

X00A00
Public Debt

Operating Budget Data

(\$ in Thousands)

	<u>FY 06</u> <u>Actual</u>	<u>FY 07</u> <u>Working</u>	<u>FY 08</u> <u>Allowance</u>	<u>FY 07-08</u> <u>Change</u>	<u>% Change</u> <u>Prior Year</u>
General Fund	\$0	\$0	\$43,500	\$43,500	
Special Fund	<u>625,208</u>	<u>654,616</u>	<u>649,195</u>	<u>-5,421</u>	<u>-0.8%</u>
Total Funds	\$625,208	\$654,616	\$692,695	\$38,079	5.8%

- Debt service costs continue to climb, reflecting increasing debt outstanding.
- Fiscal 2008 debt service costs increase to almost \$693 million.
- Annuity Bond Fund balances and revenues are insufficient to support the entire appropriation, and \$43.5 million of general funds are needed in fiscal 2008.

Note: Numbers may not sum to total due to rounding.

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Analysis in Brief

Major Trends

State Maintains AAA Bond Rating: The State continues to carefully manage its debt and maintain its AAA bond rating.

Issues

State Debt Management – Status Quo Debt Affordability Analysis: The Capital Debt Affordability Committee (CDAC) has proposed authorizing \$810 million in general obligation (GO) bonds and deemed that this level is affordable. It is estimated that there is sufficient capacity to issue an additional \$155 million annually in debt.

State Debt Management – Demand for Capital Projects Has Led to Increased Debt Authorizations Since 2000: Since the 2000 legislative session, State debt has been increased by authorizing additional GO debt as well as new kinds of debt. Unused debt capacity has declined since 2000, and the demand for new debt adds pressure to authorize even more debt.

State Debt Management – Debt Service Costs Have Grown, and the Current Revenue Structure Requires a General Fund Subsidy for Debt Service: In November 2006, the State Department of Assessments and Taxation increased its estimate of the fiscal 2008 assessable property tax base. State property tax revenues are now insufficient to fully support debt service. General fund appropriations are projected beginning in fiscal 2008, when \$43.5 million is required.

State Debt Management – Maryland Should Update the Affordability Process to Align It with Other States’ Policies, Best Practices, and the State’s Financial Outlook: CDAC was created to advise the General Assembly and Governor on debt policy. The committee develops affordability criteria and offers recommendations. Since its inception in 1978, the committee did change policies once – 20 years ago – to recognize that goals had changed. It appears that the State’s financial condition and needs have changed sufficiently that another change in debt policies is warranted. In Maryland, debt outstanding has become the controlling criterion. This focus on debt outstanding, instead of debt service, is inconsistent with policies of most AAA-rated states and the practices recommended in the financial literature. **It is recommended that the committee reevaluate the criteria with the goal of reducing pressure on the general fund and basing affordability more on debt service, instead of debt outstanding.**

Recent Scholarship Suggests That Open Auctions Bidding Reduces Debt Service Costs: Recent scholarship suggests that the State could reduce borrowing costs by changing how bonds are bid. A sum of least squares regression may be used to evaluate if there are savings. **It is recommended that the State use the open auctions process to issue bonds and then prepare an evaluation to determine if there were any savings.**

X00A00 – Public Debt

Treasurer’s Office’s Budget Includes Funds to Issue Variable Rate Bonds: The Treasurer’s Office is authorized to issue variable rate debt. To date, no variable rate debt has been issued. The fiscal 2008 allowance includes funds to support variable rate debt. Issuing variable rate debt is a significant policy change that will introduce new kinds of risk into the portfolio. **It is recommended that the Treasurers’ Office develop comprehensive, written variable rate debt policies prior to issuing any variable rate debt. The Treasurer should brief the committees on plans to issue variable rate debt and how quickly comprehensive, written policies can be developed.**

Recommended Actions

	<u>Funds</u>
1. Add language requiring the issuance of bonds through the open auction process.	
2. Delete general fund appropriation for general obligation bond debt service.	\$ 43,500,000
Total Reductions	\$ 43,500,000

X00A00
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Operating Budget Analysis

Program Description

There are two programs in the Public Debt:

- debt service, which funds principal and interest payments on general obligation (GO) bonds. GO bond debt service payments are supported by the Annuity Bond Fund (ABF). ABF revenues include State property tax revenues and repayments from certain State agencies, subdivisions, and private organizations. General funds may subsidize debt service if these funds are insufficient; and
- related expenses on State bonds, such as arbitrage penalty payments.

Performance Analysis – Factors Influencing General Obligation Bonds’ True Interest Cost

The interest rate that Maryland pays for the bonds it sells is referred to as the True Interest Cost (TIC). This rate is derived by calculating a bond sale’s internal rate of return. The TIC is calculated at each bond sale, and the bidder with the lowest TIC is awarded the bid.

The financial literature provides information about factors that influence the TIC of State and municipal bond sales. A statistical methodology standard in financial analysis may be used to evaluate these financial factors. The Department of Legislative Services (DLS) uses the sum of least squares regression to evaluate what factors influence the TIC Maryland receives on GO bond sales. This analysis first appeared in Chapter 5 of DLS’ *Effect of Long-term Debt on the Financial Condition of the State* released in December 2006. **Appendix 3** provides a description of the results. **Appendix 4** shows the values of the independent variables for each of the 33 data points.

The least squares regression analysis is used to evaluate the factors that could influence the TIC. The regression equation estimates the three statistically significant factors that influence the TIC. They are:

- ***Delphis Scale:*** The key variable is the Delphis Scale. This is an estimate of the market rate for AAA-rated State and municipal bonds. The Delphis Hanover Corporation prepares an index that measures the average yield on state and municipal bonds based on daily market activity (Delphis Scale). DLS has collected the estimated 10-year yield for AAA bonds for every bond sale since 1991 (10 years is used because that is the average maturity);

- ***Ratio of Maryland Total Personal Income to the United States Total Personal Income:*** One perspective on interest rates is to consider them as a return for risk. The higher the risk, the higher interest rate investors will expect. One factor of risk is the fiscal health of the entity selling the debt. In this regression equation, State personal income is used as a proxy for fiscal health. The regression equation uses a ratio that compares state personal income to United States personal income. If the ratio increases, Maryland is doing relatively better than the rest of the United States and a GO bond issuance's TIC should tend to decline; and
- ***Inclusion of a Call Provision:*** A call is an option that allows the seller to retire debt early. This may be advantageous if interest rates decline below the rate the seller is paying. Consequently, buyers often require higher interest rates if an issuance includes a call provision. Maryland usually issues callable bonds.

Equation's Significance – The DLS Equation May Be Used to Analyze and Compare State Debt Policies

Ultimately, the value of any statistical equation is its practical use. Important statistical equations are those that can illuminate complicated policy options. This particular equation provides a tool to better evaluate current debt policy. Specific policies evaluated later in the analysis are:

- ***If the Current Bond Bidding Procedures Are the Most Cost Effective:*** There are different kinds of bidding procedures that may be used when the State sells bonds. This equation may be used to statistically evaluate different bidding procedures. The issue and associated recommendations are found in Issue 5 in this analysis; and
- ***Costs and Benefits Associated with Issuing Callable Bonds:*** In most years, the State has included a call provision in the GO bonds that are issued. This allows the State to refinance or refund debt when interest rates decline. Prior analyses have solely calculated the benefits.

Analysis of Costs and Benefits Associated with Issuing Callable Bonds

Since we now have an estimate of how much more callable bonds cost than non-callable bonds, we can estimate the full cost or savings associated with issuing callable bonds. **Exhibit 1** provides the savings of a specific bond issuance and an estimate of the total savings for the callable bonds issued between 1991 and 2000. The State has refunded or called almost \$1.4 billion of the \$3.6 billion issued. After adjusting for the additional interest costs paid for callable bonds, the State saved \$59.0 million.

Exhibit 1
Call Provisions' Costs Compared to Savings
(\$ in Millions)

	<u>July 1998 Bond Sale</u>	<u>All Bond Sales 1991-2000</u>
Bonds Issued	\$250.0	\$3,590.0
Bonds Refunded	94.4	1,371.4
Estimated Gross Savings	4.4	69.5
Interest Premium Paid for Call ¹	1.9	10.4
Net Savings After Deduction Cost of Call	2.5	59.1

¹This is an estimate based on average additional cost paid for the 1996 first, 1996 third, 1997 first, 1997 second, and 1998 second bond sales. Because the State's policy regarding how quickly debt is amortized has not changed between 1991 and 2000, the amortization schedules for the various bond sales are very similar with respect to what percentage of debt is retired when. As a result, the estimate is quite robust and should approximate actual costs very well.

Source: Department of Legislative Services' Computation of Bond Sales' Official Statement and CDAC data

Governor's Proposed Budget

The fiscal 2008 allowance totals \$692.7 million. This is \$38.1 million (5.8%) greater than the fiscal 2007 debt service appropriation. The increase is attributable to higher GO bond authorizations and issuances in recent years resulting in more debt outstanding. New GO bond issuances increased from about \$425 million annually in fiscal 2001 and 2002 to \$725 million in fiscal 2003, \$500 million in fiscal 2004, \$775 million (including taxable issuances) in fiscal 2005, and an estimated \$750 million (including taxable issuances) in fiscal 2006.

Exhibit 2 shows the revenues that support the State's GO bond debt service. This allowance includes the first general fund appropriation since fiscal 2003. In April 2006, the Board of Public Works (BPW) reduced the State property tax rate from \$0.132 per \$100 of assessable base to \$0.112 per \$100 of assessable base. The ABF had sufficient funds to support debt service in fiscal 2007 but not in fiscal 2008. Consequently, a \$43.5 million general fund appropriation is required to fund the shortfall in the ABF.

State property tax receipts decline in fiscal 2007 and increase again in fiscal 2008. The fiscal 2007 decline is attributable to the property tax rate reduction in fiscal 2007.

The GO bonds' coupon interest rates are projected to remain at or near 5% through calendar 2007 – the State is still expecting some bond premiums in the 2007 bond sales. These bond sales' premiums are expected to generate \$21.1 million after deducting issuance costs.

Exhibit 2
Revenues Supporting GO Bond Debt Service
Fiscal 2006-2008
(\$ in Thousands)

	<u>2006</u> <u>Actual</u>	<u>2007 Working</u> <u>Appropriation</u>	<u>2008</u> <u>Allowance</u>
General Fund Appropriations	\$0	\$0	\$43,500
Annuity Bond Fund Activity			
Beginning Balance	\$106,275	\$102,579	\$7,958
Property Tax Receipts	575,131	551,959	618,056
Interest and Penalties on Property Taxes	2,126	1,500	1,500
Local Loan Repayments	2,459	2,695	1,414
Miscellaneous Receipts	9	200	200
Bond Premium	41,785	3,080	21,148
Transfer to Reserve	-102,579	-7,958	-1,081
Total Special Fund Appropriations	\$625,208	\$654,055	\$649,195
Adjustment for Summer Bond Sale	0	-562	0
Total Special Fund Expenditures	\$625,208	\$653,493	\$649,195
Total Expenditures for Debt Service	\$625,208	\$653,493	\$692,695

GO: general obligation

Note: Numbers may not sum to total due to rounding.

Source: Governor's Budget Books, Fiscal 2008, Volume III, Page 769

Issues

1. State Debt Management – Status Quo Debt Affordability Analysis

Chapter 43 of 1978 created the Capital Debt Affordability Committee (CDAC). The committee is required to recommend a level of State debt to the General Assembly and Governor. The committee is chaired by the State Treasurer, and other committee members are the Comptroller, Secretaries of Transportation and Budget and Management, and an individual appointed by the Governor. More recently Chapter 445 of 2005 added the chair of the Capital Budget Subcommittee of the Senate Budget and Taxation Committee and the chair of the Capital Budget Subcommittee of the House Committee on Appropriations as nonvoting members. The committee meets each summer and fall to evaluate State debt levels and recommend prudent debt limits to the Governor and General Assembly. The Governor and General Assembly are not bound by the committee’s recommendations.

When reviewing State debt, CDAC considers GO bonds, consolidated transportation bonds, Grant Anticipation Revenue Vehicles (GARVEEs), stadium authority bonds, bay restoration bonds, and capital leases supported by State revenues. Bonds supported by non-state revenues, such as the University System of Maryland’s Auxiliary Revenue bonds or the Maryland Transportation Authority’s revenue bonds, are not considered to be State-sourced debt and are not included in CDAC’s debt affordability calculation.

Exhibit 3 shows that CDAC proposed \$810 million in GO debt in fiscal 2008. The recommendation, which is \$120 million more than was authorized for fiscal 2007, reflects a change in application of the committee’s authorization policy. To meet the high demand for capital funding, the committee increased base authorizations \$100 million annually. Because subsequent increases are based on percent growth, the base is increased and out-year increases exceed \$100 million.

Exhibit 3
Recommended Levels of GO Bond Authorizations
Fiscal 2007-2012
(\$ in Millions)

<u>Fiscal Year</u>	<u>Proposed GO Bond Authorizations</u>	<u>Change from Previous Year’s Authorization</u>
2007	\$690	\$20
2008	810	120
2009	835	25
2010	860	25
2011	890	30
2012	920	30

GO: general obligation

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations for Fiscal 2008*

Exhibit 4 shows that the committee now recommends a total of over \$4.3 billion in authorizations from fiscal 2008 to 2012. This is an increase of \$565 million over the five-year period.

Exhibit 4
Effect of New Policy on GO Bond Authorizations
Fiscal 2008-2012
(\$ in Millions)

<u>Fiscal Year</u>	<u>2005 Report Recommended Authorizations</u>	<u>2006 Report Recommended Authorizations</u>	<u>Increased Authorization</u>
2008	\$710	\$810	\$100
2009	730	835	105
2010	745	860	115
2011	770	890	120
2012	795	920	125
Total	\$3,750	\$4,315	\$565

GO: general obligation

Source: *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations*, 2005 and 2006

Proposed Levels of State Debt Are Affordable

CDAC currently uses two criteria to evaluate debt. Total State debt outstanding should be limited to 3.20% of State personal income, and total State debt service should be limited to 8.00% of State revenues supporting debt service. **Exhibit 5** shows that the State currently meets both criteria, as debt outstanding peaks at 3.01% of personal income in fiscal 2010 and debt service peaks at 6.48% of revenues in fiscal 2012. This analysis assumes no changes in laws or policies.

Exhibit 5
Capital Debt Affordability Committee’s Criteria
Proposed Debt Levels Are Affordable
Fiscal 2007-2012

<u>Fiscal Year</u>	<u>Debt Outstanding/ Personal Income</u>	<u>Debt Service/ Revenues</u>
2007	2.72	5.41
2008	2.80	5.82
2009	2.98	6.09
2010	3.01	6.28
2011	2.97	6.41
2012	2.89	6.48

Source: Department of Legislative Services’ Computation of Department of Budget and Management data

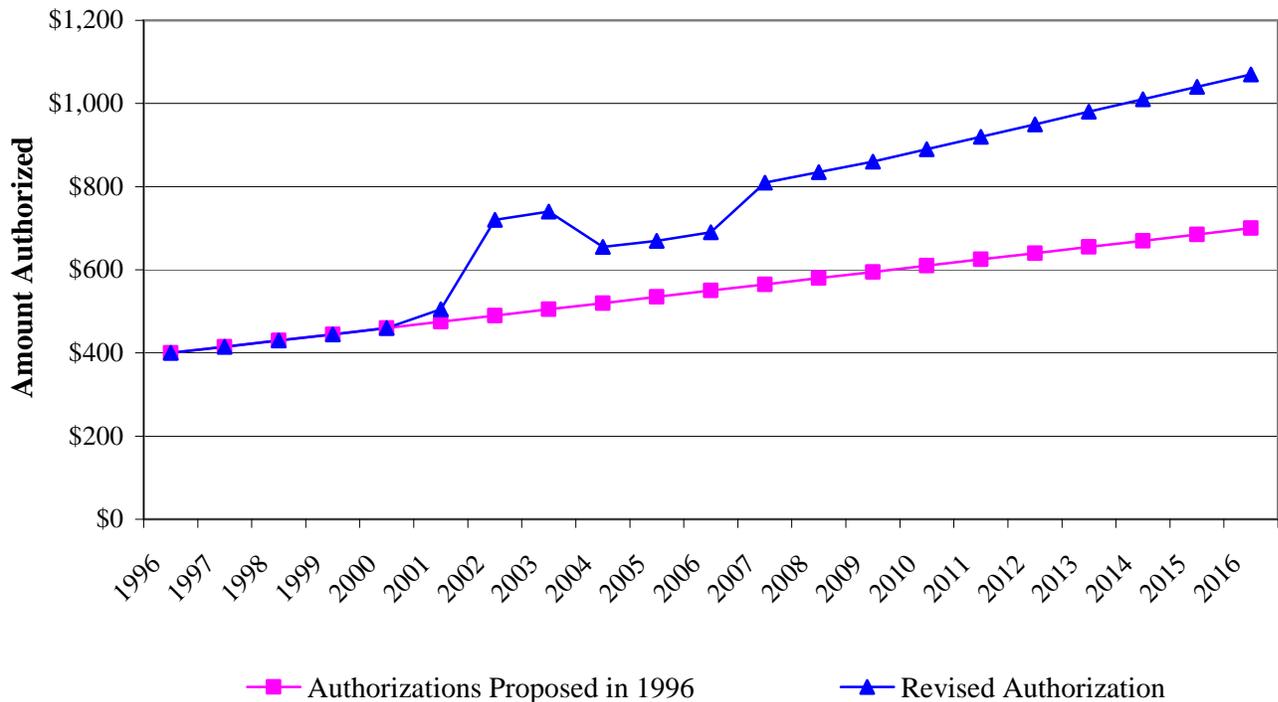
2. State Debt Management – Demand for Capital Projects Has Led to Increased Debt Authorizations Since 2000

Since the 2000 legislative session, State debt has been increased by authorizing additional GO debt and new kinds of debt. Unused debt capacity has declined since 2000, and the demand for new debt adds pressure to authorize even more debt.

GO Bond Authorizations Increase by \$3.9 Billion Between 2001 and 2016

Prior to the 2001 legislative session, the State policy was to increase debt authorizations by \$15.0 million annually. This policy had been in place for over a decade. In 2001, this steady growth policy was changed. Since 2001, the State has regularly increased the GO bond authorizations. **Exhibit 6** compares the mid-1990s proposed authorization trend line with the revised authorizations. In 1996, the Capital Debt Affordability Committee proposed authorizing \$9.9 billion over the period. Since 2001, proposed authorizations have increased by over \$3.9 billion. The growth of debt may be traced to six separate actions as shown in **Appendix 5**.

Exhibit 6
Growth in GO Bond Authorizations Begin in the 2001 Legislative Session
Session 1996-2016
(\$ in Millions)



GO: general obligation

Source: Department of Legislative Services' *Effect of Long-term Debt on the Financial Condition of the State*, 2006

New State Debt Programs Were Also Authorized

Since 2000, the State has also authorized the following new kinds of State debt:

- Bay Restoration Bonds:** The Bay Restoration Fund, which is authorized to issue bonds supported by the fund's revenues, was created to fund wastewater treatment plant improvements. The estimates assume that \$530 million in bay bonds will be authorized. The amount of debt issued is limited by the revenues generated by the fund. Additional revenues can generate additional debt; and

- **Grant Anticipation Revenue Vehicles:** GARVEEs are supported by federal transportation grants. An authorization to issue GARVEEs was given to support the InterCounty Connector. The legislation limits the amount issued to \$750 million.

Unused State Debt Capacity Continues to Decline

As in recent years, the State still has unused debt capacity; however, this unused capacity is continuing to shrink. In January 2005, Department of Budget and Management data suggested that the State had sufficient capacity to issue almost \$1.5 billion in State debt. **Exhibit 7** shows that unused capacity declined from approximately \$867 million in January 2006 to \$609 million in January 2007. The comparison is made in fiscal 2010 since that is the year in which the State is closest to the debt limit. The comparison also uses the strictest capacity test; issuing the debt all at once to determine how quickly the State reaches capacity.

Exhibit 7
GO Bond Growth
Comparison of 2006 and 2007 DLS Unused Capacity Estimates
(\$ in Millions)

<u>Debt Outstanding June 30, 2010</u>	<u>January 2006 Estimate</u>	<u>January 2007 Estimate</u>	<u>Difference</u>
GO Bond	\$5,920	\$6,042	\$122
Capital Leases	171	196	25
Transportation Bonds	1,695	1,927	232
Grant Anticipation Revenue Vehicles	608	652	44
Stadium Authority Bonds	236	266	30
Bay Restoration Bonds	339	370	30
Total Debt Outstanding	\$8,970	\$9,454	\$484
Estimated Personal Income in 2010	\$307,392	\$314,469	\$7,077
Unused Capacity	\$867	\$609	-\$258
Fiscal 2009 Debt Outstanding as Percent of Maryland Personal Income	2.92%	3.01%	0.09%

GO: general obligation

DLS: Department of Legislative Services

Note: Numbers may not sum due to rounding.

Source: Department of Legislative Services' Computation of Department of Budget and Management data

One concern about the dwindling debt capacity is that changes in economic assumptions may result in substantial changes in debt capacity. **Exhibit 8** provides a recent example of how changes in capacity attribute to changes in personal income. The analysis compares excess capacity in DLS’ *Effect of Long-term Debt on the Fiscal Condition of the State* released in December 2006 with the unused capacity implied in the CDAC report, whose data was prepared in earlier in fall 2006. (To ensure that the estimates are comparable, the same methodology is used in both estimates to estimate affordability.)

Exhibit 8
Comparison of DLS and CDAC Changes in Factors Influencing Unused Capacity
(\$ in Millions)

	<u>CDAC Report</u>	<u>DLS Report</u>	<u>Difference¹</u>
Personal Income	\$283,391	\$297,806	-\$14,415
Capacity	9,069	9,530	-461

DLS: Department of Legislative Services
 CDAC: Capital Debt Affordability Committee

¹ In December 2006, the Board of Revenue Estimates’ released new personal income estimates that were slightly less than the DLS estimate, thus reducing capacity by a more modest \$40 million.

Source: Department of Legislative Services’ *Effect of Long-term Debt on the Financial Condition of the State*, 2006; Computation of *Report of the Capital Debt Affordability Committee on Recommended Debt Authorizations for Fiscal 2008*

In this example, unused capacity attributable to personal income changes by almost one-half billion dollars in a matter of months. The point of this example is that normal changes in a key economic variable can have a substantial effect on State debt capacity. When the State had billions of dollars of unused capacity, a half-billion dollar decline in unused capacity was essentially irrelevant. However, the State no longer has billions of dollars of unused capacity. Given that the amount of unused capacity is now much smaller than in previous years, changes in personal income may be quite meaningful. Under current policies, the State will need to pay close attention to the effect of personal income on unused State debt capacity.

Demand for Non-GO State Debt Is More Likely to Rise Than to Fall

While GO bonds may be the largest form of State debt, they are not the only form of State debt. At the end of fiscal 2006, non-GO bonds represented 25% of total State debt. (Other State debt includes transportation, bay, and stadium authority bonds, as well as capital leases and GARVEEs.) By fiscal 2009, non-GO debt is projected to rise to 35% and then decline slightly thereafter. As the

X00A00 – Public Debt

State's unused capacity dwindles, increases in one kind of debt limits the amount of other debt that may be issued. A concern is that the non-GO debt estimates currently used are more likely to be revised upward than downward over the forecast period. Specific issues include:

- ***Transportation Capital Program Decline:*** By all accounts, the transportation's current revenue structure cannot maintain the capital program at fiscal 2007 levels. This is not unusual. Major transportation revenues, such as the gas tax and registration fees, are not inflation sensitive while capital spending is inflation sensitive. Most transportation plans include declining capital spending in the out-years. To slow or halt the decline, the Maryland Department of Transportation (MDOT) must periodically request additional funds which forces the department to justify its program. MDOT's current Transportation Trust Fund forecast assumes that its capital program will decline from \$1.7 billion in fiscal 2008 to \$1.0 billion in fiscal 2012. It is unlikely that there will be such a significant decline in the transportation program. Either revenue receipts will exceed estimates or the State will provide additional revenues for the transportation capital program. Additional revenues will provide additional transportation debt capacity, which the department is likely to use.
- ***Potentially Underfunded Bay Restoration Fund:*** The State is also planning to issue bay bonds to make improvements to wastewater treatment plants. To date, the construction bids have been higher than expected (which has also been an issue with a number of other capital projects) and revenues have been lower (primarily due to collections from federal facilities). Unofficial estimates are that the program may need hundreds of millions of dollars more than is available in the Bay Restoration Fund revenues and bonding capacity. Providing adequate funding to meet the program's goals may result in the issuance of additional debt.
- ***Unexpected Capital Leases:*** The State occasionally uses capital leases to move quickly on capital projects. Because of the unexpected nature of these projects, they are not anticipated and are not included in the CDAC debt estimates. Since these projects do happen, however irregularly, actual lease debt outstanding tends to exceed projections. For example, in 2000 the CDAC estimated that total capital lease debt outstanding would be \$176 million; the actual figure was \$226 million.
- ***Maryland Stadium Authority Projects:*** The Maryland Stadium Authority has a planning process and periodically prepares feasibility studies to examine capital needs. Examples of such studies include a horse park in Anne Arundel County, a sports facility in Montgomery County, a sailing hall of fame in Annapolis, and a motor sports park in Allegany County. If any of these projects were to be developed, it would add to the State's debt level.

Conclusion – Although Debt Capacity Has Declined, the Pressures to Issue More Debt Have Not

In 2000, State debt outstanding was 77% of total debt capacity. Now total debt outstanding is 94% of capacity. This increase is attributable to:

- aggressive increases in actual and proposed GO bond authorizations since 2001; and
- authorizations of two new kinds of debt (GARVEEs and bay bonds).

A review of specific bond programs suggests that the likelihood that the current estimates of non-GO debt outstanding, such as transportation and bay bonds, are more likely to be revised upward than downward. There is also considerable pressure to issue more GO bonds. For example, the Administration's *Capital Improvement Program* reduces GO bonds for public school construction from \$386 million in fiscal 2008 to \$250 million annually from fiscal 2009 to 2012.

If the State continues to increase authorizations beyond what is currently planned, the State will exhaust capacity as it is currently defined. The State may soon be faced with the choice of either slowing the growth of debt authorizations or redefining capacity.

3. State Debt Management – Debt Service Costs Have Grown, and the Current Revenue Structure Requires a General Fund Subsidy for Debt Service

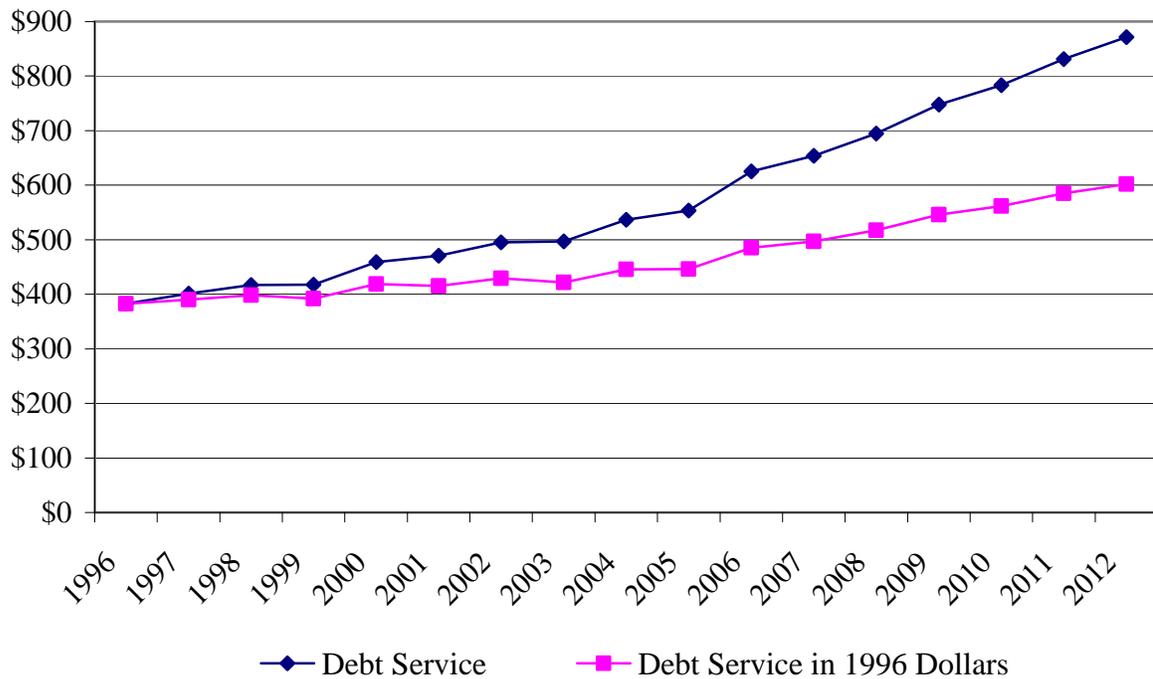
GO bond debt service costs are supported by the ABF. Historically, the fund's largest revenue source has been the State property tax. Other revenue sources include bond sale premiums, interest earnings generated by fund balances, and repayments for local bonds. When the ABF has not generated sufficient revenues to fully support debt service, general funds have subsidized debt service payments. Over the next few years, there are two factors that will influence the ABF:

- increasing debt service costs; and
- slowing growth in State property tax receipts.

State Debt Service Costs Are Projected to Continue to Increase

In recent years, the State has expanded the GO bond capital program. The predictable result is that debt service costs are projected to continue to increase. **Exhibit 9** shows that GO bond debt service costs are expected to increase to almost \$870 million by fiscal 2012. Debt service costs are also rising faster than inflation. In 1996 dollars, fiscal 2012 debt service costs rise to \$602 million, which is an increase of 57%. The greatest growth occurs after fiscal 2005. In the 10-year period prior to fiscal 2005, inflation-adjusted debt service is 17% greater than fiscal 1996. From fiscal 2005 to 2012, inflation-adjusted debt service increases another 40%, as growth totals 57%.

Exhibit 9
Debt Service Costs Rise Is Faster Than Inflation
Fiscal 1996-2012
(\$ in Millions)



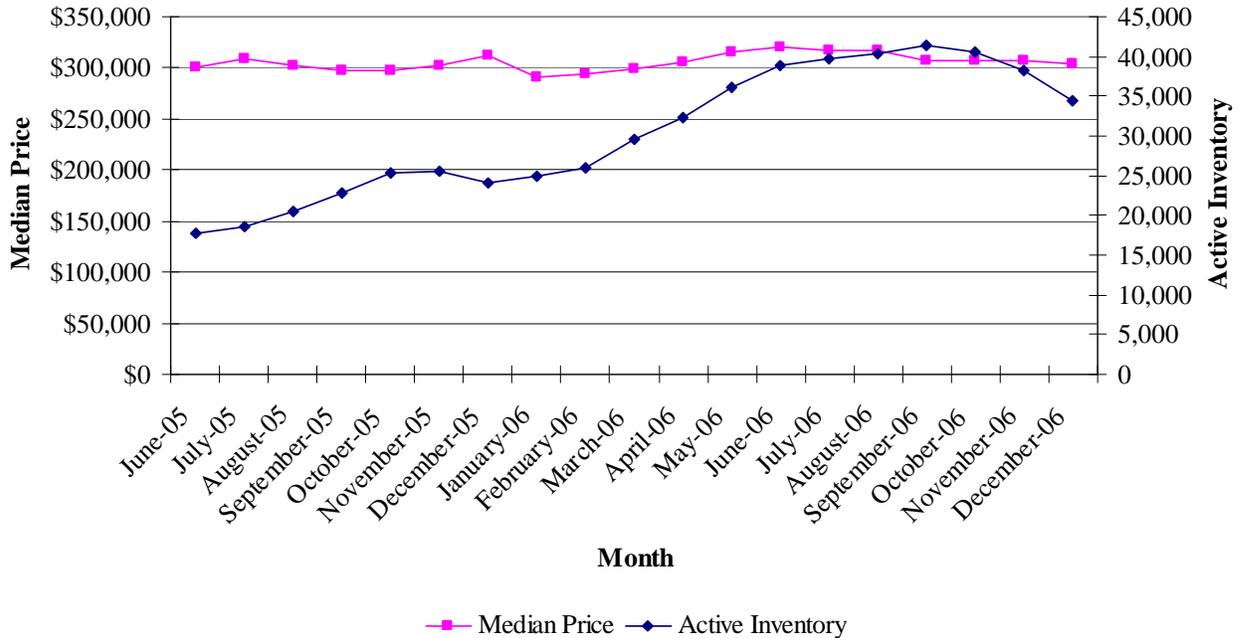
Source of Data: Department of Budget and Management, January 2007
 Source of Consumer Price Index: Global Insight, January 2007

Period of Steep Real Estate Price Appreciation Appears to Be Ending

In recent years, State property tax revenues have been growing because of increases in real estate property values. The Maryland Association of REALTORS reports that the median sales price of a home in Maryland increased from approximately \$145,000 in December 2000 to almost \$305,000 in December 2006. These increased sales prices have driven up the State assessable base, thus increasing property tax collections.

In the near term, it appears unlikely that the growth in assessable base will continue to increase as rapidly as it did in recent years. **Exhibit 10** shows that the inventory of housing for sale has increased from approximately 18,000 in June 2005 to approximately 40,000 by July 2006. Median prices have been hovering around \$300,000 since June 2005. Median prices peaked in June 2006 at almost \$321,000 and then dropped to \$305,000 in December 2006.

Exhibit 10
Home Price Appreciation Slows as Active Inventories Increase



Source: Maryland Association of REALTORS

The dip in active inventories in December 2006 is consistent with prior years’ experiences. The housing market appears to be cyclical as inventories tend to decline toward the end of the calendar year. From September to December 2006, inventories decline by 17%. In percentage terms, this decline is smaller than 2004, when inventories declined 24% from September to December. If previous years’ trends hold, it appears likely that inventories will increase again toward the end of the winter. The large inventory is likely to keep the values of homes from appreciating substantially in the near term.

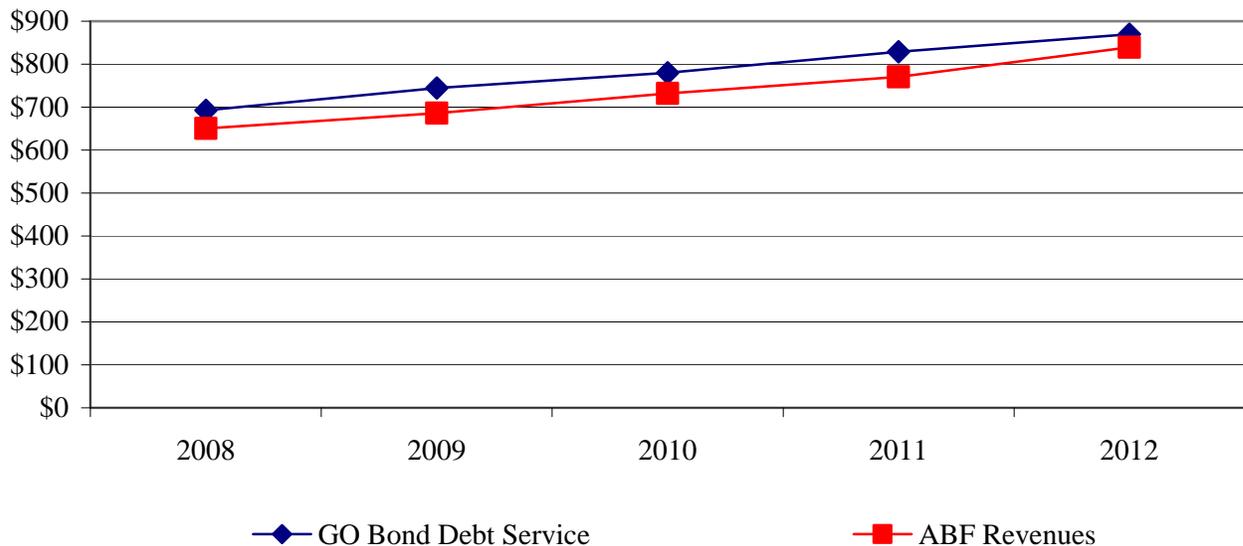
In November 2006, the State Department of Assessments and Taxation revised its estimates of the State’s property tax assessable base. The new estimates appear to reflect the slowdown in the housing market. Unlike previous years, there has not been a substantial upward revision. The total value of Maryland’s projected real property value increased by \$13 billion in fiscal 2008. The estimate increased 2.2% as total real property values are expected to exceed \$609.0 billion. This upward revision is quite a bit smaller than the November 2005 revision, which added more than 7% to the assessable base.

Annuity Bond Fund Revenues Insufficient to Support Debt Service After Fiscal 2007

Through fiscal 2003, State property taxes remained unchanged at \$0.084 per \$100 of assessable base. At this level, State property taxes supported approximately 55 to 60% of debt service costs. The State did not appropriate general funds for the ABF in the fiscal 2004 budget. To eliminate the ABF revenue shortfall, BPW increased the State property tax rate to \$0.132 per \$100 of assessable base. With these actions, the State moved from maintaining a constant property tax rate and funding any remaining debt service with general funds to funding over 90% of the debt service payments with property taxes and without any general funds. As in fiscal 2004, the fiscal 2005 and 2006 budgets do not include any general funds for GO bond debt service.

In April 2006, BPW reduced the State property tax rate by 2 cents, to \$0.112 per \$100 of assessable base. Consequently, the ABF revenues are now insufficient, and a general fund subsidy is needed to make GO bond debt service payments. **Exhibit 11** shows that, if State property tax rates are maintained at \$0.112 per \$100 of assessable base, the State will need to appropriate \$43.5 million in fiscal 2008. From fiscal 2009 to 2012, the general fund will need to provide an additional \$193.0 million to support the ABF.

Exhibit 11
Annuity Bond Fund Shortfall
Fiscal 2008-2012
(\$ in Millions)



Source: Department of Legislative Services' Computation of Department of Budget and Management data

Conclusion – Even with the Increased GO Bond Debt Service Costs and Slowing State Property Taxes Rates, Revenues Nearly Support Debt Service

In recent years, appreciating real estate values have driven up State property tax receipts. This trend is beginning to slow. Current estimates expect debt service to continue to grow. Fortunately, the rate of revenue and expenditure growth is expected to be quite similar. From fiscal 2008 to 2012, State property tax receipts are expected to grow just under 8%, while debt service costs are projected to grow just under 6%. At current rates, State property tax receipts are sufficient to generate 94% of debt service costs in fiscal 2008. This rises slightly to almost 97% in fiscal 2012. The current State property tax revenue structure can almost fully fund debt service.

4. State Debt Management – Maryland Should Update the Affordability Process to Align It with Other States’ Policies, Best Practices, and the State’s Financial Outlook

CDAC was created to advise the General Assembly and Governor on debt policy. The committee develops affordability criteria and offers recommendations. Rating agencies and financial literature appreciate stable debt management. States with stable debt management tend to have higher rated bonds and pay less in interest. That stability is important does not mean that State debt policies cannot change. As Maryland’s goals, needs, and resources change, policies may also change. Since its inception in 1978, the committee did change policies 20 years ago to recognize that goals had changed. It appears that the State’s financial condition and needs have changed sufficiently that another change in debt policies is warranted. In Maryland, debt outstanding has become the controlling criterion. This focus on debt outstanding, instead of debt service, is inconsistent with the policies of most AAA-rated states and the practices recommended in the financial literature.

CDAC Has Evolved Since It Was Created in 1978

Chapter 43 of 1978 created CDAC. The committee is required to recommend an estimate of a prudent GO bond authorization to the General Assembly and Governor. The committee’s 1979 report noted that it was created “[i]n response to a growing concern that the level of Maryland’s general obligation debt was high and rising.” Interestingly, the high level of growth was attributable to increased GO bond issuances for public school construction in the early 1970s.

To moderate State debt, the committee surveyed municipal finance specialists to develop criteria for evaluating debt affordability. To limit debt, the following criteria were established in 1979:

- debt outstanding should be limited to 3.2% of Maryland personal income;
- debt service should be limited to 8.0% of revenues supporting the debt service; and

X00A00 – Public Debt

- new authorizations are kept in the range of redemptions of existing debt. In other words, the State should not issue more than is being retired, ensuring the debt outstanding will not grow. This was referred to as the “get out of debt” criterion.

At the time the criteria were developed, the State exceeded the criteria. For example, the 1979 report estimates that fiscal 1980 would end with debt outstanding exceeding 5.4% of personal income and debt service exceeding 11.3% of revenues. When initially implemented, the goal of CDAC was to reduce the State’s debt burden. CDAC included the third criterion to ensure that the debt could not grow in the short-term. In fiscal 1986, debt outstanding to personal income fell below the 3.2% threshold, and in fiscal 1987 debt service to revenues fell below the 8% threshold. Subsequently, the third criterion was dropped. Specific reasons for eliminating the criterion were that:

- the justification for the criterion, to reduce debt outstanding, was no longer a State goal;
- the criterion arbitrarily limits debt authorizations to actions that took place as much as 15 years ago; and
- the committee was concerned that the “get out of debt” criterion “became controlling over the short term.”

Debt Outstanding Is Now the Controlling CDAC Criterion

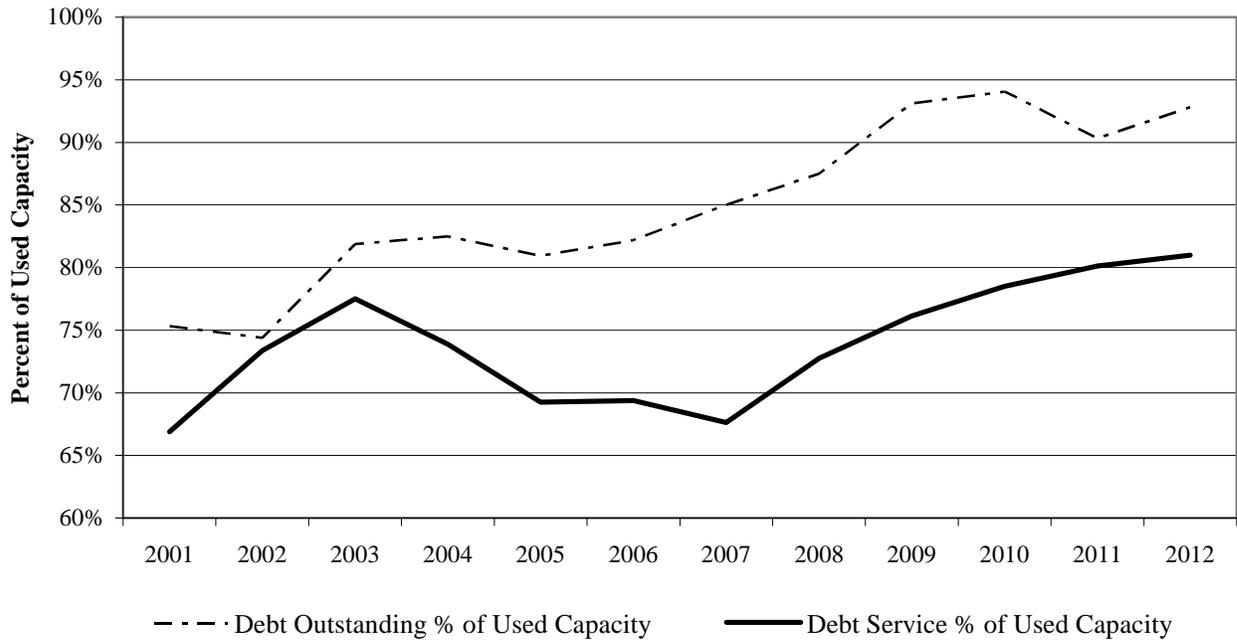
Over the last decade, the debt outstanding criterion has become the controlling criterion. **Exhibit 12** compares actual CDAC ratios with the limit (*i.e.*, 3.2% of debt outstanding and 8.0% for debt service). If a ratio reaches 100.0%, it is at the limit. If it exceeds 100.0%, it exceeds the limit. The exhibit also shows that debt outstanding has been closer to capacity in every year since fiscal 2001.

The implication is that the debt outstanding criterion has become the controlling criterion in every year since fiscal 2001. Given current estimates and the disparity between the unused capacities of the two criteria, it appears unlikely that this relationship will change any time soon. Similar to the “get out of debt” criterion in the late 1980s, the debt outstanding criterion has become controlling over the short-term.

Other AAA-rated States’ Debt Affordability Policies Tend to Focus on Debt Service, Not Debt Outstanding

DLS has surveyed other AAA-rated states (as of January 2007) to determine what debt affordability policies, if any, they have. The states surveyed include states rated AAA by all three rating agencies (Delaware, Georgia, Missouri, North Carolina, Utah, and Virginia) as well as states rated AAA by at least one major rating agency (Florida, Minnesota, and South Carolina). **Exhibit 13** shows debt policies of the other nine states with AAA ratings.

Exhibit 12
Debt Outstanding and Debt Service – Percent of Used Capacity
Fiscal 2001-2012



Source: Department of Legislative Services' Computation of Capital Debt Affordability Committee data

Exhibit 13

AAA States' Debt Management Policies

<u>State</u>	<u>Agency or Commission Managing Debt and Reporting to Elected Officials</u>	<u>Affordability Guidelines</u>	<u>Other Considerations</u>	<u>Other States Examined</u>
Delaware	None. Debt limits are codified in the Delaware code.	No specific affordability panel or agency evaluates debt; no defined quantitative criteria to evaluate debt; and no report on debt.	Delaware code limits principal issued to 5% of general fund revenues and limits debt service payments to revenues.	None.
Florida	The Florida Division of Bond Finance prepares an annual affordability report that is delivered to legislative leaders. The division is an executive branch agency. The report provides the basis for debt issuance decisions.	Florida refers to debt service to available revenues as its “benchmark debt ratio.” Debt service is limited to 7% of revenues with a goal of 6%.	Florida also evaluates reserves and debt outstanding.	10 most populous states.
Georgia	The Georgia State Financing and Investment Commission is a constitutionally created commission, with executive and legislative members, that prepares a debt management plan which recommends debt policies to the Governor and General Assembly.	No specific guidelines but the plan notes that debt service to personal income “is particularly useful ... since this ratio indicates the budgetary impact.” Debt outstanding to personal income and debt outstanding per capita is also evaluated.	Annual debt service for current and subsequent years may not exceed 10% of prior year’s treasury receipts.	AAA states examined for informational purposes.
Minnesota	A Debt Management Policy was established by the executive in 1979. The policies are not in the statutes. The Department of Finance reports state debt’s status, through capacity reports and other presentation, to the legislature. The department is an executive branch agency.	Guidelines limit debt service to 3% of general revenues, debt outstanding to 2.5% of personal income, and require that 40% of debt be retired in five years and 70% in 10 years.	None.	No comparisons to other states provided in the documents.
Missouri ¹	There are no formal debt management policies.	No specific affordability panel or agency evaluates debt; no defined quantitative criteria to evaluate debt; and no report on debt.	GO debt must be authorized by the voter referendum and then approved by the legislature.	AAA states examined for informational purposes.

X00A00 – Public Debt

<u>State</u>	<u>Agency or Commission Managing Debt and Reporting to Elected Officials</u>	<u>Affordability Guidelines</u>	<u>Other Considerations</u>	<u>Other States Examined</u>
North Carolina	The North Carolina Debt Affordability Advisory Committee reports to the Governor and General Assembly. The purpose of the report is to provide “a basis for assessing the impact of future debt issuance on the State’s fiscal position.”	Debt service as a percentage of general tax revenues is the “preferred” ratio. It should not exceed 4.75%.	Debt outstanding to personal income should not exceed 3%, and at least 50% of debt should be retired over next 10 years.	Ratios are compared to other AAA-rated states and state medians.
South Carolina	Budget and Control Board, a statutory board that includes executive and legislative officials, approves debt issuances while the Treasurer’s Office sets and implements policies.	No specific affordability panel or agency evaluates debt; no defined quantitative criteria to evaluate debt; and no report on debt.	Constitution limits GO debt service to 5% of prior year’s revenues. Similar limits exist for revenue bonds.	None.
Utah	There is no formal debt management policy. Policy regarding debt issuance is established by the legislature and is dictated by funding needs and available cash flow.	No specific affordability panel or agency evaluates debt; no defined quantitative criteria to evaluate debt; and no report on debt.	Constitution limits debt outstanding to 1.5% of property values.	AAA states examined for informational purposes.
Virginia	Debt Capacity Advisory Committee, which includes legislative and executive staff as well as citizens, recommends the amount of debt that may be issued. The recommendation is not binding for the Governor or General Assembly, but is generally adopted.	Debt service cannot exceed 5% of revenues supporting debt service.	Debt outstanding per capita, debt outstanding as a percent of personal income, and maintain two-year excess capacity at end of forecast period.	AAA states examined for informational purposes.

¹ Missouri is unique in that it is the only AAA-rated state without any affordability guidelines, constitutional limits, or statutory limits. Historically, Missouri tends to have the lowest level of debt issued among the AAA-rated states. In a 2006 Denison, Hackbart, and Moody report (in their study entitled *State Debt Limits: How Many Are Enough?*) that states with debt limits reported higher debt than states without limits. The study speculates that states with higher debt “may feel it is important that they demonstrate prudent debt management policies if they are to maintain favorable bond ratings.”

Source for Delaware, Georgia, Missouri, South Carolina, Utah, and Virginia: Department of Legislative Services’ survey of state treasury officials and debt managers, July 2005

Source for other states: North Carolina Debt Affordability Advisory Committee *Debt Affordability Study*, February 1, 2006; *State of Florida 2006 Debt Affordability Report*; Minnesota Department of Finance March 2006 *Debt Management Presentation*; and Minnesota Department of Finance November 2006 *Report to Legislature – Debt Capacity Report Office Memorandum*

There are a number of ways to organize and interpret the various affordability processes used in other AAA-rated states. For the purposes of this analysis, the relevant focus is how affordability limits are derived. The key question is what quantitative variables are used to determine limits? AAA-rated states have the following approaches:

- ***States with Debt Management Policies and Reporting Agencies That Use Guidelines That Identify Debt Service to Revenues as the Key Guideline:*** Florida, Georgia, North Carolina, and Virginia all consider debt service to revenue as the key measure. They have uniquely identified this as a “benchmark,” as well as “preferred” and “particularly useful;”
- ***States with Debt Management Policies and Reporting Agencies That Use Multiple Guidelines:*** Minnesota’s developed a Debt Management Plan whose guidelines limit debt service, debt outstanding, and bonds’ maturities; and
- ***States without Any Guidelines or Reporting Agencies:*** Delaware, Missouri, South Carolina, and Utah do not have any guidelines. Authorizations are based on perceived demands and resources.

The most common guideline used to evaluate debt affordability is to compare debt service to revenues. Four of the five states that evaluate affordability perceive debt service to revenues to be the key ratio.

A Survey of the Financial Literature – Maryland Compares Well in All Practices except Relating Criteria to the State’s “Financial Outlook”

Debt policy is a key component of a state’s financial plan. Effective debt policies promote financial stability. It is an issue that has been examined in the financial literature, which suggests guidelines. The Government Finance Officers Association’s (GFOA) *A Guide for Preparing a Debt Policy* (released in 1998) provides a summation of some of key guidelines. **Exhibit 14** quotes the guidelines recommended by GFOA and evaluates how well Maryland compares to the guidelines.

Based on the literature, the State’s CDAC process is almost ideal. The process is clearly defined, open, consistently applied, and flexible enough to manage unique situations. The shortcoming is that the process is inconsistent with the State’s “financial outlook.” The State is experiencing a period of long-term structural deficits and having debt outstanding as the controlling criterion is inconsistent with current conditions. The evaluation of GFOA guidelines suggests that Maryland’s CDAC process should be refocused so that the debt outstanding criterion no longer is the controlling criterion.

Exhibit 14
GFOA Guidelines Compared to Maryland’s Practices

GFOA Guidelines

Evaluation of Maryland’s Practices

“A consistently applied debt policy provides evidence to the rating agencies of community’s commitment to sound financial management and controlled borrowing practices.”

Maryland created CDAC in 1978. The goal was to reduce debt in 15 years to the target criteria ratios within 15 years. This was achieved by 1987, 6 years ahead of the target. Since 1987, the Governors and legislatures have complied with all CDAC recommended authorization limits. Clearly, the State has consistently applied debt policy.

“Nevertheless, the policy should be sufficiently flexible to permit the government to take advantage of market opportunities or respond to changing conditions.”

Since 2002, the State has taken advantage of market conditions by refunding \$1.4 billion in GO bonds. Flexibility has also been demonstrated by the changes in proposed authorizations since 2000. One shortcoming is that the CDAC process has not responded to the long-term structural deficit. Debt outstanding, not debt service, is the controlling criterion.

“Debt policies should be formally submitted to and adopted by a jurisdiction’s elected officials.”

Every fall, CDAC issues its report and recommendations, which are complied with by the Governor and General Assembly.

“Compliance with outstanding debt or debt service limitations and other measures of affordability should be documented in the budget document, annual report or other reports, as appropriate.

Maryland’s process is open and well documented. *The 90 Day Report*, which provides a summary of all actions taken by the General Assembly, provides information about the capital budget and CDAC compliance.

“A policy of affordable levels of debt will be based on a government’s financial condition, including trends in financial performance, service levels, the tax and revenue base, and the impact of debt on its financial outlook.”

One shortcoming with the CDAC process is that it is no longer entirely congruent with the State’s financial outlook. When first proposed, the goal was to “get out of debt.” The process was aligned to achieve this goal. Currently, the situation is managing a structural deficit. Having debt outstanding as the controlling criterion is incongruent with the State’s current financial outlook.

Source: Government Finance Officers Association’s *A Guide for Preparing a Debt Policy*, 1998

CDAC Should Adapt Criteria to the State’s Financial Outlook

There is general agreement that the State faces a structural deficit in the out-years. In the *Fiscal Briefing*, DLS estimates that, if current revenue and expenditure trends continue, general fund expenditures will exceed general fund expenditures by \$1.4 billion in fiscal 2009. Since the fiscal 2008 budget essentially spends all cash reserves, there is less than \$100 million available to spend in fiscal 2009. This means that the State will require some combination of tax and fee increases, significant spending reductions, or transferring other special funds into the general fund. The point is Maryland’s financial outlook includes a large structural deficit and solving next year’s spending problem is quite a daunting task.

CDAC Policies Were Adopted for Goals That Are No Longer Applicable

The CDAC criteria were developed at a time when interest rates were higher and the State was not overly concerned with a long-term structural deficit. At the time, the goal of the criteria was to “get out of debt.” It certainly was successful; debt outstanding to personal income dropped from 5.40% in fiscal 1980 to 2.41% in fiscal 2001. The success of the goal suggests that the CDAC approach is effective.

With respect to debt, the State’s goals have changed since the process was first introduced. In 1986, the State recognized that the goal was no longer to “get out of debt” and a criterion was dropped. The State again faces a situation where the CDAC process is incongruent with State goals. Currently, the State is facing a long-term structural deficit. Since affordability is limited by debt outstanding, the process does not adequately recognize the effect that issuing debt has on debt service and the structural deficit. The State also has made substantial capital commitments (Chapters 306 and 307 of 2004 also referred to as the Public School Facilities Act of 2004) that may require additional capital funding to realize. **Because the personal income criteria has become the controlling criterion and it is reaching capacity, the CDAC process is limiting State debt without addressing the structural deficit.**

DLS Recommends Amending CDAC Criteria to Increase the Focus in Debt Service and Ending General Fund Subsidies That Exacerbate the Structural Deficit

It is time for CDAC to review its debt policies to better adapt them to Maryland’s financial outlook. Specific policies to examine are:

- ***Eliminating the General Fund’s GO Bond Debt Service Subsidy:*** This would reduce the general fund’s long term structural deficit. It would also require an increase in the State property tax rate. The current rate is \$0.112 per \$100 of assessable base. **Exhibit 15** shows that the rate would need to be increased by \$0.008 for a rate totaling \$0.12 per \$100 of assessable base in fiscal 2008. To fully fund debt service in the out-years, tax rates would only need to be changed slightly after fiscal 2008. Exhibit 15 shows that the rate would again

Exhibit 15
Effect of Eliminating the General Fund Subsidy
Fiscal 2008-2012

<u>Fiscal Year</u>	<u>Required Property Tax Rate</u>	<u>Annual Rate Change</u>	<u>Annual Change in Taxes Paid¹</u>	<u>Increase Over Current Rate</u>
2008	\$0.1200	\$0.0080	\$24	\$24
2009	0.1220	0.0020	6	30
2010	0.1195	-0.0025	-8	23
2011	0.1204	0.0009	3	26
2012	0.1160	-0.0044	-13	12

¹ Assumes median December 2006 home price as reported by the Maryland Association of REALTORS.

Source: Department of Legislative Services' Computation of State Department of Assessments and Taxation and Department of Budget and Management data

need to be increased two-hundredths of a penny in fiscal 2009 and could be reduced in fiscal 2010. This rate is still less than the peak rate paid between fiscal 2004 and 2006, which was \$0.132 per \$100 of assessable base. The rate increase results in adding \$24 to the median homes tax bill in fiscal 2008. Insofar as only one-third of homes are assessed each year (resulting in a lag between market appreciation and assessment increases) and the homestead credit limits rate increases, the \$24 estimate overstates the increase for most households;

- ***Reduce the Debt Service to Revenue Ratio Below 8%:*** The rate was adopted in 1979. At the time, interest rates were much higher than they currently are. In early 1980, 10-year treasury bills interest rate was 12.00%; since last summer, the rates have been hovering around 5.00%. Maryland's 8.00% ratio is also the highest among AAA-rated states with a debt to revenue guideline. For example, Florida has a limit of 7.00%, Virginia has a limit of 5.00%, North Carolina has a limit of 4.75%, and Minnesota has a limit of 3.00%. It appears sensible that CDAC reevaluate the debt to revenue ratio. As an alternative to lowering ratio formally, the committee might do as Florida does with respect to their coverage ratio by adopting a target below the limit;
- ***Examine the Effect of Eliminating or Increasing the Debt Outstanding to Personal Income Criterion:*** With respect to debt outstanding, Maryland's affordability policies are unique. The criterion has become the controlling criterion. Four out of five other AAA-rated states with an affordability process make decisions based on debt service. A review of the financial literature suggests that the affordability process should be consistent with a state's financial

outlook. Insofar as debt outstanding is the controlling criterion, this is not the case in Maryland; and

- ***Expand the Ratios Monitored by CDAC:*** While most states make decisions based on debt service to revenues, they also monitor a number of statistics. This could include examining reserves, debt to property values, or per capita debt. It could also include comparing Maryland's ratios to other states.

Making these changes to the CDAC's affordability process gives the State a process that:

- bases spending decisions on debt service instead of debt outstanding, as is the case in other AAA-rated states with an affordability process;
- is updated to reflect Maryland's current financial outlook;
- allows the State to increase its capital program without adding to a structural deficit; and
- is more flexible so it may better deal with long-term cost pressures.

It is recommended that CDAC consider the following changes to its affordability process:

- **adopt a policy to eliminate the general fund's GO bond debt service subsidy and to have State property taxes and bond-related revenues support GO bond debt service;**
- **reduce the debt service to revenue ratio below 8%;**
- **examine the effect of eliminating the debt outstanding to personal income criterion; and**
- **expand the ratios monitored.**

It is also recommended that the General Assembly support the policy to end the general fund subsidy for general obligation bonds by deleting the general fund appropriation. Eliminating the subsidy reduces the long-term structural deficit facing the general fund, resulting in some combination of less general fund tax increases, less general fund spending reductions, or less transfers from special fund revenue sources into the general fund. Deleting the subsidy is projected to increase the fiscal 2008 end-of-year general fund balance by \$43.5 million. The State would also avoid a \$57.0 million general fund subsidy in fiscal 2009. To support debt service payments, this action is projected to require increasing State property tax rates by \$0.008 per \$100 of assessable base. The new rate (\$0.12 per \$100 of assessable base) would be less than the fiscal 2006 rate (\$0.132 per \$100 of assessable base). The median cost increase for homeowners is projected to be less than \$24 in fiscal 2008. Moreover, by tying future debt service more directly to a tax increase, additional sensitivity to the cost of outstanding debt levels can be expected to eventually result.

The State Treasurer should brief the committees on CDAC’s policies and the proposed reductions to the general fund appropriation.

5. Recent Scholarship Suggests That Open Auction Bidding Reduces Debt Service Costs

Currently, State GO bonds are sold in closed auctions. The State advertises a bond sale, which includes the day and time that all the bids are due. All the bids are opened at the same time, and the bidder with the lowest True Interest Cost is awarded the bond sale.

The open auction system from MuniAuction permits underwriters to submit bids during a 15-minute period. Once a bid is submitted, the underwriter is then notified of their rank in the bidding (*e.g.*, they may be the fourth best bid), and they have the opportunity to resubmit lower bids. If a bid is submitted at the end of the time period that is lower than the other bids, an additional two minutes is added to the auction to permit the other bidders to respond (thus discouraging last second bidding). When the auction ends, the underwriter offering the lowest TIC is awarded the bond issue.

A recent scholarship¹ suggests that savings may be achieved by using an open auction bidding process. Using national data from bids since 2002, the open auctions process reduces the TIC by an estimated 0.09% (9 basis points). Municipal bids from Pennsylvania (where 90.00% of bond issuances used open auctions) and California (where 10.00% of bond issuances used open auctions), where the use of open auctions is more common, were also examined. Here the auctions yielded an estimated 0.21% (21 basis points) in savings. The data suggests that higher savings appear to be related to the more prevalent use of open auctions in those states.

Based on the forecast of proposed GO bond sales in Maryland, DLS prepared an estimate of the level of savings in debt service which could be attained if an open auction of issuance were used for each bond sale over the next 10 years. The savings could be realized one of two ways:

- If there is a premium, debt payments would remain about the same and a larger premium would be realized.
- If no premium would be realized, debt service payments would be lower.

Exhibit 16 shows that this could result in total debt service savings ranging from \$3 million to \$7.1 million if there is no premium. If there was a premium, the premium is projected to be \$2.4 million to \$5.5 million larger.

¹ Robbins, Mark D., Simonson, Bill, and Rocco, Christine. 2004. “Municipal Bond Auctions and Borrowing Costs.” *Municipal Finance Journal*, 25, 1.

Exhibit 16
Debt Service Open Auctions Estimated Savings Range for
Projected \$325 Million Bond Sale in Early 2007
(\$ in Thousands)

	<u>9 Basis Points Savings (0.09%)</u>	<u>21 Basis Points Savings (0.021%)</u>
If No Bond Sale Premium		
First Year Interest	\$293	\$683
Total Interest	3,024	7,066
If Bond Sale Premium		
Increased Premium	\$2,363	\$5,547

Source: Department of Legislative Services' Computation of Department of Budget and Management data

Developing a Methodology to Evaluate the Open Auctions Process

The research suggests that significant savings could be achieved through the adoption of an open auction bond issuance process. However, before the State adopts such a process, it would need to develop a methodology that can evaluate the open auctions process. One methodology could be the sum of least squares regression used in Performance Analysis in this analysis to determine what factors influence Maryland's TIC. A dummy variable signifying the open auction bond sale could be added. This approach would allow the State to not just assess what savings the process realized (if any), but also it allows the State to assess how confident it is of the results.

In the regression equation, the dependent variable is the TIC. All the other variables are independent variables. The question that the regression equation attempts to answer is which of the independent variables influence the TIC. The regression equation identifies three statistically significant variables that affect the TIC: the Delphis Scale, inclusion of a call provision, and the ratio of Maryland personal income to United States personal income. To this equation, the State would add an independent dummy variable for each bond sale for which the open auctions process was used.

While the approach is a straightforward application of financial and statistical theory, there are some complications that may arise when evaluating the open auction process. The most significant issue is the equation's limited sample size. Regression equations are quite sensitive to small sample sizes. This equation evaluates data from 33 bond sales, which is not a particularly large sample size. For example, an independent variable measuring the size of the bond sale was rejected because it was not statistically significant at the 5% confidence interval. It is possible that as the

number of samples is increased, the size of the bond sale will eventually become statistically significant. The same that could be true of a variable for the open auction process is the regression shows savings, but not within the 5% confidence interval. If this is the case, it may take multiple bond sales before it could be determined that the open auctions process is statistically significant.

However, Maryland appears to be a good candidate for open auction bids. One of the findings in the literature is a relationship between the amount of bids and the savings realized. The more bids, the greater the savings. This suggests that a much anticipated bond sale would benefit more than a less anticipated bond sale. When discussing how Delphis Hanover Corporation develops its market estimate, its representative noted that there is generally high demand for Maryland bonds and that the markets closely watch the TIC for Maryland bonds. The Treasurer's Office agrees with this assessment. This high demand suggests that Maryland bond sales are more anticipated, are more likely to have multiple bids, and are more likely to yield savings with an open auction process.

It appears as though transportation bonds may also be good candidates. They are regularly bid and have a high bond rating. They also tend to be smaller than GO bonds, which may make them easier for the underwriter to sell, thus increasing their demand.

There is evidence to suggest that open auction processes may reduce debt service costs. This is especially the case for bonds in high demand, like Maryland bonds. DLS has developed a methodology that may be used to evaluate if the process yields any savings. **It is recommended that the State begin an evaluation of the open auctions process by using this process at a bond sale in the 2007 interim. It is also recommended that the budget committees add language requiring at least one open auction.**

6. Treasurer's Office's Budget Includes Funds to Issue Variable Rate Bonds

Chapter 325 of 2003 authorizes the State Treasurer to issue variable rate bonds. The law limits variable rate debt to 15% of the State's outstanding GO bonds. More than 25 states have issued variable rate debt, including AAA-rated states South Carolina, Utah, and Virginia. There are different variable rate bond arrangements that may be entered into, such as Variable Rate Demand (VRD) Bonds and Commercial Paper. The various instruments share key similarities. To keep the discussion focused on key differences between fixed and variable debt, only VRD bonds will be analyzed and compared to fixed rate debt.

Maryland's fixed rate bonds are 15-year agreements between the State and bondholders. The interest rate and maturity is set when the bonds are issued. The State guarantees specific debt services payments on specific days through the 15-year life of the bonds. Interest costs for fixed rate debt is in part a function of the 15-year life of the bonds. Because of the long-term nature of the bond, bondholders demand that the bonds provide a long-term interest rate, which is usually higher than the short-term rates.

Variable rate bonds do not have fixed interest rates throughout the life of the bond. Instead, VRD bonds are issued with long nominal maturities that are constantly resold to lenders paying short-term interest rates. Unlike fixed rate bonds, VRD bonds do not have an underwriter – instead a remarketing agent manages bond sales. Variable rate bonds are also not sold competitively which is impractical because the bonds are constantly remarketed. Traditionally, a Request for Proposal (RFP) is issued for the remarketing agent instead of issuing a Preliminary Official Statement.

Most VRD bonds also require a liquidity provider. If the remarketing agent cannot find another buyer for the debt, a liquidity provider is responsible for paying principal and interest for the bonds. Liquidity providers are usually banks with credit ratings of at least AA. Liquidity providers would also be competitively bid with an RFP.

Advantages of Fixed and Variable Rate Debt

Both fixed and variable rate bonds have advantages and disadvantages. The advantages of fixed rate debt include:

- ***No Upward Interest Rate Risk:*** Since the rates are determined when the bonds are issued, increases in interest rates do not affect debt service payments. However, this can also be a disadvantage if interest rates decline; and
- ***Budget Certainty:*** Debt service payments can be calculated through the life of the bonds when the bonds are issued. VRD bonds have constantly changing interest rates which requires the issuer to estimate debt service payments in the out-years.

There are also advantages to variable rate debt such as:

- ***Short-term Rates Are Usually Lower Than Long-term Rates:*** In recent years, short-term rates have dropped as low as 1.43% (after fees are included) compared to the lowest bond sale TIC, which was 3.59%. This results in lower debt service payments for VRD bonds if short-term rates do not increase substantially. Currently, short- and long-term rates are essentially the same. In January 2007, the Delphis Scale for 1-year bonds was 3.83% (after fees are included), while 10-year bonds yield 3.82%; and
- ***Fund Balances' Interest Earning Provide a Hedge Against Increases in VRD Bonds Interest Rates:*** The Treasurer's Office invests the State's fund balances to generate investment income. The office was able to increase its general fund investment return from 2.26% in fiscal 2005 to 4.06% in fiscal 2006. The increase was attributable to increases in interest rates. Had the State issued variable rate debt in prior to fiscal 2006, interest paid would have increased. However, this increase would have been offset by increases in interest earnings. The Treasurer's Office advises that the fiscal 2006 average annual general fund investment balance was \$6.4 billion. This provides a sizeable hedge against any short-term interest rate increases affecting VRD bonds.

Possible Benefits and Risks Associated with Variable Rate Bonds

Insofar as short-term interest rates tend to be lower than long-term rates, variable rate debt tends to provide debt service savings. **Exhibit 17** shows an estimate from the financial advisor that projects \$26.7 million (\$18.8 million in present value terms) in savings had the State issued VRD bonds, instead of fixed rate bonds. Had the State issued \$100 million in VRD bonds in July 2006, savings totaling \$11.3 million (\$9.6 million in present value terms) are projected. The July 2006 issuance assumes that the VRD bonds interest rates over the next 15 years would be similar as they have been in the last 10 years.

Exhibit 17 Estimated Variable Rate Bonds' Savings (\$ in Millions)

<u>Bond Issuance</u>	<u>Amount Issued</u>	<u>Total Savings</u>	<u>Net Present Value of Savings</u>
March 1991	\$95.0	\$26.7	\$18.8
July 2006	100.0	11.3	9.6

Source: Public Research Advisory Group, August 2006

However, issuing variable rate introduces the risk that interest payments increase if interest rates rise. Risks can be viewed in two ways:

- ***The Short-term Risks Associated with Market Fluctuations:*** To better understand short-term risk, DLS examined the volatility of the Bond Market Association Index, which may be used as the interest rate for some variable rate debt. The analysis compared a year's worth of interest payments with market conditions six months prior. This is when budgeting decisions would be made in Maryland. In this analysis, actual expenditures were as much as 2% off of the estimate. The standard deviation was just under 1%. This suggests a need for some short-term reserves if the State issues variable rate bonds.
- ***Long-term Risks Associated with General Rise in Interest Rates:*** Long-term risks are more difficult to quantify. Clearly, there is no guarantee that yields 15 years in the future will approximate yields from the past 10 years. A concern is that there could be a sharp rise in rates followed by a slow decline. An example of volatile short-term interest rates occurred in 1980 and 1981. The federal funds rate, which is the interest rate at which a depository institution lends immediately available funds to another depository institution overnight, increased from under 9.00% at the end of July 1980 to over 20.00% in January 1981. Over the same period, rates on 10-year Treasury Bills increased from 10.20 to 12.36%. These rates did not get back to 9.00% until 1985.

Tools That Minimize Risk

Variable rate bonds introduce risk into a bond portfolio. The concern is that rising interest rates increase the cost of debt service. Rising debt service costs could strain State resources if the ABF forecast did not take these costs into consideration. The risks may be reduced by:

- ***Maintaining a Reserve in the ABF or Hedging Estimates to Support Debt Service If Interest Rates Rise:*** If 15% of the State's bonds outstanding (*e.g.*, \$720 million out of a projected \$5.4 billion at the end of fiscal 2008) were variable rate bonds, increasing interest rates 1% would increase debt service costs approximately \$8 million. If the State were to issue variable rate bonds, holding reserves or a hedge may be advisable;
- ***Including an Interest Rate Cap with the Variable Bond Issuance:*** Debt may also be structured so that there is a cap on maximum interest rates. While reducing the exposure to risk, a cap would increase debt service costs of the variable rate bonds; and
- ***Converting the Debt from Variable Debt to Fixed Debt:*** At the time the bonds are sold, the State could include provisions that the variable debt be converted under specific circumstances such as interest rates reaching a certain level.

Treasurer's Budget Includes Funds to Support Variable Rate Debt

The Treasurer's fiscal 2008 allowance includes \$250,000 to support the remarketing and liquidity fees required if VRD bonds are issued. This assumes two \$100 million issuances in fiscal 2008. DLS does not object to issuing variable rate debt. The amount of debt that may be issued is limited. Given the State's large general fund cash balances, the variable rate debt would be sufficiently hedged.

However, one concern is that comprehensive, written policies have not yet been developed. Issuing variable rate debt is a significant policy change. Specific policies to address include:

- under what market conditions to issue variable rate debt;
- what portion of debt will be variable rate debt;
- if, when, and how to hedge the debt;
- reserve requirements; and
- what debt instruments to use (for example, commercial paper or VRD bonds).

X00A00 – Public Debt

It is recommended that the Treasurer’s Office develop comprehensive, written variable rate debt policies prior to issuing any variable rate debt. The Treasurer should brief the committees on plans to issue variable rate debt and how quickly comprehensive, written policies can be developed.

Recommended Actions

1. Add the following language to the special fund appropriation:

, provided that the State Treasurer’s Office will issue bonds through at least one open auction in fiscal 2008. The Treasurer, in conjunction with the Department of Legislative Services, should evaluate whether savings were achieved in the open auction process and submit a report to the budget committees summarizing the results of the open auction. It is the intent of the committees that subsequent open bond sales in fiscal 2008 may be open or closed at the discretion of the Treasurer.

Explanation: Recent scholarship suggests that the open auction bid process is likely to generate savings. The State has the ability to use the process and evaluate if there are savings. The language requires an issuance and evaluation.

	<u>Amount Reduction</u>	
2. Delete general fund appropriation for general obligation (GO) bond debt service. It is recommended that the General Assembly support the policy to end the general fund subsidy for GO bonds by deleting the general fund appropriation. Eliminating the subsidy reduces the long-term structural deficit facing the general fund, resulting in some combination of less general fund tax increases, less general fund spending reductions, or less transfers from special fund revenue sources into the general fund. Deleting the subsidy is projected to increase the fiscal 2008 end-of-year general fund balance by \$43.5 million. The State would also avoid a \$57.0 million general fund subsidy in fiscal 2009. To support debt service payments, this action is projected to require increasing State property tax rates by \$0.008 per \$100 of assessable base. The new rate (\$0.12 per \$100 of assessable base) would be less than the fiscal 2006 rate (\$0.132 per \$100 of assessable base). The median cost increase for homeowners is projected to be less than \$24 in fiscal 2008.	\$ 43,500,000	GF
Total General Fund Reductions	\$ 43,500,000	

Current and Prior Year Budgets

Current and Prior Year Budgets Public Debt (\$ in Thousands)

	<u>General Fund</u>	<u>Special Fund</u>	<u>Federal Fund</u>	<u>Reimb. Fund</u>	<u>Total</u>
Fiscal 2006					
Legislative Appropriation	\$0	\$623,106	\$0	\$0	\$623,106
Deficiency Appropriation	0	0	0	0	0
Budget Amendments	0	2,101	0	0	2,101
Reversions and Cancellations	0	0	0	0	0
Actual Expenditures	\$0	\$625,208	\$0	\$0	\$625,208
Fiscal 2007					
Legislative Appropriation	\$0	\$654,616	\$0	\$0	\$654,616
Budget Amendments	0	0	0	0	0
Working Appropriation	\$0	\$654,616	\$0	\$0	\$654,616

Note: Numbers may not sum to total due to rounding.

Fiscal 2006

Fiscal 2006 expenditures totaled \$625.2 million, which is \$2.1 million more than the legislative appropriation. The increase is attributable to a budget amendment, which was necessary because the legislative appropriation understated expenditures. The appropriation assumed that the State would sell \$325 million in tax-exempt bonds in July 2005. Instead, the State issued \$430 million in tax-exempt debt and \$20 million in taxable debt. This increases the fiscal 2006 debt service payment by \$2.1 million.

Fiscal 2007

To date, no budget amendment has been processed. However, it appears that expenditures will be \$561,725 less than the appropriation. As projected, the State sold \$350 million in GO bonds. However, the interest paid on the series maturing in 15 years is 4.25%, which is 0.75% less than projected, resulting in the savings. These funds will be canceled at the end of the fiscal year and remain in the ABF.

**Object/Fund Difference Report
Public Debt**

<u>Object/Fund</u>	<u>FY06 Actual</u>	<u>FY07 Working Appropriation</u>	<u>FY08 Allowance</u>	<u>FY07-FY08 Amount Change</u>	<u>Percent Change</u>
Objects					
13 Fixed Charges	\$ 625,207,861	\$ 654,616,325	\$ 692,694,848	\$ 38,078,523	5.8%
Total Objects	\$ 625,207,861	\$ 654,616,325	\$ 692,694,848	\$ 38,078,523	5.8%
Funds					
01 General Fund	\$ 0	\$ 0	\$ 43,500,000	\$ 43,500,000	n/a
03 Special Fund	625,207,861	654,616,325	649,194,848	-5,421,477	-0.8%
Total Funds	\$ 625,207,861	\$ 654,616,325	\$ 692,694,848	\$ 38,078,523	5.8%

Note: The fiscal 2007 appropriation does not include deficiencies, and the fiscal 2008 allowance does not reflect contingent reductions.

X00A00 - Public Debt

Appendix 2

Performance Analysis – Factors Influencing General Obligation Bonds’ True Interest Cost

The interest rate that Maryland pays for the bonds it sells is referred to as the True Interest Cost (TIC). This rate is derived by calculating a bond sale’s internal rate of return. The TIC is calculated at each bond sale, and the bidder with the lowest TIC is awarded the bid.

The financial literature provides information about factors that influence the TIC of State and municipal bond sales. A statistical methodology standard in financial analysis may be used to evaluate these financial factors. The Department of Legislative Services (DLS) uses the sum of least squares regression to evaluate what factors influence the TIC Maryland receives on GO bond sales. This analysis first appeared in Chapter 5 of DLS’ *Effect of Long-term Debt on the Financial Condition of the State* released in December 2006. Appendix 4 shows the values of the independent variables for each of the 33 data points.

Financial Theory and Research Identifies Factors That May Influence the True Interest Cost

Financial theory suggests factors that could influence Maryland’s GO bond TIC. Research has confirmed a number of significant influences in other states and in national studies that include Maryland. To build the least squares regression equation, the following data were collected and analyzed for the 33 tax-exempt GO bond sales since March 1991 (refunding sales are excluded):

- true interest cost;
- Delphis Scale for 10-year, AAA bonds;
- date of the bond sale, fiscal year, and calendar years the bonds were sold;
- if the bond sale includes one of the three call provisions offered since 1991;
- average years to maturity;
- amount of debt sold;
- use of a financial advisor;
- ratio of Maryland personal income to United States personal income; and

- Consumer Price Index to examine if inflation affected markets perception of the amount of debt sold.

The Equation Identifies General Bond Market Interest Rates, State Economic Strength, and Inclusion of a Call Provision as Significant Factors Influencing the TIC

The least squares regression analysis dependent variable is the TIC. All the other variables are independent variables that are included to control the things that could influence the TIC. The question that the regression equation attempts to answer is which of the independent variables influence the dependent variable (TIC). The regression equation examines the variable previously listed and identifies three statistically significant variables at the 5% confidence level that affect the TIC. All the other previously identified statistics were not statistically significant at the 5% confidence level. **Table 1** shows the data for the three statistically significant variables.

- ***Delphis Scale:*** The key variable is the Delphis Scale. This is an estimate of the market rate for AAA-rated State and municipal bonds. The Delphis Hanover Corporation prepares an index that measures the average yield on State and municipal bonds based on daily market activity (Delphis Scale). DLS has collected the estimated 10-year yield for AAA bonds for every bond sale since 1991 (10 years is used because that is the average maturity);
- ***Ratio of Maryland Total Personal Income to the United States Total Personal Income:*** One perspective on interest rates is to consider them as a return for risk. The higher the risk, the higher interest rate investors will expect. One factor of risk is the fiscal health of the entity selling the debt. In this regression equation, State personal income is used as a proxy for fiscal health. The regression equation uses a ratio that compares State personal income to United States personal income. If the ratio increases, Maryland is doing relatively better than the rest of the United States and a GO bond issuance's TIC should tend to decline; and
- ***Inclusion of a Call Provision:*** A call is an option that allows the seller to retire debt early. This may be advantageous if interest rates decline below the rate the seller is paying. Consequently, buyers often require higher interest rates if an issuance includes a call provision. Maryland usually issues callable bonds.

Table 1
TIC Regression Equation – Evaluating the Independent Variables

<u>Independent Variable</u>	<u>Coefficient</u>	<u>Standard Error</u>	<u>Beta</u>	<u>Sig.</u>	<u>Explanation</u>
Delphis Scale	0.972	0.020	0.971	0.000	Coefficient less than 1.0 suggests Maryland TIC is less than other AAA-rated bonds. High beta means that the Delphis Scale is the dominant variable. Equation is almost 100% sure that the variable is significant.
MD PI/US PI	-0.702	0.271	-0.050	0.015	Negative coefficient suggests that as the Maryland economy strengthens, compared to other states, the TIC declines. Significant at the 2% confidence interval.
Call	0.087	0.041	0.0042	0.044	Cost of a call is 0.087% (approximately nine basis points). Range is 0.046% to 0.123%. Significant at 5% confidence interval.
Constant	1.684	0.618	n/a	0.011	Y-intercept is appropriate.

TIC: True Interest Cost

Sig.: Significance or confidence interval

MD PI/US PI: Maryland Total Personal Income to the United States Personal Income

Source: Department of Legislative Services' *Effect of Long-term Debt on the Financial Condition of the State*, 2006

Statistical Analysis Suggests That the Equation Explains TIC Extremely Well

In addition to estimating and evaluating the specific variables, a proper statistical analysis must also incorporate an analysis of the equation as a whole. This includes an analysis of five aspects of the equation:

- how confident are we in the equation (confidence interval);
- what is the equation's margin of error;
- how close are the equation's estimates to the actual data;
- are we missing a relevant independent variable (serial or auto correlation); and

- do we have similar independent variables (multicollinearity)?

The resulting equation has a high level of explanatory power and suggests that the determinants of Maryland's TIC are well understood and account for almost all of the variations that are seen in the TIC. **Table 2** shows the equation's statistics.

Table 2
TIC Regression Equation – Evaluating the Entire Equation

<u>What Is Measured</u>	<u>Statistic Used to Measure</u>	<u>Value of Statistic</u>	<u>Explanation</u>
Confidence in the equation	F Statistic	0.000	We are almost 100% confident that the independent variables influence the dependent variable.
Margin of error	Standard error of the estimate	0.080	We expect the actual TIC to be within 0.08% (eight basis points) of the estimate.
Estimate in relation to actual data	Adjusted R Square	0.989	The estimate is very close to the actual data and the model's estimates are within 2% of the actual data.
Serial or Auto Correlation	Durbin-Watson	2.146	The ideal value is 2.0. If the number deviates too far from 2, it suggests that there are patterns in the errors and a key independent variable is missing. Statistic suggests the equation has the key variables.
Multicollinearity	Tolerance	0.890	The range is between 0 and 1. If the amount is below 0.20, it is likely that variables are related. This suggests that the independent variables are not related.

TIC: True Interest Cost

Source: Department of Legislative Services' *Effect of Long-term Debt on the Financial Condition of the State*, 2006

Examining the Effectiveness of the Regression Equation – An Intuitive Approach

As previously noted, the appendices provide all the statistical data. This allows statisticians to examine DLS' least squares regression equation. In addition to the statistical data, a more intuitive analysis of the regression equation may be made.

In the past, DLS has compared the TIC to the Delphis Scale to examine the State's GO bond yields. The purpose of the exercise is to improve upon this approach and to determine what factors are statistically significant and to what extent they influence the TIC. For the regression equation to be useful, it should be able to better estimate the TIC than the Delphis Scale alone. While the Delphis Scale is an excellent proxy for general market conditions, it does not reflect any independent variables specific to Maryland financial condition or a bond sale's attributes (such as issuing callable bonds).

Table 3 compares the DLS regression equation and the Delphis Scale to the actual TIC and shows that the DLS regression equation is more likely to be closer to the TIC than the Delphis Scale. Of the 33 bond sales analyzed, the DLS estimate is closer to the actual TIC than the Delphis Scale 21 times (64.00%). The Delphis Scale is closer 9 times (27.00%), and they produce the same estimate 3 times (9.00%). The total error of the DLS regression equation is 210 basis points, compared to 329 basis points for the Delphis Scale. The DLS regression equation has an average error of 6 basis points (0.06%) while the Delphis Scale has an average error of 10 basis points (0.10 %).

Although this is not a scientific analysis, it does show that including variables for personal income and call provisions provides an estimate that is quite close to the actual TIC and provides an estimate that is usually closer than the Delphis Scale alone.

Table 3
Comparison of the DLS Regression Equation and Delphis Scale to Actual TIC

Bond Sale Date	TIC	DLS Equation	Delphis Scale	Difference Between TIC and DLS Regression Equation	Difference Between TIC and Delphis Scale	Estimate Closer to Actual TIC
03/13/91	6.31	6.16	6.15	0.15	0.16	DLS
07/10/91	6.37	6.52	6.50	0.15	0.13	Delphis Scale
10/09/91	5.80	5.75	5.70	0.05	0.10	DLS
05/13/92	5.80	5.80	5.75	0.00	0.05	DLS
01/13/93	5.38	5.46	5.40	0.08	0.02	Delphis Scale

Bond Sale Date	TIC	DLS Equation	Delphis Scale	Difference Between TIC and DLS Regression Equation	Difference Between TIC and Delphis Scale	Estimate Closer to Actual TIC
05/19/93	5.10	5.18	5.10	0.08	0.00	Delphis Scale
10/06/93	4.45	4.55	4.45	0.10	0.00	Delphis Scale
02/16/94	4.48	4.59	4.50	0.11	0.02	Delphis Scale
05/18/94	5.36	5.43	5.35	0.07	0.01	Delphis Scale
10/05/94	5.69	5.58	5.50	0.11	0.19	DLS
03/08/95	5.51	5.44	5.35	0.07	0.16	DLS
10/11/95	4.95	4.92	4.80	0.03	0.15	DLS
02/14/96	4.51	4.48	4.35	0.03	0.16	DLS
06/05/96	5.30	5.22	5.10	0.08	0.20	DLS
10/09/96	4.97	5.03	4.90	0.06	0.07	DLS
02/26/97	4.90	4.84	4.70	0.06	0.20	DLS
07/30/97	4.64	4.65	4.50	0.01	0.14	DLS
02/18/98	4.43	4.41	4.25	0.02	0.18	DLS
07/08/98	4.57	4.55	4.40	0.02	0.17	DLS
02/24/99	4.26	4.26	4.10	0.00	0.16	DLS
07/14/99	4.83	4.93	4.80	0.10	0.03	Delphis Scale
07/19/00	5.05	4.97	4.85	0.08	0.20	DLS
02/21/01	4.37	4.32	4.28	0.05	0.09	DLS
07/11/01	4.41	4.41	4.39	0.00	0.02	DLS
03/06/02	4.23	4.17	4.17	0.06	0.06	Same
07/31/02	3.86	3.89	3.89	0.03	0.03	Same
02/19/03	3.69	3.77	3.77	0.08	0.08	Same
07/16/03	3.71	3.65	3.56	0.06	0.15	DLS
07/21/04	3.89	3.99	3.89	0.10	0.00	Delphis Scale
03/02/05	3.81	3.78	3.72	0.03	0.09	DLS
07/20/05	3.79	3.68	3.63	0.11	0.16	DLS
03/01/06	3.87	3.95	3.89	0.08	0.02	Delphis Scale
07/26/06	4.18	4.14	4.09	0.04	0.09	DLS
Total Error				2.10	3.29	

DLS: Department of Legislative Services
TIC: True Interest Cost

Source: Department of Legislative Services' *Effect of Long-term Debt on the Financial Condition of the State*, 2006

Factors Influencing Maryland's GO Bonds' True Interest Cost

<u>Bond Sale Date</u>	<u>Delphis Rate</u>	<u>MD PI/US PI</u>	<u>Call</u>
03/13/91	6.15	2.261	Yes
07/10/91	6.50	2.240	Yes
10/09/91	5.70	2.230	Yes
05/13/92	5.75	2.220	Yes
01/13/93	5.40	2.221	Yes
05/19/93	5.10	2.212	Yes
10/06/93	4.45	2.206	Yes
02/16/94	4.50	2.208	Yes
05/18/94	5.35	2.199	Yes
10/05/94	5.50	2.191	Yes
03/08/95	5.35	2.184	Yes
10/11/95	4.80	2.163	Yes
02/14/96	4.35	2.159	Yes
06/05/96	5.10	2.144	Yes
10/09/96	4.90	2.144	Yes
02/26/97	4.70	2.136	Yes
07/30/97	4.50	2.135	Yes
02/18/98	4.25	2.119	Yes
07/08/98	4.40	2.128	Yes
02/24/99	4.10	2.134	Yes
07/14/99	4.80	2.146	Yes
07/19/00	4.85	2.157	Yes
02/21/01	4.28	2.178	No
07/11/01	4.39	2.201	No
03/06/02	4.17	2.233	No
07/31/02	3.89	2.241	No
02/19/03	3.77	2.242	No
07/16/03	3.56	2.257	Yes
07/21/04	3.89	2.227	Yes
03/02/05	3.72	2.290	Yes
07/20/05	3.63	2.310	Yes
03/01/06	3.89	2.286	Yes
07/26/06	4.09	2.286	Yes

GO: general obligation

MD PI/US PI: Maryland Total Personal Income to United States Personal Income

Source for Delphis Rate: Maryland State Treasurer's Office

Source for Personal Income (PI): Federal Bureau of Economic Analysis

Source for Call: GO Bonds Sales' Official Statement

Increased GO Bond Authorizations Since 2000

The growth of the debt can be traced to six separate actions taken since 2001:

- **2001 Session – Low Debt Ratios and a Good Economy:** In 2001, the debt authorization limit was increased by an additional \$30 million annually. This increased the debt authorized from \$475 million to \$505 million that year. CDAC did not reduce the amount the following year, which resulted in permanently increasing all authorizations by \$30 million. In sum, this increased authorizations by \$480 million over the period.
- **2002 and 2003 Sessions – Poor Economy Dries Up General Fund PAYGO Capital Funds:** In the 2001 session, over \$600 million in general funds were appropriated to support PAYGO capital projects. At the time, the Administration assumed that the general funds would be sufficient to provide significant levels of appropriations for the capital program. When the economy slowed, the general funds were no longer available for the capital program. Instead of withdrawing planned support for projects, CDAC provided \$200 million in additional authorizations in the 2002 and 2003 sessions. The planned authorizations were reduced correspondingly in the 2004 session. This added \$400 million to GO authorizations.
- **2002 Session – Financing for the Tobacco Buyout:** Chapter 103 of 2002 authorized \$30 million (\$5 million annually from fiscal 2004 to 2009) to finance tobacco buyouts for farmers. Current CDAC projections do not reduce authorizations after the program is done. Instead, the increased authorizations may be used to support other capital projects. This \$5 million annual increase adds \$70 million over the period.
- **2004 – Move PAYGO to GO:** In the 2004 session, CDAC provided an additional \$100 million annually for five years. At the time it was noted that former PAYGO projects had migrated into the GO program and that either additional GO bonds would need to be authorized or capital projects would need to be reduced or deleted. In sum, this authorized an additional \$500 million over the period.
- **2006 Session – High Capital Demand:** The 2006 session brought a subtle change in methodology. Prior to 2006, the annual increase was \$15 million per year. This represented about 3% annual growth when the policy was adopted. As the authorization levels increased, \$15 million represented less than 3% growth. To ensure at least a 3% increase each year, the policy was changed from increasing by \$15 million each year to increasing by 3%. Consequently, the slope of the trend line is now steeper and authorizations will grow faster. CDAC also ended the authorization drop-off proposed in the 2009 session. The justification for these changes was high demand for capital projects. Taken together, these changes provide an additional \$1.2 billion in authorizations.

Effect of CDAC Actions Taken to Increase GO Authorizations
Session 2001-2016
(\$ in Millions)

<u>Session Year</u>	<u>2001 Low CDAC Ratios and Good Economy</u>	<u>2002 and 2003 Poor Economy so Replace PAYGO</u>	<u>2002 Exclude Tobacco Buyout</u>	<u>2004 \$100 Million Annually for Five Years</u>	<u>2006 Capital Demand</u>	<u>2007 Capital Demand</u>	<u>Total Increase</u>
2001	\$30	\$0	\$0	\$0	\$0	\$0	\$30
2002	30	200	0	0	0	0	230
2003	30	200	5	0	0	0	235
2004	30	0	5	100	0	0	135
2005	30	0	5	100	0	0	135
2006	30	0	5	100	5	0	140
2007	30	0	5	100	10	100	245
2008	30	0	5	100	15	105	255
2009	30	0	5	0	115	115	265
2010	30	0	5	0	125	120	280
2011	30	0	5	0	135	125	295
2012	30	0	5	0	145	130	310
2013	30	0	5	0	155	135	325
2014	30	0	5	0	165	140	340
2015	30	0	5	0	175	145	355
2016	30	0	5	0	185	150	370
Total	\$480	\$400	\$70	\$500	\$1,230	\$1,265	\$3,945

CDAC: Capital Debt Affordability Committee
GO: general obligation

Note: Dates denote legislative session year. In some cases the action stems from the CDAC report recommendation from the previous fall.

Source: Department of Legislative Services' *Effect of Long-term Debt on the Financial Condition of the State*, 2006

- ***2007 Session – High Capital Demand:*** In response to continued high capital demand, the committee proposed a permanent \$100 million increase in the base for the 2007 session. Since the annual increase is 3% (instead of the flat \$15 million prior to 2006), this results in higher annual increases also. The total effect is to increase authorizations by approximately \$1.3 billion.