

Have the MBTA's Retirement Plans Gone Off the Rails?

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by Iliya Atanasov



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Have the MBTA's Retirement Plans Gone Off the Rails?

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■ **Have the MBTA's Retirement Plans Gone Off the Rails?**

1. Overview

The Massachusetts Bay Transportation Authority (MBTA) – known around Boston as “the T” – has been notoriously secretive about its retirement plans. Only recently did the MBTA Retirement Fund (MBTARF) release a database of retiree benefits – and after the state legislature mandated the disclosure as it funneled even more public money into the indebted transit system through the state’s delayed budget for FY 2014.

But the often lavish benefits that dozens of former employees had been able to retire with in their forties due to a later abolished provision in the plan are just the tip of the iceberg. The T’s financial statements raise much more troubling questions about the sustainability of the MBTA Retirement Plan (MBTARP), the MBTA Police Association Plan (MBTAPAP), covering the T’s own police force, and the MBTA Deferred Compensation Plan.¹ This study focuses mostly on MBTARP, which accounts for the bulk of the obligations, but the police and the deferred plan are in a similar condition in terms of their funding.

Underscoring the T’s special position is the fact that its retirement plans are not established under Massachusetts General Laws Chapter 32, which governs the remaining 105 public retirement systems in the commonwealth, and it is not subject to regulation by the state’s pension watchdog, the Public Employee Retirement Administration Commission (PERAC).

Accordingly, MBTARF did not formerly publish on its website any financial statements or any of the reports of its investment managers. It was anybody’s guess what the managers’ investment performance was, let alone the amount of money they

received or potential conflicts of interest that may exist.

Until recently, the only information regarding the retirement plans was contained in the footnotes of the audited financial statements on the MBTA’s website, which must include consolidated estimates of pension and other postemployment benefit (OPEB) liabilities. Trends from the past 10-20 years paint a very concerning picture about the health of the T’s pension plans:

- The growth of pension costs is vastly outpacing that of labor costs.
- The retirement benefits earned are funded inadequately.
- In 2011, the unfunded liability for pensions reached \$726mn; the liability for unfunded retiree healthcare benefits surpassed \$2bn.

The deteriorating condition of MBTARP and its sister plans should be alarming not just to taxpayers, but to the T’s employees, who depend on these benefits for their retirement.

These alarming trends were confirmed with the 2012 annual report, which MBTARF publicized on its website after receiving an earlier draft of this paper. For the better part of a decade, the T has failed to fund its pension plans at a level that both covers newly earned benefits and reduces the unfunded liabilities within a meaningful time frame. Ultimately, this lack of funding has contributed to rising pension costs.

The goal of this report is to highlight developments at the MBTA and MBTARF and outline a path towards improved transparency and accountability in order to secure employees’ benefits at a reasonable cost to MBTA riders and Massachusetts taxpayers.

2. When Is a Retirement Plan Being Funded Adequately?

MBTA financial statements and MBTARF's 2012 annual report contain several important pension-related metrics defined by the Governmental Accounting Standards Board (GASB). The **annual required contribution (ARC)** to the pension plan consists of the normal cost for the year (the payment needed to cover benefits earned during the year) and an amortization allowance for the unfunded portion of pre-existing liabilities (the payment needed to reduce the unfunded liability) designed to fund the pension fully within 30 years by current MBTARF assumptions.

The **annual pension cost (APC)** equals the ARC unless the employer has an outstanding **net pension obligation (NPO)** for past under- or overcontributions. GASB summarizes this as follows:

An NPO is defined as the cumulative difference between annual pension cost and the employer's contributions to a plan, including the pension liability or asset at transition, if any. An employer with an NPO should measure annual pension cost equal to (a) the ARC, (b) one year's interest on the NPO, and (c) an adjustment to the ARC to offset the effect of actuarial amortization of past under- or overcontributions.²

In other words, if there is an outstanding (positive) NPO due to past undercontributions, the annual pension cost increases by the interest on the accumulated outstanding amount because of foregone investment returns assumed by the regular funding schedule. An additional APC allowance needs to be made in order to reduce the NPO liability down to zero over time.

The APC is recorded "regardless of the amount recognized as pension expenditures/

expense."³ Since the T "accounts for its operations as an enterprise fund" on an accrual basis,⁴ pension expense equals APC.⁵ Thus, three metrics provide a nuanced view of annual pension costs – pension expense, annual pension cost and actuarially required contribution – with the following schematic relationship within the calendar year:

actuarially required contribution
(ARC) → annual pension cost (APC)
→ pension expense

In other words, the ARC must be included in the APC, which in turn must be fully recorded as pension expense, whether it is actually paid or not.

GASB further states that any "liability balance in the NPO should be recognized in the general long-term debt account group" of the balance sheet,⁶ thereby emphasizing the fact that a positive NPO means that management effectively is borrowing from its pension plan when it opts to pay other operating costs rather than fully funding the APC. A large NPO, especially one that is consistently growing, should raise red flags not just for plan members, but also for anyone responsible for funding it – taxpayers, in this case – because it increases the overall cost of providing a given level of benefits. Thus, making the ARC is not sufficient to bring down the cost of underfunding; contributing the entire APC is necessary. A growing NPO also raises red flags for lenders because it weakens the balance sheet and makes it more costly to borrow for other needs.

On the basis of these actuarial metrics, an advance-funded defined-benefit plan can be classified as:

- a) fully funded – if its unfunded liability is not positive;

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- b) underfunded, but funding its unfunded liability on schedule – if it does have a positive unfunded liability, but the net pension obligation is not positive;
- c) underfunded and funding its unfunded liability behind schedule (both exacerbating the underfunding issue and escalating the overall cost of the benefits) – if both the unfunded liability and the net pension obligation are positive.⁷

The available evidence, limited as it is, places the T's main retirement plans firmly in the last category.

Objective metrics show that the T has been underfunding its retirement plans for years.

3. Pension Costs Have Been Growing Unsustainably

According to the MBTA's 2013 statements,

[t]he Authority provides retirement benefits to employees through four defined benefit retirement plans and one defined contribution plan: the MBTA Retirement Plan, the MBTA Police Association Plan, the MBTA Deferred Compensation Plan, the MBTA Qualified Deferred Compensation Plan, and the MBTA Deferred Compensation Savings Plan.⁸

The MBTA has opted not to advance-fund the Deferred Compensation Plan, so there is no ARC associated with it. The ARCs of MBTARP and the police plan are available in the supplementary notes of the MBTA's annual financial statements. As a most basic measure of pension costs, both of those ARCs have increased substantially in FY 2001-2013 (Fig. 1).

The employer ARC rose from 7.75% to over 20% of covered payroll for MBTARP – an increase of a whopping 158%. The T's

ARC for the police pension plan rose less dramatically but on a much higher base, from just over 11% to above 17% of covered payroll. However, the overall percentage payroll cost of the two plans is about the same when the higher contributions from the MBTA police are factored in.

The total ARC was 25.59% and 24.47% of covered payroll for MBTARP and MBTAPAP, respectively. MBTARP members' contribution rate was 5.5% in 2013. By comparison, the most recent cohort of state employees may end up paying about 11% of their compensation into the retirement system. Furthermore, they are not covered by Social Security in retirement and the state does not have to make employer contributions to that program.

In 2013, the combined contribution rate for MBTARP was at record 25.59% of covered payroll. The combined contribution rate for the MBTA police plan was at 24.47%, also a record.

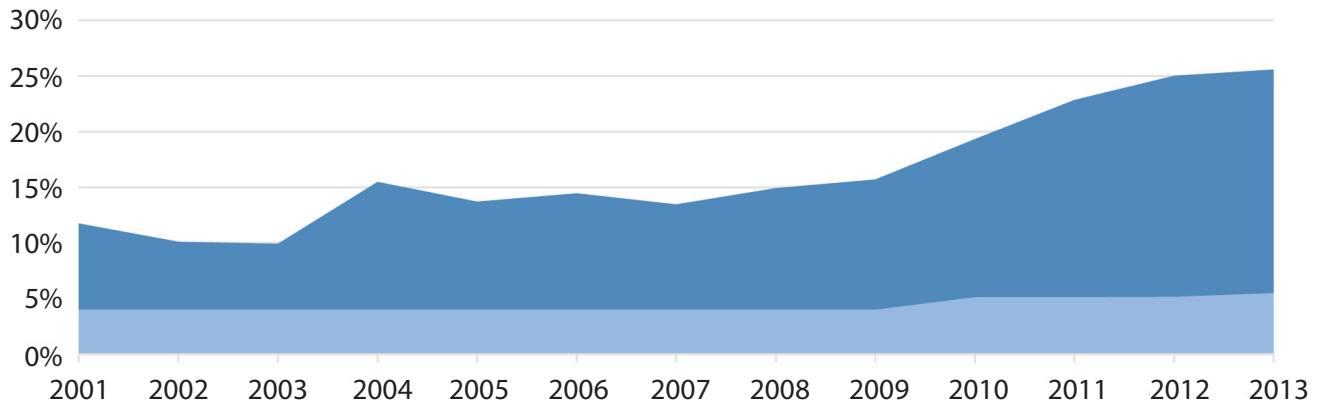
The fair allocation of pension contributions between the public and employees is a matter of subjective judgment. But an ARC of 25% of covered payroll indicates the health and sustainability of a defined-benefit retirement plan may be in jeopardy. Moreover, the ARC and pension expense figures do not account for the payments made to Social Security by the MBTA. When those are included in the calculation, overall pension costs reach 31.4% of payroll and over 17% of total labor costs for FY 2013.

The "23 and out" rule, which allowed employees to retire after 23 years of service with the MBTA regardless of age and was abolished by the state legislature in 2009,

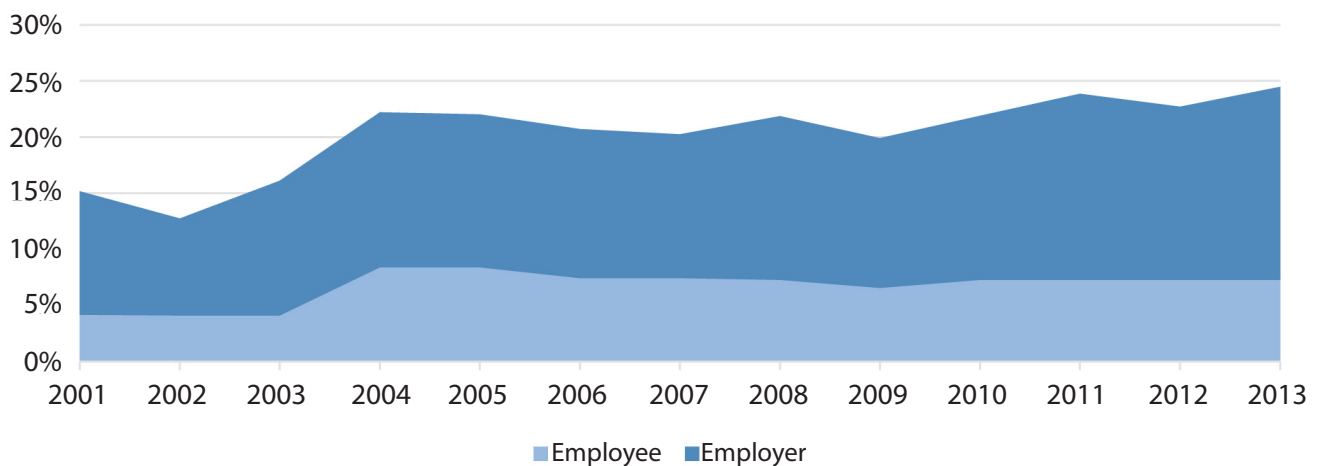
Figure 1. Annual Required Contributions for MBTARP and MBTAPAP as Percentage of Covered Payroll

FY Ended June	MBTARP			MBTA Police Association Plan		
	Employer	Employee	Total	Employer	Employee	Total
2013	20.09%	5.50%	25.59%	17.18%	7.29%	24.47%
2012	19.89%	5.15%	25.04%	15.41%	7.29%	22.70%
2011	17.74%	5.12%	22.86%	16.58%	7.29%	23.87%
2010	14.23%	5.12%	19.36%	14.61%	7.29%	21.90%
2009	11.69%	4.00%	15.69%	13.35%	6.56%	19.91%
2008	10.93%	4.00%	14.93%	14.59%	7.29%	21.88%
2007	9.47%	4.00%	13.47%	12.82%	7.44%	20.26%
2006	10.47%	4.00%	14.47%	13.27%	7.44%	20.71%
2005	9.71%	4.00%	13.71%	13.62%	8.40%	22.02%
2004	11.47%	4.00%	15.47%	13.81%	8.40%	22.21%
2003	5.92%	4.00%	9.92%	11.98%	4.12%	16.10%
2002	6.11%	4.00%	10.11%	8.63%	4.12%	12.75%
2001	7.75%	4.00%	11.75%	11.02%	4.17%	15.19%

MBTARP Required Contributions (% Covered Payroll)

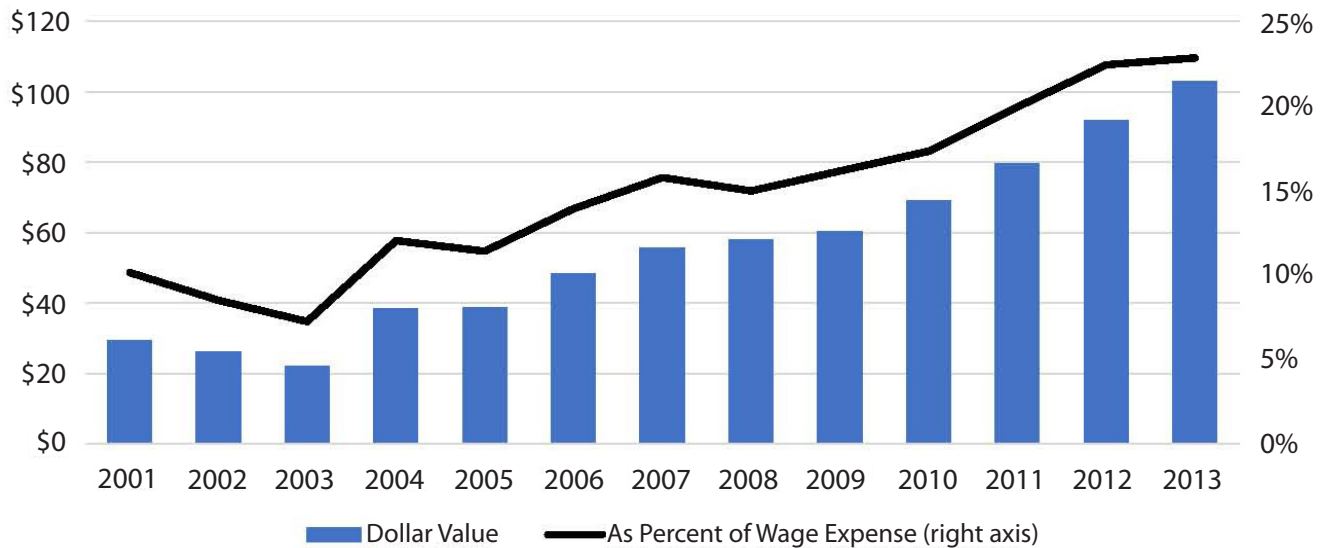


MBTA Police Association Plan Required Contributions (% Covered Payroll)



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Figure 2. MBTA Pension Expense (dollars in millions)



is but the most egregious testament as to why costs have grown so rapidly. Even though the practice was terminated, the benefits conferred as a result of it remain. MBTA pension “reform” raised the tenure minimum to 25 years, but employees can still retire at age 55. These poor incentives remain a significant contributor to the rapid growth of pension expenses at the T, which have increased from about \$30mn to well over \$100mn in just a dozen years (Fig. 2).⁹

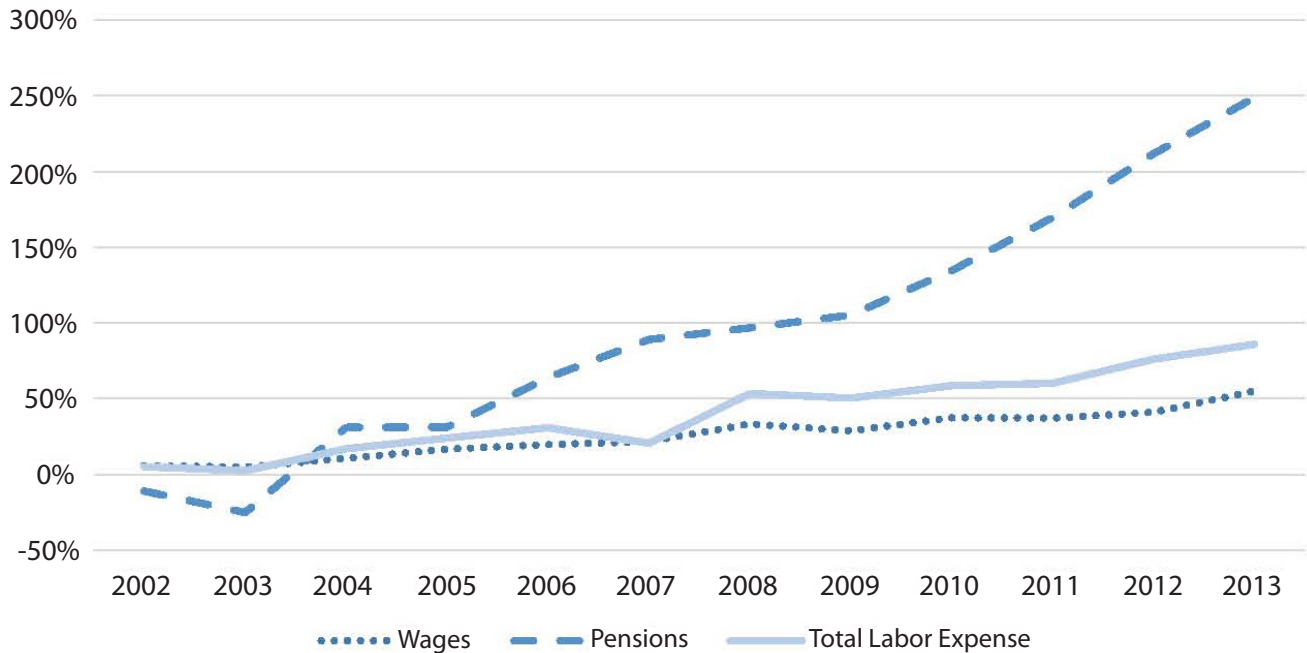
A more detailed look at the relative growth of labor expenses at the T further confirms the concerns raised by the increase of the ARC. Figure 3 represents the cumulative increase in select expenses relative to their value as of FY 2001. In 2002-2013, wage expense grew at a nominal annualized rate of about 3.7%, which amounts to 54.9% for the entire period. Meanwhile, after falling briefly on the coattails of the dotcom bubble, pension expense exploded by nearly 250% at an

annualized rate just short of 11%, rising about three times as fast as wages. The combined annual pension cost for MBTARP, the police and the deferred compensation plans *more than tripled* from about \$25 million in FY 2001 to almost \$86 million in FY 2013. This wide disparity between current compensation and pension expense growth speaks to the poor decisions regarding retirement benefits that had been made at the T.

During the same period, total labor costs increased by about 86%. While pension expense comprised 6.6% of that total in 2001, it had reached nearly 12.4% by FY 2013. As explained in the previous section, a substantial portion of the pension expense increase could be attributable to underfunding the plan.

In FY 2002-2013, MBTA pension expenses grew at an aggregate rate of 11% annually, nearly doubling their share of total labor costs.

Figure 3. Cumulative Expense Growth (2002-2013)¹⁰



4. The T Has Been Using Its Retirement Plans as a Piggy Bank

The T funded religiously its APC until about 2008,¹¹ when it started covering only about 80% on average (Fig. 4). The payments made to MBTARP fell to 75% of that plan’s APC in fiscal year 2013, while the net pension obligation (the accumulated underpayment) increased more than fourfold from about \$20 million to nearly \$87 million for that plan alone.¹²

Since 2008, the T has effectively borrowed about \$80 million overall from its pension plans, which ought to be of grave concern to employees and retirees, who expect to receive pensions from them (Fig. 5). As discussed previously, the underpayment of current APC *increases* the overall cost of the benefits because compounding investment returns are forfeited as a result.

Furthermore, the MBTA has shifted to an *open* 30-year funding schedule to amortize

MBTARP’s unfunded liabilities. With an open funding schedule, the deadline for full funding is not fixed and moves out every year. This approach is not allowed for any of the other 105 public-employee retirement systems in Massachusetts, which are generally required by statute to fund their liabilities no later than 2040. A 30-year open schedule as of FY 2013 implies that the ARC for that year reflects a funding deadline well beyond 2040. That target will keep moving further out, unless a closed schedule with a fixed deadline is reinstated.

According to GASB 27, “the open method, when coupled with an amortization period of 30 to 40 years, produces no perceptible amortization of the unfunded actuarial liability.”¹³ In other words, when this approach is taken, the underfunding persists – adding interest charges and increasing pension costs exponentially without end in sight.

According to MBTARF’s 2012 annual report,¹⁴ the MBTA has not been making

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Figure 4. The MBTA's funding of pension costs 2001-2013 (dollars in millions)

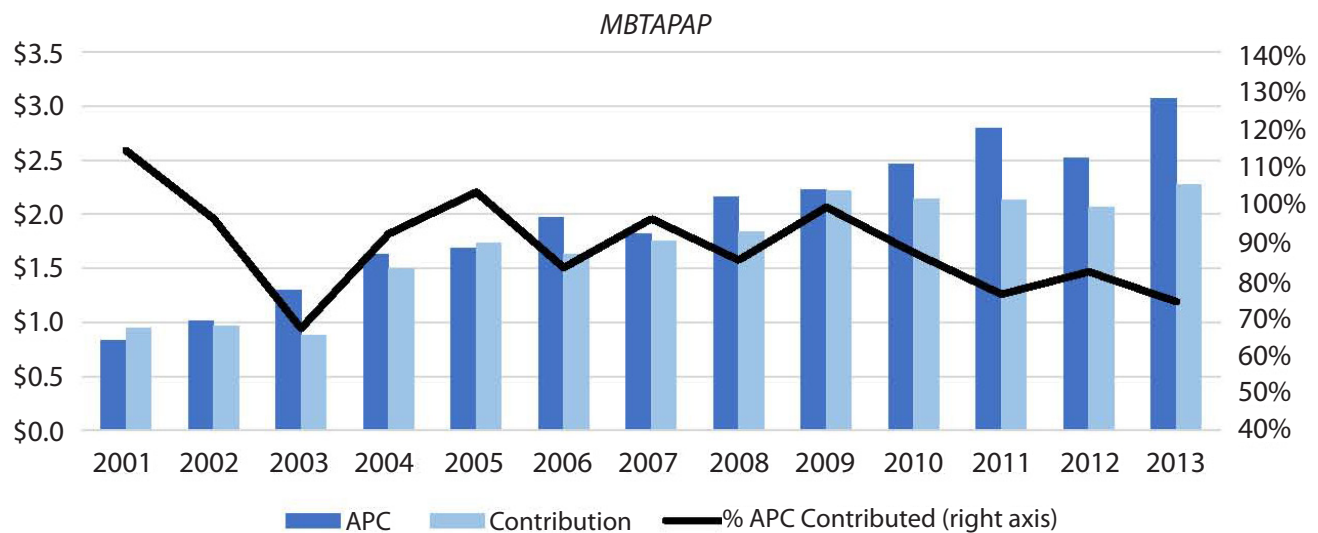
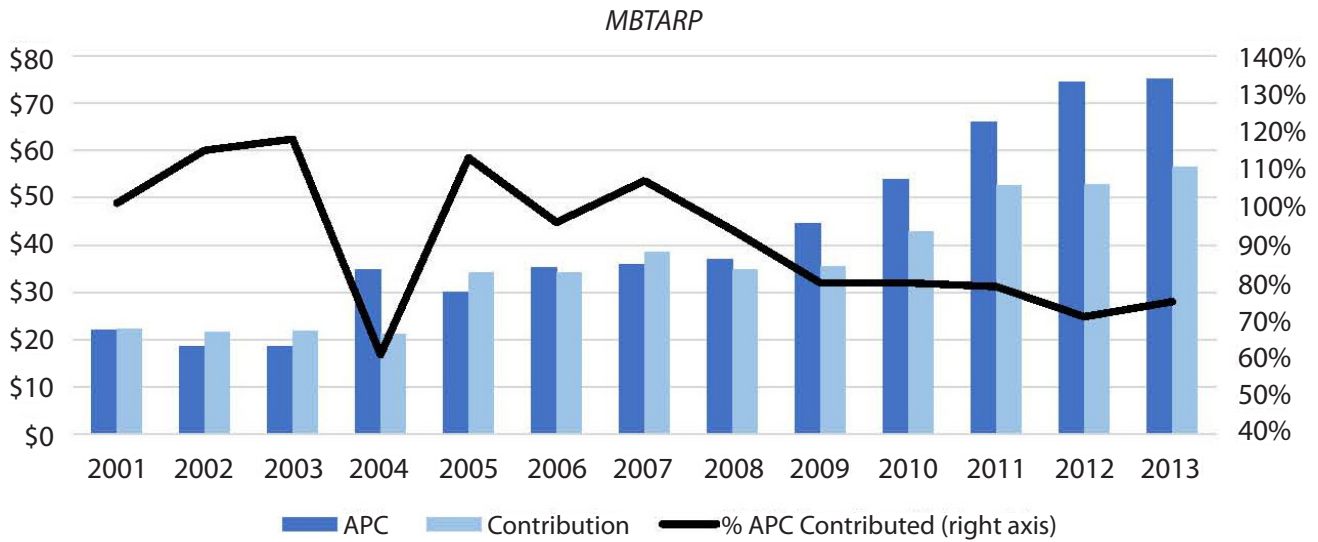
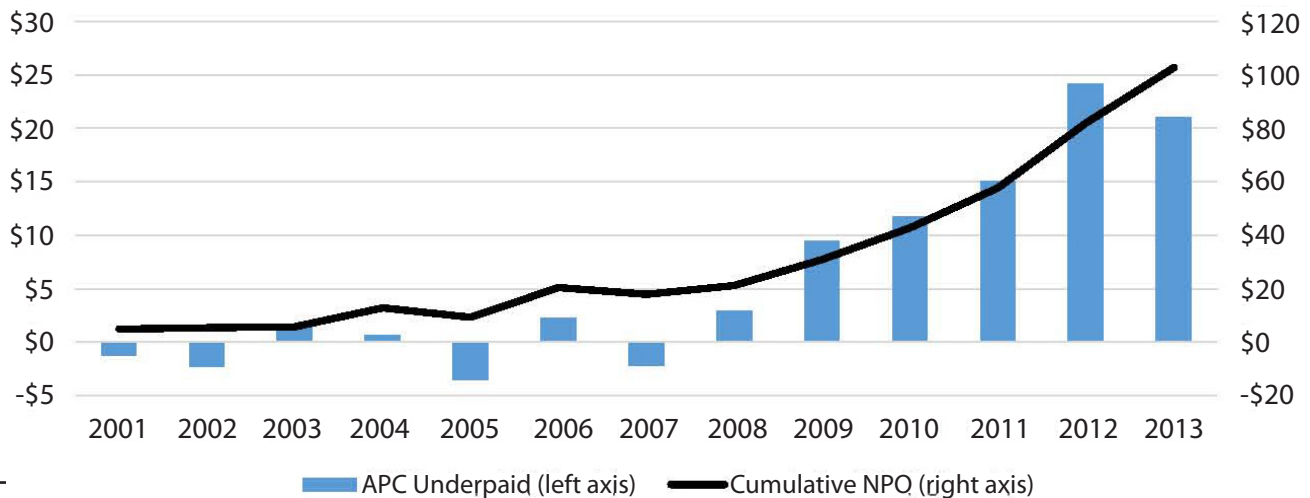


Figure 5. MBTA Underpayment of Annual Pension Cost and Accumulation of a Net Pension Obligation



even the annual required contribution in the past six years (Fig. 6).¹⁵ This implication directly contradicts the T’s own financial statements, which aver that “contributions made in 2013 and 2012 were in accordance with [...] contribution requirements.”¹⁶ The MBTA’s report states that these requirements were set in accordance with the latest (2011) actuarial valuation, but it remains unclear whether the required contribution rates reported by MBTA and MBTARF have been calculated on the same basis. A summary of other discrepancies found in the financial statements of the MBTA and the 2012 annual report of MBTARF is available in Appendix II.

According to the Governmental Accounting Standards Board, the funding methods adopted by the MBTA in recent years do not result in a meaningful reduction of the unfunded pension liability.

5. MBTARF’s Financial Condition Has Been Deteriorating Rapidly

In the period 1995-2005, MBTARF was nearly fully funded – and even overfunded at the peak of the dotcom bubble. After that bubble burst, the plan maintained a decent level of funding through the mid-2000s, but then its funded level began to falter *before*

the unravelling of the housing boom and the subsequent financial crisis (Fig. 7).

MBTARF reports to have been funded well below the actuarially required contribution in the past six calendar years.

The plan had about the same assets in 2007 as it did in 2000 with very little fluctuation in the interim. Most other public pension systems in the commonwealth managed to grow substantially during this period. Meanwhile, MBTARF’s liabilities rose from \$1.5 to \$2.1 billion – a staggering 40% increase in just seven years. Total liabilities have been growing rapidly for the better part of a decade, even though MBTARF increased the discount rate on its pension liabilities from 7.25% to 7.5% and decreased the expected compensation growth rate from 5% to 4% annually – actuarial moves, which tend to put downward pressure on the estimate of the liabilities.

The funded ratio last increased in 2005 and by 2011 had dropped to 68.1%, the lowest level since at least 1991. Correspondingly, the MBTA’s unfunded liability has been on a steady upward path since 2006 and had reached the unprecedented level of 198% of covered payroll by yearend 2011 (Fig. 8).

Figure 6. MBTA Employer Contributions According to MBTARF by Calendar Year

Year	Contributed	ARC	% ARC Recognized
2012	\$54,968,325	\$66,035,000	83.24%
2011	\$52,278,311	\$60,691,000	86.14%
2010	\$49,006,722	\$60,252,000	81.34%
2009	\$38,566,024	\$49,340,000	78.16%
2008	\$35,420,770	\$39,761,000	89.08%
2007	\$30,014,017	\$33,815,000	88.76%

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Figure 7. MBTARP Funding Status (dollars in millions)

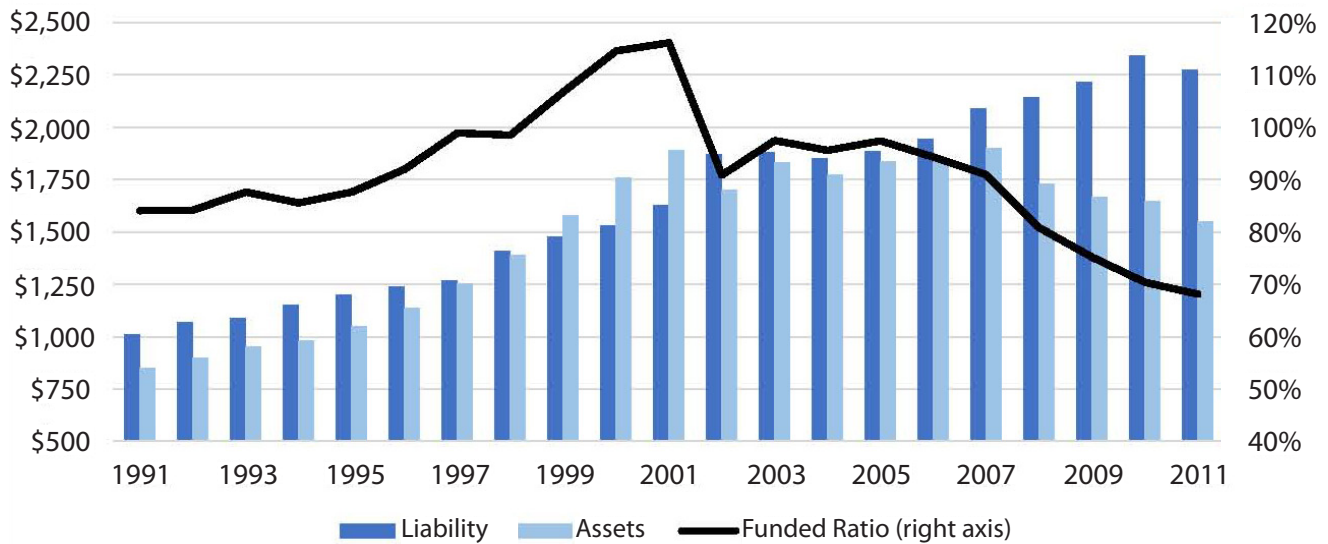
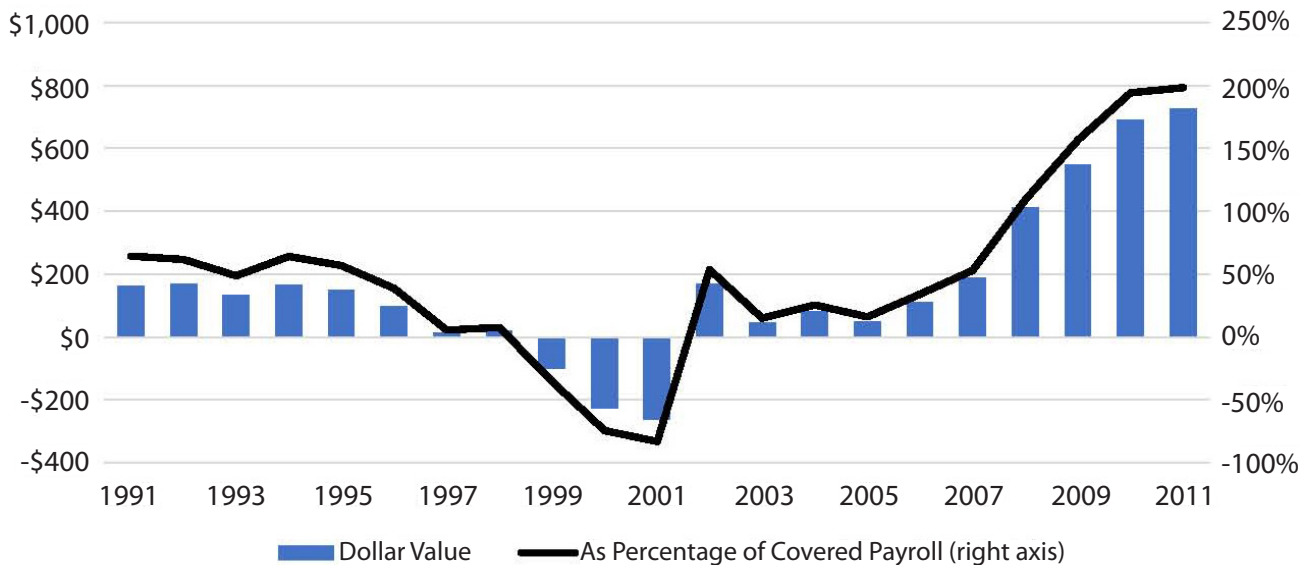


Figure 8. MBTARF Unfunded Liability (dollars in millions)



As of the end of 2011, the date of the last actuarial valuation, MBTARF's unfunded liability was over \$726mn, while the fund was serving 5,790 active members.¹⁷ This implies about \$125,000 in outstanding unfunded liability for every working member covered by MBTARF. Observe that this is a present value, not a cash flow deferred over

time. If left unfunded, it would increase by MBTARF's actuarially assumed rate of return (ARR) of 7.5% every year until the benefits come due.

MBTARF's pension assets have declined while its liabilities have skyrocketed.

6. Other Postemployment Benefits Are Not Advance-Funded

The T's financial statements have reported the results of four OPEB valuations since (Fig. 9). The valuations themselves have not been released on the MBTA website, so it is impossible to determine what part of the wide fluctuation in valuations is due to changes in the T's labor force, healthcare costs or changes in actuarial assumptions, among other factors.

With its Statement 45, GASB started requiring recognition of OPEB expenses on an accrual basis (rather than pay-as-you-go) for periods beginning after mid-December 2006. In other words, GASB 45 aims to provide more transparency regarding OPEB: (a) the grandfathered unfunded OPEB liability must appear in the supplementary information of the financial statements, while (b) the unpaid portion of the ARC and of subsequently incurred normal cost accrues on the balance sheet as a **net OPEB obligation**

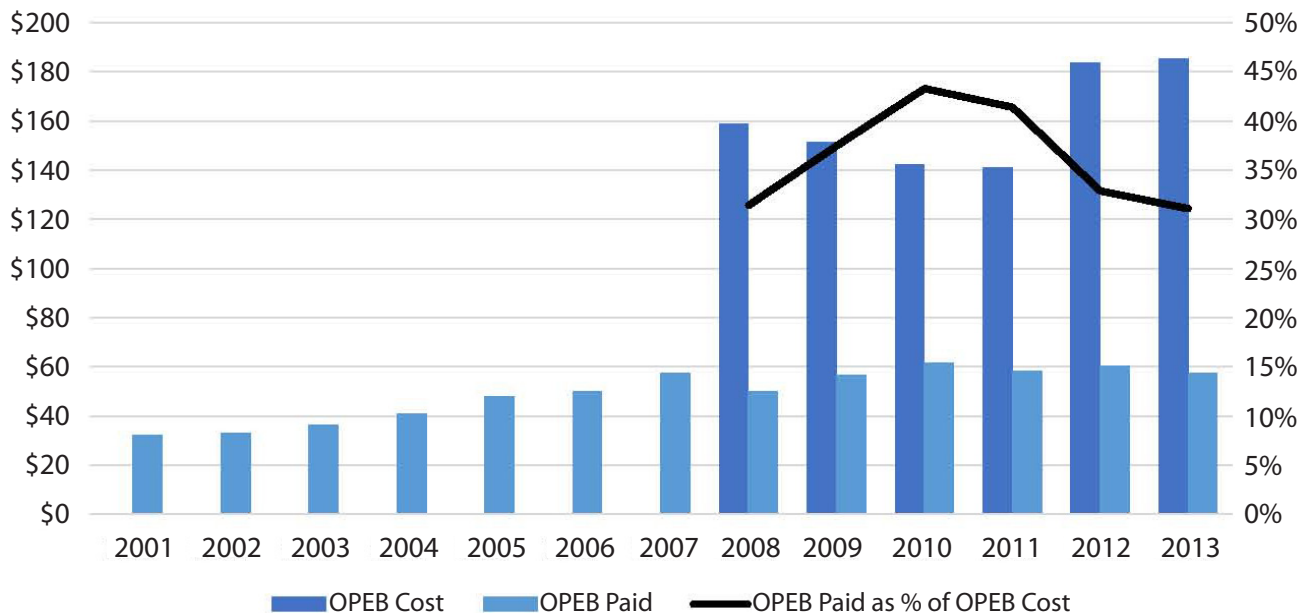
Figure 9. Valuations of OPEB Liabilities¹⁸
(dollars in thousands)

Year Ending June	OPEB Liability
2006	\$1,734,777 ¹⁹
2008	\$1,714,605
2009	\$1,555,394
2011	\$2,016,063

(**NOPEBO**). This mechanism ensures that over time the unfunded liability is either paid down or transferred to the balance sheet as NOPEBO.

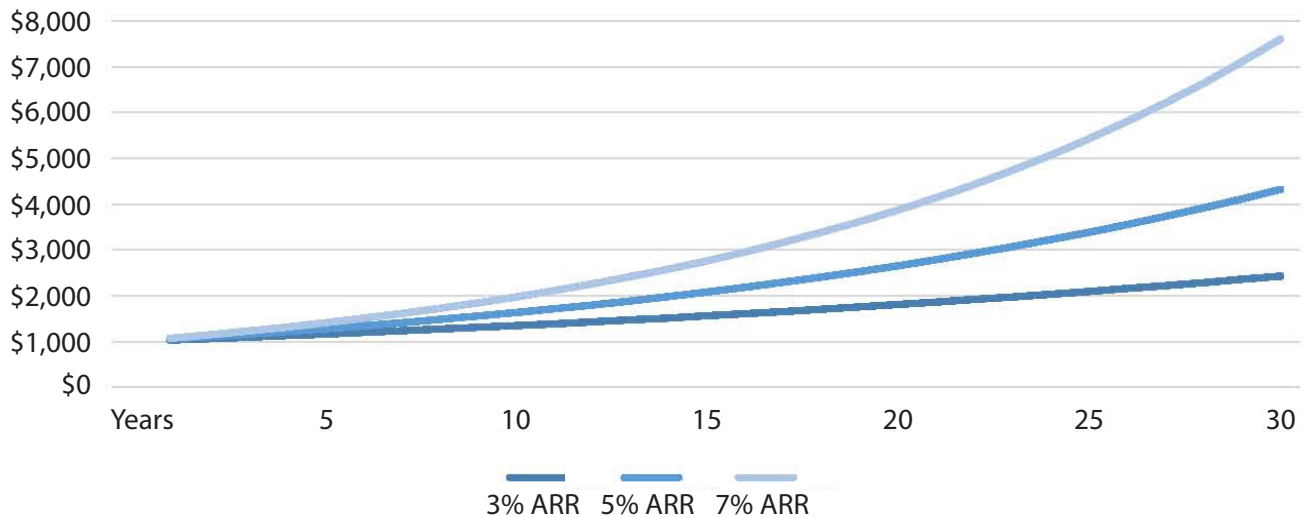
Effectively, the net OPEB obligation (NOPEBO) is the OPEB analogue of the net pension obligation (NPO). A rising NOPEBO is an indication that the unfunded OPEB liability reported as required supplementary information is not being paid down. Quite expressly, the MBTA has opted not to advance-fund its OPEB (Fig. 10), in which case the annual OPEB cost less the actual contribution is recognized as NOPEBO on the balance sheet over time. The OPEB paid only covers

Figure 10. MBTA OPEB Funding (dollars in millions)



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Figure 11. Future Value of \$1,000 at Different Rates of Return and Durations in Years



the cash needed for benefits provided in the then-current fiscal year. GASB specifically states that:

Generally, the more of its annual OPEB cost that a government chooses to defer, the higher will be (a) its unfunded actuarial accrued liability and (b) the cash flow demands on the government and its tax or rate payers in future years.²⁰

The cash-flow impact of the underfunding can be truly profound (Fig. 11). Suppose a liability with a duration of 15 years is discounted at a 3% ARR to a present value of \$1,000. This liability has an equivalent future value of \$1,558 when it comes due 15 years on. The difference of \$558 represents the opportunity cost of not funding the liability now.

This approach can be used to see what opportunity costs have already been incurred by the T and make some projections about future costs. GASB 45 itself requires that an interest charge at the discount rate of the last valuation be applied to any outstanding NOPEBO. The annual change in NOPEBO

represents the underpayment relative to the ARC. Every year, interest is charged on the NOPEBO accrued as of the last fiscal year. For the six fiscal years since the implementation of GASB 45, the MBTA has incurred interest charges of over \$55mn as a result of not funding its OPEB liabilities (Fig. 12).

For each \$100 not funded, the MBTA will have to pay approximately \$190 at an ARR of 4.38% and \$166 at an ARR of 3.42% if the liability has a duration of about 15 years. By not funding the OPEB liability according to the ARC over the past six fiscal years, the MBTA's management has added a total of more than \$400mn to the cash which will be needed to cover the corresponding portion of OPEB, assuming a 15-year duration for each ARC.

The MBTA is not paying its annual required contribution for OPEB, which, according to GASB, will result in higher taxes and fees in the future.

**Figure 12. Accrued and Estimated Costs of Unfunded OPEB Liabilities
(dollars in thousands)**

Fiscal Year	Last Valuation Date	ARR of Last Valuation	Annual Change in NOPEBO	Accrued NOPEBO	Annual Interest on Accrued NOPEBO	15-Year Opportunity Cost
2008	2006	4.38%	\$108,941	\$108,941	NA	\$98,288
2009	2008	4.38%	\$94,632	\$203,573	\$4,772	\$85,378
2010	2009	4.38%	\$80,835	\$284,409	\$8,917	\$72,930
2011	2009	4.38%	\$82,657	\$367,053	\$12,457	\$74,574
2012	2011	3.42%	\$123,266	\$490,253	\$12,553	\$80,866
2013	2011	3.42%	\$127,880	\$613,133	\$16,767	\$83,893
Total (nominal, unadjusted)					\$55,466	\$495,930
Total (adjusted at 3.42% rate)					\$49,735	\$405,564

7. The Opinion of the Auditors

In recent years, the MBTA’s audited financial statements do not contain any discussion by management, including of how it expects to fund the retirement plans and the impact of unfunded liabilities on the availability of financing for needed capital expenditures. The auditors repeatedly refer to this violation of Governmental Accounting Standards in their comments on required supplemental information (the same issue is identified by the auditors regarding MBTARF’s 2012 financial statements). The most recent (FY 2013) audit report states:

Management has omitted management’s discussion and analysis that US generally accepted accounting principles [GAAP] require to be presented to supplement the basic financial statements. Such missing information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who [sic] considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context.²¹

In the preceding paragraph, the auditors also shun any responsibility regarding the funding

status of the MBTA’s pension plans and other post-employment benefits (OPEB):

We have applied certain limited procedures to the required supplementary information [including the schedule of funding progress for pensions and OPEB] in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management’s responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.²²

The same disclaimers are present in the auditor’s letter included in MBTARF’s 2012 annual report.

8. What Drives the Cost of a Retirement Plan?

Underfunding a plan increases its cost because it creates a drain on investment returns, which are supposed to cover a

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substantial portion of the plan's benefits. This point becomes abundantly clear when one looks at the cash flows of a pension fund. By way of illustration, Figure 13 displays the revenue of MBTARF since 1996, excluding investments²³ and refunds to members. This net revenue represents the sum of all contributions made through the year less the benefits paid and the administrative expenses. It has been negative every year since.

Public retirement plans are particularly susceptible to political interference because they are an easy and hidden source of borrowing for fiscally challenged governmental units. While already dedicated assets typically cannot be touched by the employer, undercontributing to the plan can be a temptingly easy fix to patch up a budget burdened by irresponsible spending or tax cuts. Without enough inflows, the mounting liabilities coming due erode the asset base, ultimately leading to insolvency.

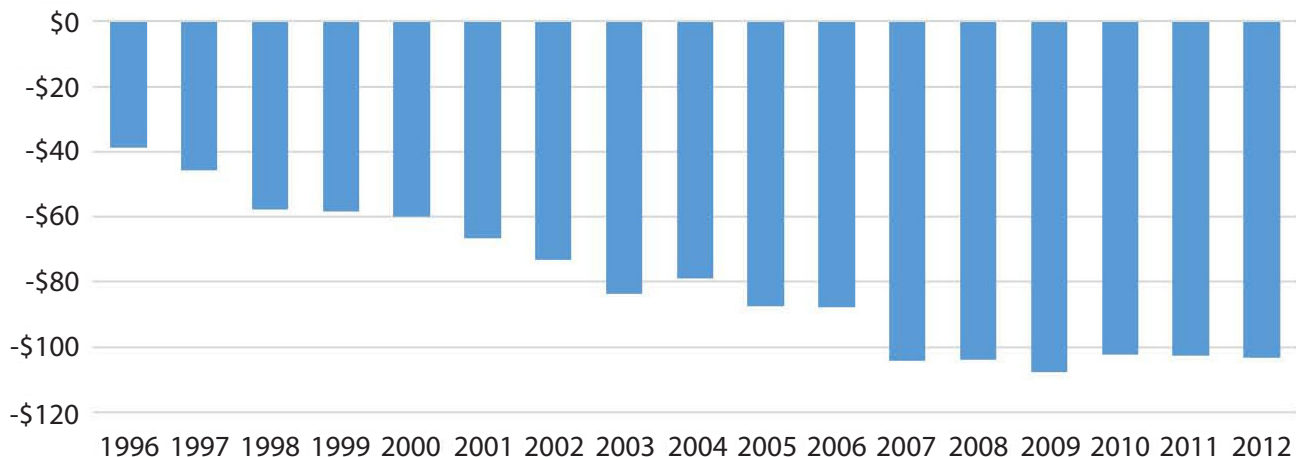
Another key – and often neglected – cost driver are fund management issues such as exorbitant investment-management and related third-party fees, poor asset allocation

decisions, excessive administrative costs and lavish executive compensation. They can put a major drag on a plan's funding progress even more swiftly than undercontributions, yet for the same reason – much of the liability needs to be covered by investment returns on the asset base, which can be drained by poor fund management.

Of course, costs are also affected by the contractual arrangements with the plan's members. Oftentimes benefits are simply too generous or leave too many loopholes that can be exploited by plan members. One common example of such a loophole is exposure to spiking, which can occur because the final benefit is determined on too narrow a base of the employee's work history, because overtime pay is included in the calculation or because a member is transferred from a much less generously compensated position in another government agency, yet granted a full benefit.

Another common issue is that the minimum retirement age is simply too low. While most Americans cannot begin to draw on their Social Security pension until age 62 and are

**Figure 13. MBTARF Net Revenue Excluding Investments and Refunds
(dollars in millions)**



provided incentives to work until as late as age 70, MBTA employees can retire as early as 55 and have little reason to stay on the job unless they expect a sizable promotion in the following years that could spike their allowance. They can instead go and work elsewhere in government or the private sector and even earn a second pension, a phenomenon known as double-dipping.

Even without loopholes and weak governance, advance-funded defined-benefit plans present a significant managerial and policy challenge because of their complexity and vulnerability to poor investment management, political pressures and extreme events such as market crashes, among other factors. This fragility is founded on an inherent inability to predict some critical inputs to the three main determinants of the plan's cost outlined above over an extended period:

- the future growth of covered payroll;
- panics in the securities markets;
- political-economic changes affecting the plan principal's ability and willingness to fund it in a timely manner.

Demographic variables such as the longevity and tenure of plan members are the only significant component of the pension calculus that can be forecast with some reliability. However, it is quite possible that accelerating advancements in medical technology and nutrition disrupt even that part of the equation. A similar reasoning applies to OPEB – with the added complication that one also has to anticipate changes in the cost of medical services or insurance premiums.

Effective retirement-plan management cannot be done by assumption or clairvoyance. Instead, it requires meticulous scenario analysis of possible future shocks and appropriate preparations to meet such

adverse events. The simple and transparent retirement plan is the only manageable and sustainable retirement plan. Current actuarial and managerial practice seems to endorse the former approach rather than the latter, as both the management and the benefit structures of the MBTA's retirement plans have become increasingly complex and opaque.

9. A Path Forward

Changes in benefits, plan management and funding all are necessary components of a meaningful reform package. Reform can be summarized in a simple maxim: the lenient treatment allotted to the MBTA relative to other parts of government within the commonwealth must cease. If anything, because of its critical importance to millions of Massachusetts residents and the economy of the commonwealth and Greater Boston, the T's retirement plans should be held up to an even higher standard.

First, the pension and retirement healthcare benefits of MBTA employees must at least be brought in line with those of other public employees in comparable jobs within the state government. There is no rational justification for maintaining plan provisions such as the "23 and out" rule, which has now taken the form of "25 and out by age 55." Even without them, MBTA employees would still be in a privileged position because they would remain the only public employees in the state collecting a Social Security pension in addition to the benefit provided by the T.

While benefits imprudently conferred in the past cannot be revoked, there is some room to mitigate their impact. One such mitigating provision is a ban on double-dipping – drawing a pension from the T while working in another government job. One example

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of this practice is the executive director of MBTARF himself, who as of 2007 was taking “home more than \$350,000 a year: a salary of about \$225,000 and a [‘23 and out’] pension of about \$130,000” from his former position as general manager of the MBTA.²⁴

Secondly, the state must start taking responsibility for the promises made to MBTA retirees. Presently, funding flows are grossly insufficient to ensure the solvency of their retirement plans. Moreover, unlike the members of the state and teachers’ retirement systems, MBTA employees’ benefits are not explicitly backed by the state and would be vulnerable if the T’s financial condition continued to deteriorate and led to a restructuring in bankruptcy. Making the state directly liable would both help discourage future fiscal irresponsibility and make the needed changes of retirement benefits more palatable to MBTA employees.

But improving governance is by far the most important aspect of MBTA retirement plan reform. The five retirement plans should be consolidated into a single system (even if some nuances in benefits are maintained), which should be brought under the umbrella of Chapter 32 of MGL just like any other retirement system in the state. This will both reduce complexity and instate some regulatory oversight over MBTARF without much legislative effort, automatically introducing a wide variety of improvements such as:

- making the MBTA retirement plan subject to supervision by PERAC, which would bring regulatory controls on administrative expenses, investment management decisions, contracting and conflicts of interest;
- enforcing a finite funding program for the unfunded liability and preventing future

underfunding relative to that schedule of payments;

- making most activities of MBTARF a matter of public record that cannot be withheld from policymakers and citizens.

The first step in such a transition would be to pass existing legislative initiatives calling for a comprehensive audit of the T’s retirement plans. Further, the complete valuation studies of both the pension and healthcare liabilities should be made public and updated no less often than every two years henceforth.

Shining a light on the financials of the T’s retirement plans is the most critical step in ensuring the agency’s continued and successful operation. To provide an appropriate level of accountability, the state should mandate that the MBTA publicize online every year:

- the retirement plans’ annual budget and subsequent statement of financial condition;
- the complete audit and valuation reports of all its pension and health plans;
- the quarterly reports of all its investment managers and consultants;
- the investment strategy and annual performance evaluation of each plan;
- all contracts with providers of financial services;
- the compensation of all MBTARF’s employees without exception;
- the minutes of all MBTARF board meetings, particularly those related to asset management, that are not restricted by privacy laws.

No cost-containment initiative can be successful in the long run without these necessary changes in the MBTA retirement plans’ culture and governance.

Figure 14. MBTA Equity Adjusted for Retirement Liabilities (dollars in thousands)

Total net position reported	\$2,614,952
Net pension obligation (NPO)	\$102,767
Net OPEB obligation (NOPEBO)	\$613,133
UAAL pensions	(\$726,304) ²⁵
UAAL OPEB	(\$2,016,063) ²⁶
Remaining equity	\$588,485

10. Conclusion

The MBTA has been in the grips of a structural crisis for years, remaining in the top ranks for largest debt burden and highest cost of services rendered among similar agencies across the country. One of the root causes of this untenable situation is a poor level of transparency regarding its retirement plans, which had accumulated unfunded actuarially accrued liabilities (UAAL) of about \$2.74bn as of their last valuations. When these are fully factored into the MBTA’s balance sheet, its total net position (the governmental equivalent of shareholder equity) is reduced to \$588mn (Fig. 14), which amounts to less than 6% of total assets. The deteriorating financial condition of the pension and healthcare plans for the T’s retirees can quickly deplete what little is left.

Meanwhile, state and local governments are already providing well over \$1.1bn annually to keep the T running; more than half of that amount goes for other debt service. The current gross undercontribution to the MBTA’s retirement plans, which is used to cover other costs will add far more to that burden down the line. As Massachusetts just passed a \$500mn tax increase to fund transportation spending, taxpayers have little patience left for profligacy. Who would pour more gold into a leaking pot?

Unless urgent action is taken to improve governance, rein in the cost of retirement plans and fund existing obligations, the T will find itself irretrievably locked in a path to bankruptcy – sooner rather than later. In terms of public trust, it may already be there.

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About the Author

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Appendix I. Supplementary Data Tables

All data displayed in this appendix have been sourced from the audited financial statements of the MBTA and from the 2012 annual report of MBTARF. ND marks observations for which no data are available (but must exist) and NA marks observations that are not applicable.

Table 1. MBTA Labor Expenses (dollars in thousands)

FY Ended June	Wages	Medical & Dental Insurance	OPEB ²⁷	Pensions	Social Security Taxes	Workers' Comp	Other	Capitalized	Total
2013	\$450,898	\$65,104	\$185,595	\$102,941	\$38,654	\$8,778	\$1,131	-\$22,548	\$830,553
2012	\$410,156	\$77,350	\$183,676	\$91,988	\$36,760	\$7,989	\$1,346	-\$22,353	\$786,912
2011	\$399,292	\$67,227	\$141,035	\$79,568	\$34,990	\$11,125	\$1,987	-\$19,351	\$715,873
2010	\$399,573	\$66,746	\$142,547	\$69,186	\$34,634	\$10,897	\$2,769	-\$17,717	\$708,635
2009	\$374,876	\$66,486	\$151,350	\$60,518	\$34,106	\$8,675	\$2,057	-\$25,835	\$672,233
2008	\$387,958	\$61,152	\$158,856	\$58,054	\$34,331	\$10,871	\$2,076	-\$28,096	\$685,202
2007	\$353,900	\$51,978	\$57,618	\$55,747	\$31,446	\$11,965	\$1,968	-\$26,240	\$538,382
2006	\$347,846	\$112,790	\$50,182	\$48,387	\$31,264	\$16,238	\$1,963	-\$23,806	\$584,864
2005	\$339,760	\$94,035	\$47,880	\$38,743	\$30,335	\$20,971	\$2,112	-\$19,453	\$554,383
2004	\$321,386	\$89,363	\$41,153	\$38,645	\$28,076	\$19,305	\$2,877	-\$18,017	\$522,788
2003	\$304,854	\$78,983	\$36,361	\$22,091	\$26,820	\$5,912	\$403	-\$17,777	\$457,647
2002	\$307,843	\$80,805	\$33,175	\$26,199	\$26,883	\$10,085	\$1,259	-\$17,048	\$469,201
2001	\$291,093	\$68,766	\$32,157	\$29,515	\$25,347	\$14,394	\$2,575	-\$16,790	\$447,057

Table 2. MBTARF Key Statistics (dollars in thousands)

FY Ended	Annual Pension Cost	% APC Contributed	Contribution	Employer Contribution	Employee Contribution	NPO	Under-contributed
2013	\$75,065	75%	\$56,556	20.0927%	5.4989%	\$86,805	\$18,766
2012	\$74,587	71%	\$52,865	19.8865%	5.149%	\$68,296	\$21,630
2011	\$66,075	79%	\$52,516	17.7367%	5.124%	\$46,574	\$13,876
2010	\$53,887	80%	\$42,920	14.2318%	5.124%	\$33,015	\$10,777
2009	\$44,642	80%	\$35,495	11.6936%	4.00%	\$22,048	\$8,928
2008	\$37,106	94%	\$34,786	10.934%	4.00%	\$12,901	\$2,226
2007	\$35,995	107%	\$38,420	9.47%	4.00%	\$10,581	-\$2,520
2006	\$35,350	96%	\$34,104	10.47%	4.00%	\$13,006	\$1,414
2005	\$30,160	113%	\$34,201	9.71%	4.00%	\$2,483	-\$3,921
2004	\$34,847	61%	\$21,180	11.47%	4.00%	\$6,524	\$5,018
2003	\$18,618	118%	\$21,914	5.92%	4.00%	-\$7,143	-\$1,033
2002	\$18,683	115%	\$21,538	6.11%	4.00%	-\$3,847	-\$2,802
2001	\$22,051	101%	\$22,332	7.75%	4.00%	-\$922	-\$221
2000	\$26,391	111%	ND	ND	ND	-\$711	-\$2,903
1999	\$27,954	96%	ND	ND	ND	-\$553	\$1,118

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Table 3. MBTAPAP Key Statistics (dollars in thousands)

FY Ended	Annual Pension Cost	% APC Contributed	Contribution	Employer Contribution	Employee Contribution	NPO	Under-contributed
2013	\$3,072	74%	\$2,273	17.183%	7.285%	\$3,073	\$799
2012	\$2,520	82%	\$2,072	15.413%	7.285%	\$2,274	\$454
2011	\$2,798	76%	\$2,137	16.583%	7.285%	\$1,826	\$672
2010	\$2,468	87%	\$2,140	14.612%	7.285%	\$1,165	\$321
2009	\$2,230	99%	\$2,220	13.3549%	6.56%	\$837	\$22
2008	\$2,163	85%	\$1,838	14.590%	7.285%	\$827	\$324
2007	\$1,819	96%	\$1,750	12.82%	7.44%	\$502	\$73
2006	\$1,970	83%	\$1,632	13.27%	7.44%	\$433	\$335
2005	\$1,686	103%	\$1,734	13.62%	8.40%	\$95	-\$51
2004	\$1,636	92%	\$1,500	13.81%	8.40%	\$143	\$131
2003	\$1,303	67%	\$878	11.98%	4.12%	\$7	\$430
2002	\$1,014	96%	\$971	8.63%	4.12%	-\$418	\$41
2001	\$837	114%	\$950	11.02%	4.17%	-\$460	-\$117
2000	\$805	123%	ND	ND	ND	-\$347	-\$185
1999	\$723	123%	ND	ND	ND	-\$164	-\$166

Table 4. MBTA Deferred Compensation Plan Key Statistics (dollars in thousands)

FY Ended	Annual Pension Cost	% APC Contributed	Contribution	Employer Contribution	Employee Contribution	NPO	Under-contributed
2013	\$7,781	81%	\$6,287	NA	NA	\$12,888	\$1,478
2012	\$7,520	72%	\$5,387	NA	NA	\$11,394	\$2,106
2011	\$5,770	90%	\$5,185	NA	NA	\$9,261	\$577
2010	\$5,602	88%	\$4,904	NA	NA	\$8,676	\$672
2009	\$5,320	90%	\$4,763	NA	NA	\$7,978	\$532
2008	\$5,163	93%	\$4,601	NA	NA	\$7,421	\$361
2007	\$4,609	95%	\$4,457	NA	NA	\$6,859	\$230
2006	\$4,609	89%	\$4,293	NA	NA	\$6,990	\$507
2005	\$4,531	90%	\$4,057	NA	NA	\$6,674	\$453
2004	\$4,392	89%	\$3,926	NA	NA	\$6,200	\$483
2003	\$4,364	75%	\$3,840	NA	NA	\$5,743	\$1,091
2002	\$4,227	88%	\$3,724	NA	NA	\$5,313	\$507
2001	\$2,525	135%	\$3,402	NA	NA	\$4,811	-\$884
2000	\$2,569	128%	ND	NA	NA	\$5,688	-\$719
1999	\$2,596	124%	ND	NA	NA	\$7,029	-\$623

Table 5. MBTARP Funding Progress (dollars in thousands)

Yearend	Actuarial value of assets (a)	Actuarial accrued liability (AAL)(b)	Unfunded (UAAL)	Funded ratio (a/b)	Covered payroll (c)	UAAL as a percentage of covered payroll ((b-a)/c)
2011	\$1,550,446	\$2,276,750	\$726,304	68.10%	\$366,535	198.20%
2010	\$1,649,129	\$2,341,344	\$692,215	70.40%	\$356,609	194.10%
2009	\$1,667,362	\$2,216,721	\$549,359	75.20%	\$350,619	156.70%
2008	\$1,729,738	\$2,141,576	\$411,838	80.80%	\$377,795	109.00%
2007	\$1,902,276	\$2,091,930	\$189,654	90.93%	\$357,069	53.11%
2006	\$1,832,680	\$1,943,986	\$111,306	94.27%	\$327,187	34.02%
2005	\$1,835,223	\$1,844,151	\$48,928	97.40%	\$305,551	16.01%
2004	\$1,772,612	\$1,854,264	\$81,652	95.60%	\$321,397	25.41%
2003	\$1,834,834	\$1,881,974	\$47,140	97.50%	\$317,598	14.84%
2002	\$1,701,048	\$1,871,543	\$170,495	90.89%	\$318,824	53.48%
2001	\$1,889,500	\$1,626,998	-\$262,502	116.13%	\$316,403	-82.96%
2000	\$1,757,327	\$1,533,284	-\$224,043	114.61%	\$301,132	-74.40%
1999	\$1,578,162	\$1,477,993	-\$100,167	106.78%	\$284,677	-35.19%
1998	\$1,389,496	\$1,410,753	\$21,257	98.49%	\$274,661	7.74%
1997	\$1,254,695	\$1,268,938	\$14,243	98.88%	\$254,723	5.59%
1996	\$1,138,225	\$1,237,705	\$99,480	91.96%	\$257,141	38.69%
1995	\$1,050,103	\$1,198,745	\$148,642	87.60%	\$261,953	56.74%
1994	\$983,556	\$1,150,035	\$166,479	85.52%	\$259,938	64.05%
1993	\$954,571	\$1,089,321	\$134,750	87.63%	\$276,712	48.70%
1992	\$900,412	\$1,069,181	\$168,769	84.22%	\$273,441	61.72%
1991	\$849,578	\$1,010,989	\$161,411	84.03%	\$250,820	64.35%

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Appendix II. Disclosures of Certain Discrepancies in Financial Statements

This appendix discloses discrepancies found in MBTA and MBTARF financial statements which cannot be reconciled. All MBTA documents from which these numbers have been sourced have been audited by KPMG. However, KPMG has not stated an opinion on the soundness of the funding progress of the retirement plans. Furthermore, the annual report published by MBTARF is not itself an audited document and it is not clear which parts of it have been certified by the auditor.

A. The fiscal year of the MBTA ends in midyear, as it budgets along with the state government, whereas the fiscal year of MBTARF coincides with the calendar year (as do the fiscal years of the other public-employee retirement systems in Massachusetts). Thus, it is impossible to reconcile certain figures appearing in both sets of financial statements without referring directly to ledger transactions. This includes required and actual contributions, which are reported on budget-cycle basis even if they rely on the same actuarial valuations.

Additionally, the MBTA's required supplementary disclosures with the retirement plan information have to alternate between midyear and calendar-year accounting periods. The language can be ambiguous as to which fiscal-year basis is used in a particular instance.

B. The number of active and retired members of MBTARF recorded in the latter's annual report is not consistent. The actuarial valuation results on p. 30 show 5,276 active members as of YE 2011. The description of the fund on p. 20 shows 5,790 active members as of YE 2011. The two sources register 6,298 and 6,251 individuals currently receiving pension benefits as of YE 2011, respectively.

C. The financial statements of the MBTA do not report a consistent number for OPEB liabilities. Prior to 2009, the statements projected the number of the last available valuation to the then-current fiscal year using an unspecified methodology. Beginning with the 2010 statement, the then-latest valuation number available is reported without adjustment.

D. Investment expenses are not reflected in the expense tables provided by MBTARF. According to the annual report, "[i]nvestment incomes [are] presented net of investment expenses beginning in 2000 and the related investment expenses previously reported in administrative expenses have been reclassified to investment expenses and reported in total."²⁷ Investment expenses do not appear to be reflected in total expense; instead, they are only subtracted from the investment income line item of the income statement (p. 19). While reporting investment returns net of expenses is recommended for benchmarking investment performance, not reporting investment expense in the appropriate expense section of the income statement obscures its impact on net plan position.

E. An error seems to occur at the time of reclassification of the investment expense. The total reported in the expense table²⁹ is \$10,000 short of the sum of its parts. While rounding errors sometimes normally occur in financial statements, rounding can hardly produce a \$10,000 discrepancy in expenses which are reported down to the dollar. This intuition is confirmed by checking the remaining 16 annual entries, which sum up accurately.

Appendix III. Estimation of OPEB Underfunding Costs

The \$2bn present value of the unfunded OPEB liability is based on a level-dollar 30-year schedule, using a 3.42% assumed rate of return (ARR) as of the 2011 valuation. However, this estimate is based on the assumption that the payments are actually made and earn investment interest. Therefore, to find the actual value for an unfunded liability which will not be advance-funded, it is necessary to reverse the discounting at the appropriate ARR to obtain the equivalent cash flow.

To find an exact estimate over any given time span, a variety of assumptions about the costs of medical premiums and labor force demographics also need to be made. These assumptions determine, among other things, the duration of each dollar of liability – i.e., when it comes due. Obviously, making such projections produces, at best, somewhat unreliable estimates. Thus, instead of conducting a complete revaluation of the liabilities, an approximation can be developed by making an assumption about the duration of the liabilities T . If r_a is the ARR and investments are made at the beginning of the period, the relationship between present value (PV) and future value (FV) can be expressed as:

$$FV = PV(1+r_a)^T$$

Two possible candidates for duration are the GASB-recommended amortization period of 30 years and a much more lenient 15 years. With those assumptions, the above formula yields a cash equivalent for the OPEB liability of \$5.48bn and \$3.31bn, respectively.

The same formula was used to obtain the opportunity costs in Figure 12. The annual interest is obtained by multiplying the prior year's NOPEBO by the ARR of the then-last valuation. The 15-year FV opportunity cost is estimated by taking the annual change in NOPEBO as the PV and the corresponding year's last-valuation ARR to be the interest rate. The adjusted totals are based on a uniform 3.42% rate reflecting the ARR assumption in the 2011 valuation.

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Endnotes

1. The T also has a Deferred Compensation Savings Plan, whose cost it says is actuarially immaterial.
2. Governmental Accounting Standards Board. *Statement No. 27*. Norwalk, CT: November 1994, <http://www.gasb.org/cs/BlobServer?blobkey=id&blobnocache=true&blobwhere=1175824062508&blobheader=application%2Fpdf&blobcol=urldata&blobtable=MungoBlobs>, accessed 2013.11.02, p. i.
3. Ibid.
4. Massachusetts Bay Transportation Authority. "Financial Statements, Required Supplementary Information and Supplementary Information June 30, 2013 and 2012." http://mbta.com/uploadedfiles/F_194655_13_MBTA_FS.pdf, accessed 2013.11.01, p. 9.
5. GASB 27 ¶ 67, p. 69.
6. Ibid.
7. It should be noted that this categorization does not necessarily allow for comparisons between plans because they use different actuarial assumptions to estimate and fund their liabilities. However, they can be a helpful directional indicator for a single plan as it moves between them, provided that actuarial methods do not change materially.
8. MBTA 2013, p. 39.
9. Please refer to Appendix I for more detailed labor cost and pension funding data.
10. Pension expense and total labor expense include GASB changes in pension and OPEB recognition in beginning in 2008.
11. In that year, the MBTA switched from paying in the full APC to covering just the annual required contribution (ARC), which is more or less arbitrarily determined over a 30-year amortization period. The ARC has turned out to be about 80% of the APC over time.
12. Note that negative NPO balances for any of the plans are not actuarially recognized as an asset according to GASB regulations. The total NPO is recorded as the sum of all the positive NPOs of the plans; if all individual plan NPOs are negative or zero, the total NPO is recorded as zero on the MBTA's balance sheet and the plan NPOs are only included in the supplementary sections of the financial statements.
13. GASB 27 ¶ 37, p. 24.
14. MBTA Retirement Fund. "2012 Annual Report." <https://www.mbtarf.com/sites/default/files/AR%20Final%202012%20A.pdf>, accessed 2013.10.31.
15. Note that MBTA financial statements are based on a fiscal year ending in June, whereas MBTARF's fiscal year corresponds to the calendar year. Therefore, ARC and actual-contribution figures in the two sets of financial statements may not match exactly.
16. MBTA 2013, p. 40.
17. MBTARF 2013, pp. 20, 30. The number of 2011 active employees covered is not consistent

throughout the MBTARF annual report. Please refer to Appendix II for more information.

18. See Appendix II.D regarding OPEB liabilities.
19. Projected to FYE 2007.
20. GASB. "GASB Statement 45 on OPEB Accounting by Governments: a Few Basic Questions and Answers." http://www.gasb.org/cs/ContentServer?site=GASB&c=Document_C&pagename=GASB%2FDocument_C%2FGASBDocumentPage&cid=1175804850529, accessed 2013.11.10.
21. KPMG. "Independent Auditors' Report," 2013.10.25, in Massachusetts Bay Transportation Authority. "Financial Statements, Required Supplementary Information and Supplementary Information June 30, 2013 and 2012." http://mbta.com/uploadedfiles/F_194655_13_MBTA_FS.pdf, accessed 2013.11.01, p. 2.
22. Ibid.
23. Investment expense is included in administrative expenses through 1999, whereafter it was reclassified as negative investment income.
24. Andrea Estes. "MBTA's Retirement Plan Pays Off for Two." *The Boston Globe*, 2007.08.21.
25. As of YE 2011.
26. As of June 2011.
27. Reflects actual payments made through FYE 2007; includes ARC, ARC adjustments and NOPEBO interest thereafter.
28. MBTARF 2013, p. 31.
29. Ibid.

