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POLICY BRIEF

The Reckless Cost of MBTA Financial Derivatives

by Iliya Atanasov

Executive Summary

The Massachusetts Bay Transportation Authority[1] (MBTA) has been bleeding millions of dollars on reckless financial derivatives for many years. The authority had to pay out an estimated $236 million in net swap interest in FY 2001-2015. Despite warnings by the state auditor in 2008, the MBTA did not take commonsense steps to stem the bleeding or reduce the attendant risks. Poor financial reporting and internal controls have helped obscure and exacerbate this growing problem.

The MBTA's over half a billion dollars of adjustable-rate debt can cause budgetary trouble at the embattled agency. However, financial derivatives are not an effective way to reduce those fiscal risks. Instead, the derivatives inflate the MBTA's debt-servicing costs. They add to the complexity and fragility of the authority's impaired balance sheet.

Financial derivatives are rife with risk. They are among the most significant contributors to the global financial crisis of 2008. During the crisis, MBTA swap counterparties went out of business, yet the authority expanded its derivatives exposure. Since then, global financial debt has only increased, adding to the potential counterparty risk.

A global investment bank which is a counterparty to MBTA interest-rate swaps was recently downgraded by the credit-rating agencies. The downgrade allows the authority to terminate its swap agreements with the bank. This is an opportunity to create a coherent risk-management strategy consistent with the economic outlook and adopt a saner and cheaper approach to balancing the MBTA's debt burden and cash needs.

Background

The periodic interest on adjustable- or variable-rate debt changes with some underlying benchmark, typically an interest-rate or price index. To offset the risk of wild fluctuations in their interest payments on variable-rate bonds, borrowers frequently enter into swap agreements with third parties. The swap counterparty agrees to pay a variable rate identical or similar to the interest on the bonds, while the borrower pays the counterparty a fixed

Iliya Atanasov is Pioneer's Senior Fellow on Finance, leading the research tracks on pension portfolio management, infrastructure and municipal performance. Iliya received his PhD in Political Science from Rice University and is a former Presidential Fellow at the University. He also holds BAs in Business Administration, Economics and Political Science/International Relations from the American University in Bulgaria.

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interest rate. A swaption is a financial derivative on a swap. It provides the option to activate such a swap if exercised within a predetermined time window.

A tenth of the MBTA's $5.1 billion of outstanding debt was variable-rate as of 2015.[2] According to the original bond redemption schedules, the authority would have $550 million in floating-rate debt at fiscal yearend (FYE) 2015, exclusive of the redeemed Sales Tax Bonds Series 2003 B. The MBTA reported to have eight interest-rate swaps on its books at FYE 2014. Seven of those qualified as hedges on the still-outstanding MBTA bonds issued in 2000-2010. The other swap was a remnant of the bond issue that had since been redeemed. Overall, the eight swaps amounted to a liability of $113 million at FYE 2014. In prior years, the agency was also a party to a number of "speculative"[3] swaptions, some of which were terminated while others were exercised to become swaps.

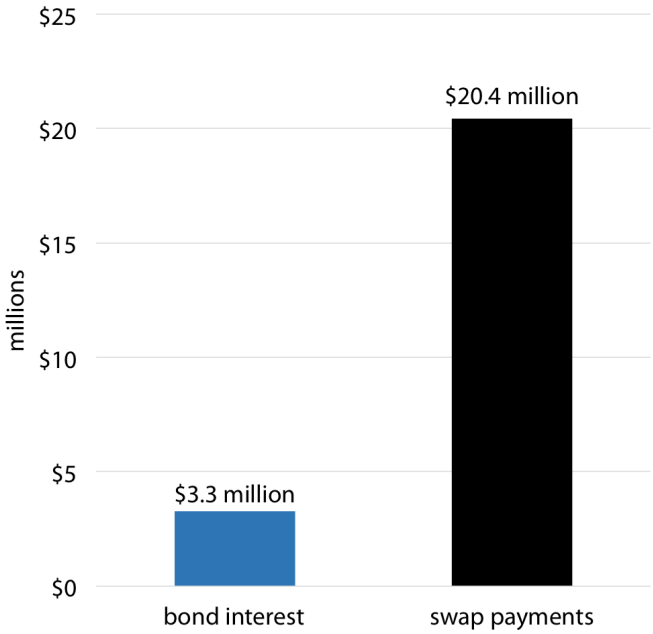
The MBTA's Projected Losses on Financial Derivatives

Only on one occasion[4] in FY 2001-2014 did the MBTA list a swap interest payment as a separate item in the disclosures to its financial statements. Interest on qualifying swap agreements was customarily rolled into interest expense. However, the disclosures provide projections for future payments on the interest-rate swaps similar to those for bonded debt.

As disclosed in the FY 2014 statements, the MBTA expected to pay out a total of $20.4 million on its seven qualified swaps in FY 2015 (Fig. 1). The projected interest payments on the underlying bonds were less than $3.3 million. The swaps increased the projected direct debt-servicing cost on the bonds more than sixfold.

The MBTA has been projecting multimillion-dollar annual outflows on its swap positions for years (Fig. 2). In its FY 2009 statements, near the trough of the Great Recession, the MBTA projected the record $27.6 million in swap interest outflows for FY 2010. Overall, the reported one-year forward projections for

Figure 1. MBTA Projected Payments on Seven Qualifying Swaps and Interest on Related Bonds for FY 2015



Source: MBTA

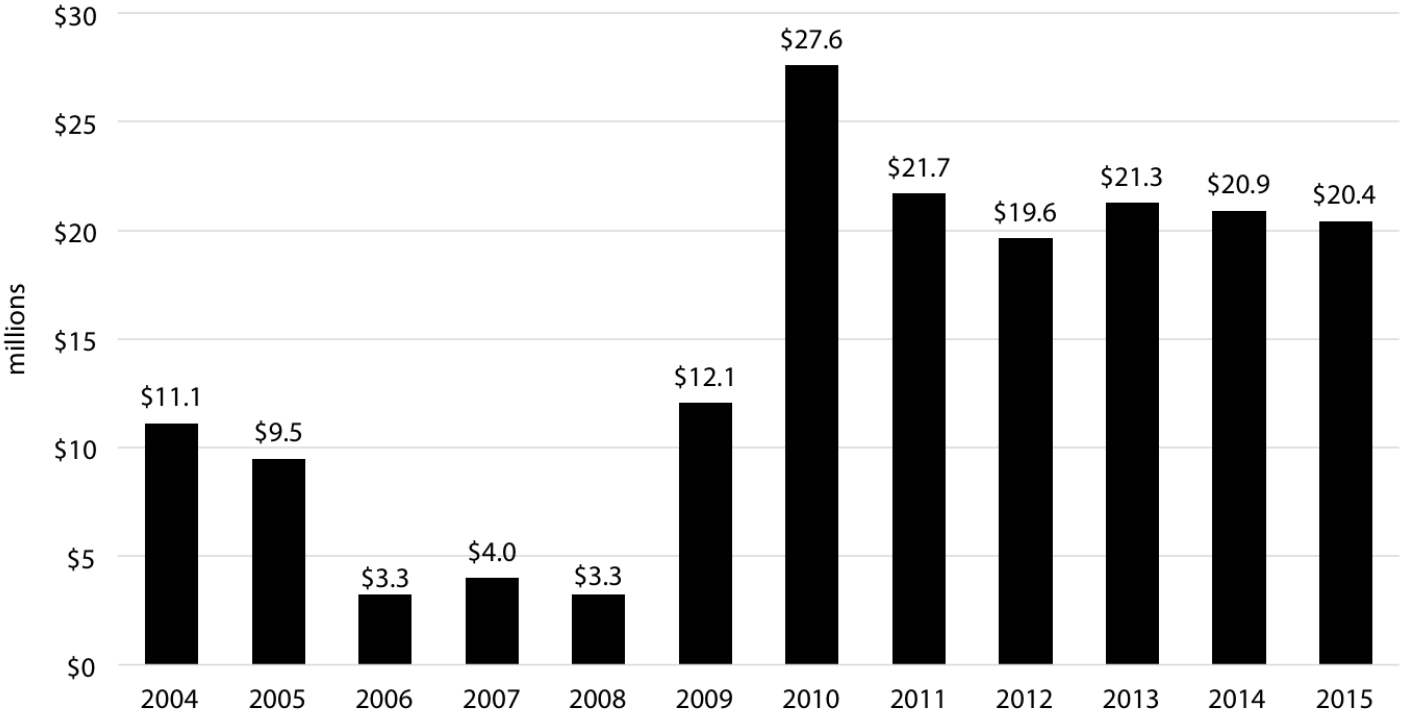
FY 2004-2015 amount to $175 million of payments to swap counterparties – global investment banks.

These figures exclude any prior payments on underlying swaptions or swap initiation premiums received or paid by the MBTA. In 2008, the state auditor found that the MBTA had netted a loss of $18 million on swap premiums, consultant and termination fees from midyear 2000 to YE 2005.[5] Also not included are projected payments on the authority's orphaned swap agreement after FY 2009. Beginning with its FY 2010 statements, the MBTA stopped reporting projected payments on the swap, which had a notional value of $88 million at that time and was still on the books as of FYE 2014.

Estimated Swap Payments for FY 2001-2015

Using data from the disclosures of the MBTA's annual financial statements, it is possible to estimate the actual annual losses on the swap contracts. The authority paid out an estimated $236 million in swap interest over the fifteen-year period. It lost about

Figure 2. MBTA Projected Swap Interest Losses for FY 2004-2015



Source: MBTA

$26 million annually in FY 2010-2015 (Fig. 3). The orphaned "investment" swap cost the MBTA an estimated total of about $24.7 million over the same period.

In most cases, the estimates for the actual payments are higher than the MBTA's one-year forward projections. The MBTA typically expected interest rates to remain higher than they did. Additionally, the authority excluded the orphaned swap from its forward projections for swap interest payments. That swap accounts for about one sixth of estimated swap interest payments in FY 2010-2015. The MBTA's inconsistent financial reporting makes it very difficult to benchmark the accuracy of the estimates.

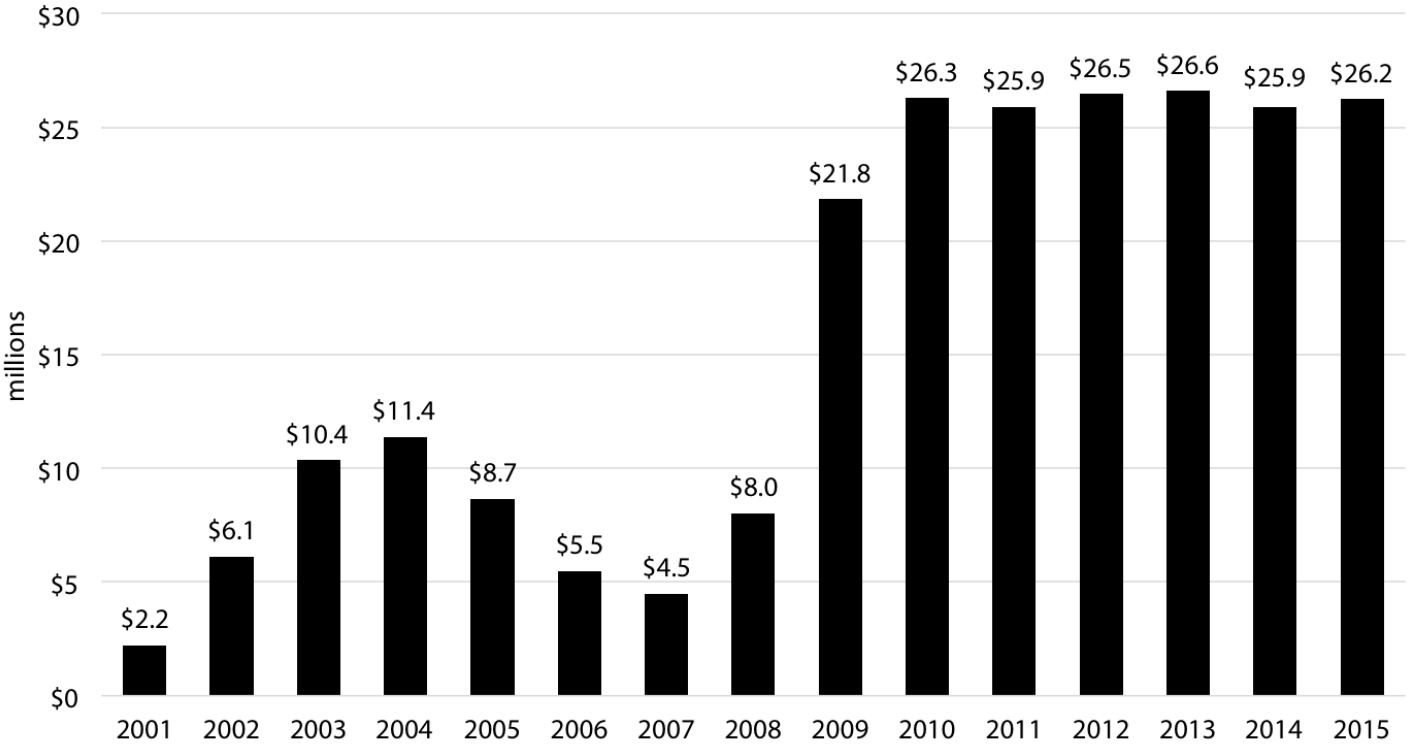
Red Flags

A special report by the state auditor in 2008 found that the MBTA incurred $55 million in swap costs from July 2000 to December 2005. During that period, the authority entered 12 swap agreements totaling "approximately $1.632 billion"[6] in notional principal. The state auditor warned that

> since these swaps are synthetic in nature and not part of the Authority's funded debt, all counterparty interest payments owed by the MBTA must be paid from the Authority's operating funds, and not from debt service reserves. As a result, large interest rate moves could adversely impact the MBTA's annual operating budget and result in large, unanticipated deficits.[7]

The MBTA had already paid $49.4 million in swap-termination and consultant fees, in addition to $37.5 million in swap interest. Its total receipts on the swap transactions had been $31.5 million. The state auditor concluded that "the opportunity to receive up front [sic] or future premium payments by the MBTA […] may be inducing the Authority to participate in this speculative […] derivatives market"[8]. The MBTA rejected the auditor's exhortations to adopt a sensible debt-management policy avoiding derivatives and variable-rate debt. This reckless attitude is reflected in the authority's financial reporting.

Figure 3. Estimated Annual MBTA Swap Payments FY 2001-2015



Source: MBTA, Federal Reserve Bank of St Louis, Securities Industry and Financial Markets Association

The MBTA's financial statements since FY 2001 deliver only boilerplate language regarding its approach to these financial derivatives. To the extent that it exists, the explanatory language in the disclosures not so much informs as intimidates and deters public scrutiny. There is no clearly articulated risk-management policy for the MBTA's derivatives exposure. No valid rationale is presented for issuing variable-rate bonds and overlaying them with costly swaps instead of just issuing callable fixed-interest obligations. No valid rationale is presented for the swap reference rates, the chosen counterparties and their qualifications.

In its opinion on the financial statements for FY 2008-2014, the MBTA's external auditor KPMG noted the authority's failure to include management's discussion and analysis (MD&A), a required and "essential part of financial reporting"[9]. The authority had included MD&A in its statements for FY 2002-2007. The MD&A section of well-prepared financial statements would include "capital asset and long-term debt activity during the year" as well as "currently known facts, decisions or conditions that are expected to have a significant effect on financial position"[10] such as substantial derivatives exposure.

The tabulated summaries of synthetic fixed-rate swap transactions in the MBTA's financial statements for FY 2013 and 2014 misrepresent the fixed payable swap rates.[11] This likely typographical oversight is not necessarily a direct indication of misstatement of the authority's financial results. However, KPMG auditors repeatedly certified the financial statements without apparent mention of the erroneous disclosures. This silence is inexplicable in the context of a credible audit process, especially in light of the fact that the swap rates were quoted accurately elsewhere in the statements.

Basic professional standards of conduct mandate that auditing teams alert clients of such discrepancies

so they can make appropriate changes. A lapse of this sort calls into question the internal processes of the auditing firm and its capacity to continue in that role. Audit organizations with strong cultures of excellence undertake an internal investigation of their own practices whenever such lapses occur. Prudent management on the part of the client dictates that an independent third party conduct an audit of and help restate suspect reporting if necessary.

In 2015, Massachusetts Governor Charlie Baker designated a special Fiscal Management and Control Board (FMCB) to lead a new beginning for the underfunded and underperforming MBTA. The MBTA has since "engaged KPMG to review payroll records and timesheets"[12] in order to clamp down on reckless overtime expenses, a key focus of the FMCB's reform effort. The firm was also expected to audit the MBTA's FY 2015 financials. KPMG has been the MBTA's external auditor since 1990.

In a January 2016 status report, KPMG notified the FMCB that the FY 2015 audit had been "delayed due to difficulties encountered during the audit of the MBTA's pension related [sic] amounts"[13]. The unstated reason for KPMG's difficulty was an ongoing audit of the MBTA Retirement Fund, a private entity whose audited financials were needed in determining the MBTA's pension obligations. In its update, KPMG also reported to have found "material weakness regarding the administration of the various MBTA pension plans"[14] in auditing the MBTA's internal controls.

In late 2013, *Boston Globe* reporting revealed that the MBTA Retirement Fund (MBTARF) had not disclosed a $25 million hedge-fund loss in its annual reports.[15] The investment in what turned out to be an alleged Ponzi scheme was riddled with conflicts of interest. A year later, the paper found that another $10 million of MBTARF assets had been embroiled in an apparently fraudulent scheme, which also had not been disclosed in a timely manner.[16] The MBTARF's auditor KPMG had signed off on the pension fund's reporting.

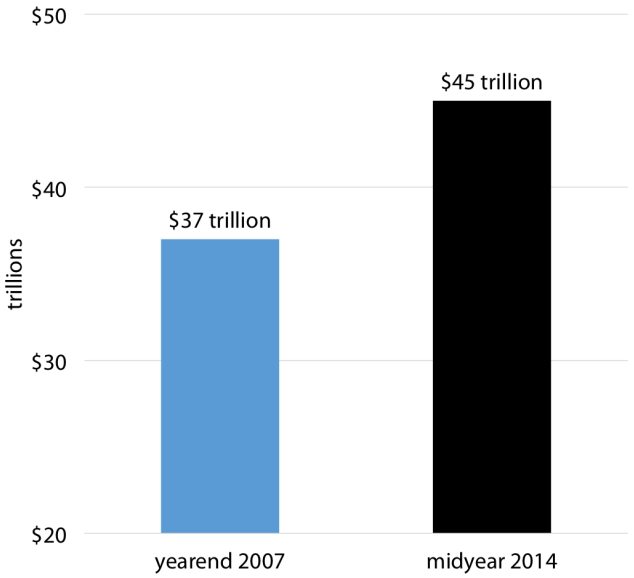
KPMG is the longtime external auditor not only of the MBTA and the MBTA Retirement Fund, but also of the Massachusetts Department of Transportation, the Massachusetts Water Resources Authority, the state's multibillion-dollar Pension Reserves Investment Management Board and the Commonwealth of Massachusetts itself, among numerous other state agencies and subunits.

Counterparty Risk Defeats the Purpose

Financial derivatives are not an effective long-term hedge in the prevailing economic conditions. Hedging with a counterparty can be effective only if the counterparty is robust to economic shocks. The counterparties to the MBTA's interest-rate swaps are global investment banks. These are not reliable counterparties.

Leverage in the global financial system has escalated since the financial crisis of 2008. The indebtedness of the financial sector swelled from $37 to $45 trillion from the end of 2007 to midyear 2014 (Fig. 4). Global financial debt reached nearly 70% of global GDP as of midyear 2014.[17]

Figure 4. Global Financial Debt



Source: McKinsey Global Institute

Many global banks have had top credit ratings despite an adverse outlook. One of the earliest counterparties to the MBTA was Bear Stearns. On 14 March 2008,

Moody's downgraded the bank's debt to Baa1 – just below investment-grade. Two days later, JPMorgan acquired Bear in a fire sale engineered by the Federal Reserve to prevent its collapse. Four months earlier, Standard & Poor's had given Bear Stearns an A rating. Liquidators of Bear funds sued the ratings agencies for fraudulently inflating their ratings, seeking to recover $1 billion in damages.[18]

In 2008, the MBTA had swaps of a $281 million notional principal with Lehman Brothers. The bank filed for bankruptcy in September that year and was liquidated. On the eve of bankruptcy, it had top ratings from Moody's (A2) and Standard & Poor's (A). Subsequently, the MBTA replaced Lehman with Deutsche Bank (DB) as a counterparty on those four swaps.

By 2015, Deutsche Bank's credit ratings had deteriorated enough to trigger a termination clause on the swaps, allowing the MBTA to pick another counterparty. The authority paid a consultant, Swap Financial Group, to tell it that it should replace a counterparty with deteriorating credit. In September 2015, the MBTA petitioned the FMCB that Deutsche Bank be replaced by Barclays, as the consultant had recommended.[19] S&P had downgraded Barclays to A- in the summer, alongside but a notch higher than Deutsche Bank.

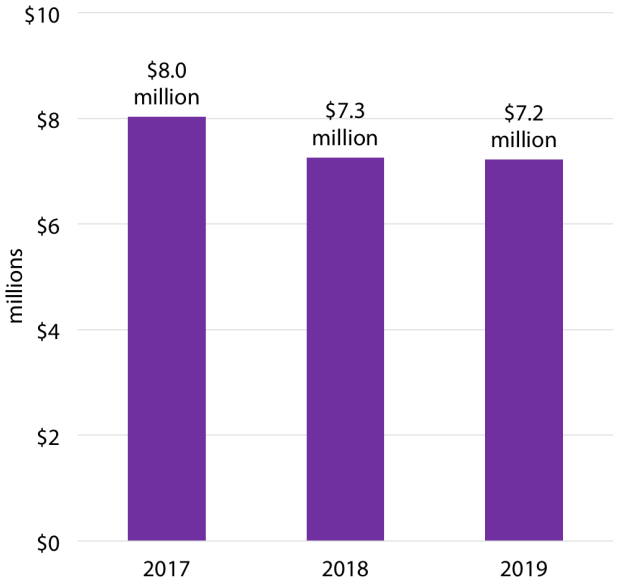
Way Forward

The MBTA recommended that the FMCB approve a replacement of Deutsche Bank with Barclays as a counterparty "at no out of pocket [sic] cost".[20] This recommendation was reckless and misleading. The continuation of the swap agreements is very costly.

The Deutsche Bank swaps are linked to inflation, interbank and municipal borrowing rates. Excessive debt hampers growth and inflation globally and domestically. Low growth and inflation put pressure on the Federal Reserve to adopt negative interest rates and buy more financial assets. Such policies push borrowing rates further down. Trillions of dollars of government debt in Japan and the Eurozone already had a negative yield as of early 2016. Amid low inflation and interest rates, the MBTA faces mounting losses on its interest-rate swaps.

The authority would have to pay out an estimated $22.5 million on the four Deutsche Bank swaps over the next three fiscal years alone (Fig. 5) given the variable rates as of YE 2015.[21] In mid-2015, the MBTA expected that it would cost some $30 million to terminate the swaps.[22] Since the swaps expire in FY 2021-2025, it may make sense to terminate them before the variable rates have fallen further and made the swaps even costlier. It may also be possible to negotiate a discount on the termination fees with Deutsche Bank, which was scrambling to raise capital in early 2016.

Figure 5. Expected MBTA Payments on Deutsche Bank Swaps for FY 2017-2019 at YE 2015 Rates[23]



Source: MBTA, Federal Reserve Bank of St Louis, Securities Industry and Financial Markets Association

As interest rates on government debt fall further, the MBTA can issue fixed-rate callable bonds to fund swap terminations and to redeem the adjustable-rate bonds "hedged" by the Deutsche Bank swaps. About $24.3 million of CPI bonds under the Deutsche Bank swaps are not redeemable prior to their maturity in 2024-2025. Left unhedged, these bonds do not pose significant interest-rate risk, especially given the

low-inflation outlook. The MBTA can also offer to repurchase them at market.

Conclusion

Organizations which drift away from their core activities fail. The mission of the MBTA is to provide affordable and reliable transit to citizens. Managing a multimillion-dollar portfolio of financial derivatives is a reckless distraction from that mission. Financial management has not been among the MBTA's organizational strengths. Wise leaders minimize exposure to organizational weaknesses and build organizational strength in core activities. The smart long-term strategy for the MBTA is to eliminate its disruptive exposure to financial derivatives and adjustable-rate debt.

Reducing swap and debt obligations over the medium term while building a cash reserve is the best way to hedge the fiscal risks associated with an economic downturn or another financial crisis. Swap hedges on variable-rate debt only create a false sense of security in an unstable financial environment. They have also cost hundreds of millions of dollars to Massachusetts taxpayers. The MBTA can take advantage of multi-decade lows in interest rates to refinance its adjustable-rate debt with callable bonds and to extend maturities. Volatility in the financial markets may also create additional opportunities to eliminate swap exposures at a discount.

Endnotes

1. Unless otherwise noted, the data in this research paper have been obtained from the MBTA's audited financial statements and official bond statements.
2. Massachusetts Bay Transportation Authority, "Massachusetts Bay Transportation Authority Swap Counterparty Replacement" (Boston, MA, September 21, 2015), 2, http://www.mbta.com/uploadedfiles/About_the_T/Board_Meetings/SwapCounterpartyReplacementDeutscheBank09182015PTHFinal.pdf.
3. A. Joseph DeNucci, "Independent State Auditor's Report on Certain Activities of the Massachusetts Bay Transportation Authority" (Boston, MA: Auditor of the Commonwealth of Massachusetts, January 29, 2008), 5.
4. Massachusetts Bay Transportation Authority, "Financial Statements and Required Supplementary Information June 30, 2002" (Boston, MA, 2002), 23.
5. A. Joseph DeNucci, "Independent State Auditor's Report on Certain Activities of the Massachusetts Bay Transportation Authority," 9.
6. Ibid., 6.
7. Ibid., 8.
8. Ibid., 10.
9. KPMG, "Independent Auditors' Report," in "Financial Statements, Required Supplementary Information and Supplementary Information June 30, 2014 and 2013" by Massachusetts Bay Transportation Authority (Boston, MA, 2014), 2.
10. Governmental Accounting Standards Board, "Summary of Statement No. 34 Basic Financial Statements – and Management Discussion and Analysis – for State and Local Governments," June 1999, http://www.gasb.org/cs/ContentServer?c=Pronouncement_C&pagename=GASB%2FPronouncement_C%2FGASBSummaryPage&cid=1176156699453.
11. See Massachusetts Bay Transportation Authority, "Financial Statements, Required Supplementary Information and Supplementary Information June 30, 2013 and 2012" (Boston, MA, 2013), 30; Massachusetts Bay Transportation Authority, "Financial Statements, Required Supplementary Information and Supplementary Information June 30, 2014 and 2013" (Boston, MA, 2014), 30. For example, the fixed payable swap rate on item 3 in the FY 2013 table is misreported as "4.00%" whereas the actual rate of 4.13% is noted in the discussion on p. 32. Similarly, the tabulated rate for item 4 is "5.00%", whereas the correct 4.66% is included on p. 32. The rates appeared accurately in prior-year tabulations.
12. Massachusetts Bay Transportation Authority, "MBTA Overtime Audit Update" (Boston, MA, January 4, 2016), 1, http://www.mbta.com/uploadedfiles/About_the_T/Board_Meetings/OTAuditandLeaveMgmtPolicies01042016.pdf?id=fdgsa1.
13. KPMG, "Status Report to the Fiscal Management and Control Board" (Boston, MA, January 2016), 6, http://www.mbta.com/uploadedfiles/About_the_T/Board_Meetings/MBTA_AC_Presentation%202015_Jan%202016Version.pdf.
14. Ibid., 4.
15. Beth Healy, "Ex-T Pension Chief Recommended $25m Investment That Went Bust," *The Boston Globe*, December 20, 2013, https://www.bostonglobe.com/business/2013/12/20/former-mbta-pension-fund-chief-recommended-million-hedge-fund-investment-that-went-bust/baNMRcCLcdIoitY8xqx66M/story.html.

16. Beth Healy, "MBTA Waits a Year to Tell of Issues at Hedge Fund," *The Boston Globe*, December 22, 2014, https://www.bostonglobe.com/business/2014/12/22/mbta-pension-fund-had-more-hedge-fund-problems/vVjpMoCGQOiWMOdnqcqmTJ/story.html.
17. Richard Dobbs et al., "Debt and (Not Much) Deleveraging" (McKinsey Global Institute, February 2015), 1, http://www.mckinsey.com/insights/economic_studies/debt_and_not_much_deleveraging.
18. Daniel Wiessner, "Judge Dismisses Lawsuit Claiming Rating Agencies Misled Bear Sterns Funds," *Reuters*, August 5, 2015, http://www.reuters.com/article/lawsuit-ratings-idUSL1N10G1QU20150805.
19. Massachusetts Bay Transportation Authority, "Massachusetts Bay Transportation Authority Swap Counterparty Replacement."
20. Ibid., 2.
21. SIFMA Municipal Swap Rate 0.01%, one-month LIBOR 0.4239% and one-year CPI 0.7295%.
23. Massachusetts Bay Transportation Authority, "Massachusetts Bay Transportation Authority Swap Counterparty Replacement," 2.
23. Annual estimates decline over time due to anticipated reductions of the notional principal.

PIONEER INSTITUTE
PUBLIC POLICY RESEARCH
185 Devonshire Street, Suite 1101, Boston, MA 02110
T: 617.723.2277 | F: 617.723.1880
www.pioneerinstitute.org