

# Evaluating Solutions for Austin's Billion Dollar Pension Crisis

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Updated May 2018

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## Table of Contents

Executive Summary .....	3
Introduction .....	3
<b>Part 1. Primer on COAERS and Its Current Crisis</b> .....	4
<b>1.1. Current Benefit Structure</b> .....	4
<b>Inset: How Defined Benefit Plans Are Funded</b> .....	5
<b>1.2. Summary of the Current Crisis</b> .....	7
<b>Part 2. Causes of the Crisis: Examining COAERS's Experience</b> .....	8
<b>2.1. Problem 1: Underperforming Investment Returns</b> .....	9
<b>2.2. Problem 2: Statutory Funding Policy Has Led to Structural Underfunding</b> .....	13
<b>2.3. Problem 3: COAERS's Pension Debt Is Undervalued</b> .....	13
<b>Inset: Best Practice for Amortization Policy</b> .....	14
<b>2.4. Problem 4: COAERS Has Failed to Meet Its Actuarial Assumptions</b> .....	16
<b>Part 3. A Framework for Pension Reform</b> .....	16
<b>Part 4. Options for Future Reform</b> .....	17
<b>4.1. Alternative Plan Design</b> .....	17
<b>4.2. Funding Policy</b> .....	18
<b>4.3. Assumption Changes</b> .....	18
<b>Part 5. Analysis of COAERS Pension Reform Scenarios</b> .....	19
<b>5.1. Baseline Scenario: Statutory Contribution Rate Policy with 7.5 percent Assumed Return</b> .....	20
<b>5.2. Reform Scenario 1: Responsibly Pay the Bill</b> .....	20
<b>5.3. Reform Scenario 2: Use More Conservative Assumptions</b> .....	21
<b>5.4. Reform Scenario 3: Create a Primary Retirement Defined Contribution Plan for New Employees</b> .....	22
<b>5.5. Reform Scenario 4: Create a Choice-Based Retirement System</b> .....	25
<b>Conclusion</b> .....	26
<b>References</b> .....	27

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## Key Points

- The City of Austin Employees' Retirement System (COAERS) is facing a multi-billion dollar crisis.
- At the end of fiscal year 2016, the retirement system reported almost \$1.3 billion more in promised pensions than it had in assets available to pay them. Using more conservative accounting methods, the total shortfall could be as much as \$2.4 billion.
- The decline of COAERS's solvency has been a long time in the making.
- Resolution of this issue will require pain in the short term and political courage to make the decisions that will hurt today, but preserve retiree benefits and Austin's budget in the long run.

## Executive Summary

Austin's largest municipal retirement system is mired in financial trouble, even by its own standard.

Based on a discount rate of 7.5 percent, the City of Austin Employees' Retirement System's unfunded liability was \$1.3 billion in 2016, an increase of more than \$875 million over a ten-year period. The system's funded ratio hovered at 64 percent in 2016, a decrease from its 80 percent mark in 2007.

When more realistic actuarial assumptions are applied, the system appears even more distressed. Based on a discount rate of 6.5 percent, COAERS's unfunded liability amounts to \$1.8 billion and its funded ratio is only 57 percent. Using a discount rate of 5.5 percent, the system's unfunded liability totals \$2.4 billion and its funded ratio declines to 50 percent.

COAERS's fiscal deterioration is evident, and the causes are many, such as sub-par investment returns, failing to properly anticipate how long workers would stay in the system, and mortality assumptions. And while the city has taken certain steps to shore up the plan's finances, such as creating the Supplemental Funding Plan, those actions have proven insufficient.

As such, COAERS remains a troubled plan and questions persist about its long-term sustainability and stability. To calm these concerns and ensure that the plan remains solvent well into the future, state and local policymakers need to take decisive action that may include:

- **Moving away from funding the plan based on a statutory contribution rate and adopting an actuarially determined contribution rate policy;**
- **Using more conservative assumptions, particularly with regard to a lower rate of return; and**
- **Creating a primary retirement defined contribution plan and allowing new employees the option to participate, such that there would be slower growth in liabilities exposed to unrealistic assumptions.**

In combination, these reforms have the potential to significantly improve the fiscal condition of the COAERS system, especially if reality exceeds expectations.

Resolving COAERS's fiscal issues may not be easy or painless, but implementing the proper policy prescriptions now means a better tomorrow for retirees and taxpayers alike.

## Introduction

The City of Austin Employees' Retirement System (COAERS) is facing a multi-billion dollar crisis. At the end of fiscal year 2016, the retirement system reported almost \$1.3 billion more in promised pension benefits than it had in assets available to pay them. Using more conservative accounting methods, the

total shortfall could be as much as \$2.4 billion. And all of this for a pension plan that was reported to be fully funded back in 2000.

The decline of COAERS's solvency has been a long time in the making. Subpar investment returns over the past decade have been a major contributor. But the fiscal health of COAERS was on a downward trend before the financial crisis struck in 2008. A close look at the specific losses for COAERS from the last 20 years suggests challenges deeper than just investment returns.

In response to COAERS's continued financial decline, Austin has taken some corrective measures. The increase in both employer and employee contribution rates—and the Supplemental Funding Plan (SFP) adopted to put more money into the underfunded plan—have slowed the decline in COAERS's funded status. But despite these good faith efforts, COAERS is still a fundamentally troubled plan.

This paper will examine the causes of COAERS's current situation and model the effects of different changes to the pension system's funding policy and plan design. Many defined benefit (DB) pension systems across the country face problems similar to COAERS—the “new normal” of low investment returns that followed the financial crisis makes it harder for many plans to stay fully funded. Accepted norms on amortization policy from the 1990s are no longer viewed as responsible methods of distributing costs. And, while COAERS has made some modest changes to their assumptions, the failure to adopt a more realistic assumed rate of return or an actuarially based funding policy means there is no clear path to solvency for COAERS absent substantial reform.

## Part 1. Primer on COAERS and Its Current Crisis

Established under a 1941 city ordinance, the City of Austin Employees' Retirement System (COAERS) provides retirement, disability, and death benefits for non-public-safety city employees. In 1991, the plan became a participant in the proportionate retirement system that allowed members in other public sector plans in Texas to count their service in one plan toward service credit in another, with costs for beneficiaries to be shared proportionately among the plans ([COAERS 2016a, 18, 24](#)).

Throughout its 75-year history, COAERS has increased the scope and value of its benefits:

- At its inception, the only benefit provided was a maximum annuity of \$100 per month to retirees aged 65 or older ([COAERS 2016a, 21](#)).
- During the 1950s and 1960s, more benefit options were created, like disability benefits, cost-of-living adjustments (COLAs) and different joint and survivor benefits.
- Beginning at the same time and continuing into the 1990s, benefits were also increased from the maximum \$100 per month annuity to a plan based on a multiplier of 1.125 percent in 1951, followed by two more increases to 1.25 percent and 1.5 percent in 1967 and 1971, respectively.
- These were followed by increases throughout the 1980s and 1990s, until the multiplier was raised to its current 3.0 percent in January 2002 ([COAERS 2016a, 21-24](#)).
- A new tier of benefits was created for those hired after 2012 that provides a 2.5 percent multiplier, though this didn't reduce the multiplier for those pre-2012.

During this period, statutory employer and employee contribution rates increased from 4.0 percent each at the system's establishment, to 7.0 percent in the 1980s. The contribution rates (evenly split between employer and employee) plateaued at 14 percent until they were again increased to a 16 percent total contribution in 2000. In 2005, the Austin City Council began a “Supplemental Funding Plan” that ratcheted up the city's contribution rates by an additional 4 percent by 2010 and beyond. The plan also set a 30-year amortization period target. In 2010 the plan was amended to further increase city contribution rates up from 12 percent to 18 percent by 2013 until the total employer and employee contribution rates were increased to 26 percent of payroll ([COAERS 2016a, 24-25](#)).

### 1.1. Current Benefit Structure

The retirement plan currently offered by COAERS is a defined benefit pension plan based on the average of the highest 36 months of compensation ([COAERS 2016b, 29](#)). Members hired before January 1, 2012, are included in “Group A,” with the rest of the members belonging to “Group B.” These two cohorts differ in their pension benefit multipliers (3 percent for Group A but 2.5 percent for Group B) and retirement eligibility. Members of Group A may retire at age 62, any age with 23 years of service, or age 55 with 20 years of service. Members of Group B may retire at age 62 with 30 years of service, or age 65 with 5 years of service ([COAERS 2016b, 33](#)).

In addition to this basic benefit structure, COAERS offers death and disability benefits, along with different annuity options for pension benefits that include reduced retirement benefits that cover both the plan member and a designated

## How Defined Benefit Plans Are Funded

Defined benefit systems like COAERS are supposed to be *pre-funded*.<sup>\*</sup> This means that the contributions the plan receives during the years an employee is earning benefits—taking into account the plan's assumed rate of return on saved assets—should be enough to pay out all promised future benefits to that employee when he or she retires. This is structurally different than Social Security, a pay-as-you-go system where current workers are taxed to pay the benefits of current retirees.<sup>\*\*</sup>

Two primary components determine how much employers and employees should contribute in a given year to fund the payment of future benefits:

1. The *normal cost* is the annual cost to pre-fund pension benefits earned that year by workers, which is actuarially determined.
2. *Unfunded liability amortization payments* are the additional cost needed to pay down any unfunded pension liabilities (or pension debt) over a specified period. These additional debt payments occur if normal cost is miscalculated, employers don't make their required contributions, investment returns underperform, or actuarial experience deviates from assumptions.

*Normal cost* is determined by an actuary, who estimates how much will be needed in the future to provide the benefits promised to existing workers, in part using actuarial assumptions about salary changes, turnover rates, disability costs, and life expectancy (mortality). Contributions for projected obligations are then reduced using an assumed rate of return on assets to figure out how much should be paid into the system's coffers in a given year to ensure long-term solvency of the system. The annual normal cost payment is divided between contributions from the employer and the employees.

In Austin, the employee contribution is set as a constant share of payroll, as is the employer contribution—and

<sup>\*</sup> This text borrows from a previously published analysis by Reason Foundation. For a longer discussion, read "[How Public Sector Defined Benefit Plans Are Funded](#)," Reason Foundation, March 2016.

<sup>\*\*</sup> The contribution rates to defined benefit plans are actuarially determined based on the demographics and trends of the members of the plan and the particular assumptions adopted by the plan's directors. The normal cost rate for any given employee theoretically should be the contributions necessary in order for the plan to honor the promised stream of payments in retirement to that employee. By contrast, Social Security explicitly draws on the revenue from taxing active employees to pay benefits for retirees, and the contribution rates are determined through a political process that is disconnected from any actuarial analysis of the program's members.

importantly, both contribution rates are established in city ordinance and are not set on an actuarial basis (e.g., they do not automatically change to reflect deviations from expected investment performance and other assumptions). It is fairly typical for employee contributions to not only be fixed but to be lower than the employer contributions. While most plans use actuarially determined contribution rates over statutory contribution rates, the plans' employees generally only pay a fixed share of payroll, leaving employers to make up the rest of the contributions.

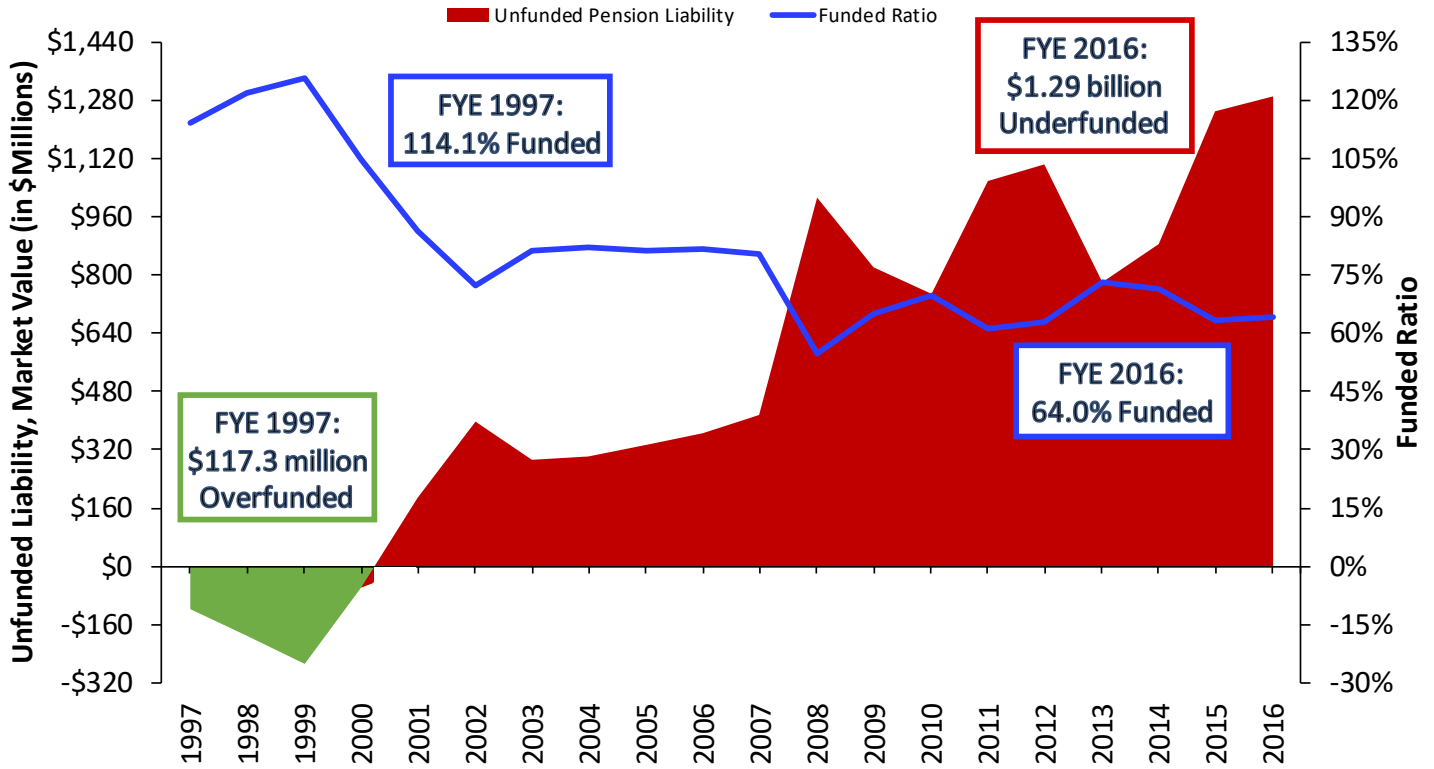
*Unfunded liability amortization* payments are the annual contributions that an employer needs to pay to make up the difference between the value of the promised pension benefits and how much has actually been saved to pay for them. Most plans include a breakdown of the amortization payments when determining their contributions, but because of COAERS's statutory funding policy, any contribution in excess of the normal cost is considered an amortization payment, even though it does not follow a more traditional amortization policy.

In technical terms, the unfunded actuarially accrued liability (UAAL) is the difference between the value of assets in a plan, and the net present value of actuarially accrued liabilities (AAL). A common way to measure the health of a pension plan is the *funded status* (or funded ratio), which is equal to the value of a pension plan's assets divided by the AAL. (It should be noted that the funded ratio is not the only measure of a plan's health, though.)

The combined total of (a) the gross normal cost for benefits earned this year and (b) the unfunded liability amortization payment for previously earned benefits is equal to (c) the actuarially determined contribution (ADC)—i.e., the total amount of contributions necessary from employers and employees to fund a pension plan in a given year. <sup>\*</sup>

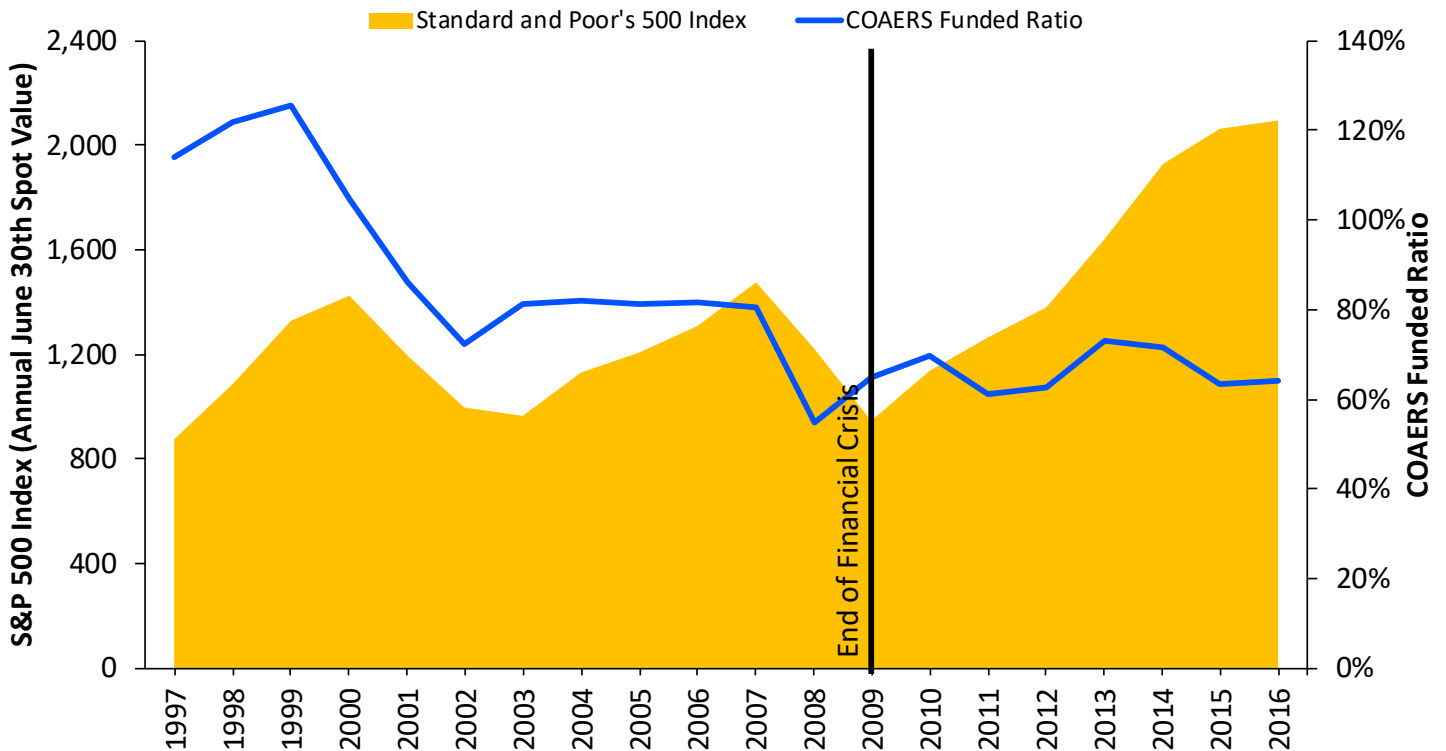
If all of the assumptions used to calculate normal cost in the past matched actual experience there would be no UAAL. If all of the assumptions used to determine the amortization payments from today onward match actual experience, then eventually the pension plan will become fully funded without a need for debt payments—but only if 100 percent of the ADC is paid. Any pension plan that receives payments less than the ADC will likely never become fully funded.

Figure 1: City of Austin Employees' Retirement System Funded Ratio and Unfunded Liability



Source: Pension Integrity Project Analysis of COAERS Valuation Reports

Figure 2: COAERS Funded Status Relative to S&P 500 Performance



Source: Pension Integrity Project Analysis of COAERS Valuation Reports and Yahoo Finance

**Table 1: Summary of COAERS's Degrading Solvency**

	1987	1997	2007	2016
<b>Market Value of Assets</b>	\$ 262.9 million	\$ 949.4 million	\$ 1,698.2 million	\$ 2,299.7 million
<b>Actuarially Accrued Liability</b>	\$ 236.1 million	\$ 832.1 million	\$ 2,112.8 million	\$ 3,591.4 million
<b>Unfunded Liability</b>	(\$ 26.8 million)	(\$ 117.3 million)	\$ 414.6 million	\$ 1,291.7 million
<b>Funded Ratio</b>	111.4 %	114.1 %	80.4 %	64.0 %

Source: Pension Integrity Project Analysis of COAERS Valuation Reports

survivor. COAERS also offers a deferred retirement option program (DROP), which allows members to reduce the service credit used to determine pension benefits in exchange for a lump-sum payment equal to 90 percent of the benefits the member would miss out on by joining the DROP (COAERS 2016b, 31).

### 1.2. Summary of the Current Crisis

Though COAERS is almost 80 years old, the current crisis has only emerged over the course of the past two decades. High investment returns bolstered COAERS's funded ratio and, in turn, kept the required contribution rates low. Following the dot-com bust, COAERS developed an unfunded liability of over \$300 million that remained relatively stable until the financial crisis, where it exploded to almost \$1 billion and has yet to recover despite the last decade's market booms.

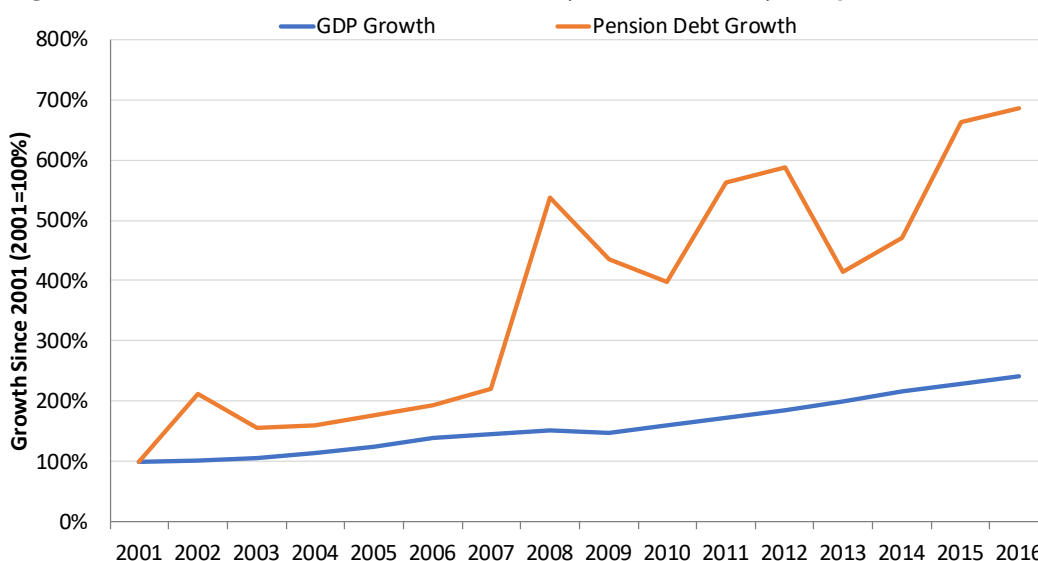
While above-expected investment returns would help the struggling COAERS if sustained consistently over many years, because of major global economic and capital market

shifts since 2000, it's unlikely that the high investment returns of the 1980s and '90s will return anytime soon. Worse, COAERS's general performance and financial health have become de-coupled from the performance of the market.

As shown by **Figure 1** and **Table 1**, COAERS ended the last century overfunded, but since 2000 pension debt has grown to \$1.3 billion. Using the funded ratio (value of assets divided by liability) the plan went from having \$1.14 for each dollar in promised benefits to only \$0.64 on the dollar to pay for promised benefits.

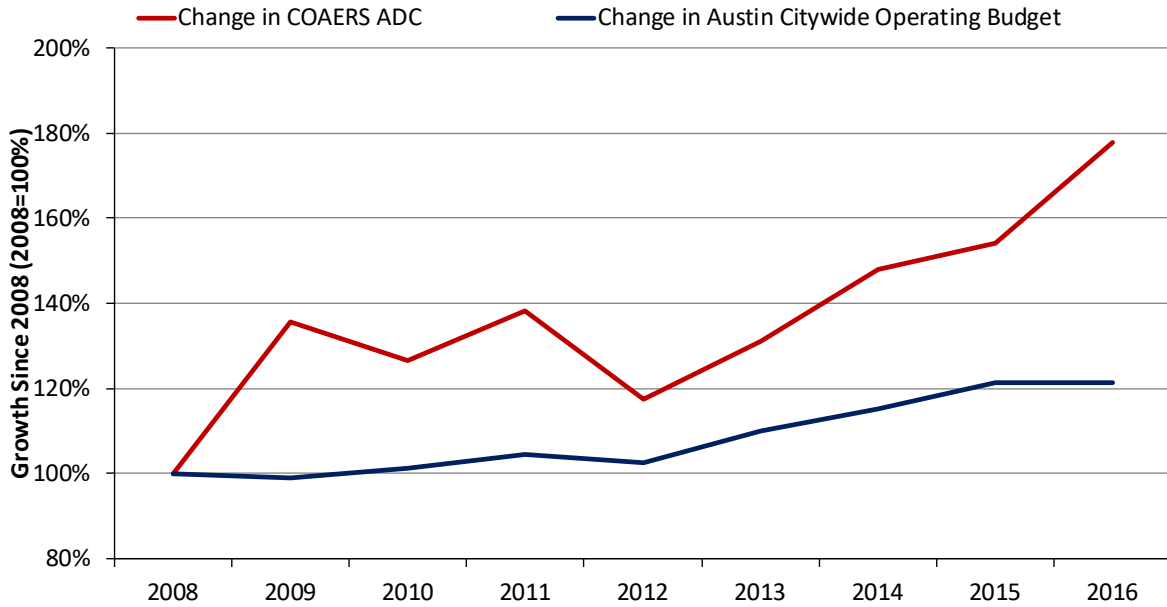
COAERS's unfunded liability was relatively stable until the financial crisis, after which the unfunded liability ballooned and has never fully recovered. Some dips in the size of the pension debt have occurred during boom years in the stock market, but the general trend is clear and even a boom year like 2017 won't be able to reverse it. As shown by **Figure 2**, there is evidence that the fiscal health of COAERS is starting to de-couple from the general performance of the market.

**Figure 3: Growth of COAERS Unfunded Actuarially Accrued Liability Compared to Austin-Round Rock**



Source: Pension Integrity Project Analysis of COAERS Valuation and Federal Reserve Data on Austin-Round Rock, Texas

**Figure 4: Growth of COAERS Required Contributions Relative to Austin City Budget**



Source: Pension Integrity Project Analysis of COAERS Valuation and City of Austin Financial Reports

As the pension debt has grown, so too have required contributions as a share of Austin’s city budget and economy. Using data from the Federal Reserve Bank of St. Louis on the Austin-Round Rock, Texas area, since 2001 GDP has grown by almost 250 percent, while the unfunded liability has grown by almost 700 percent (see **Figure 3**).

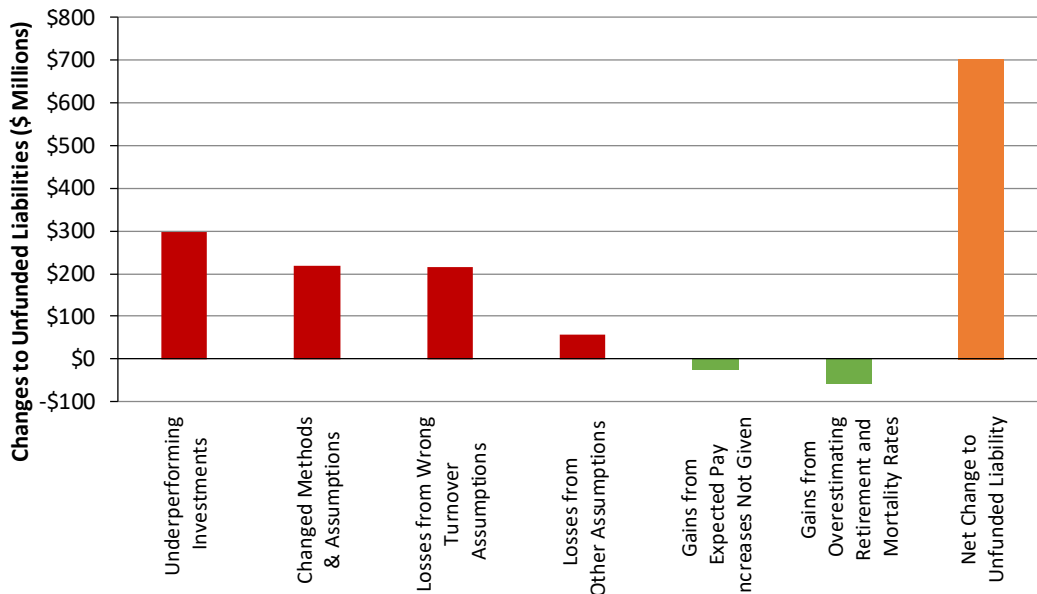
Similarly, **Figure 4** shows that while the operating budget for Austin has only grown about 20 percent since the 2008 financial crisis, the actuarially determined contribution (ADC) has grown by almost 80 percent.

The causes of this dramatic increase in Austin’s pension debt and the costs to service this debt, both in absolute terms and relative to the size of Austin’s budget, are myriad. The following section will discuss each of these causes in detail to assess how COAERS’s fiscal health has fallen so far over the past 20 years.

**Part 2. Causes of the Crisis: Examining COAERS’s Experience**

Included in the annual actuarial valuation reports for COAERS are gain/loss data, which break down the causes of

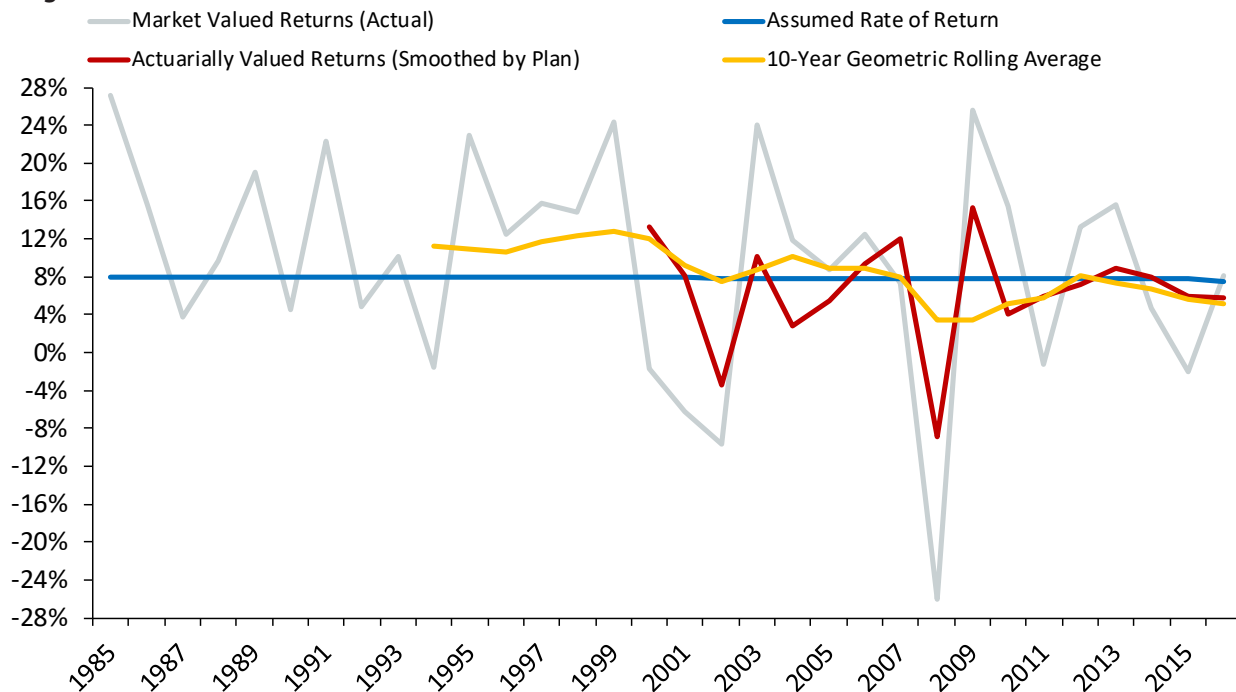
**Figure 5: Causes of the COAERS Unfunded Liability, 2003 to 2016**



Source: Pension Integrity Project Analysis of COAERS Actuarial Valuation Reports and CAFRS



**Figure 6: COAERS Historic Investment Returns**



Source: Pension Integrity Project Analysis of COAERS CAFR and Valuation Reports

an increase or decrease in the unfunded liability in a given year. If an assumption overperforms (e.g., the actual investment return is greater than the assumed rate of return) then there is a decline in the unfunded liability. In the same way, if an assumption underperforms (e.g., retirees live longer than previously anticipated), there is a growth in the unfunded liability.

**Figure 5** breaks down the sources of COAERS’s current unfunded liability from 2003 to 2016.

As shown above, the largest contributor to the unfunded liability was underperforming investments. Further discussion of the investment return assumptions and history will follow (see part 2.1), but because most of COAERS’s money comes from interest on contributions, further exposure to an overly optimistic assumed rate of return (ARR) will drive growth in pension debt.

The second largest contributor to the growth in UAAL has been changes to the assumptions and methods used by COAERS. When the plan updates its assumptions in a way that increases the liability of the plan (e.g., improvements in mortality or earlier retirement ages), the plan’s UAAL grows to account for these changes. These miscellaneous assumption changes do not include changes in turnover rates, which has contributed over \$200 million to the pension debt as fewer members of COAERS withdraw from the plan and there are more rehires and new hires than expected.<sup>1</sup>

1 Pension Integrity Project analysis of COAERS CAFR Experience Studies.

Not every assumption has underperformed, however. Slower-than-expected growth in employee salary, increased mortality, and lower retirement rates have actually *decreased* the unfunded liability, albeit by a small amount.

In summary, while some assumptions have overperformed relative to expectations, overall the growth to COAERS’s pension debt due to chronically underperforming assumptions indicates a plan with structural flaws in its design. The following portions of this paper will go into greater detail discussing each of the causes of COAERS’s growing pension.

**2.1. Problem 1: Underperforming Investment Returns**

**Figure 6** and **Table 2** show the assumed rate of return compared to the actuarial and market-valued rates of return. Prior to 2001, COAERS used an 8 percent ARR. This assumption was lowered to 7.75 percent in 2002, where it remained until 2016, when the ARR was reduced further to 7.5 percent.

High returns from the 1980s-90s made the plan’s 8 percent rate of return feasible, but fundamental changes in the global economy have made even the new ARR impractical. In the past 20 years, the average rate of return was 7.0 percent, and in the past 10 years it was a mere 5.2 percent. These figures include recessions like the dot-com bubble and the financial crisis, but they also include interim booms in investment returns. Assumed rates of return are supposed to

**Table 2: COAERS Historic Investment Returns**

	Average Market Valued Returns	Average Actuarially Valued Returns
<b>32 Years (1985-2016)</b>	8.93 %	N/A
<b>20 Years (1997-2016)</b>	6.98 %	6.45 %
<b>15 Years (2002-2016)</b>	6.38 %	5.88 %
<b>10 Years (2007-2016)</b>	5.15 %	6.41 %

Source: Pension Integrity Project Analysis of COAERS Valuation Reports, 2001-2016.

estimate a long-run rate of return, which could include the booms and busts that are features of any economy.

Stellar investment returns in fiscal year 2017 have helped pension systems across the country (COAERS included), but years like 2017 are anomalous and are likely to only become rarer for the foreseeable future (Niraula and Takash). Most financial economists believe we are entering a “new normal” of low investment returns. The causes are various, including low investment in human capital, China’s matured relationship in international trade, and declining population growth (McKinsey 2016, 13). However, it is clear that the decline in the “natural” rate of return is not the cause of any one policy and is a structural feature of the global economy for the foreseeable future (Del Negro et al.).

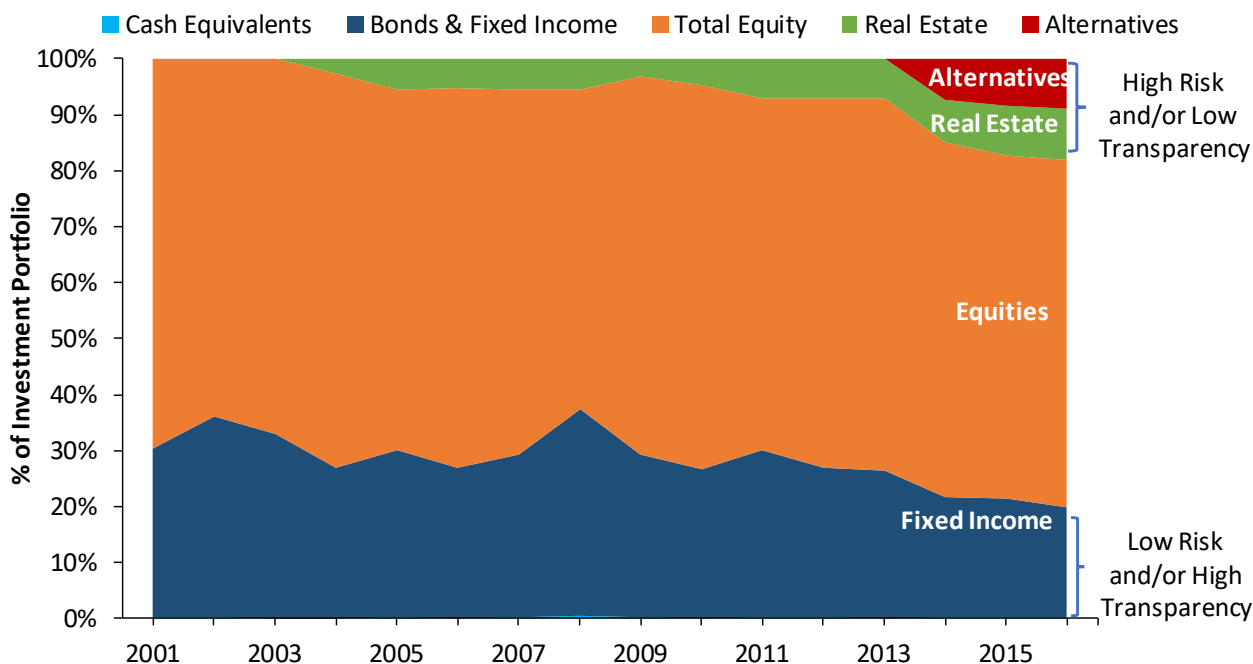
How has the new normal influenced investment returns? In the past 20 years, 30-year Treasury yields (the figure commonly used to represent the “risk-free” rate of return) have declined from about 6 percent in 2000 to just under

3 percent today. McKinsey & Co. estimates that returns from equities will be between 20 percent and 50 percent lower than today over the next 20 years, and real returns on fixed income instruments (i.e., bonds) may become negative. McKinsey estimates that a portfolio with a 60/40 mix of equities and bonds will earn less than a 5 percent annual rate of return (McKinsey 2016, 29).

The new normal is not just a lingering effect of the financial crisis—it is representative of structural features of the global economy. In response, COAERS and other pension systems across the U.S. have dramatically increased volatility of their investment portfolios as a way to chase higher investment returns. Figure 7 demonstrates how COAERS’s portfolio has taken on greater investment risk since 2000.

The share of fixed income (generally considered the safest asset class) and equities (riskier but still generally considered safe) has declined as investment in real estate and alternative investments has grown. However, despite taking

**Figure 7: COAERS Asset Allocation Over Time**



Source: Pension Integrity Project Analysis of COAERS Actuarial Valuation Reports and CAFRS

**Table 3: Likelihood of Actual Investment Returns Over Next 10-15 Years**

Rate of Return	Probability of COERS Achieving a Given Return Based On:				
	COERS Assumptions	BNY Mellon Forecast	JP Morgan Forecast	BlackRock Forecast	Research Affiliates Forecast
9.0 %	26.0 %	9.8 %	10.2 %	10.4 %	4.8 %
8.0 %	41.2 %	18.7 %	19.9 %	19.0 %	10.4 %
7.5 %	49.2 %	24.6 %	26.5 %	24.4 %	14.5 %
7.0 %	57.5%	31.6 %	34.2 %	31.0 %	19.4 %
6.5 %	65.1 %	38.7 %	42.6 %	38.5 %	25.3 %
6.0 %	72.4 %	46.8 %	51.2 %	46.1 %	32.0 %
5.0 %	84.4 %	63.1 %	68.8 %	61.0 %	47.2 %

Source: Pension Integrity Project Monte Carlo model based on COERS asset allocation and reported expected returns by asset class. Return forecasts by asset class generally from BNYM (10-Year Forecast), JPMC (10-15 Year Forecast), Research Affiliates (10-Year Forecast), and BlackRock (10 Year Forecast) were used and matched to the specific asset class of COERS. Probability estimates are approximate as they are based on the aggregated return by asset class.

on increased risk, COERS’s 7.5 percent assumed rate of return is still unrealistic. **Table 3** shows the probabilities of meeting different long-run rates of return based on estimates from COERS and major financial institutions.

As shown above, the 7.5 percent assumed rate of return is optimistic, even using COERS’s assumptions. Using estimates from other major financial institutions, even a 6 percent rate of return has less than a 50 percent chance of being met.<sup>2</sup>

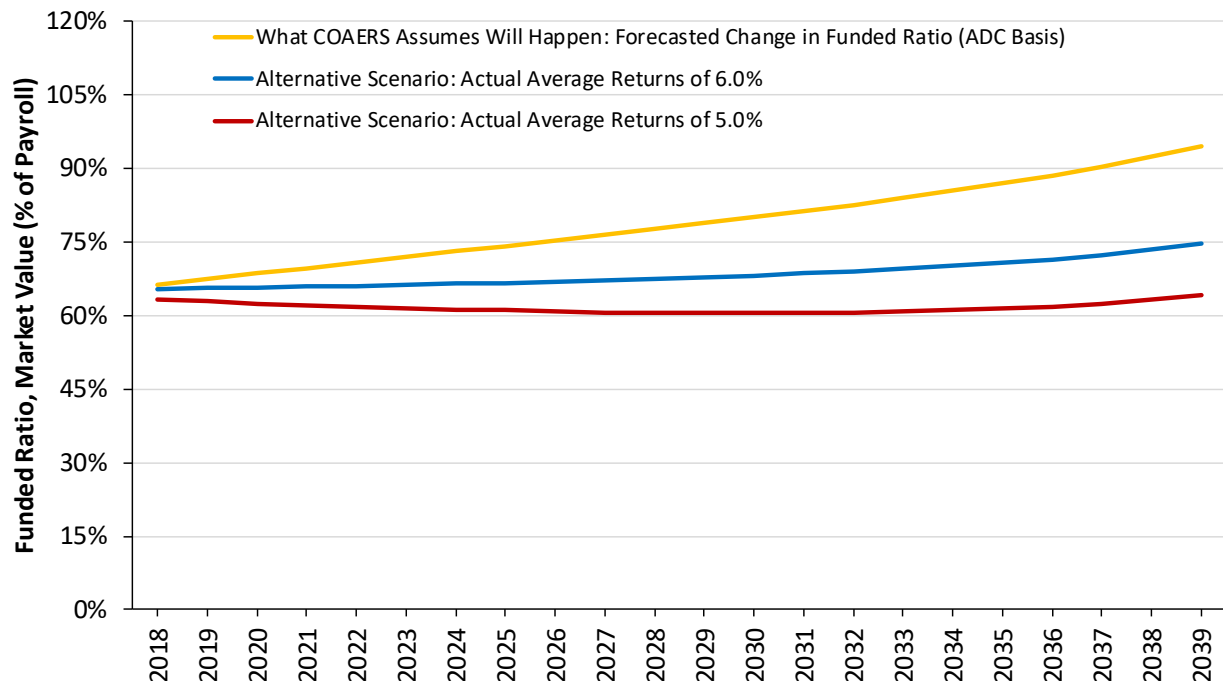
The implications of the new normal are that COERS is structurally underfunding its plan by using an ARR that is higher than can be reasonably expected. In practice, failure to meet the ARR over the long term increases the ADC, as greater contributions are needed to cover past shortfalls.

What is the impact of underperforming investment returns? **Figures 8, 9, and 10** show projected contribution rates

<sup>2</sup> A 50 percent probability is a “coin-flip’s” chance of meeting the assumed rate of return. It would

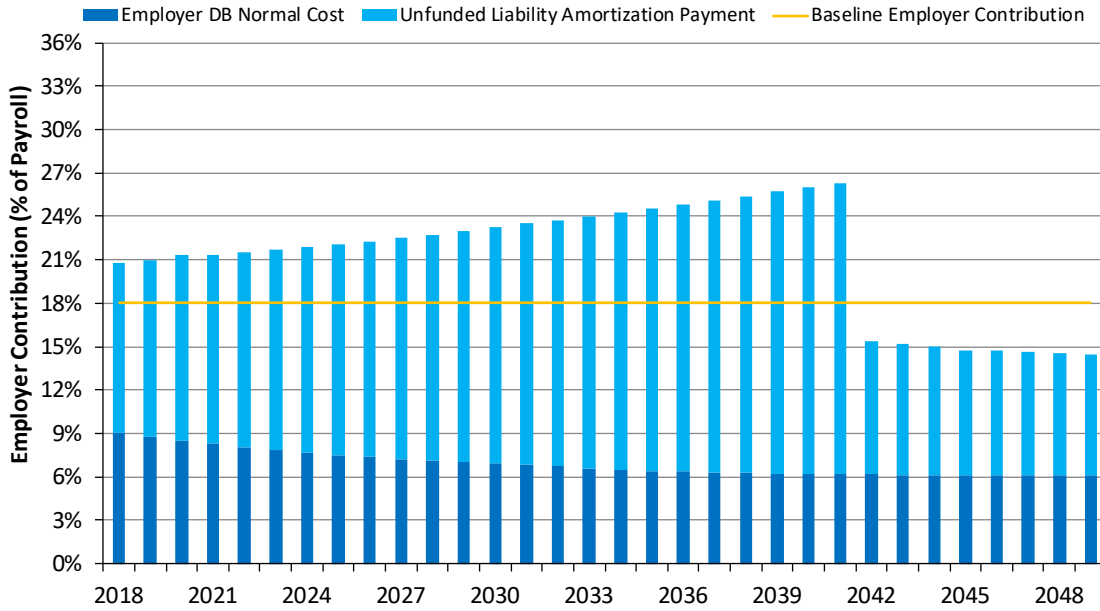
be more prudent for COERS to adopt an assumed rate of return it can meet more consistently, such as something at the 75 percent level.

**Figure 8: Projected COERS Funded Ratio for Various Actual Rates of Return**



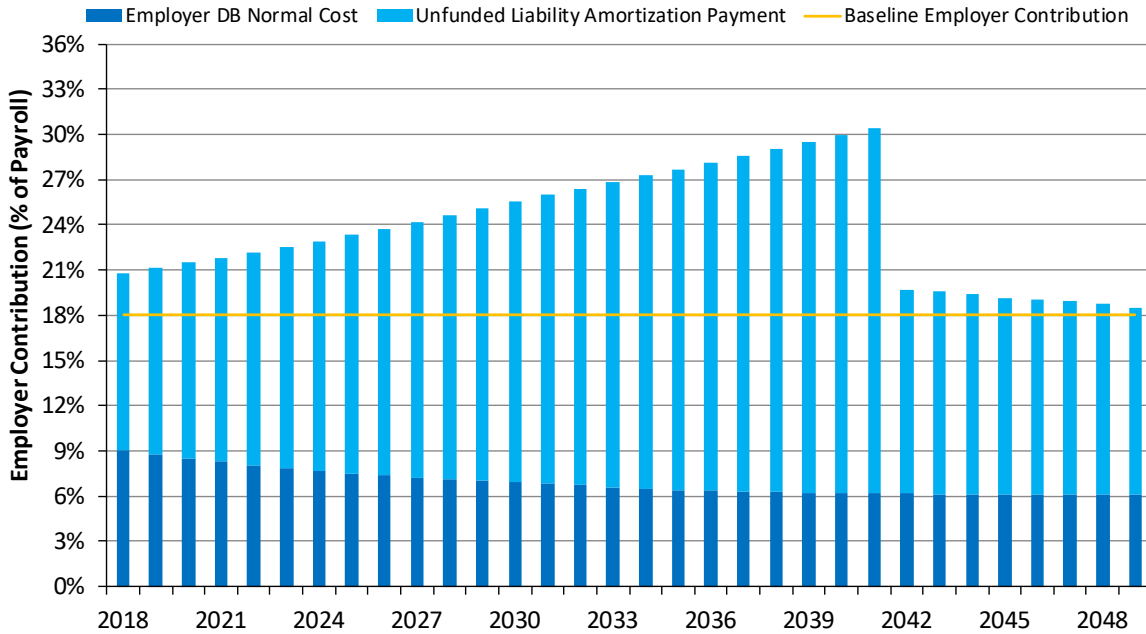
Source: Pension Integrity Project Roll Forward Actuarial Analysis Based on COERS Valuation Reports

**Figure 9: COAERS Contribution Rates Based on Current Assumptions and 6% Actual Return on Investment**



Source: Pension Integrity Project Projections Based on COAERS Data

**Figure 10: COAERS Contribution Rates Based on Current Assumptions and 5% Actual Return on Investment**



Source: Pension Integrity Project Projections Based on COAERS Data

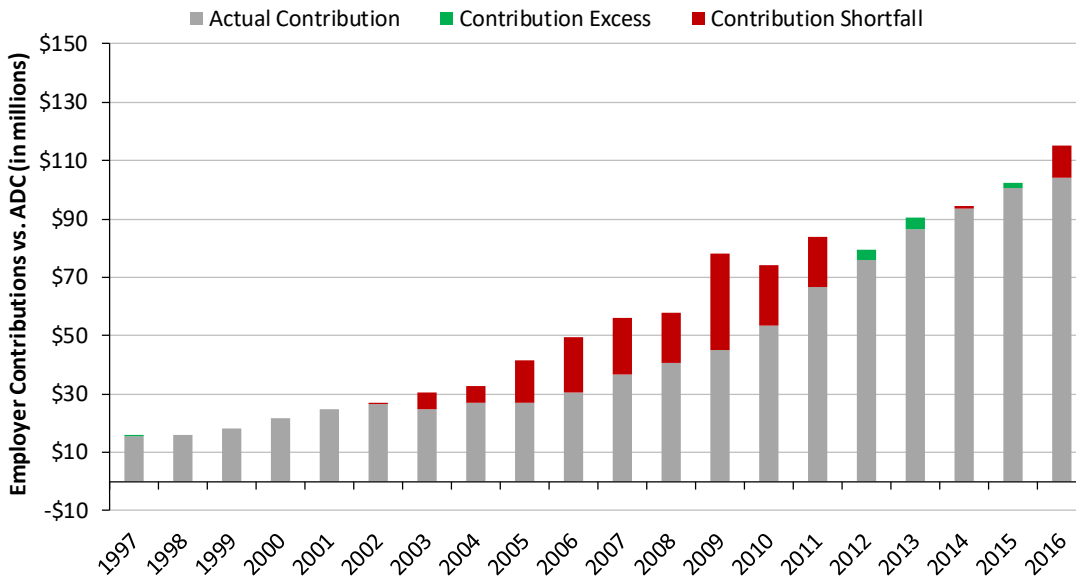
and expected funded ratios based on different investment performance scenarios.

As shown in **Figure 8**, a 6 percent actual return over the following 20-year period will leave the plan 74.6 percent funded, while a 5 percent actual rate of return will leave COAERS only 64.1 percent funded. If COAERS used its current statutory funding policy, the ADC wouldn’t grow as needed and the funding ratio would continue to fall. Because this scenario models COAERS using an ADC funding

policy, contribution rates will rise as necessary, as demonstrated in **Figures 9** and **10**.

The above two figures demonstrate ADC as a share of payroll based on different investment return scenarios. If COAERS achieves a 6 percent investment return, by 2049 Austin will need to contribute an additional \$651.6 million over the next 30 years. If COAERS achieves a 5 percent investment return, an additional \$1.3 billion will be necessary over this period relative to what COAERS currently

**Figure 11: COAERS Contribution Rates Compared to Actuarially Determined Contribution Rate**



Source: Pension Integrity Project Analysis of COAERS Valuation Reports and CAFRs

projects.<sup>3</sup> If COAERS does not abandon its current statutory funding policy in favor of an actuarially determined contribution rate policy (see next section), required contribution rates will grow even larger as the city's contribution rates fail to catch up to the ADC.

**2.2. Problem 2: Statutory Funding Policy Has Led to Structural Underfunding**

The above discussion of COAERS's assumed rate of return largely deals with these contribution rates in the context of the ADC, a figure designed to pre-fund the plan as benefits are earned (the normal cost component) and bring an underfunded plan to full funding by a certain point in time (the unfunded liability amortization payments). Most pension systems fund their plans based on their ADC (though many simply choose to contribute less than the ADC).

COAERS, however, uses a statutory contribution rate policy, where contribution rates are set in law, rather than being appropriated each year based on the ADC. When the plan was first created in 1941, contributions were only 4 percent of payroll. Since then, they have increased to 8 percent for the employer and employee, plus an additional 10 percent contribution from the employer as part of the Supplemental Funding Plan. This brings the total statutory contribution rate to 26 percent of payroll.

While there is one key advantage to statutory contribution rates—namely that they keep pension costs stable in the short term—this is a short-sighted policy detrimental to the system's solvency. Each year the ADC exceeds the statutory

contribution rate, the unfunded liability grows—necessitating even greater contribution rates later on. *Independent of flawed actuarial assumptions, statutory contribution rates lead to structurally underfunded plans because the rates do not respond to changes in the fiscal health of the plan.*

**Figure 11** shows the employer contributions to COAERS over time. From 2003 to 2011, the plan's failure to adequately increase the statutory

contribution rate led to a cumulative \$155 million contribution deficit since 1997. Only with the creation of the Supplemental Funding Plan did COAERS reduce its structural deficit. However, as assumptions continue to underperform it is likely that COAERS will need to increase its contribution rates to catch up.

An additional consequence of using statutory instead of actuarially determined funding policy is the high variance this policy creates in the length of the amortization schedule. In 2005, COAERS set a target to amortize pension debt over 30 years as part of the SFP. However, because the plan uses a statutory contribution rate policy, these contribution rates are held constant and thus can only target its current 31-year amortization schedule goal, rather than set contribution rates at the levels needed to actually meet it.

The result has been that the time period over which COAERS is set to pay down its unfunded liability has fluctuated wildly, as shown in **Figure 12**. Values above 35 represent years when COAERS had an infinite amortization period (i.e., it would never pay off the unfunded liability).

COAERS's statutory contribution rate policy has been a major contributor to the plan's current crisis and needs serious review.

**2.3. Problem 3: COAERS's Pension Debt Is Undervalued**

COAERS's unfunded liability is currently about \$1.3 billion, but this figure does not refer to the total nominal value of the benefit checks it is projected to send to beneficiaries (less assets). Rather, this refers to the *present value* of the plan's liabilities. The present value is determined by discounting future benefit payments using a *discount rate*,

3 Pension Integrity Project projections based on COAERS Valuation Report data.

## Best Practice for Amortization Policy

Amortization payments may be based on either a level percent of payroll or a level dollar method, and their repayment schedule may be *open* or *closed*.

A *level percentage of payroll method* sets the amortization contributions as an equal share of the system's payroll. This has the advantage of keeping required contributions as a fixed share of total compensation, but it is also very sensitive to missed assumptions. For example, if payroll growth underperforms and the static contribution rate leads to less money going into the plan, contribution rates must be recalculated.

More importantly, whether or not all of a plan's assumptions with respect to the amortization payments are correct, level percentage methods backload pension debt. If payroll is assumed to grow, then the dollar value of the contribution will grow with payroll, leading to growing contributions in the long run. By back-loading amortization payments, pension systems using a level percentage method wind up paying more in contributions than they would using a different schedule.

A *level dollar method*, on the other hand, sets payments as a fixed dollar amount. This frontloads debt payment, but leads to greater savings in the long run—in addition to preventing lower-than-expected payroll growth from leading to missed contributions.

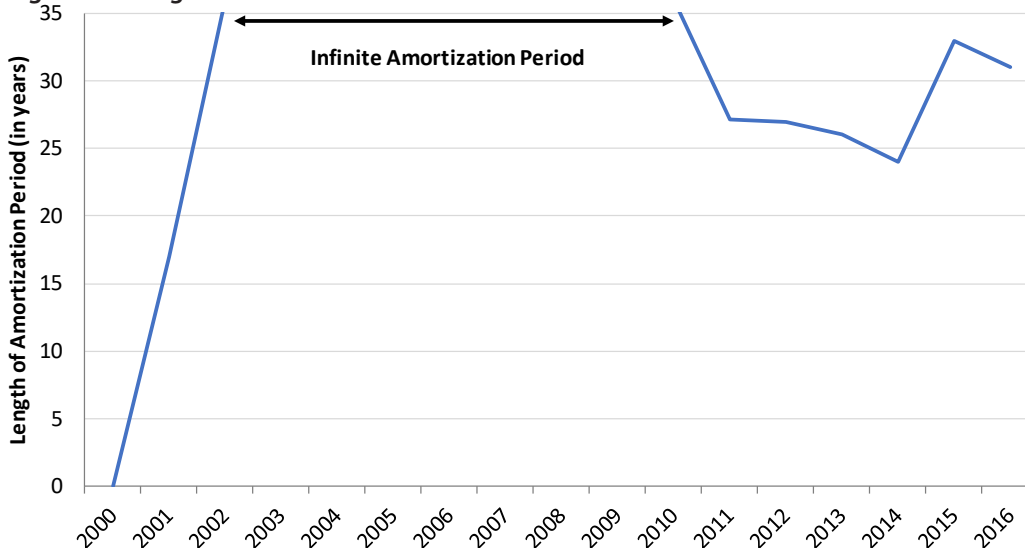
Level percent and level dollar refer to the way payments are structured, but the amortization schedule refers to the timeline over which an unfunded liability is amortized. Amortization schedules are normally between 20 and 30 years. Over

the past few years pension actuaries have begun reducing these schedules to avoid the problems that became associated with schedules longer than 20 years. The emerging best practice is that pension plans aim to use amortization periods of less than two decades, and aiming for 10- to 15-year schedules to pay off the debt that emerges in a given year may be the most appropriate.

A plan may choose to amortize over that time period based on an *open* or *closed* schedule. A closed amortization schedule sets a specific date by which the unfunded liability will be paid off. An open amortization schedule, on the other hand, sets amortization payments so the repayment schedule is reset *each year*, like refinancing a mortgage every year. For example, a plan with a 20-year open amortization schedule in 2018 will set amortization payments as if the debt were to be completely paid off by 2038, but the next year it will set the payments so the plan becomes fully funded by 2039, and so on. But while the choice is up to the pension plan, the best practice is clearly to use a closed period of time for each schedule. In general, *an open amortization schedule will never fully pay off its unfunded liability*.

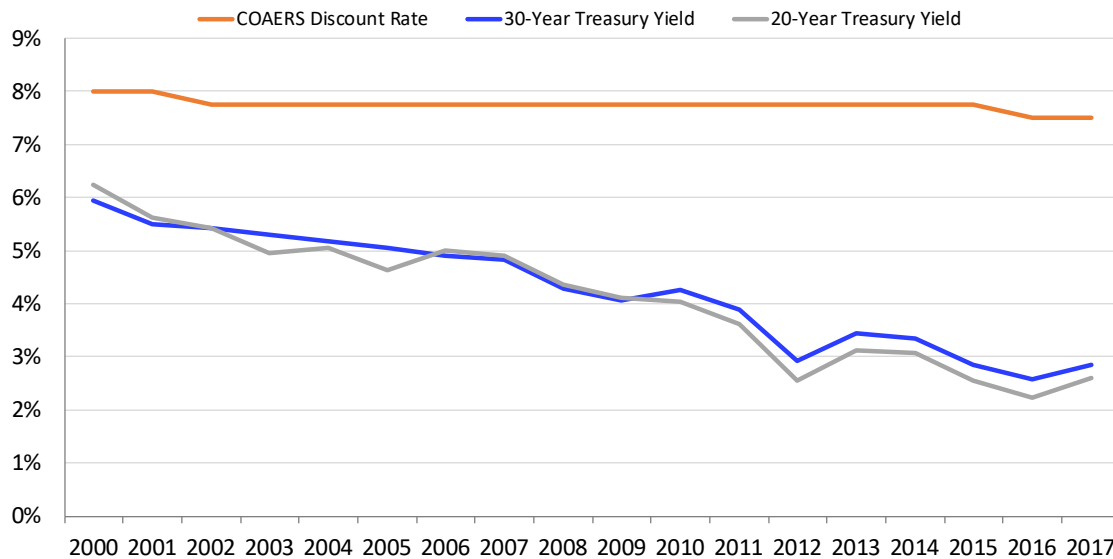
In summary, the best practice amortization methods that pension plans like COAERS should be shifting toward over time are closed, level-dollar periods of time that are less than 20 years in total, and perhaps shorter periods to pay off specific kinds of unfunded liabilities that emerge in certain years.

Figure 12: Length of COAERS Amortization Schedule



Source: Pension Integrity Project Analysis of COAERS Valuation Reports and CAFRs. Values above 35 indicate an infinite amortization schedule.

**Figure 13: COAERS Discount Rate Compared to 20- and 30-year Treasury Yields**



Source: Pension Integrity Project Analysis of COAERS Valuation Reports and CAFRs and U.S. Treasury Yield Data

which reflects both the time *value of money* and the risk associated with a given stream of payments.<sup>4</sup>

Most pension systems across the country (COAERS included) make their discount rate equal to their assumed rate of return, based on the reasoning that the risk associated with earning a given rate of return should be the same as how much future liabilities should be discounted. If the investment return is based on a long-run projection (and pension systems *do* invest for the long term) then the investment risk associated with these long-term investments should be the same as the risk associated with making long-term benefit payments.

However, financial economists highlight a legitimate flaw with this position, explaining that the ARR refers to the expected return on investment of a given portfolio, while the discount rate refers to the risk-adjusted present value of future payments. *These are two completely separate figures.* An assumed rate of return should be based on the expected returns of assets, and it should be adjusted based on the investments made. If a plan decides to make risky investments to justify a high ARR (an unwise decision), its

<sup>4</sup> For a more detailed discussion of discount rate methodology, see “[Why Discount Rates Should Reflect Liabilities: Best Practices for Setting Public Sector Pension Fund Discount Rates.](#)”

assumed rate of return should be high. If a plan instead decides to have a low-risk and low-return portfolio, then the ARR should be lowered. But no matter what choice the plan makes, these decisions have nothing to do with the value of the benefits promised and thus should have no bearing on choosing the discount rate.

A proper discount rate will take into consideration the *time value of money*, which quantifies how much money in the future is worth relative to money today. The figure that is commonly used to estimate this is called the *risk-free* rate of return, and it is usually pegged to 30-year Treasury yields, as they are backed by the full faith and credit of the U.S. government.

Additionally, the discount rate should also incorporate a *risk premium*, which is an estimate of the probability of default. Because COAERS’s pension benefits are backed by the city of Austin, the risk premium should be relatively low. As 30-year Treasury yields have declined from about 6 percent in 2000 to just under 3 percent today, COAERS’s discount rate should have declined accordingly. This has not been the case, as shown in **Figure 13**.

If we call the difference between the risk-free rate of return (30-year Treasury yield) and the discount rate the “implied

**Table 4: COAERS Pension Debt Sensitivity Based on Different Discount Rates**

Discount Rate	Actuarially Accrued Liabilities (AAL)	Unfunded Actuarially Accrued Liabilities (UAAL)	Funded Ratio
7.5 % (Current Rate)	\$ 3.77 billion	\$ 1.33 billion	64.7 %
6.5 %	\$ 4.24 billion	\$ 1.82 billion	57.0 %
5.5 %	\$ 4.50 billion	\$ 2.40 billion	50.0 %

Source: Pension Integrity Project Analysis of COAERS Actuarial Valuation Reports

risk premium,” we can see that the implied risk premium has declined from 2 percent in 2000 to 4.5 percent today. This would imply that the probability of Austin defaulting on its pension debt has more than doubled, which is highly unlikely. The more likely explanation is that COAERS is underestimating the value of its pension debt. **Table 4** shows the size of COAERS's liability using alternative discount rates.

Using a discount rate that is based on better actuarial practices reveals that the COAERS unfunded liability is *over \$1 billion more than currently reported*. Undervaluing pension debt is another form of structural underfunding.

#### **2.4. Problem 4: COAERS Has Failed to Meet Its Actuarial Assumptions**

As shown back in **Figure 5**, underperforming investment returns are the largest single driver of COAERS's pension debt, but they are far from the only cause. Over \$430 million of the current unfunded liability is due to either updating assumptions or underperformance of assumptions, specifically those related to retention and rehires, i.e., when fewer members withdraw from the plan and more new members and rehires join or re-join the plan than is expected.

An area where COAERS has improved is in its use of updated mortality table. The most up-to-date mortality table is the RP-2014 Combined Healthy Mortality Table (adjusted for blue collar workers). However, COAERS only adopted this table in 2015. From 2012 to 2014, it used the RP-2000 mortality table ([COAERS 2014, 21](#)), and prior to that it used a 1994 mortality table ([COAERS 2011, 99](#)). So, while COAERS has certainly *improved* its actuarial assumptions, it is still catching up from years of operating under outdated assumptions.

Updating the actuarial assumptions used by the plan since 2003 has added about \$218 million to the plan's unfunded liability. This isn't necessarily a problem—it's just the plan recognizing the actual cost of the benefits offered. COAERS's only mistake was not being more proactive in updating these assumptions, and the cost is greater contribution rates in the future. COAERS (temporarily) ignored reality, but it cannot ignore the costs of ignoring reality.

One area where COAERS has experienced an actuarial *gain* (i.e., experienced an overperforming assumption that reduced the unfunded liability) is in its estimation of payroll growth. Since 2003, lower-than-expected payroll growth has reduced COAERS's unfunded liability by \$25.7 million. But underestimating payroll growth is a double-edged sword.

On the one hand, lower levels of compensation means lower benefit payouts, since they are based on compensation. On the other, when payroll growth is lower than expected and contribution rate policy is defined as a share of payroll, less money goes into the plan than expected. More data would be available on the exact effect of this if COAERS used a more formal amortization schedule based on a payroll growth assumption.

As a final note, lower-than-expected payroll growth can be caused by a number of different phenomena, but, as evidenced by the Supplemental Funding Program's existence, a need to put more money to finance benefits that should have been pre-funded on a sounder actuarial basis necessarily reduces the amount of money available to increase payroll. This vicious cycle not only perpetuates pension debt, but also reduces the ability of Austin to recruit the best talent through higher compensation.

### **Part 3. A Framework for Pension Reform**

While the challenges facing COAERS are daunting, there is a range of potential reform options available to policymakers to address existing challenges and promote long-term financial solvency and budgetary sustainability. Evaluating alternative reform concepts often requires considering tradeoffs between risk, short-term costs, and long-term costs. Thus, any given proposal or set of ideas should be considered in the context of a framework for what would define good pension reform.

We propose the following seven objectives as a set of benchmarks to measure any COAERS reform plan against:

- 1. Keeping Promises: *Ensure the ability to pay 100 percent of the benefits earned and accrued by active workers and retirees.***  
Paying promised pension benefits is not optional; they are deferred compensation that employers should take every effort to ensure are honored. For future employees, the retirement benefit design should emphasize retirement security by minimizing volatility and risk, while also taking care to avoid the problems of the past—even if that means offering new benefit designs or alternative cost- and risk-sharing methods.
- 2. Retirement Security: *Provide retirement security for all future and current employees.***  
Ensuring that benefits are sufficient to preserve retiree standard of living is the primary goal of benefit design. The needs of different retirees will vary, but any benefits offered should be designed to ensure an employee's standard of living won't decline after they retire.



**3. Predictability: Stabilize contribution rates for the long term.**

Volatile contribution rates are challenging for state fiscal management and can create a perverse incentive to budget for contributions less than the actuarially determined contribution.

**4. Risk Reduction: Reduce pension system exposure to financial risk and market volatility.**

The ability of a pension plan to pay out promised benefits rests on ensuring that contributions will be supplemented with investment returns as expected. Pension plans should thus be responding to changes in the market that have lowered the yields of fixed income instruments by reducing investment risk and increasing contributions, not by maintaining unachievable assumed rates of return that lead to continued underfunding.

**5. Affordability: Reduce long-term costs for employers, taxpayers, and employees.**

By minimizing the costs for all parties involved, policy-makers free up future resources for other projects.

**6. Attractive Benefits: Ensure the ability to recruit 21st century employees.**

For the government to run well, it must be able to attract talented employees. Changes in labor markets have changed the demand for fixed pensions versus flexible, portable retirement benefits, as well as preferences for a higher salary today over better long-term benefits. Lifestyle preferences vary by region, so an employer should consider the specific considerations of employees in their jurisdiction for what 21st century employees prefer.

**7. Good Governance: Adopt best practices for board organization, investment management, and financial reporting.**

During pension crises, it is easy for other political interests to hinder pension reform, making the whole government worse off. Ensuring the long-term solvency of COAERS means aligning the incentives of the pension fund administrators and decision-makers by fixing decision-making processes and ensuring that they have a stake in the long-term solvency of the plan.

## Part 4. Options for Future Reform

While the challenges facing COAERS are daunting, there are many different types of reform options available to address them. Most are non-exclusive and could form a comprehensive package of reforms to both address the current pension crisis and prevent future crises from emerging.

This section offers a categorical overview of reform concepts Austin can consider, and the following section presents some analysis forecasting how they might change the trajectory of the plan.

### 4.1 Alternative Plan Design

Austin can look to other jurisdictions across the country to find examples of more sustainable plan designs and holistic reforms designed to restore solvency, ensure earned and accrued benefits are paid in full, and offer a sustainable benefit structure moving forward. While changing retirement benefits for future employees will not address the current unfunded liability, also called legacy debt, creating a more sustainable plan will “cap” the unfunded liability so future debt repayments aren’t throwing good money after bad.

Government employers are embracing a variety of styles of retirement plan as they enact reforms:

- 1. Risk-Managed Defined Benefit Plans:** Despite the financial challenges that some public pension systems have faced over the last two decades, there is nothing fundamentally flawed with the defined benefit pension plan design in and of itself. That said, in many jurisdictions certain plan design elements and trustee decision-making have left systems exposed to unanticipated risks, and they have proven difficult to administer successfully. One way to resolve this would be to create a new DB plan for new hires—sometimes described as creating a new “tier” of benefits—built from the beginning with very conservative assumptions, explicit cost-sharing provisions, and a “trigger” mechanism to prevent severe underfunding from spiraling out of control.

Such mechanisms have consistently kept risk-managed DB pension plans in states like Wisconsin and South Dakota at or very near full funding despite the generally weak economic conditions of the past decade, and a similar concept formed the basis of a 2017 reform to Michigan’s Public School Employees Retirement System (MPERS). The new plan has the same benefit model as before, but it uses a 6 percent assumed rate of return, and any pension debt earned in a given year will be paid off over 10 years or less. Additionally, the full actuarially determined contribution is split evenly between employers and employees of the new benefit tier.

- 2. Primary Retirement Income-Focused Defined Contribution Plans:** A defined contribution (DC) plan is a retirement vehicle where the employer and employee make regular, fixed payments into a retirement account owned by the employee, who then assumes all future

investment risk or passes it along to a private sector insurance company (such as purchasing an annuity). DC plans can be designed to be supplemental—as currently offered in Austin—or as a primary retirement plan, with minimum contribution rates and appropriate guardrails to ensure the plan is built to support retirement security. Because they are entirely pre-funded and investment outcomes are not guaranteed by the plan sponsor (e.g., employers/taxpayers), there is by definition no possibility for unfunded liabilities in a DC plan.

The most important features of a DC plan include having a fixed contribution rate that isn't exposed to inaccurate actuarial assumptions or underperforming assets, ensuring long-run sustainability, and the ability to recruit and retain 21st century workers who are increasingly mobile and may not want a retirement benefit they only receive after a long period of service.

3. **Choice-Based Retirement Plans:** Each worker is different, and in response to the differing needs of different employees, it can be advantageous to offer a range of attractive retirement options for employees. This could involve offering employees the choice between a risk-managed defined benefit plan and a purely defined contribution plan, or something in between.

For example, since 2012 Michigan teachers have had the option to enter into a hybrid pension plan or a full defined contribution plan, and a 2016 reform in Arizona brought retirement plan choice (DB pension or DC plan) to all law enforcement personnel and firefighters statewide. Pennsylvania's recent pension reform will offer teachers and state employees a choice between two DB/DC hybrid plan designs and a full defined contribution plan. Choice-based systems can default employees into one plan or another—as the Florida Legislature did in 2017 by enacting legislation that will auto-enroll employees into the DC plan choice unless they choose otherwise—or new hires can be required to make a positive election between choices.

4. **Hybrid DB/DC Plans:** Hybrid pension systems incorporate both a defined benefit and defined contribution component into their retirement benefits at the same time. Generally, hybrid plans should try to balance the value of each benefit, though this has not been the case in all jurisdictions that have hybrid plans. Hybrid plans provide for a base guaranteed retirement benefit (via the DB pension component) while also minimizing the risk to the employer (via the DC component).

5. **Cash Balance Plans:** A cash balance plan is a defined benefit system that guarantees a certain rate of return on investment. If investment returns for a given year fall below this figure, taxpayers will make up the difference. If investment returns exceed this figure, then the plan splits the difference between plan members and city taxpayers. This “upside sharing” varies from district to district.

#### 4.2. Funding Policy

Independent of any new plan design, COAERS should change its funding policy from the current, fixed statutory rate to an actuarially determined contribution rate policy. For all of the reasons previously discussed, statutory funding policies cannot guarantee full funding, and any projections for full funding are based on an amortization period that has fluctuated wildly in the past.

Optional approaches to improving funding policy would include:

1. Adopting a program of automatic adjustments to contribution rates over time that are triggered if the difference between the total contributions into the plan each year are projected to be less than the ADC.
2. Adopting a program that expands the Supplemental Funding Plan each year by a fixed amount until the total contributions into COAERS equal the ADC, at which point the SFP would be eliminated and the city would be required to simply pay the ADC each year.

Contributions above the ADC can also be good policy, which could be done either as an additional fixed percentage of payroll (like the Supplemental Funding Plan) or as lump-sum dollar contributions done on an ad hoc basis. These proposals will cost more from the city budget in the short term, but save the plan money in the long run as these additional contributions accrue interest.

#### 4.3. Assumption Changes

Though COAERS has improved its assumptions over the past five years, additional steps are needed to prevent systemic underfunding.

COAERS should make a greater commitment to updating assumptions as needed. While moving to the RP-2014 mortality table was a positive first step, COAERS could have better funded their plan by being more proactive when updating assumptions. More importantly, however, the assumed rate of return and the discount rate need to be updated. It is important to note that these are two completely

different figures that need different methodologies to make sure they are up-to-date.

For the discount rate, this could be resolved in a relatively straightforward manner. Since the discount rate is designed to measure the risk based on the risk-free rate of return plus a risk premium, this could be based on either 30-year U.S. Treasury yields plus a constant risk premium (between 200 and 300 basis points) or based on Austin's municipal bond yields. This would allow the discount rate to rise and fall based on the risk-free rate of return while still being in line with good actuarial practices.

Updating the assumed rate of return is a little more complicated, but still a necessary and achievable pursuit. First, it should be noted that COAERS hasn't met its inflation assumption since 2008. Updating the inflation assumption will, in turn, necessitate lowering the ARR since the ARR (7.5 percent) is the sum of the real return on assets (4.75 percent) and the inflation assumption (2.75 percent).

Second, basing the assumed rate of return on the median expected return on invested assets—as COAERS and many other public pension plans effectively target an ARR for which there is an approximate—is not ideal for a government program. In the private sector, it is perfectly acceptable (albeit inadvisable) to use your own money to finance risky, illiquid investments. But, because taxpayer and retiree money is on the line, COAERS should make more conservative assumptions that it can meet more consistently, perhaps at the 75 percent probability level (or 25th percentile).

This will make the plan more expensive, but this is only because COAERS needs to recognize the new normal the global economy has entered and how that impacts investment returns.

### Part 5. Analysis of COAERS Pension Reform Scenarios

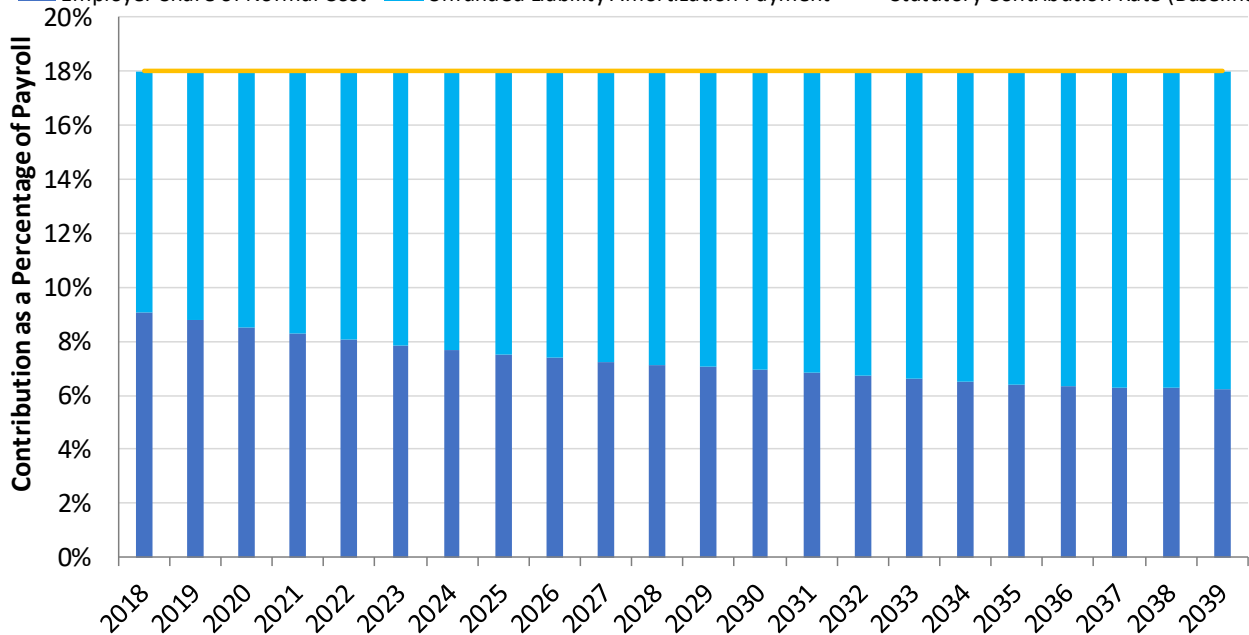
There are many possible combinations of changes to assumptions, contribution methods, and plan design that could lead to an improvement in plan solvency and better supports for retirement security. To have a better sense for how the various options could change contribution rates and forecasts of accrued liabilities we analyzed the following scenarios, shown below:

- **Baseline Scenario:** what COAERS forecasts future contributions will be.
- **Reform Scenario 1:** Responsibly Pay the Bill—what does changing from statutory rate to contributions based on actuarial determination do to the overall contribution rate?
- **Reform Scenario 2:** Use More Conservative Assumptions—how would adopting a more conservative assumed rate of return and inflation assumption change contribution rates?
- **Reform Scenario 3:** Create a primary retirement defined contribution plan for new employees.
- **Reform Scenario 4:** Create a retirement-choice system.

**Baseline Scenario: Employer Contributions Based on Current Statutory Contribution Rate Policy**

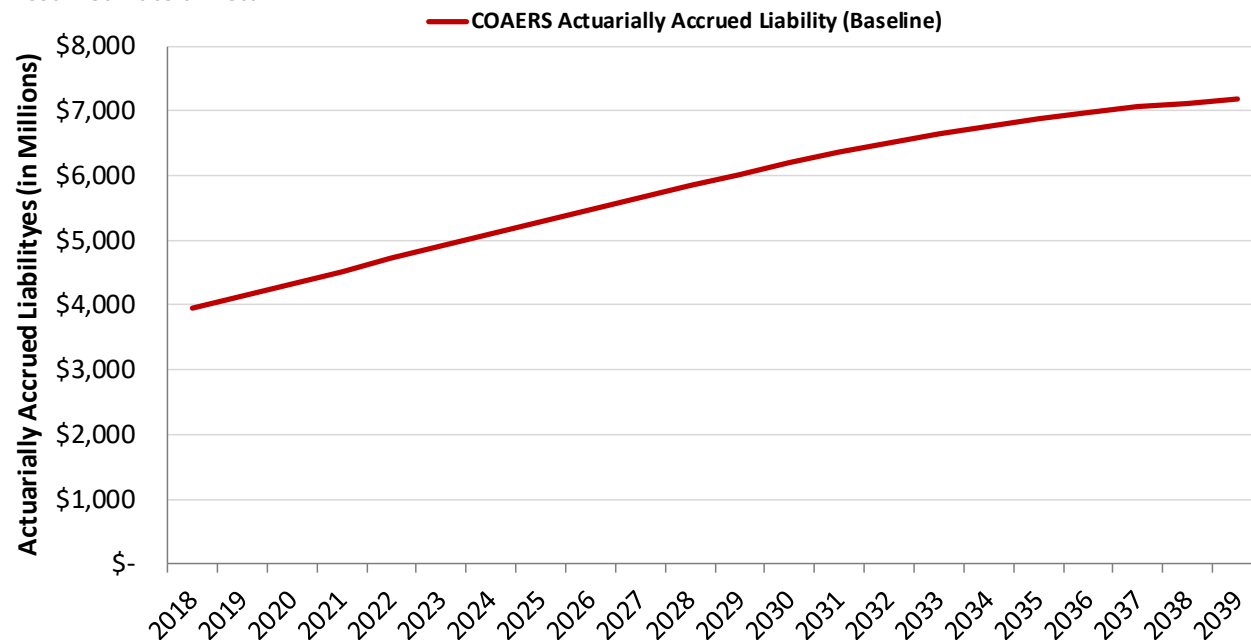
7.5% Assumed Rate of Return and 2.75% Inflation Assumption with 8% Employee Contribution

■ Employer Share of Normal Cost ■ Unfunded Liability Amortization Payment — Statutory Contribution Rate (Baseline)



Source: Pension Integrity Project Roll Forward Actuarial Analysis Based on COAERS Valuation Reports

**Baseline Scenario Analysis: Forecasted Dollar Value of Promised Liabilities Exposed to Risks of the Plan’s Assumed Rate of Return**



Source: Pension Integrity Project Roll Forward Actuarial Analysis Based on COAERS Valuation Reports

**5.1. Baseline Scenario—Statutory Contribution Rate Policy with 7.5 percent Assumed Return**

This baseline scenario demonstrates the current COAERS funding policy breakdown. Because the plan has a statutory contribution rate policy, the contribution is fixed as a percentage of payroll and any portion of the statutory contribution rate in excess of the normal cost (less employee contributions) is considered to be part of COAERS’s amortization payment.

**Cost Forecast:** Because the plan is not using an actuarially determined contribution rate policy, the COAERS’s unfunded liability will not be paid off within the next 30 years. On the other hand, under the baseline forecast the normal cost declines as a percentage of payroll as members whose benefits were based on a 3.0 percent multiplier are replaced by members hired after January, 1 2012, whose benefits are calculated using a 2.5 percent multiplier. From this baseline estimate of what COAERS will contribute in the future, we

can examine the effects of different reform proposals on the contribution rates and overall liability size for COAERS over the next 30 years.

**Liability Forecast:** The Baseline Scenario Analysis shows the growth of total accrued liabilities (i.e., promised pension benefits) in COAERS under the present circumstances over the next 20 years. Based on this projection, if there are no changes to the benefits offered by COAERS, the total plan liability will grow from less than \$4 billion today to over \$7 billion.

**5.2. Reform Scenario 1: Responsibly Pay the Bill—Adopt an Actuarially Determined Contribution Rate Policy**

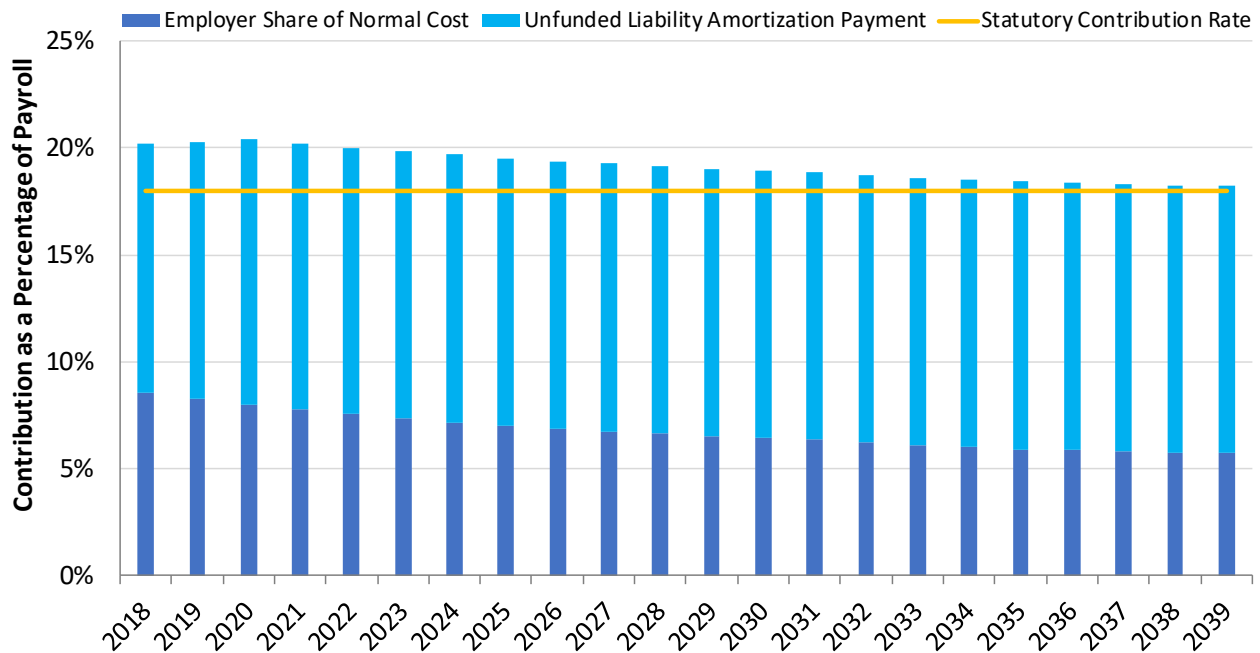
This scenario measures the effect of changing COAERS’s current contribution rate policy from a fixed, statutory rate of 18 percent to one based on the actuarially determined contribution rate. Thanks to the SFP, COAERS’s contribution rates have been closer to the ADC in recent

**Table S1: Cost/Savings Analysis**

	Average Contribution Rate (percent of Payroll)			Cumulative Employer Contributions (in millions)		
	Statutory Rate	Actuarially Determined Contribution	Increase/(Decrease)	Statutory Rate	Actuarially Determined Contribution	Increase/(Decrease)
<b>5 Years</b>	18.0 %	20.22 %	2.22 %	\$632.3	\$710.0	\$77.78
<b>10 Years</b>	18.0 %	19.87 %	1.87 %	\$1,401.5	\$1,544.3	\$142.80
<b>20 Years</b>	18.0 %	19.27 %	1.27 %	\$3,476.0	\$3,693.2	\$217.2
<b>30 Years</b>	18.0 %	16.37 %	(1.63 %)	\$6,546.8	\$5,457.2	(\$1,089.6)

Source: Pension Integrity Project Roll Forward Analysis Based on COAERS Valuation Reports

**Scenario 1: Employer Contribution Rates Based on Actuarially Determined Contribution Rate**



Source: Pension Integrity Project Roll Forward Actuarial Analysis Based on COAERS Valuation Reports

years than in the past (see contribution rate history in **Figure 11**). But the fixed contribution rate is not well-designed to keep up with changes to assumptions or methods, or negative actuarial experience.

If Austin city officials were to start responsibly paying the actuarial bill for COAERS, then employer contribution rates will increase modestly initially, with large savings coming further down the line as the pension debt is paid off.

- **Cost Forecast:** Examining this scenario, by funding based on the ADC, contribution rates will increase modestly initially as more money is dedicated to explicitly pay down the plan's unfunded liability. These cost increases in the short term pay off over time after the plan becomes fully funded (and amortization payments go to zero). In the long run, adopting an ADC funding policy would save COAERS over \$800 million in contributions.

- **Liability Forecast:** Because this scenario simply changes funding policy and does not consider any change to the plan's provisions or assumptions, the total accrued liability of the plan will stay the same. This approach should be considered a "bare minimum" change COAERS can make to help reverse course and prevent further underfunding. For this reason and because the statutory contribution rate is a constant, the next three scenarios will compare the costs or savings of other policy changes, assuming that this ADC scenario is in place.

**5.3. Reform Scenario 2: Use More Conservative Assumptions—Adopting a Lower Assumed Return and Inflation Assumption**

While adhering to an ADC funding policy is a necessary first step to guarantee the solvency of COAERS, this policy is most effective when it is based on conservative

**Table S2: Cost/Savings Analysis**

	Average Contribution Rate (percent of payroll)			Cumulative Employer Contributions (in millions)		
	Current Plan Design (ADC)	5.5 percent ARR and 2 percent inflation	Increase/(Decrease)	Current Plan Design (ADC)	5.5 percent ARR and 2 percent inflation	Increase/(Decrease)
<b>5 Years</b>	20.22%	34.61%	14.39%	\$710.03	\$1,215.24	\$505.21
<b>10 Years</b>	19.87%	34.10%	14.23%	\$1,544.28	\$2,650.30	\$1,106.03
<b>20 Years</b>	19.27%	33.13%	13.86%	\$3,693.22	\$6,348.69	\$2,655.47
<b>30 Years</b>	16.37%	29.08%	12.71%	\$5,457.23	\$9,784.37	\$4,327.13

Source: Pension Integrity Project Roll Forward Analysis Based on COAERS Valuation Reports

assumptions the plan can meet on a consistent basis. As discussed above, the current 7.5 percent assumed rate of return does not fit this description, and as the largest driver of pension debt, updating this assumption is crucial to prevent further growth in the plan’s unfunded liability.

For this scenario, we change the assumed rate of return to 5.5 percent with a 2 percent inflation assumption. Because COAERS uses the same discount rate for valuing accrued liabilities as the assumed rate of return on liabilities, we also change the discount rate to 5.5 percent.

- Cost Forecast:** As expected, the required contributions for COAERS after this assumption change will increase required contribution rates by about \$15 million per year over the next 30 years. While these changes may make the plan more expensive on a budgetary basis, it does nothing to change the actual benefit offered or the total benefit payments COAERS is expected to make. These assumption changes only reflect the new normal of low investment returns, making the true cost of fully funding COAERS clearer. Thus, the budgetary increases are simply an upfront recognition of what future costs will be in the form of unfunded liability payments. Note that the normal cost for COAERS is higher under this scenario (up to 25.3 percent from 16.6 percent) because of the lower assumed rate of return, which in turn increases the employer’s share of normal cost by about 8.7 percent of payroll (assuming no change to the employee rate). At the same time, using a 5.5 percent discount rate means recognizing \$1 billion more in

unfunded liabilities, which translates to needing 17 percent of payroll in amortization payments on that pension debt for year 1 of reform, up from 11.6 percent without the assumption changes.

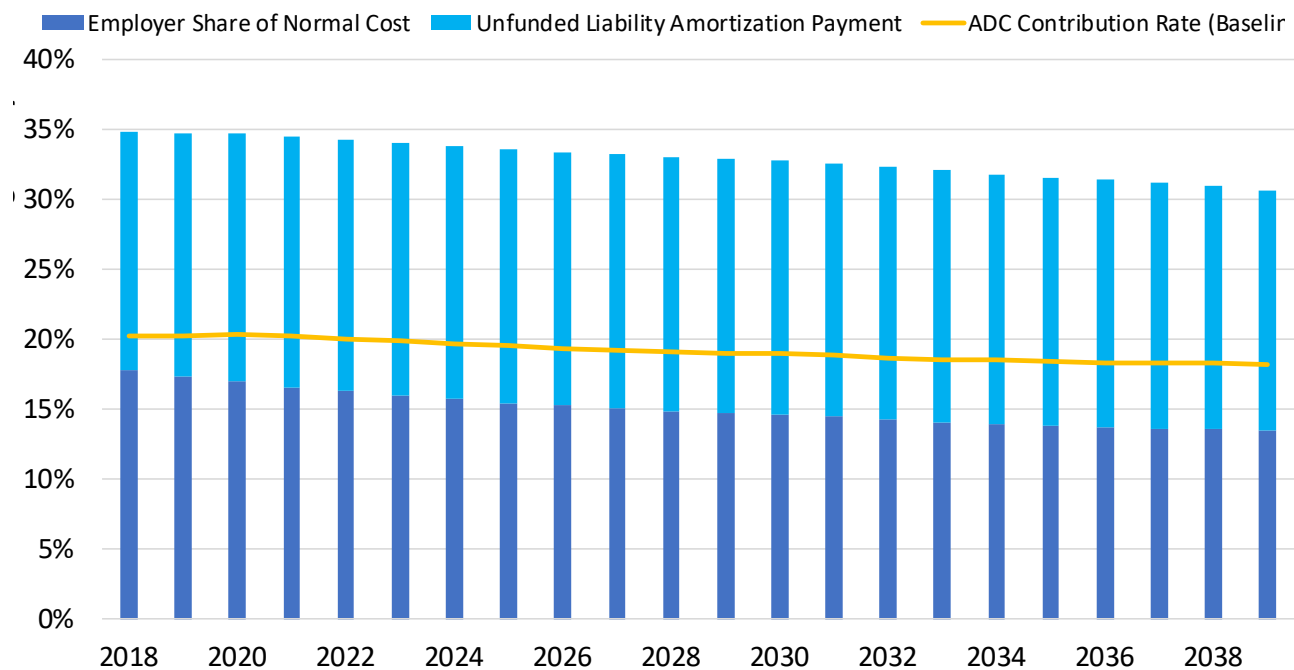
- Liability Forecast:** If COAERS implements a comprehensive update of the current assumptions used, the measured value of the total liability will increase by 71 percent over the next 20 years, from \$7 billion to around \$12 billion. However, it is important to note that without any change to the benefits offered, this change merely represents a change in the measured value of the plan’s liabilities. The cost of the plan hasn’t increased, just the reported value.

**5.4. Reform Scenario 3: Create a Primary Retirement Defined Contribution Plan for New Employees**

COAERS currently offers members access to supplementary defined contribution retirement plans, in addition to the defined benefit pension plan and paying into Social Security. However, COAERS could offer new hires a primary retirement defined contribution plan in lieu of a pension—either as an option, as the default retirement plan with an optional defined benefit plan, or as the sole available retirement plan for new hires.

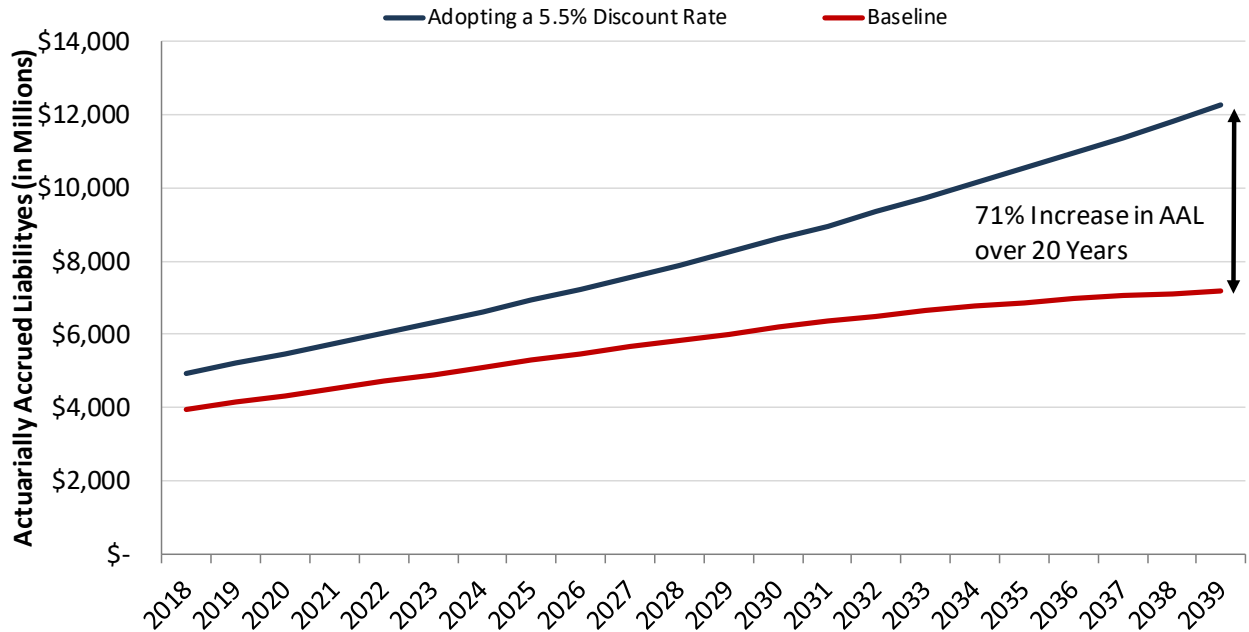
If Austin were to take the latter option and create a primary defined contribution retirement plan, the minimum total contributions should be at least 10 percent to 12 percent of payroll in order to support retirement security (if COAERS

**Scenario 2: Employer Contribution Rates Based on Updated Investment Return Assumptions**



Source: Pension Integrity Project Roll Forward Actuarial Analysis Based on COAERS Valuation Reports

**Scenario 2 Analysis: Comparing Change in Accrued Liabilities by Adopting a 5.5% Assumed Rate of Return and 2% Inflation Assumption, 2018 to 2039**



Source: Pension Integrity Project Roll Forward Actuarial Analysis Based on COAERS Valuation Reports

members did not also participate in Social Security, the amount would need to be greater). There is a significant difference between a supplemental DC retirement plan and a primary DC retirement plan—and if the only retirement benefit offered is a DC retirement plan it should be designed with “primary” as a guiding objective.

In this scenario, we model putting all new entrants to COAERS into a defined contribution plan with a 12 percent total contribution rate—8 percent contributed by the employee (matching the status quo) and 4 percent contributed by the employer. We also ensure that there is no reduction in contributions toward the unfunded liability by maintaining the unfunded liability amortization payments as a percentage of total payroll—i.e., no matter whether an employee is in Group A, Group B, or this new primary defined contribution retirement plan, Austin will make the

same unfunded liability amortization payment based on their payroll. Again, this is critical for ensuring that any change to the plan design for COAERS does not undermine paying off unfunded liabilities.

- Cost Forecast:** At the onset, creating a DC plan for new employees will produce little savings. But, as more employees enter the plan where the employer contribution is only 4 percent of payroll, compared to the Group B 6 percent normal cost, the costs will decline because employees enter a lower-cost plan that cannot create an unfunded liability (see Scenario 3: Employer Contribution Rates). Though the 12 percent total contribution rate (4 percent employer, 8 percent employee) will yield the savings shown above, changes to the employer contribution rate for a DC plan will change the relative costs or savings of the plan.

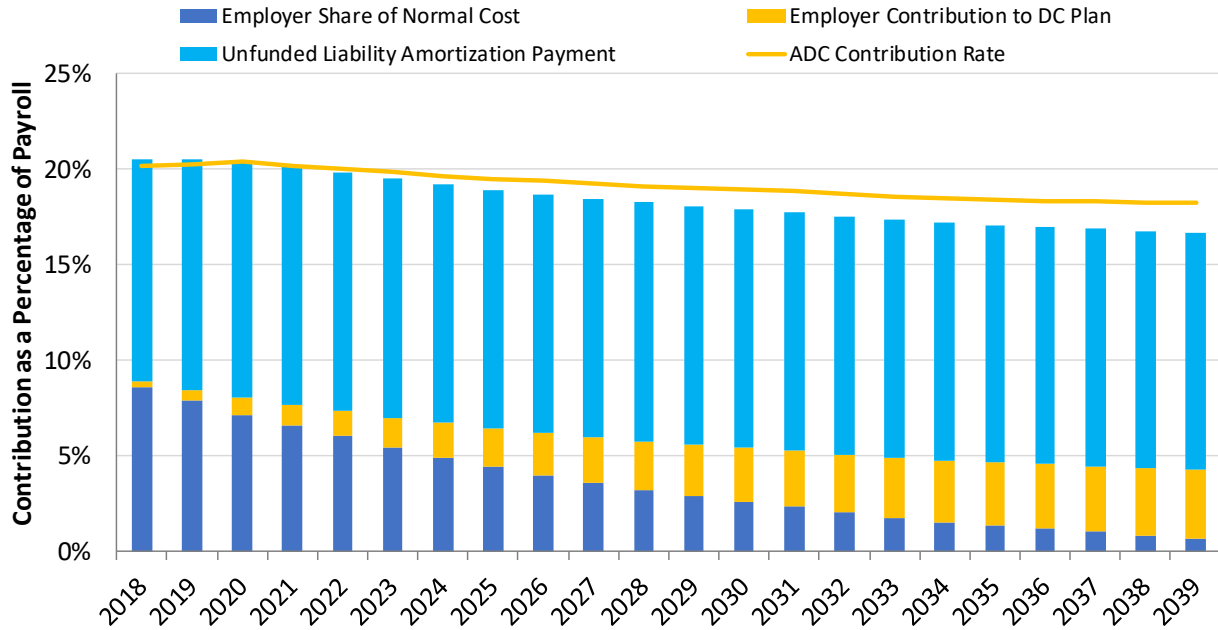
**Table S3: Cost/Savings Analysis**

	Average Contribution Rate (percent of payroll)			Cumulative Employer Contributions (in millions)		
	Current Plan Design (ADC)	DC Plan for New Hires	Increase/(Decrease)	Current Plan Design (ADC)	DC Plan for New Hires	Increase/(Decrease)
<b>5 Years</b>	20.22 %	20.30 %	0.08 %	\$ 710.0	\$712.41	\$2.38
<b>10 Years</b>	19.87%	19.63%	(0.24%)	\$1,544.28	\$1,521.97	\$(22.31)
<b>20 Years</b>	19.27%	18.57%	(0.71%)	\$3,693.22	\$3,533.38	\$(159.83)
<b>30 Years</b>	16.37%	15.48%	(0.88%)	\$5,457.23	\$5,023.15	\$(434.08)

Source: Pension Integrity Project Roll Forward Analysis Based on COAERS Valuation Reports

**Scenario 3: Employer Contribution Rate Based on Enrolling New Hires in a Defined Contribution Plan**

Based on 4% Employer- and 8% Employee-Defined Contribution with No Change to Current Plan Assumptions



Source: Pension Integrity Project Roll Forward Actuarial Analysis Based on COAERS Valuation Reports

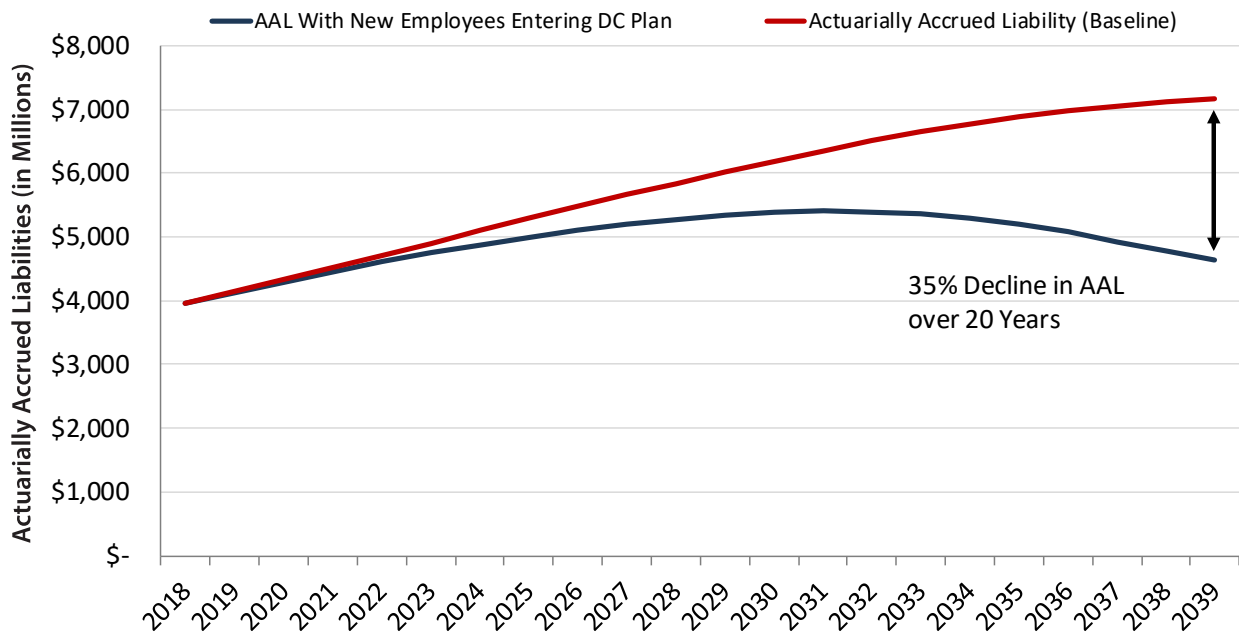
- Liability Forecast:** Over time, a change to a defined contribution plan would reduce the total value of accrued liabilities exposed to the risks of the current 7.5 percent assumed rate of return (see Scenario 3 Analysis). It is impossible for a defined contribution plan to produce any accrued liabilities. Of course there are still active members of the COAERS plan that will continue to accrue liabilities under this scenario, so

the overall liability will increase for a few years before beginning to decline.

**5.5 Reform Scenario 4: Create a Choice-Based Retirement System**

Rather than offer employees a single primary retirement vehicle, Austin could create choices for future members of COAERS, allowing members to choose between a primary

**Scenario 3 Analysis: Comparing Change in Accrued Liabilities by Enrolling New Employees in a Defined Contribution Plan, 2018 to 2039**



Source: Pension Integrity Project Roll Forward Actuarial Analysis Based on COAERS Valuation Reports



retirement defined contribution plan and a shared-risk defined benefit plan.

In this scenario, the defined contribution plan matches the one modeled in Scenario 3, with employees contributing 8 percent and the employer contributing 4 percent. The shared-risk defined benefit plan would match the existing pension benefits offered to new hires as part of Group B, but would use a 5.5 percent assumed rate of return and 2 percent inflation assumption to determine normal cost and would split the ADC 50/50 between the employer and employee. For the purpose of this analysis, we will assume that half of new employees elect to join the DC plan and half select the shared-risk DB plan.

The normal cost for this shared-risk defined benefit plan would be about 20.8 percent of payroll, with 10.4 percent paid by the employer and 10.4 percent paid by the employee. Similar plans in Arizona and Michigan require that any potential unfunded liability amortization payments

that might accrue specific to the new hire plan—perhaps referred to as “Group C”—would be split equally between the employer and employee, in addition to the normal cost.

- Cost Forecast:** As shown above, the choice-based retirement plan will yield moderate savings for COAERS over the long run. This is largely due to the fact that the choice-based retirement system is based on conservative assumptions that, while unlikely to underperform and create further unfunded liabilities, is still more expensive for the employer than the current, underpriced DB plan. Over the next 20 years, as members of Groups A and B leave the system, most of the ADC will go to fund the DC and risk-sharing DB plan.
- Liability Forecast:** The Scenario 4 analysis shows that the total AAL will increase relative to the current baseline, but this is largely due to the fact that new DB members are placed into a plan with more conservative assumptions used to measure the plan’s liabilities.

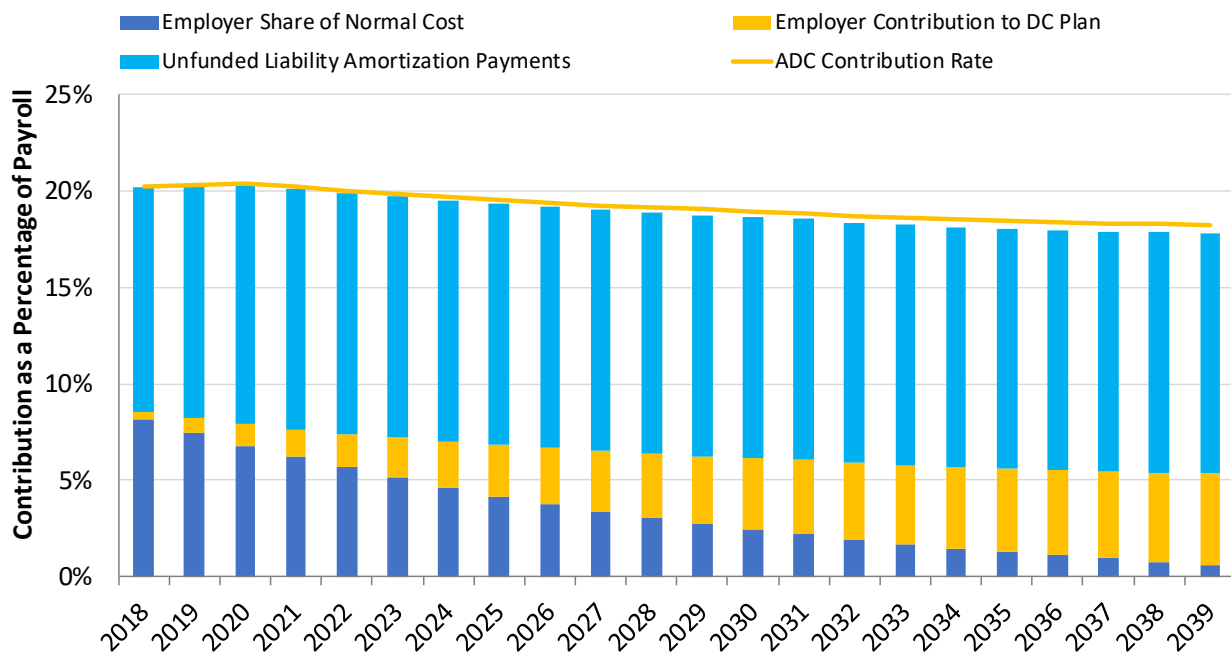
Table S4: Cost/Savings Analysis

	Average Actuarially Determined Contribution ( percent of payroll)			Cumulative Employer Contributions (in millions)		
	Current Plan Design	Choice-Based Plan	Increase/(Decrease)	Current Plan Design	Choice-Based Plan	Increase/(Decrease)
<b>5 Years</b>	20.22 %	20.14 %	(0.08 %)	\$ 710.0	\$ 707.1	(\$ 2.9)
<b>10 Years</b>	19.87 %	19.73 %	(0.15 %)	\$ 1,544.3	\$ 1,532.4	(\$ 11.9)
<b>20 Years</b>	19.27 %	19.03 %	(0.24 %)	\$ 3,693.2	\$ 3,641.6	(\$ 51.7)
<b>30 Years</b>	16.37 %	16.05 %	(0.32 %)	\$ 5,457.2	\$ 5,327.3	(\$ 130.0)

Source: Pension Integrity Project Roll Forward Analysis Based on COAERS Valuation Reports

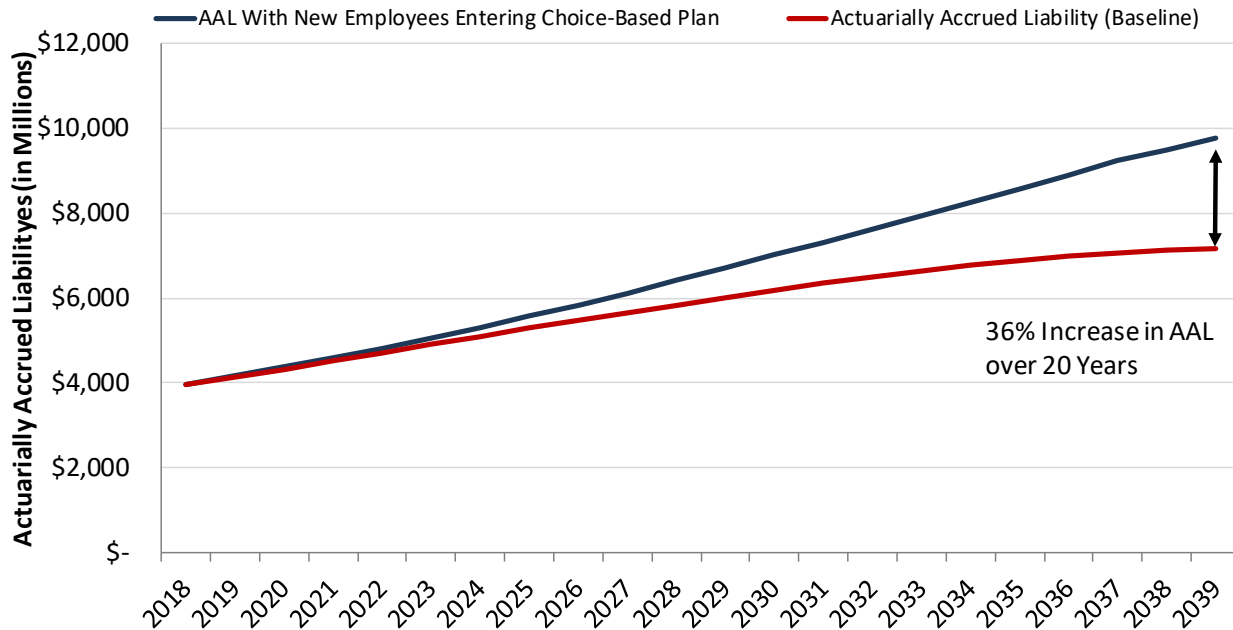
**Scenario 4: Employer Contribution Rate Based on Enrolling New Hires in a Defined Contribution Plan**

Based on 4% Employer- and 8% Employee-Defined Contribution with 5.5% ARR and 2% Inflation for New Hires



Source: Pension Integrity Project Roll Forward Actuarial Analysis Based on COAERS Valuation Reports

### Scenario 4 Analysis: Comparing Change in Accrued Liabilities by Enrolling New Employees in a Choice-Based Plan, 2018 to 2039



Source: Pension Integrity Project Roll Forward Actuarial Analysis Based on COAERS Valuation Reports

However, the increase in the total liability relative to the baseline is gradual, as the liabilities for members of Groups A and B are measured using the previous plan's assumptions.

### Conclusion

COAERS's \$1.3 billion unfunded liability wasn't created overnight, and it won't be paid down overnight either. The work required to redesign benefits to ensure retirement security while not breaking Austin's budget will be a difficult process. Even if a new, sustainable plan is created, the legacy debt must still be addressed for the pension crisis to be ended.

Complacency and inaction by policymakers are—in part—a cause of the crisis. Despite raising the statutory contribution rates, by not making them a function of the required contribution necessary to fully fund the plan, Austin chronically underfunded COAERS and runs the risk of doing so in the future. Commitment to funding on an ADC basis is an important first step on the path to solvency.

But making the ADC is only helpful if the ADC is properly calculated. By using assumptions that have not panned out in the past and are unlikely to be realized in the future, COAERS has created a scenario where a comprehensive update to the assumptions used is necessary.

There are some positive signs on this front. Updating the mortality tables and ARR are a positive step, but the latter change should have been more aggressive and updated both the inflation assumption to the historic average of 2 percent and the real rate of return to a point where it was closer to, at most, 6 percent. In part, these assumption changes are making up for lost time. But, on the other hand, the reality of the “new normal” and the potential for low payroll and revenue growth in the future means COAERS must adopt far more conservative assumptions and consider placing new hires into a new retirement plan design with more options for employees and less financial risk for the city.

If reality exceeds the expectations set by the more conservative assumptions, and more money goes into the plan, then perhaps COAERS can consider using more generous assumptions down the line. But, even if overperformance occurs, conservative assumptions are necessary to bring more money into the plan. Commitment to using any excess revenues or other sources of monies to pay down pension debt will go a long way, but building in assumptions that not only shield the plan's solvency from negative shocks, in addition to accelerating debt repayment, is necessary to end the current crisis.

Resolution of this issue will require pain in the short term and political courage to make the decisions that will hurt today, but will preserve retiree benefits and Austin's budget in the long run. ★

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