### Analysis

If one considers that the debt outstanding indicators are relative measures reflecting the impact of outstanding debt on the tax base, then a further analysis of that base is warranted. Accordingly, notable characteristics of the population and property tax bases are discussed below.

The first measure of the city’s tax base is its population. Having been well documented, the population of Pittsburgh has declined substantially in the last half of the 20th century. According to the most recent Census data available, the population fell from 676,806 in 1950 to 369,879 in 1990, representing a decline of 45 percent. The population decline can certainly provide one explanation of the relatively high

**EXHIBIT 3-5 ■ Comparative Debt Burden Measures: Median Values—1994**

Debt Measure	Statistic	PEER GROUP	
		Debt Outstanding	Debt Service
Direct Debt	Percentage	192%	<b>131%</b>
	Rank	15	<b>11</b>
G.O. Debt	Percentage	154%	<b>157%</b>
	Rank	13	<b>12</b>
Bonded Debt	Percentage	178%	<b>175%</b>
	Rank	14	<b>11</b>

debt burden measures that characterize Pittsburgh. However, there is nothing that can be done in the short term to reverse this out-migration pattern.

Turning to the property tax base, one finds another cause for the high debt burden measures associated with Pittsburgh. In effect, a public policy decision explains why Pittsburgh's indicators are well above the benchmark groups. This decision is the tax exemption granted to substantial amounts of real property owned by various eleemosynary and not-for-profit organizations, specifically universities and health care facilities. Unlike the population decline, the tax exemption reflects a statutory decision rather than the individual decisions of the large number of citizens who left Pittsburgh since the 1950s.

Two salient characteristics emerge. First, the entire growth in the property base of the city has been in the area of tax-exempt property, which grew by over 12 percent in the five-year period summarized above. Second and more notable is the fact that *tax-exempt property represents almost one-third (32.9 percent in 1994) of the total real property in the city*. In combination, these observations provide an obvious explanation for the earlier findings, which concluded that Pittsburgh's debt burden measures, particularly debt outstanding indicators, exceeded those of the comparative samples.

Given the above observations of the city's tax base, the only other variable in the debt burden indicators is, of course, debt itself. That is, the city may simply have incurred an excessive amount of debt, particularly bonded debt. Unfortunately, there is no measure or fiscal indicator that evaluates the wisdom or necessity of capital expenditures that are associated with bonded debt. That is largely a judgment of management, other participants in the budget process, and the elected officials.

Alternatively, an intuitive argument can be offered by remembering that debt is generally issued for infrastructure projects. Thus, while the population has declined by 45 percent, no bridges have been closed, streets have continued to be re-paved, water mains are regularly replaced and wastewater is continually treated. *In effect, the burden of maintaining an infrastructure originally designed for a city of nearly 700,000 is now being shouldered by a population only 55 percent of that size.*

The current debt burden could be considered manageable if the population of Pittsburgh were relatively affluent, thereby meeting the ability-to-pay criterion. Unfortunately, as measured by the income per

capita variable, this is not the case. From high to low, Pittsburgh ranks sixth in the peer group of 15. The result is a disproportionate debt burden on the citizens of Pittsburgh.

## **SUMMARY**

This chapter described how the case study city's (Pittsburgh's) debt burden can be compared against its peer group's. It was determined that Pittsburgh's debt burden, as represented by either principal outstanding or debt service payments, was uniformly higher when compared to the averages for the peer group. The same analysis can be conducted for any municipality, allowing finance professionals to create informed debt and capital improvement policies.



# Measuring Debt Capacity

This chapter explores the question of “*How much debt can a government afford to issue in the future, given its current debt structure and existing debt burden?*” Debt capacity is measured using the same concepts of debt burden that were utilized in Chapter 3 (i.e., debt outstanding and debt service—and the same primary debt burden indicators). In evaluating affordability, a series of alternative scenarios are examined which assume an increasing amount of general obligation (G.O.) debt will be issued each year. Finally, for purposes of analysis, debt is defined as the use of general obligation bonds.

## METHODOLOGY

The foregoing discussion will outline the analytical focus taken, questions that are examined, assumptions made, and debt burden indicators calculated, to describe the methodology employed in this study.

### Analytical Focus

The comparative analysis of Chapter 3 was essentially static in nature. For example, 1994 measures of Pittsburgh’s debt burden were compared to a series of fiscal indicators drawn from a comparable peer group sample for the same year. This section reflects a dynamic analysis as well as a forward-looking perspective by developing a series of projections, beginning with 1996 and extending into the next 20 years. This

analysis is described for Pittsburgh, but again, the methodology can be applied to any city or county. The projections essentially represent a simulated or pro forma set of operating results as a basis for addressing the fundamental question of “*How much debt can a government afford?*” The simulated results are based upon a series of assumptions that are summarized later.

Multi-year projections consist of the following fiscal and debt parameters, utilizing the simulation model:

- Total G.O. bonds outstanding;
- Total debt service reflecting new G.O. bonds;
- Fair market value of property;
- Population;
- General fund revenues;
- Operating budget expenditures; and
- Personal income per capita.

## **Questions Examined**

To estimate the amount of debt that Pittsburgh (or any other city) can afford to issue in the future, this section examines the following questions:

- What is the effect of issuing different amounts of new G.O. bonds on:
  - Various fiscal indicators of debt burden?
  - Indicators of debt burden as compared to the same measures for the peer group sample?
- Based upon the findings of Chapter 3, that Pittsburgh’s debt burden is substantially higher than the peer group, what level of debt (G.O. bonds) can the city afford to issue in the future?
- Assuming that the current and projected debt burden is excessive, how can the city eventually move to a more affordable level of debt?

## **Scenario Modeling**

Debt issuance scenarios are constructed to forecast values of specific indicators under different assumptions. What does the debt amortization schedule look like if the government issues \$20 million in bonds every



two years? What about \$30 million? Assumptions involve the quantity of debt, the market interest rate, the type of credit, and other criteria that are important “control” features of the analysis. It is important that assumptions are realistic if the analysis is to be reliable.

For this study, four G.O. bond debt issuance scenarios were developed which projected a series of fiscal parameters related to the debt burden of Pittsburgh through the year 2024. The scenarios included: (1) no new debt, (2) \$10 million of new debt per year, (3) \$20 million of new debt per year, and (4) \$30 million of new debt per year.

### *Assumptions*

The simulated results are based on the following assumptions:

**Base Line.** As a base line reference point, the model utilized 1996 values for the following parameters:

- **Debt Outstanding**—Reflects the G.O. bonds outstanding as of December 1996. (Source: *1996 Pension Bonds Official Statement, City of Pittsburgh.*)
- **Debt Service**—Represents the annual debt service requirements (and future debt service schedule) associated with the G.O. bonds currently outstanding as of December 1996. (Source: *1995 Comprehensive Annual Financial Report, City of Pittsburgh* and an updated amortization schedule.)
- **Budgeted Expenditures**—\$321 million, which includes total appropriations for the general, special revenue, and debt service funds. (Source: *Office of Management and Budget, City of Pittsburgh.*)
- **General Fund Revenues**—\$262.5 million, which reflects the amount budgeted in the 1996 budget as amended. (Source: *Office of Management and Budget, City of Pittsburgh.*)
- **Population**—Total population of 384,100. (Source: *U.S. Bureau of Census, City-County Databook 1994.*)
- **Fair Market Value of Taxable Property**—\$8.1 billion. (Source: *Land File, Department of Budget and Finance, County of Allegheny.*)
- **Per Capita Personal Income**—\$12,580. (Source: *U.S. Bureau of Census, City-County Databook 1994.*)

**G.O. Bond Issues.** A series of scenarios was assumed including the following:

- **Size**—Annual bond issues in \$10 million increments up to \$30 million.
- **Term**—20 years.
- **Debt Service**—Level (i.e., constant) amount each year (added on top of existing amortization schedule).
- **Interest Rate Scale**—AAA insured with same coupons used for each annual bond issue.

**Population.** Assumed growth rate of approximately 0.6 percent per year. (Source: *Pennsylvania Economy League Economic Forecast, 1996-2000.*) This is a very simple approach to population projection used for illustration purposes only. Most governments should get accurate figures from demographers in their planning departments.

**Fair Market Value.** Assumed growth rate of approximately 0.6 percent per year. (Source: *Pennsylvania Economy League Economic Forecast, 1996-2000.*)

**Per Capita Personal Income.** Assumed growth rate of approximately two percent per year. (Source: *Pennsylvania Economy League Economic Forecast, 1996-2000.*)

**General Fund Revenue.** Assumed growth rate of approximately one percent per year. (Source: *City of Pittsburgh, Revenue Forecast, 1996-2000.*)

**Budgeted Expenditures.** Assumed growth rate of approximately 2.5 percent per year based on the Pennsylvania Economy League's 1996-2000 projections which were then extrapolated into the future. (Source: *City of Pittsburgh, Revenue Forecast, 1996-2000.*)

Similar assumptions can be developed for other municipalities. The main concern is that the assumptions remain consistent throughout the projections.

### *Debt Burden Indicators*

The following debt burden measures were utilized to determine debt affordability:

#### ***Debt Outstanding Indicators:***

- G.O. debt as a percentage of fair market value of taxable property
- G.O. debt per capita

***Debt Service Indicators:***

- G.O. debt service as a percentage of general fund revenue
- G.O. debt service as a percentage of budgeted expenditures
- G.O. debt service per capita
- G.O. debt service per capita as a percentage of personal income per capita

## FINDINGS

Appendix 4-1, “Projected Debt Issuance Impact,” presents the summarized version of the four debt issuance scenarios. That table identifies the annual debt service and principal outstanding for each scenario beginning in 1996 and extending through 2024. The simulation model assumes the additional G.O. bonds will be issued starting in 1996 and continuing indefinitely. The incremental debt service for these additional bonds begins in 1997.

Appendix 4-2, “Projected Debt Indicators,” utilizes the results of Appendix 4-1 and calculates pro forma values for the debt burden indicators identified above based upon the assumed growth in the tax base and operating budget for Pittsburgh.

It should be noted that the comparative measures incorporated into Appendix 4-2 are quite conservative. That is, 1994 values are used and no projections are made for the years 1996 through 2024, which are encompassed in Appendix 4-2. Historically, standard measures of debt burden, such as debt per capita as reported in *Moody’s Medians*, increase over time. For example, most larger municipalities generally issue debt regularly, and at a faster growth rate than their population growth.

Projected values for the comparative peer group were not developed, since such projections would have required developing debt issuance and growth assumptions for each city in the group. Unlike the projected values for Pittsburgh, which were based on forecasts prepared by the city and the Pennsylvania Economy League, there was no basis for making such assumptions for each municipality in the peer group.

### *Break-Even Year Method*

Not surprisingly, a review of the debt burden indicators in Appendix 4-2 results in the same general conclusion found in Chapter 3. *The debt burden of Pittsburgh is substantially higher than the benchmark group.* If one were to stop there, then the only answer to the fundamental question raised in this chapter, “*How much debt can Pittsburgh afford in the future?*”, would simply be “none.” Yet such a simplistic answer would not draw upon the analytical power of the simulation methodology utilized in developing Appendix 4-1.

The authors developed a “break-even year” method which asks “*Assuming a specific scenario for a debt indicator (i.e., debt as a percentage of the operating budget), how long will it take my government to reach the average for the comparison group?*” This methodology is especially suited for governments that have significant debt burdens. Governments that are considerably below their debt capacity can probably do without this step.

The break-even year is defined as the year in which the projected value for a given debt burden indicator for Pittsburgh falls below the corresponding 1994 benchmark value. By attaining this level, the debt burden of Pittsburgh would arguably be “affordable,” since it would equal the average level of the peer group. For example, *if one considers the “no new debt” scenario, it would take Pittsburgh until the year 2005 before its current G.O. debt per capita of \$1,551 were to fall below the 1994 peer group average of \$935.*

Exhibit 4-1 was developed by applying the 1994 benchmark values for the peer group sample of 15 municipalities to the break-even year approach.

Charts 4-1 to 4-3, at the end of this chapter, plot debt service from 1996 through 2024, assuming several debt issuance scenarios. These charts describe how long it will take for Pittsburgh to reach the break-even year by using the mean values of various indicators for the peer group. For example, Chart 4-1 shows that assuming \$10 million per year is issued, Pittsburgh reaches the peer group average for annual debt service per capita in the year 2012. Similar analyses are provided for other indicators in the other charts (Charts 4-2 and 4-3).

**EXHIBIT 4-1 ■ Projected Break-even Year for the City of Pittsburgh**

<b>Debt Burden Indicator</b>	<b>No New Debt</b>	<b>\$10M/year</b>	<b>\$20M/year</b>	<b>\$30M/year</b>
G.O. Debt/FMV of Property	2009	2011	2021	2024
G.O. Debt per Capita	2005	2008	2011	2018
Debt Service/GF Revenue	2012	2015	2022	>2024
Debt Service/Budget Expenditures	2012	2014	2018	>2024
Debt Service per Capita	2012	2013	2018	>2024
Debt Service per Capita /Personal Income per Capita	2012	2012	2012	2017

A review of this table, while supporting the basic conclusion made above, that Pittsburgh's debt burden is substantially higher than its peer group, also suggests that several other conclusions can be drawn, including the following:

- **No New Debt**—If Pittsburgh were to issue no new debt, it would take at least nine years from 1996 (until the year 2005) and as many as 16 years (until the year 2012, depending upon the indicator used) before the city were to reach the current debt burden levels of its peer group. *This baseline scenario further suggests that by averaging all debt burden indicators used in Exhibit 4, it would take 14 years before Pittsburgh could attain a position where new G.O. bonds could be issued.* This conclusion is based upon the conservative assumption that the city should not incur any new debt until it has reduced its current debt burden to the 1994 level of its peer group.
- **\$10 Million per Year of New Debt**—The city could issue this amount of new G.O. bonds without significantly changing its current debt burden. *That is, \$10 million of new debt per year would only increase the break-even point on average by less than two years over the baseline case of “no new debt.”*
- **\$20 Million per Year of New Debt**—This level of debt issuance would increase the break-even point by an additional five years over the \$10 million per year scenario. *That is, if Pittsburgh were to issue \$20 million of new debt per year, the incremental effect would be*

to increase the break-even point on average by approximately seven years from the baseline case of “no new debt.”

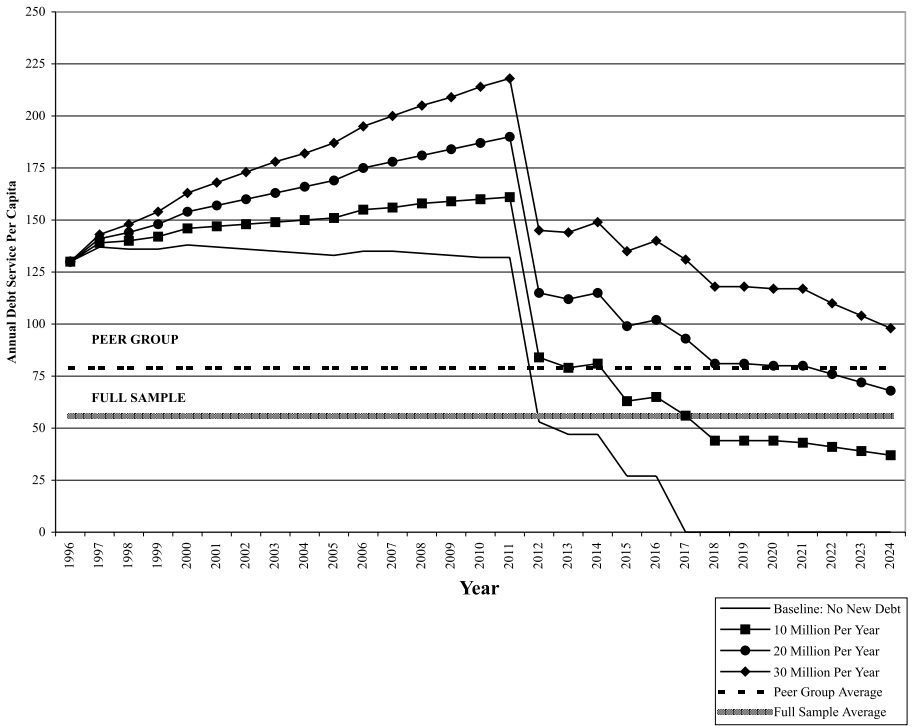
- **\$30 Million per Year of New Debt**—*At this level, significant and material differences arise over the baseline case.* For example, for three of the debt burden indicators, the projected values for Pittsburgh do not reach the 1994 peer group benchmark levels by the end of the simulated period (i.e., the year 2024). *For the other three indicators, the incremental effect would be to increase the break-even point by 11 years (from 1996, on average) from the baseline case of “no new debt.”*

## SUMMARY

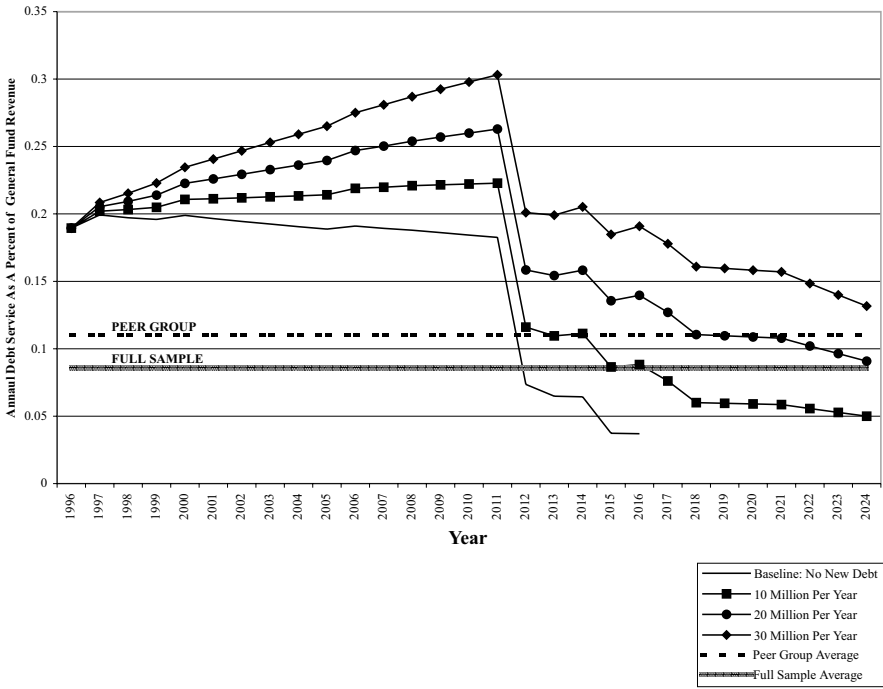
Given the earlier findings of this study, that the current debt burden of Pittsburgh is materially higher than its comparative peer group, the fundamental issue centers on whether there exists an analytical justification to support any additional debt. Based upon the simulated results of issuing various levels of new G.O. bonds and the incremental effect over the current level of debt burden as measured by the break-even approach, the following conclusion is offered: *Pittsburgh could sustain a capital program of at least \$10 million per year, and as much as \$20 million annually, without significantly increasing the current debt burden level, regardless of the fiscal indicator used to measure the burden. However, \$30 million per year—the rule of thumb it now uses in debt issuance plans—should be reconsidered.*

As in the Pittsburgh case study, the debt issuance scenario methodology supplies an analytical approach for forecasting the impact of different amounts of debt issuance. Using that approach in combination with the break-even year methodology, finance professionals are given the tools necessary to plan capital projects over an extended time period, while at the same time, evaluating the impact of those capital plans on debt levels. Used together, these tools can accurately indicate to policy makers how much debt their city can afford, thereby allowing them to plan accordingly.

**CHART 4-1 ■ Annual Debt Service Per Capita**  
*City of Pittsburgh*

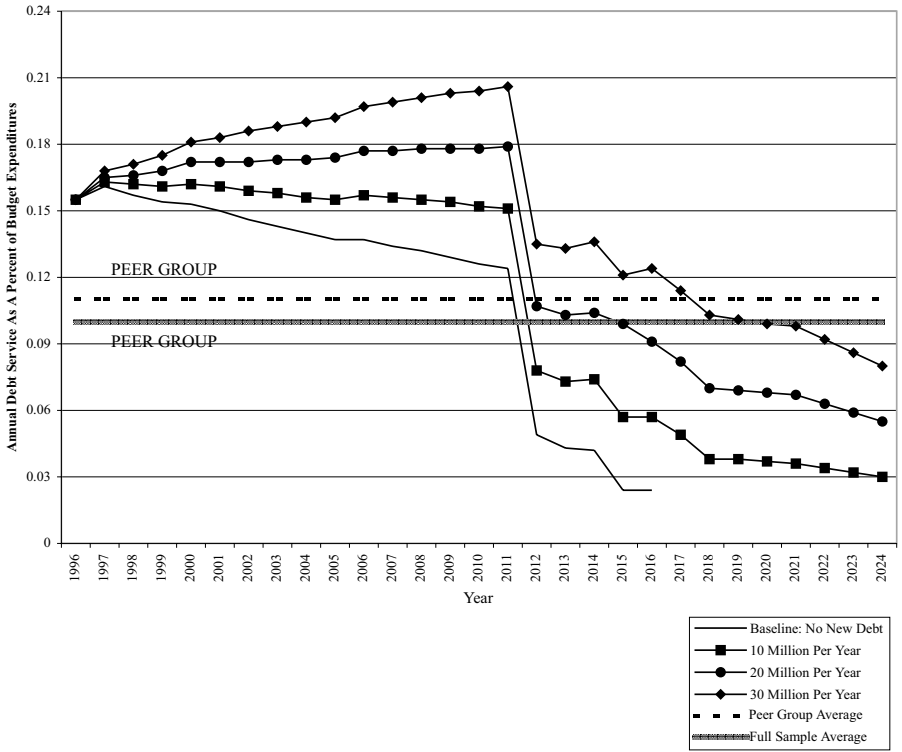


**CHART 4-2 ■ Annual Debt Service as a Percent of General Fund Revenue**  
*City of Pittsburgh*





**CHART 4-3 ■ Annual Debt Service as a Percent of Budget Expenditures**  
*City of Pittsburgh*



**APPENDIX 4-1**  
**Projected Debt Issuance Impact**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Baseline: No New Debt</b>										
Annual Debt Service	49.7	52.8	52.9	53.1	54.3	54.2	54.2	54.2	54.1	54.1
Principal Outstanding	595.7	575.7	555.4	534.6	512.3	487.3	461.8	434.9	406.5	376.1
<b>\$10 Million Per Year</b>										
Annual Debt Service	49.7	53.6	54.5	55.5	57.5	58.3	59.0	59.8	60.6	61.4
Principal Outstanding	605.7	595.7	585.1	573.6	560.3	544.0	526.8	507.8	486.9	463.5
<b>\$20 Million Per Year</b>										
Annual Debt Service	49.7	54.4	56.1	57.9	60.8	62.4	63.9	65.5	67.1	68.7
Principal Outstanding	615.7	615.7	614.8	612.7	608.4	600.7	591.7	580.7	567.3	551.0
<b>\$30 Million Per Year</b>										
Annual Debt Service	49.7	55.3	57.7	60.4	64.0	66.4	68.8	71.2	73.6	76.0
Principal Outstanding	625.7	635.7	644.5	651.7	656.4	657.4	656.7	653.5	647.6	638.4
	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
<b>Baseline: No New Debt</b>										
Annual Debt Service	55.3	55.3	55.4	55.4	55.3	55.3	22.5	20.0	20.0	11.7
Principal Outstanding	343.0	306.7	268.0	227.1	184.0	138.5	90.6	73.7	58.3	42.1
<b>\$10 Million Per Year</b>										
Annual Debt Service	63.4	64.2	65.1	65.9	66.7	67.5	35.4	33.8	34.6	27.1
Principal Outstanding	437.1	406.9	373.9	338.2	299.7	258.3	213.8	199.8	186.6	171.8
<b>\$20 Million Per Year</b>										
Annual Debt Service	71.5	73.1	74.8	76.4	78.0	79.6	48.4	47.5	49.2	42.5
Principal Outstanding	531.2	507.2	479.9	449.3	415.4	378.1	337.1	325.9	315.0	301.7
<b>\$30 Million Per Year</b>										
Annual Debt Service	79.6	82.0	84.6	87.0	89.4	91.8	61.4	61.3	63.8	57.9
Principal Outstanding	625.2	607.4	585.8	560.3	531.0	497.8	460.3	451.9	443.2	431.4
	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	
<b>Baseline: No New Debt</b>										
Annual Debt Service	11.7									
Principal Outstanding	33.1									
<b>\$10 Million Per Year</b>										
Annual Debt Service	27.9	24.3	19.3	19.3	19.3	19.3	18.5	17.7	16.9	
Principal Outstanding	163.6	154.1	147.6	145.6	143.5	131.3	118.9	106.6	94.5	
<b>\$20 Million Per Year</b>										
Annual Debt Service	44.1	40.5	35.5	35.5	35.5	35.5	33.9	32.3	30.7	
Principal Outstanding	294.3	284.8	278.3	276.3	274.2	252.0	229.6	207.6	186.1	
<b>\$30 Million Per Year</b>										
Annual Debt Service	60.4	56.7	51.7	51.7	51.7	51.7	49.3	46.9	44.4	
Principal Outstanding	424.7	415.2	408.7	406.7	404.6	372.4	339.9	308.3	277.5	

**Assumptions in the Debt Affordability Analysis**

- (1) Population, Median Income, FMV (Pennsylvania Economy League Economic Forecast 1996-2000)
- (2) General Fund Revenue (City of Pittsburgh Revenue Forecast 1996-2000)
- (3) Debt Scenarios
  - 20 year level debt service, coupons from AAA (ins.) from Bond Buyer, same coupons used for each bond issue 1996-2004, and 9/1/96 settlement date
- (4) Includes 1996 \$37 million Pension Bond Issue

APPENDIX 4-2  
 Projected Debt Issuance Indicators for the City of Pittsburgh -- 1996-2024

Annual Debt Service										
Per Capita	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Baseline: No New Debt	130	137	136	136	138	137	136	135	134	133
10 Million Per Year	130	139	140	142	146	147	148	149	150	151
20 Million Per Year	130	141	144	148	154	157	160	163	166	169
30 Million Per Year	130	143	148	154	163	168	173	178	182	187
Peer Group	79	79	79	79	79	79	79	79	79	79
Full Sample	56	56	56	56	56	56	56	56	56	56

Annual Debt Service										
Per Capita	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Baseline: No New Debt	135	135	134	133	132	132	53	47	47	27
10 Million Per Year	155	156	158	159	160	161	84	79	81	63
20 Million Per Year	175	178	181	184	187	190	115	112	115	99
30 Million Per Year	195	200	205	209	214	218	145	144	149	135
Peer Group	79	79	79	79	79	79	79	79	79	79
Full Sample	56	56	56	56	56	56	56	56	56	56

Annual Debt Service										
Per Capita	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Baseline: No New Debt	27	0	0	0	0	0	0	0	0	
10 Million Per Year	65	56	44	44	44	43	41	39	37	
20 Million Per Year	102	93	81	81	80	80	76	72	68	
30 Million Per Year	140	131	118	118	117	117	110	104	98	
Peer Group	79	79	79	79	79	79	79	79	79	
Full Sample	56	56	56	56	56	56	56	56	56	

Annual Debt Service As A Percent Of General Fund Revenue										
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Baseline: No New Debt	19.0%	19.9%	19.7%	19.6%	19.9%	19.7%	19.4%	19.3%	19.1%	18.9%
10 Million Per Year	19.0%	20.2%	20.3%	20.5%	21.1%	21.1%	21.2%	21.3%	21.3%	21.4%
20 Million Per Year	19.0%	20.5%	20.9%	21.4%	22.3%	22.6%	22.9%	23.3%	23.6%	24.0%
30 Million Per Year	19.0%	20.8%	21.5%	22.3%	23.5%	24.1%	24.7%	25.3%	25.9%	26.5%
Peer Group	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%
Full Sample	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%

Annual Debt Service As A Percent Of General Fund Revenue										
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Baseline: No New Debt	19.1%	18.9%	18.8%	18.6%	18.4%	18.3%	7.4%	6.5%	6.4%	3.7%
10 Million Per Year	21.9%	22.0%	22.1%	22.2%	22.2%	22.3%	11.6%	11.0%	11.1%	8.6%
20 Million Per Year	24.7%	25.0%	25.4%	25.7%	26.0%	26.3%	15.8%	15.4%	15.8%	13.6%
30 Million Per Year	27.5%	28.1%	28.7%	29.2%	29.8%	30.3%	20.1%	19.9%	20.5%	18.5%
Peer Group	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%
Full Sample	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%

Annual Debt Service As A Percent Of General Fund Revenue										
	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Baseline: No New Debt	3.7%									
10 Million Per Year	8.8%	7.6%	6.0%	6.0%	5.9%	5.9%	5.6%	5.3%	5.0%	
20 Million Per Year	14.0%	12.7%	11.1%	11.0%	10.9%	10.8%	10.2%	9.6%	9.1%	
30 Million Per Year	19.1%	17.8%	16.1%	16.0%	15.8%	15.7%	14.8%	14.0%	13.2%	
Peer Group	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	11.0%	
Full Sample	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	8.6%	

continued



# Elements of a Comprehensive Debt Policy

A formal debt policy is essential to effective financial management. The Government Finance Officers Association (GFOA) has stated that a formal policy is a recommended practice that should be followed by all jurisdictions intending to issue debt. A debt policy improves the quality of decisions, provides justification for the structure of debt issuance, identifies policy goals, and demonstrates a commitment to long-term financial planning. For these reasons, a debt policy is viewed favorably by credit rating agencies. The GFOA's statement outlined several major elements that should be addressed by a debt policy (see Exhibit 5-1).

Debt policies are written guidelines and restrictions affecting the amount, issuance, process, and type of debt issued by a governmental entity. This chapter summarizes the findings of a recent survey that studied such policies across a large sample of cities. An analysis of individual policy statements identified elements that are not included in the GFOA's recommended practice but are nevertheless relevant to a comprehensive debt policy. Thus, the findings of this chapter can provide financial managers with a checklist of elements to consider when designing a debt policy.

## METHODOLOGY

In 1995, the City of Pittsburgh sought to compare its debt issuance practices to comparable jurisdictions as part of an effort to develop a new debt policy. As part of this effort, the following methodology was utilized:

- **Sample.** A sample of cities was identified based on membership in the GFOA. Membership information was provided by the GFOA for all municipalities with population of 25,000 or more. A resulting sample of 600 municipalities was identified.
- **Communication.** In August 1995, a standard letter was sent to the chief financial officer of each municipality requesting a copy of the formal debt policy adopted by that government. Follow-up phone calls were made approximately three weeks after the letter was sent, if no response had been received by that time. In several cases we found that the government had no formal debt policy and that its statutory restrictions were viewed as the “policy statement.” No response was received from several governments despite written requests and follow-up phone calls.

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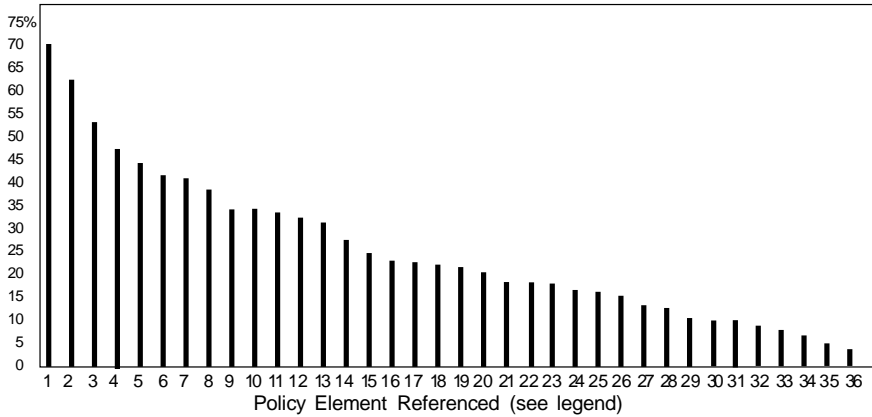
### EXHIBIT 5-1 ■ Elements of a Debt Policy

- Purposes for which debt can be issued
- Legal debt limitations, or limitations established by policy
- Use of moral obligation pledges
- Types of debt permitted to be issued and criteria for issuance
- Structural features that may be considered
- Credit objectives
- Method of sale
- Selection of external financial professionals
- Refunding of debt
- Disclosure (primary and secondary market)
- Compliance with federal tax law provisions, including arbitrage requirements
- Integration of capital planning and debt financing activities
- Investment of bond proceeds where otherwise not covered by explicit written law or written investment policy.

Source: GFOA Recommended Practice “*Development of a Debt Policy*,” GFOA 1995.

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**EXHIBIT 5-2 ■ Frequency of Elements Appearing in Debt Policy Statements (97 sample cities)**

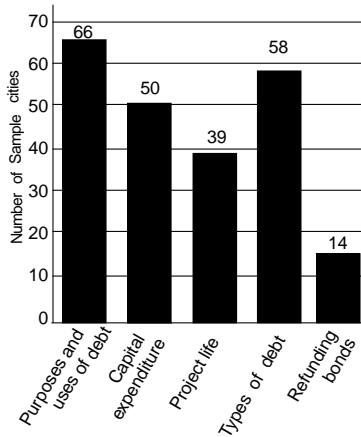


DEBT CATEGORIES		
1 Purposes and uses of debt	14 Maturity guidelines	27 Operating revenue
2 Types of debt	15 General fund revenue	28 Lease debt
3 Capital expenditure	16 Expenditure limitations	29 Capitalized interest guidelines
4 Refunding bonds	17 Professional services	30 Market value limitation
5 Disclosure	18 Short-term debt	31 Insurance/letters of credit/ other enhancements
6 Statutory limitations	19 Sale process	32 Limited tax GO bonds
7 Project life	20 Assessed value	33 Inter-fund borrowing
8 Rating agency relations	21 Analysis requirements	34 Variable rate debt
9 Operating budget	22 Reserve capacity	35 Debt service funds
10 Revenue and TIF bond	23 Per capita limitations	36 Derivative restrictions
11 Bond rating goals	24 Size of issuance	
12 Miscellaneous limitations	25 Intergovernmental coord	
13 Repayment provisions	26 When not to issue debt	

The actual number of debt policies received totaled 97 statements (or 12 percent of the sample).

- Content Analysis.** Each policy statement was reviewed using content analysis—a methodological approach frequently used in the social sciences. Content analysis entails ascertaining patterns in policy statements and then classifying these patterns by theme. By its very nature content analysis is a qualitative methodology and hence subjective. However, application of the methodology was relatively straightforward since common features were repetitively identified and classified through an iterative process.

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**EXHIBIT 5-3 ■ Conditions for Debt Issuance**

## A CLASSIFICATION OF DEBT POLICY STATEMENTS

Seven major categories were identified by the content analysis. Various sub-categories were developed under each of these seven major categories; examples are cited to amplify or illustrate the nature of policies encompassed in that category. Exhibit 5-2 lists the frequency of elements within debt policies.

### 1. Conditions for Debt Issuance

A number of policies were identified that generally specified the conditions or purposes for which debt could be issued (see Exhibit 5-3). Specific sub-categories and observations follow:

- **Purposes and uses of debt** policies identify the nature of projects and/or expenditures for which bond proceeds can be used. *Project-oriented policies* generally focused on “major capital infrastructure creation including planning, design and land acquisition” or “meeting the capital needs of the community.” *Philosophical policies* are used to set a tone such as “debt should not constitute an unreasonable burden to residents and taxpayers or use self-supporting debt wherever possible.” *Equity* is also a concern (“matching of benefits with payment” or “a significant proportion of citizens should benefit”).



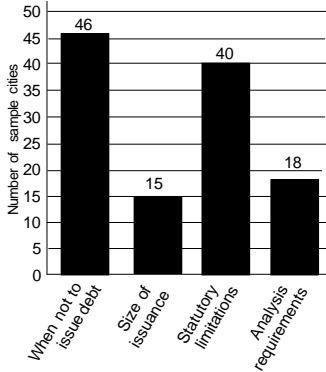
- **Capital expenditure** policies restrict debt issuance to capital needs identified and formalized in a capital improvement program (CIP). Other policies describe specific restrictions on the CIP (“15 percent of the CIP will be funded on a pay-as-you-go basis”).
- **Project life** policies restrict use of debt to capital projects that have a minimum specified economic life (“issue debt only when the economic/useful lives of the assets are greater than five years”).
- **Types of debt** restrictions describe what types of debt the government can issue. A common theme is that general obligation (G.O.) debt should be used only as a last resort (“wherever possible, the city will use revenue, self-supporting, or special assessment bonds instead of G.O. bonds”). However, several governments identified conditions where G.O. debt can be issued in lieu of revenue bonds. Other policies suggest a broad adoption and interpretation of the formal statement (“capital leases, COPs, and lease-purchase financing will be treated as debt and subject to the same policies”).
- **Refunding bonds.** These policies describe conditions and/or limitations under which refunding bonds can be issued (“issue refunding bonds only if the present value of debt service savings exceeds 2 percent of the debt service amount of the refunded bonds”).

## **2. Restrictions/Limitations on Debt Issuance**

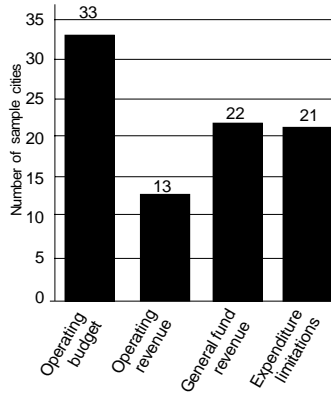
A second group of policies (see Exhibit 5-4) shares a common theme of restrictions/limitations on use of debt, including specific prohibitions against debt issuance:

- **When not to issue debt** statements place specific prohibitions against issuing G.O. debt. These prohibitions include: current operations, enterprise activities, enterprise funds, vehicles/rolling stock, leased or lease/purchase items, or unless there is a clear identification of financing sources.
- **Size of issuance** restrictions generally apply to smaller governments and limit annual debt issuance to a specific dollar amount as a means of “avoiding arbitrage compliance restrictions” or to receive “yield advantages associated with bank qualified obligations.”

**EXHIBIT 5-4 ■ Restrictions or Limitations on Debt Issuance**



**EXHIBIT 5-5 ■ Debt Service Limitations**



- **Statutory limitations** face most local governments, but only a few incorporate these limitations into formal debt policies. Such governments reference constitutional limits that generally restrict outstanding debt to a stated percentage (ranging from 2.5 percent to 20 percent) of the tax base (generally expressed as assessed or market value).
- **Analysis requirements** describe tests that are to be conducted prior to issuance of debt, including impact on future budgets, sufficiency of revenues dedicated to debt service or operating cost of capital asset, and impact on ability to provide future services.
- **Reserve capacity** guidelines reserve a portion of authorized/statutory debt capacity for emergency purposes (ranging from 20 percent to 30 percent).

### 3. Debt Service Limitations

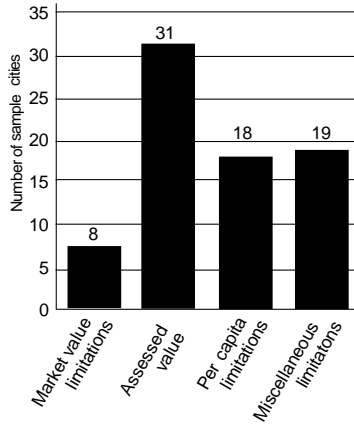
In general, these policies limit debt service expenditures to some definition of resources available to the government (see Exhibit 5-5). These variations include:

- **Operating budget** policies express limitations regarding how much of the operating budget can be devoted to debt service. However, the scope of the “operating budget” is not defined in most policy statements. For example, the scope could vary from solely the general fund to all four governmental funds. In addition, unless one assumes a balanced budget, these policies are ambiguous since “operating budget” does not specify the “resources/revenues” side or “appropriations/expenditures” side of the budget. Philosophically oriented policies stated “debt service payments should be a predictable and manageable part of the operating budget.” Quantitative policies limited debt service expenditures from as little as 5 percent to as much as 30 percent of the total operating budget (however defined by that government).
- **Operating revenue** policies restrict debt service expenditures to a percentage of total operating revenues. Again, no definitions are incorporated in the policy statements, leaving open to interpretation the scope of fund(s) encompassed in “operating revenues.” For example, operating revenues could be restricted to the general fund; alternatively, some analysts include special revenue and debt service funds within their definition of operating funds since those funds are used regularly for the day-to-day operations of the government.
- **General fund revenue** policies specifically restrict debt service expenditures to a percentage of general fund revenue.
- **Expenditure limitations** are presumably a more ambiguous restriction since expenditures (i.e., appropriations) can either exceed revenues (i.e., a government can reduce previously accumulated resources by “spending down” fund balance) or be less than revenues by appropriating expenditures at a lower level, thereby increasing its fund balance by budgeting a surplus. Variations include the fund scope (general fund, general fund plus debt service funds, or all governmental funds) and the percentage limitation (most ranging from 10 percent to 25 percent).

#### **4. Limitations on Outstanding Debt**

These policies limit the total amount of outstanding debt to a measure of the tax base (property values or population) (see Exhibit 5-6). We found a litany of key variables guiding these policies. For example,

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**EXHIBIT 5-6 ■ Limitations on Outstanding Debt**

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there are wide variations of how “debt” is measured, including: net G.O. debt, total direct plus overlapping debt, G.O. debt/G.O. bonds, net debt, bonded debt, total G.O. debt payable from property tax levies, total G.O. net debt, total tax-supported debt, outstanding debt total indebtedness, overall net debt attributable to the general fund, total long-term debt principal outstanding, total long-term bonded debt, total G.O. net debt (including G.O. debt supported by utilities), G.O. debt being repaid from property taxes, net direct debt, and total direct debt. Although many are simply different labels (reflecting local use and practice) for the same amount, other variations represent substantively different measures (e.g., net direct debt versus total direct plus overlapping debt). As such, restrictions represented by this category of policies are different and must be placed in the local context. The other major variation relates to the definition of the “tax base.” These differences constituted the basis for the classification system that follows below:

- **Market value limitations** restrict outstanding “debt” to a specific percentage of market value (with variations on definitions for property and market value). Percentages ranged from 2 percent to 10 percent.
- **Assessed value** policies restrict outstanding debt to some percentage of assessed value (where value is primarily defined as

assessed value, but also included was current assessed value and total equalized assessed value). Percentages ranged from 2 percent to 15 percent.

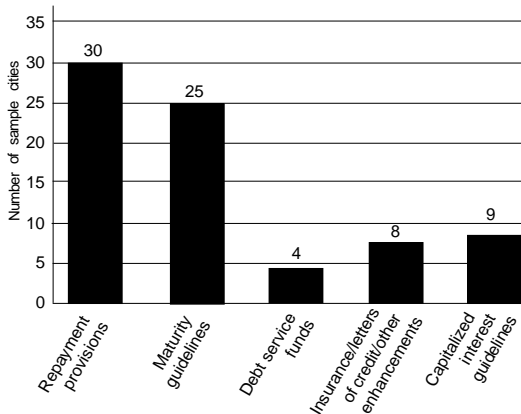
- **Per capita limitations** restrict outstanding debt to a specified dollar amount (per capita or percentage of per capita income). Amounts ranged from \$200 to \$1,300 per capita and 6.5 percent to 10 percent of per capita income. In addition, several governments provided for an automatic inflationary adjustment by incorporating the Consumer Price Index into the policy.
- **Miscellaneous limitations** include policies linking debt to *taxation* (percentage of the total property tax levy), *revenue*, *dollar amount*, and *debt burden* (e.g., “within the norm of comparable cities”).

## 5. Characteristics/Terms/Provisions of Debt Issuance

These policies relate to various characteristics of the debt being issued that are generally legal in nature and incorporated into various official documents including the bond ordinance (see Exhibit 5-7). These variations follow:

- **Repayment provisions** place restrictions on debt service payments and include the following categories: policies related to

EXHIBIT 5-7 ■ Characteristics, Terms, and Provisions of Debt Issuance



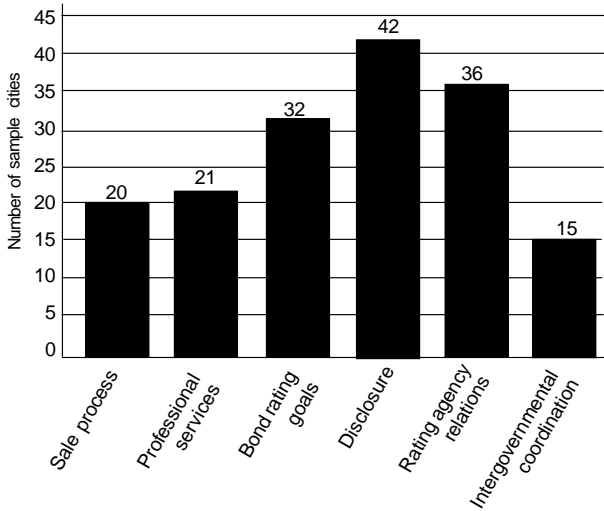
*time-pattern* describe the structure and pattern that should be utilized including: front-loaded, level principal, level debt service, or 50 percent of principal repaid within 10 years; policies related to *sources* suggest use of funds other than property taxes (e.g., user fees for revenue bonds) if possible to pay debt service; and policies related to *equity* suggest those who benefit from projects should be the source of debt service payments.

- **Maturity guidelines** generally relate to either the maximum term or average maturity life and include the following variations: *life of the asset* (“the term bond should be less than the useful life of the asset”) and policies related to the *number of years* that restrict maximum maturity to a period ranging from 10 to 20 years.
- **Debt service funds** are required for most bond issues (through the bond ordinance). Several debt policies require the creation of such a fund and specify minimum (e.g., 100 percent) and maximum (e.g., 125 percent) levels, as a function of the next year’s funding requirements.
- **Insurance/letters of credit/other enhancements** are generally philosophical in nature and indicate when such instruments should be used (e.g., if cost effective, for marketing purposes, if net savings occur, or consider insurance for each bond issue).
- **Capitalized interest guidelines** were adopted by a small number of governments. These restrictions limit use of this financing technique to “enterprise activities for expenses incurred prior to actual operation.”

## 6. Debt Issuance Process

These policies (see Exhibit 5-8) relate to various process activities associated with issuing the debt including:

- **Sale process** policies are generally philosophical and suggest use of a competitive bidding process unless “it is in the best interests...to conduct a negotiated sale.” Other policies suggest use of negotiated issues “due to market volatility” or for “unusual or complex financing.” Finally, several policies spoke to public notices or other features of a public sale.
- **Professional services** policies describe the circumstances for and scope of professional services, particularly regarding use of

**EXHIBIT 5-8 ■ Debt Issuance Process**

financial advisors and bond counsel. Several policies spoke to the selection process (e.g., “competitive request for proposal every three to five years”) or to the term for the advisor (e.g., “every three years”). These policies also were philosophical in nature, stating the need for professional services “as necessary” or the scope of work to be provided (e.g., debt structuring, debt management plan, or preparation of the official statement).

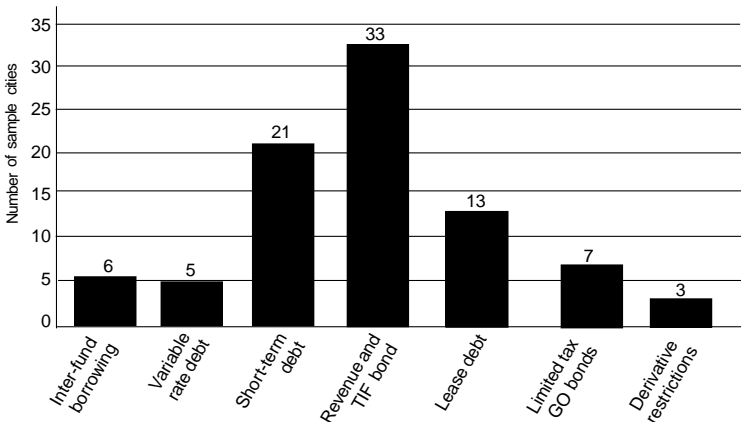
- **Bond rating goals** are generally philosophical in nature, such as “the city will seek to maintain and improve its bond rating to minimize borrowing costs and to ensure its access to credit markets.” Several policies stated an objective of maintaining a (specified) minimum credit rating (e.g., AA).
- **Disclosure** requirements are broadly stated, such as “the city will follow a policy of full disclosure on every financial report and bond prospectus.”
- **Rating agency relations** are emphasized in most debt policies through statements such as “the city shall encourage and maintain good relations with financial and bond rating agencies.”
- **Intergovernmental coordination** was emphasized by several governments in order to direct communication processes with other governments sharing the same tax base.

## 7. Other Forms of Debt

Several governments have identified specific policies related to debt issues other than G.O. instruments (see Exhibit 5-9). Surprisingly, few debt policies include such provisions and even then they are generally limited to a specific instrument. These policies include:

- **Inter-fund borrowing** restrictions state when such borrowings can occur—primarily for short-term cash flow needs—and general terms for such loans (“internal interest payments will be made at prevailing interest rates”). These policies are also philosophical in nature (“when it would reduce the costs of interests, debt issuance, or administration”).
- **Variable rate debt** policies state when such instruments can be used (“as an integral part of a long-term strategy” or “only as a source of interim financing”).
- **Short-term debt** issuance policies primarily relate to RANs, BANs, or TANs and circumstances when they can be used. Limits include the maximum term (“from one to three years”) or maximum size (“up to 5 percent of operating revenue”). Specified purposes include cash flow needs, temporary financing for capital improvements, or major equipment leasing.

EXHIBIT 5-9 ■ Other Forms of Debt





- **Revenue and TIF bond** policies identify coverage requirements (e.g., 125 percent or 130 percent) as debt policies.
- **Lease debt** policies place restrictions on leased debt, including “lease payments as a percentage (10 percent) of current revenues,” term (“useful life of assets not to exceed 25 years”), or specific purposes (“rolling stock”).
- **Limited tax G.O. bonds** policies outline circumstances under which these instruments can be issued (“only when constraints preclude the preferred practice of voter-approved G.O. bonds”).
- **Derivative restrictions** were cited, surprisingly, by only one city and specified when these instruments can be used, which included an evaluation of restrictions that should be evaluated (counter-party risk).

## SUMMARY

This chapter examined the breadth of debt policies used by a large sample of GFOA cities. While a formal debt policy statement is a recommended practice of the GFOA, our response rate suggests that less than 15 percent of GFOA municipalities have such policies (as of 1995). Many cities are content with allowing statutory guidelines to be their debt policy. Of those governments that had formal policies, we found a substantial variation in the scope and content of statements we surveyed. The purpose of this chapter is to provide financial professionals a comprehensive categorization of specific components of policies in use today. It should provide a structured checklist to review and update current debt policies so it better reflects the complexities of contemporary public finance. Finally, this chapter described how the empirical findings of a benchmarking study of peer group governments can be incorporated into a new or existing debt policy.



# Implementing NACSLB Recommended Budget Practices

In early 1998, the National Advisory Council on State and Local Budgeting (NACSLB) completed a three-year process and issued recommended budget practices. These practices have the objective of improving budgeting in state and local government. One of the major points stressed by the NACSLB is the need for a strategic and long-term perspective when governments make budgeting and financial management decisions.

This book presented tools and techniques to implement the following recommended practices:

- **Recommended Practice (RP) 4.3—Develop Policy on Debt Issuance and Management:** A government should adopt policies to guide the issuance and management of debt;
- **RP 4.3a—Develop Policy on Debt Level and Capacity:** A government should adopt a policy on the maximum amount of debt and debt service that should be outstanding at any one time;
- **RP 11.3—Monitor, Measure and Evaluate Financial Condition:** A government should monitor and evaluate its financial condition.

RP 11.3 encompasses more aspects of the fiscal policy process than the debt indicator focus in this study. This chapter provides a brief discussion of how the tools and techniques in this study can promote the implementation of NACSLB practices.

## **INCORPORATING FINDINGS OF THE BENCHMARKING STUDY**

*How does debt capacity analysis assist in the implementation of RP 4.3 and 4.3a?* The debt policy classification structure provided in Chapter 5 and the specific components encompassed within that structure provide a consistent framework for a governmental entity to establish a debt policy. The question that remains is how can an entity incorporate the findings of its benchmarking study—as described in Chapters 3 and 4—into a new or existing debt policy? We offer several suggested scenarios.

### **New Debt Policy**

It is often easier to start with the proverbial “blank piece of paper” and use the findings of a benchmarking study to provide a basis for quantitative limitations in a new debt policy. Obviously, an issuer must reflect all statutory limitations when drafting its initial policy. However, when statutes are silent as to numerical values for quantitative limitations typically found in policy statements—e.g., *outstanding general obligation bonded debt should not exceed \$X per capita* or *annual general obligation debt service should not exceed Y percent of operating revenues*—the use of empirical findings of the benchmarking study can be incorporated into the proposed debt policy. However, we would offer three caveats as outlined below.

- **What Statistic?** First, be careful in selecting which descriptive statistic to incorporate into the policy. For example, *median values* are often used to reduce the impact of extreme values (i.e., “outliers”).
- **What Value?** Second, the capital needs of the governmental entity must be considered. For example, a community with significant capital needs should not necessarily be limited to median values. Consider our case study’s finding that Pittsburgh still had to support its existing infrastructure even though its popu-

lation had declined significantly over several decades. Thus, a policy restricting Pittsburgh to a *debt per capita* limitation equal to a median value of its peer group would arguably be too restrictive and not reflect the political reality that the existing infrastructure had to be maintained. That reality could be addressed by an associated policy that was stated as a percentage of the median—e.g., *debt per capita should be no more than 150 percent of the peer group's median value*.

- **What Reference Point?** Rather than state a quantitative limitation as a specific numerical value—e.g., reflecting the exact numerical findings of the benchmark study at a specific point in time – the policy statement should use the peer group as a reference point. For example, note the illustration above—*debt per capita should be no more than 150 percent of the peer group's median value*—referenced the median value, **not** a specific dollar amount drawn from the study. This approach permits a certain level of growth over time as a means to reflect inflation.

## Existing Debt Policy

The peer group benchmarking study approach of Chapters 3 and 4 can also be used to update and justify changes to an existing debt policy. The update could take the form of *enhancing* the existing policy by: (1) incorporating additional restrictions based upon the categorization structure above, and (2) quantifying those restrictions by incorporating the empirical findings of the peer group study. Once again, we would recommend the same strategy as outlined above regarding a new debt policy, particularly in respect to use of median values reflecting a community's own future capital needs.

The benchmarking study can also be of value to *justify changes* to an existing debt policy, particularly when provisions of that policy prove overly restrictive. For example, if a policy statement adopted many years ago restricted outstanding debt to an extremely low amount of debt per capita, the benchmarking study can provide appropriate empirical data to justify and explain a change in such overly restrictive and/or dated provisions.

## **Fiscal Indicators Reporting**

*How does debt capacity analysis assist in the implementation of RP 11.3?* An important part of monitoring, measuring, and evaluating financial condition is the analysis of debt. Many governments have established fiscal trend monitoring systems as a means of providing a “feedback loop” from the latest financial results to future financial planning. Fiscal indicator reporting often involves tracking trends of measures of expenditures, revenues, and debt. Chapter 2 provided a comprehensive list of debt indicators from the standpoint of measuring debt capacity. These indicators would serve as a good starting point for the “debt section” of a fiscal indicators report, although additional indicators may be desirable (e.g., use of short-term borrowings).

## **SUMMARY**

This chapter provided suggestions for using the tools and techniques presented in this book to implement select NACSLB recommended budget practices. In particular, the authors discussed how findings from the measurement and benchmarking exercise can assist in the design or revision of debt policy. Also, the comprehensive list of debt indicators presented in Chapter 2 provides a major analytical source for the debt section of any financial trend monitoring system.