CENTER FOR MUNICIPAL FINANCE

From High to Low:

Understanding How the Education Retirement Board of New Mexico Became Underfunded

THE UNIVERSITY OF CHICAGO
Harris Public Policy

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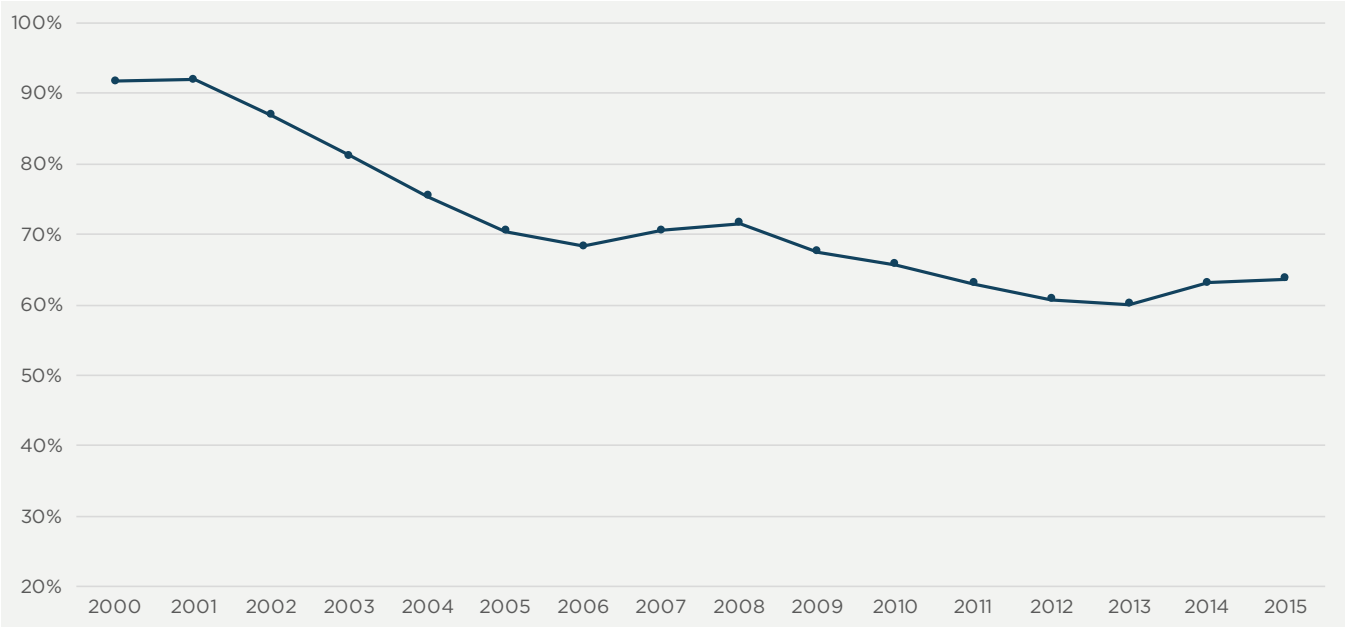
INTRODUCTION

In 2000, the Education Retirement Board of New Mexico (NMERB) was a well-funded public pension plan with a funded ratio of 91.6%, as shown in Figure 1. Over the ensuing years, the funded ratio rapidly fell as NMERB's unfunded liabilities increased from $624.8 million in 2000 to $6.5 billion by the end of fiscal year 2015. We sought to understand the factors the contributed to NMERB's $5.9 billion increase in unfunded liabilities between 2000 and 2015. From our analysis, we found that the most significant factors were poor investment performance and insufficient contributions. Investment performance resulted in a $3.2 billion increase in NMERB's unfunded liabilities, while insufficient contributions led to a $1.9 billion increase between 2000 and 2015. Growth due to poor investment performance occurred in the aftermath of two different

FIGURE 1

NMERB Funded Ratio History



recessions, while growth due to insufficient contributions began in 2005. The remainder of this report analyzes the main drivers that led to the decline in NMERB's financial condition between 2000 and 2015.

OVERVIEW OF THE EDUCATION RETIREMENT BOARD OF NEW MEXICO AND FACTORS AFFECTING GROWTH IN UNFUNDED LIABILITIES

The Education Retirement Board of New Mexico was created in 1978 to provide retirement benefits to employees of the state's public schools and higher-education institutions.[1] In 2015, NMERB provided benefits to education employees from 216 employers and served more than 146,000 members.[2] Table 1 highlights the demographics and finances of the NMERB as of fiscal year 2015.

At the end of 2000, NMERB had $6.84 billion in assets and $7.46 billion in liabilities.[3] Over the period of analysis (2000-2015) NMERB's assets grew by $4.63 billion, while its liabilities increased by $10.55 billion. As Table 1 demonstrates, by the end of 2015, NMERB had $11.47 billion in assets and $18.01 billion in liabilities, meaning that the plan was underfunded, with a funded ratio of approximately 63.7%.

To understand what factors contributed to growth in NMERB's unfunded liabilities, we analyzed data from its annual Actuarial Valuation reports (for detailed methodology see Appendix A). We grouped data that accounted for year-to-year changes in unfunded liabilities into the following five categories:

Actuarial Assumptions
This category accounts for changes to actuarial assumptions, including changes to the investment rate assumption and mortality projections.

Actuarial Experience
This category accounts for differences between actuarial assumptions and actual experience concerning salary changes, termination rates, mortality rates, and other actuarial assumptions

Benefit Changes
This category accounts for changes to the formula used to determine pension benefits and the cost-of-living adjustment; a positive number indicates benefit enhancements while a negative number indicates a benefit reduction.

Insufficient/(Excess) Contributions
This category accounts for differences between actual contributions and an amount that equals the

TABLE 1

Demographics and Finances of NMERB as of Fiscal Year 2015

# Current Employees	# Retirees and Beneficiaries	Average Benefit	Assets ($ Billions)	Liabilities ($ Billions)	Unfunded Liabilities ($ Billions)	Funded Ratio
60,998	44,043	$22,585	$11.47	$18.01	$6.54	63.7%

[1] 2015 CAFR Page 9
[2] Members include current employees, retirees and other beneficiaries, and inactive employees. 2015 CAFR Page 11
[3] 2001 Actuarial Valuation Page 8

employer normal cost plus interest on unfunded liabilities;[4] a positive number indicates the actual employer contribution was below what was needed to prevent growth in unfunded liabilities. This category also includes changes to unfunded liabilities caused by legislation that imposed restrictions on employer contributions, and further caused contributions to be less than what was needed to prevent growth in unfunded liabilities.

Investment Performance

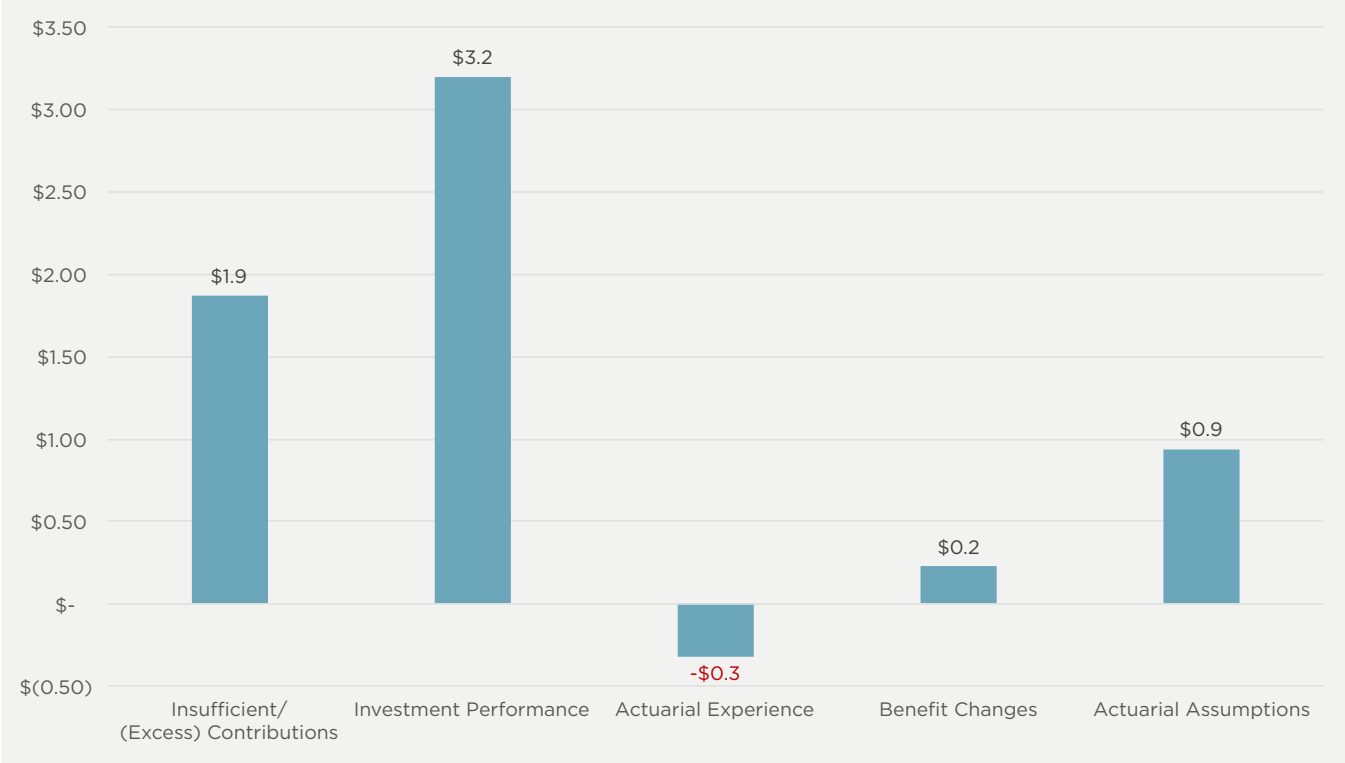
This category accounts for differences between actual investment returns[5] and actuarial projections; a positive number indicates that the actual investment performance was less than actuarial projections. Growth in unfunded liabilities due to poor investment performance can occur for two reasons: (a) investment losses, and (b) the actuarial return being less than the investment rate assumption. Due to data limitations, it was not possible to differentiate between underperformance and actual investment market losses.

The specific factors and their corresponding categories are detailed in Table 4 in Appendix A.

Figure 2 shows the five factors that contributed to NMERB's growth in unfunded liabilities between 2000 and 2015. The primary reasons for the growth in unfunded liabilities were insufficient employer contributions and investment underperformance. Poor investment returns increased unfunded liabilities by $3.2 billion, or 54% of the total change in unfunded liabilities. The second factor, insufficient contributions, resulted in a $1.9 billion increase in unfunded liabilities, 32% of the total change.

FIGURE 2

Factors Contributing to Changes in NMERB's Unfunded Liabilities between 2000 and 2015 ($5.9 billion)



[4] Note: this does not compare the actual contribution to the Actuarially Required Contribution (or Actuarially Determined Contribution, which has replaced the ARC). The actuarial contribution in determining the changes to unfunded liabilities is interest on the unfunded liabilities plus normal cost ("normal cost + interest").

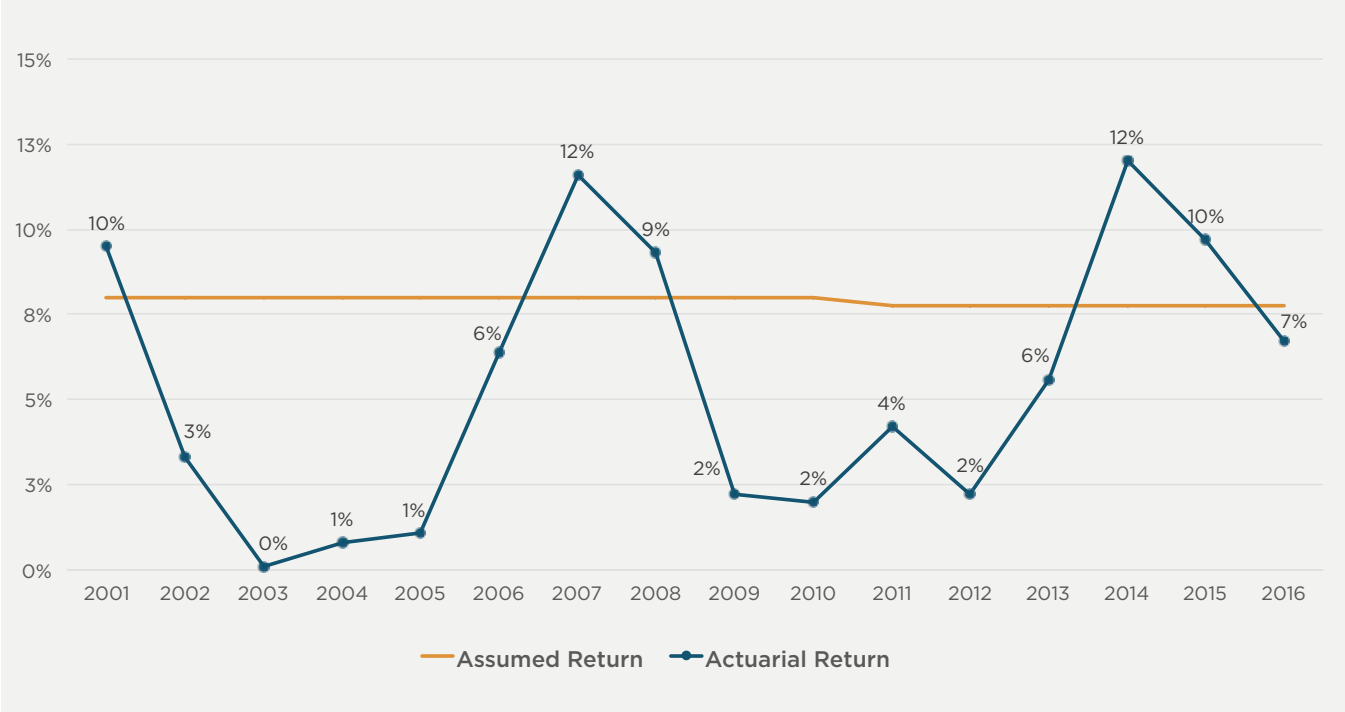
[5] In this report, we use the phrases "actual investment return" and actuarial rate of return interchangeably. It is important to note, however, that the actuarial rate of return is different than the market rate of return.

FIGURE 3

Annual Market Returns

FIGURE 4

Investment Performance



GROWTH IN UNFUNDED LIABILITIES DUE TO INVESTMENT UNDERPERFORMANCE

Poor investment performance was the largest contributor to NMERB's growth in unfunded liabilities between 2000 and 2015, accounting for 54% of the total $5.9 billion increase. Figure 3 shows NMERB's market rate of return on investments between 1995 and 2015. The impact of the two recessions in the 2000s is reflected by the negative return rates in 2001, 2002, 2008, and 2009.

Although actual market returns provide directional information about investment performance, pension funds often do not use these figures to determine unfunded liabilities. Instead, an "actuarial value of assets" is typically determined. The actuarial value of assets is based on comparing expected investment returns with the actual results. Investment gains or losses that differ from the projected investment performance are often smoothed over several years, rather than being absorbed in just one year. NMERB calculates its actuarial value of assets by smoothing excess investment gains and losses over a five-year period.[6]

The actuarial return is different than the market return because it is based on the actuarial value of assets. Since the actuarial return is directly tied to NMERB's financial condition it is instructive to examine it. Figure 4 compares NMERB's actuarial return and its investment rate assumption, which was 8% from 2001-2010 and then decreased to 7.75% for years 2011-2015. As Figure 4 shows, NMERB's actuarial return was below its investment rate assumption 11 times between 2001 and 2015.

The average actuarial return for the 15 years we examined was 5.33%, well below NMERB's average investment rate assumption (7.92%). The difference between the investment rate assumption and actuarial returns resulted in significant growth in NMERB's unfunded liabilities between 2000 and 2015.

INSUFFICIENT CONTRIBUTIONS

Insufficient employer contributions increased NMERB's unfunded liabilities by $1.9 billion between 2000 and 2015. This category accounts for 32% of the total growth in unfunded liabilities over that period.

New Mexico state law specifies contribution rates for both employers and employees. The contributions are fixed rates of pay, meaning they do not change from year-to-year. Further, because the contribution rates are fixed, legislative action is required to change them.

The benefit of the fixed contribution rates is that employer contributions are statutorily guaranteed and not determined as part of the budget process. However, a deficit is that the contribution rates are not directly tied to NMERB's financial condition or the cost of benefits being earned by current employees, meaning they are not responsive to growth in unfunded liabilities.[7]

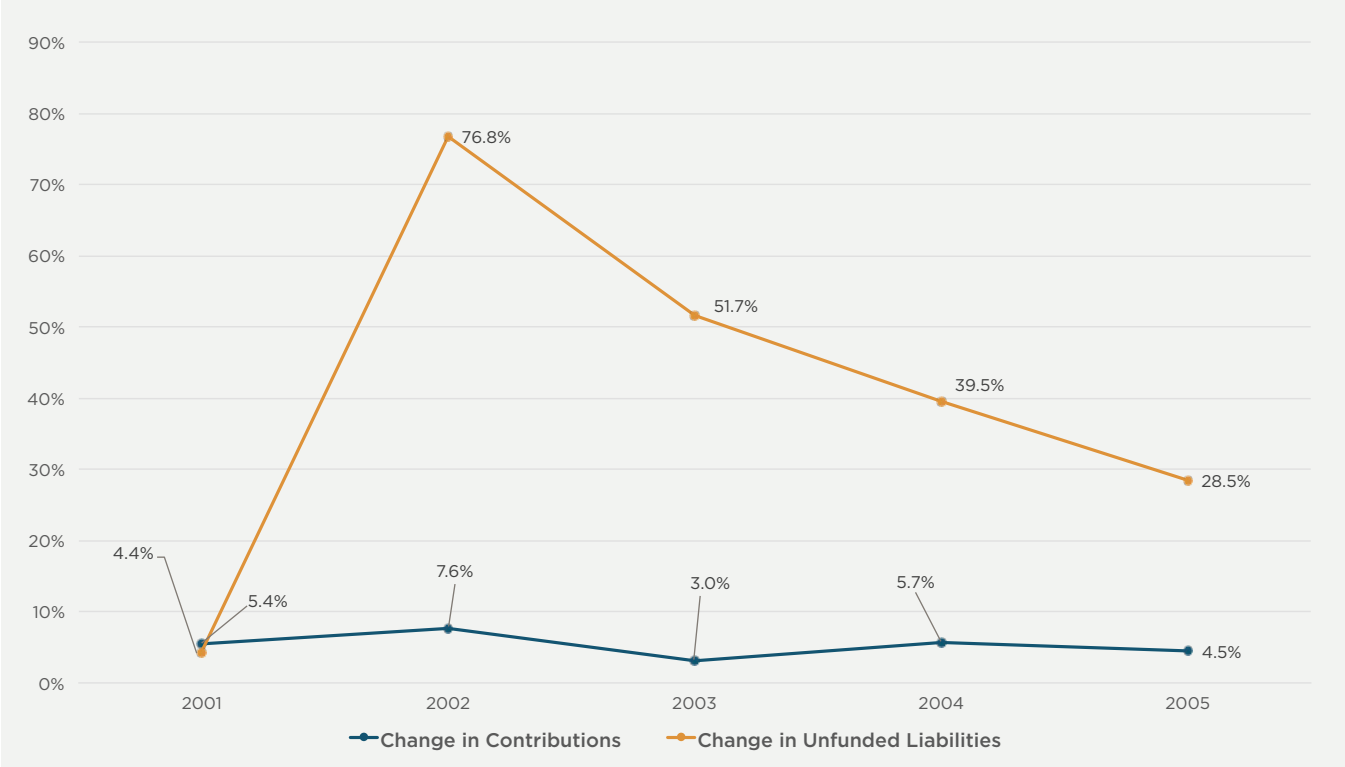
Until legislation was passed in 2005 (Senate Bill 181), employees contributed 7.6% of their

[6] The amount that is smoothed is determined by comparing the actual return with the investment return. For example, in 2013, NMERB's actual net earnings was $1 billion and the expected return was $723.65 million (p. 18 of the 2013 Actuarial Valuation). This meant that in 2013 NMERB's "excess return" was $282.23 million, and that $282.23 million excess return will be absorbed over five years.

[7] Often employer contributions change from year-to-year and are based on a funding plan. Typically, the employer contribution is an amount that covers the annual normal cost (less employee contributions) and an amount to pay down any unfunded liabilities (referred to as the "amortization contribution"). The normal cost is the estimated cost of benefits

FIGURE 5

Year-to-Year Change in Unfunded Liabilities and Employer Contributions



salary for their pension benefits, and the employer contribution rate was 8.65%. The contribution rates had been the same since 1985 for employees and 1994 for employers.[8] NMERB's fixed employer contribution rate differs from many other public pension funds in which the employer contribution rate varies from year-to-year and is tied to the cost of benefits and amortization of unfunded liabilities. In other words, with most pension systems as unfunded liabilities increase so too do employer contributions.

The fixed contribution rates were problematic because between 2000 and 2005 NMERB's unfunded liabilities increased by $2.5 billion. In just one year (2001 to 2002), unfunded liabilities increased by 77%, while contributions increased by 7.6%, as shown in Figure 5. It is important to note that the significant growth in unfunded liabilities between 2001 and 2002 was not due to insufficient employer contributions; the growth during that time was due to investment underperformance and actuarial experience. The purpose of Figure 5 is to demonstrate that employer contributions did not change in tandem with changes in NMERB's financial condition.

Since the contributions did not increase in line with changes in the unfunded liabilities this meant that without legislative action NMBER's financial condition would continue to deteriorate. Concern over NMERB's future led lawmakers to pass Senate Bill 181 in 2005, which increased both employee and

for an employee that is credited to the current year. The amortization contribution is dependent on the size of unfunded liabilities and the number of years, or amortization period, that a plan has committed to pay off its unfunded liabilities.

[8] See NMERB's contribution rate history: https://www.nmerb.org/pdfs/C.%20Contribution%20Rate%20schedule2017.pdf

TABLE 2

Employee and Employer Contribution Rates per Senate Bill 181 (2005)

Year	Employee	Employer
2005	7.6%	8.65%
2006	7.675%	9.40%
2007	7.75%	10.15%
2008	7.825%	10.90%
2009	7.9% (permanent rate)	11.65%
2010	7.9%	12.40%
2011	7.9%	13.15%
2012	7.9%	13.9% (permanent rate)

employer contribution rates. Table 2 shows the contribution rate schedule set by Senate Bill 181.

As Table 2 highlights the employer contribution rate was supposed to increase between 2008 and 2012. However, due to the 2007-2009 recession lawmakers subsequently passed several pieces of legislation that reduced employer contributions rates for fiscal years 2010 through 2014.[9] While employer contribution rates were decreased, the contribution rate for employees with salaries above $20,000 was increased. Table 3 compares actual employer and employee contribution rates between 2005 and 2015 with the contribution rates set by Senate Bill 181.

The idea behind the changes in contribution rates was to swap higher employer contributions with higher employee contributions; however, NMERB pointed out that an employee dollar is actually only worth 95 cents—in other words, it was not a true one-for-one swap.[13] Further, the actual combined employee and employer contribution rates for fiscal years 2011, 2012, and 2013 were less than they would have been under Senate Bill 181 of 2005. As a result, the changes to the employer contribution rates between 2006 and 2015 added to growth in NMERB's unfunded liabilities.

The current contribution rates are: 13.9% of salary for employers, 10.7% for employees with salaries above $20,000, and 7.9% for employees with salaries of $20,000 or less. The contribution rates are supposed to be sufficient to cover the normal cost and to amortize the unfunded liabilities. However, how long it will take to amortize the unfunded liabilities fluctuates. NMERB changed the amortization period for its funding policy frequently between 2000 and 2015; for example,

[9] The specific legislation that changed employee and employer contribution rates were: House Bill 854 of 2009, Senate Bill 91 of 2010, House Bill 628 of 2011, and Senate Bill 115 of 2013.
[10] The higher contribution rates are only applicable to employees with salaries above $20,000.
[11] For 2012 and 2013 the contribution rate differed based on employee salary—the lower employer contribution rate is for salaries above $20,000.
[12] For 2012 and 2013 the contribution rate differed based on employee salary—the lower employer contribution rate is for salaries above $20,000.
[13] See p. 5 of the Fiscal Note to House Bill 854 of 2009.

TABLE 3

Employee and Employer Contribution Rates

(Rates Different than SB 181 in Bold)

Year	Employee, Under SB 181	Employee, Actual [10]	Employer, Under SB 181	Employer, Actual
2005	7.6%	7.6%	8.65%	8.65%
2006	7.675%	7.675%	9.40%	9.40%
2007	7.75%	7.75%	10.15%	10.15%
2008	7.825%	7.825%	10.90%	10.90%
2009	7.9%	7.9%	11.65%	11.65%
2010	7.9%	**9.4%**	12.40%	**10.9%**
2011	7.9%	**9.4%**	13.15%	**10.9%**
2012	7.9%	**11.15%**	13.9%	**9.15%/12.40%** [11]
2013	7.9%	**9.4%**	13.9%	**10.9%/12.40%** [12]
2014	7.9%	**10.1%**	13.9%	**13.15%**
2015	7.9%	**10.7%**	13.9%	**13.90%**

it was set at 45 years in 2009 and then set at 62.5 years in 2010. Its amortization funding period—meaning the time it will take to pay off unfunded liabilities— was 43.2 years as of fiscal year 2015. An amortization period of 43 years means that NMERB's funding policy differs from actuarial standards [14] and in the short-term is likely to result in continued growth in unfunded liabilities.

Deficit between ARC and Actual Contributions

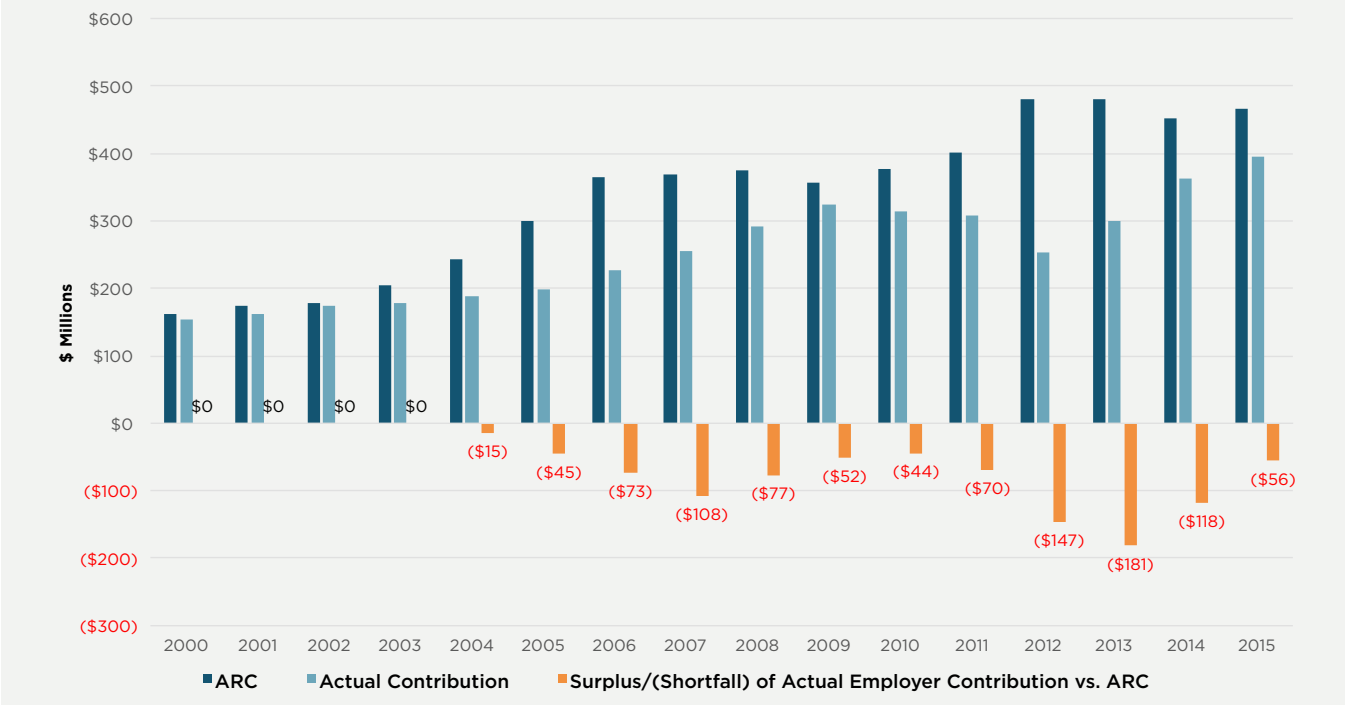
One way to evaluate employer contributions is to compare them with the Actuarially Required Contribution (ARC). The ARC is a financial reporting figure required by the Governmental Accounting Standards Board (GASB) and is the amount of money needed to cover the employer normal cost and amortize unfunded liabilities over 30 or 40 years.[15] As unfunded liabilities increase so too does the ARC. It is important to note that the ARC is not what employers are required to contribute to their public pension funds, and as previously mentioned employer contributions for NMERB are set by state law. Figure 6 compares actual employer contributions with the ARC between 2001

[14] Actuarial standards call for amortizing unfunded liabilities over 30 years.

[15] The ARC was a requirement per GASB Statements 25 and 27. GASB Statements 25 and 27 were replaced by Statements 67 and 68. Under Statements 67 and 68 the ARC has been replaced with the Actuarially Determined Contribution (ADC). PA-PSERS began reporting the ADC in fiscal year 2016. The ARC amortization period was 40 years for fiscal years 2000-2006 and 30 years thereafter.

FIGURE 6

Annual Required Contribution and Actual Contribution



and 2015, and highlights how contributions were less than the ARC for most years.

As Figure 6 highlights, actual employer contributions declined from 2009 to 2013, which occurred in tandem with decreases in NMERB's funded ratio. As employer contributions have increased in recent years so too has NMERB's funded ratio, which increased from 60.1% in 2013 to 63.7% at the end of 2015.

CONCLUSION

While NMERB had been underfunded during the 1990s, strong investment performance in the latter half of the decade led to improvement in its funded ratio.[16] Unfortunately, the combination of poor investment returns and static contribution rates led its funded ratio to decrease through the first half of the 2000s. By 2006 NMERB's funded ratio had fallen below 70%. While NMERB's financial condition improved slightly in 2007 and 2008 those gains were quickly reversed by the 2007-2009 recession and decreased employer contributions. While employer contribution rates have increased in recent years it is likely this will be an ongoing challenge for NMERB as contribution rates are not responsive to changes in NMERB's financial condition. This means that lawmakers would have to increase contributions through legislation should NMERB's financial condition decline significantly, which could be politically difficult should a decline coincide with other financial pressures.

[16] NMERB's funded ratio was 72.1% in 1995.

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ABOUT THE CENTER

The Center for Municipal Finance bridges academia and the public sphere for enhanced transparency, tested strategies, and a rigorous approach to understanding public finance–an approach that's a hallmark of the University of Chicago Harris School of Public Policy.

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Appendix A
Research Methodology

All financial data used in this report is from NMERB's annual Actuarial Valuations (AV) for the years 2001-2015. We collected all AVs from the Center for Retirement Research's Public Plans Data site. Our methodology analyzing PA-PSERS' change in unfunded liabilities is similar to that used by Alicia H. Munnell, Jean-Pierre Aubry, and Mark Cafarelli in their 2015 brief "How Did State/Local Plans Become Underfunded?"

TABLE 4

Factors for Growth in NMERB's Unfunded Liabilities and Corresponding Category

Factor from AV Report	Center for Municipal Finance Category	Explanation/Details
Assumptions	Change in Actuarial Assumption or Methodology	Assumption changes occurred in seven different years: 2001, 2003, 2005, 2011, 2013, and 2015.
Benefit Change	Benefit Changes	This factor accounts for change in unfunded liabilities due to the benefit changes in Senate Bill 115 of 2013, House Bill 631 of 2009 and House Bill 573 of 2009.
COLA	Actuarial Experience	The COLA is tied to inflation, and the actuarial reports for 2013, 2014, and 2015 included a separate line-item for decreases in the unfunded liability due to the COLA being less than expected.
Insufficient/(Excess) Employer Contribution to Cover Interest on Unfunded Liabilities	Insufficient/(Excess) Contributions	The Center for Municipal Finance created this factor and it is the difference between actual contributions and the normal cost + interest on unfunded liabilities figure.
Investment Return	Investment Loss/(Gain)	Change in unfunded liabilities due to the actuarial rate of return being different from the investment rate assumption.
Liability Experience	Actuarial Experience	This is the difference between actuarial assumptions and experience for factors such as salary, mortality, and retirement rates.

From the AVs, we collected data for factors in growth on unfunded liabilities, which specifically came from the "Analysis of Changes in Unfunded Accrued Liability" tables. Once collected each factor was grouped into one of the five categories, Table 4 shows each factor, corresponding category, and any relevant details.

Once that data was collected for each year and grouped into the Center's five categories, we summarized it to get totals for each of category. We then determined which categories were the main drivers of growth in unfunded liabilities. We identified which categories were most significant by examining them as a percentage of total change in unfunded liabilities between 2000 and 2015.

In addition to factors in the growth of unfunded liabilities we also collected the following data from the AVs: liabilities, assets, investment return (both market and actuarial), ARC, actual contributions, assumptions (investment rate and inflation rate), funded ratio, and qualitative data (like descriptions of legislative changes and the method for determining the employer contribution). Last, we supplemented our understanding of legislative changes and rules for determining employer contributions by examining state laws, legislation, and Comprehensive Annual Financial Reports.


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