



PENSION DEBT:
The Billion Dollar Problem
Still Threatening Omaha

BY TRUONG BUI, DANIEL TAKASH, AND ANTHONY RANDAZZO

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About the Authors

Anthony Randazzo is managing director of the Pension Integrity Project at Reason Foundation.

Truong Bui is a policy analyst at the Pension Integrity Project.

Daniel Takash is a policy analyst at the Pension Integrity Project.



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Executive Summary

In 2015, the city of Omaha took a positive step toward curbing unfunded pension liabilities that threaten the city's budget, its ability to continue providing the current level of public services, and the solvency of pension plans for city employees. The creation of a cash balance plan for the civilian employees in Omaha puts a cap on the growth of future obligations, and reduces the taxpayer liability to guaranteeing just a 4% rate of return. At the same time, however, the remaining defined benefit plan is still assuming an unrealistic 8% rate of return, an actuarial assumption that leaves in place the threat of growing pension debt. And the city's plan for public safety employees—with roughly three times the unfunded liabilities as the civilian employee plan—remains unchanged and still exposed to the risks of underfunding, undervalued liabilities, and underperforming investments.

Introduction

Since 2007, Omaha's pension plans have been assuming that investment returns on the assets of pension fund members would earn an average return of 8% a year.¹ In 2015, however, the plans earned a return of just 0.2% for the Police and Fire Retirement System (PFRS) and 3.1% for the Employees' Retirement System (ERS), and the actuary for the plans reported that 2016 would need to see a return of 13% in order to put them on their expected 8% rate of return pace.² Strong evidence suggests that the actual return for 2016 will be considerably lower than that, and almost certainly will be less than the expected 8% again.³ And in the process, taxpayers will see millions of dollars of unfunded liability added to the city's two defined benefit plans.

While one or two years of investment returns should never be the singular focus when analyzing a pension plan, the past two years are representative of both the historic underperforming trend for Omaha's pension plans, as well as the forecasted future of lower expected returns for pension funds than even the past. The unfortunate reality is that despite changes made to Omaha's retirement systems in 2015, growing pension debt remains a considerable threat in the coming years absent further reform.

The good news for Omaha is that things could be worse. In 2015, Mayor Jean Stothert signed a collective

bargaining agreement with civilian labor unions that, in part, created a new "cash balance" retirement plan for new members of the ERS. This cash balance plan guarantees a 4% rate of return on contributions to member's retirement accounts and shares 75% of investment returns above 7% with plan members. Thus, every member hired after March 1, 2015, when this cash balance plan was adopted, is an employee whose pension liabilities are not exposed to the actuarial assumptions of the civilian defined benefit plan.⁴

While the data is not yet final, general market returns during the 2016 fiscal year suggest that Omaha will certainly see market rates of return less than the assumed 8% return target. As such, we can safely assume that unfunded liabilities are going to be lower in 2017—if even by a small amount—than if the cash balance plan had not been implemented.

That is the extent of the good news for Omaha, though, as we outline in this report. The PFRS saw its unfunded liabilities grow by \$40.7 million during fiscal year 2015, and it remains exposed to even further pension debt growth. Changes made to benefits in 2010 and 2013 slightly reduced the growth of unfunded liabilities, but they did not fundamentally change the underlying funding policy factors that have been the drivers of unfunded liabilities. Plus, while the adoption of a cash

balance plan for new civilian hires in 2015 was a positive step toward meaningful pension reform, the funding policy for the existing plan must be adjusted in order to prevent the existing liabilities from experiencing continued underfunding. Thus, there are several other steps that should be taken in order to protect Omaha's taxpayers from seeing their tax dollars consumed by unfunded liability amortization payments.

As of January 2016, Omaha's defined benefit pension plans have \$835 million in pension debt, as shown in Table 1. The PFRS plan is the larger of the two defined benefit plans with 1,310 members and 74% of the reported value of all pension benefits guaranteed by Omaha's taxpayers. This means PFRS is the larger threat to Omaha's taxpayers and budget. ERS is now divided into a defined benefit plan (DB plan) with 1,073 members that is still significantly underfunded and cash balance plan (CB plan) that is in its infancy with 121 members.

In 2014, we highlighted several problematic trends associated with Omaha's billion-dollar problem.⁵ In this new report, we identify three underlying causes for the pension debt weighing down Omaha. Then, we use actuarial analysis to show how much worse the pension debt problem is likely to get in the coming years without finishing the process of pension reform. Finally, we outline what the scope of completed pension reform should look like for the city of Omaha.

Part I: The Problems Creating Need for Further Reform

Both the Omaha defined benefit pension systems for public safety and civilian employees in Omaha are dangerously underfunded. As shown in Figure 1, the city-reported funded ratio for the combined plans is only 50%, as of January 2016. This means the defined benefit plans have saved only half of the assets needed to pay the promised benefits, based on the reported present value of all future promised pension checks. Over the past 20 years, Omaha has seen the funded ratio of its pension plans fall precipitously from almost 100% funded, to the current situation with \$835 million in combined debt.

Where did these unfunded liabilities come from? The actuarial reports for the pension systems provide detailed information that reveals the different factors creating the funding discrepancies for the two pension systems. Figures 2 and 3 provide a visual of this data for PFRS and ERS respectively.

As shown in the charts, the two most prominent causes of growth in the unfunded liability were shortfalls in the city's contributions to the pension systems and underperforming investment returns. The third largest contributor to the growth in pension debt has been a combination of reality differing from the plan's assumptions and the pension systems needing to change actuarial assumptions to become more realistic.

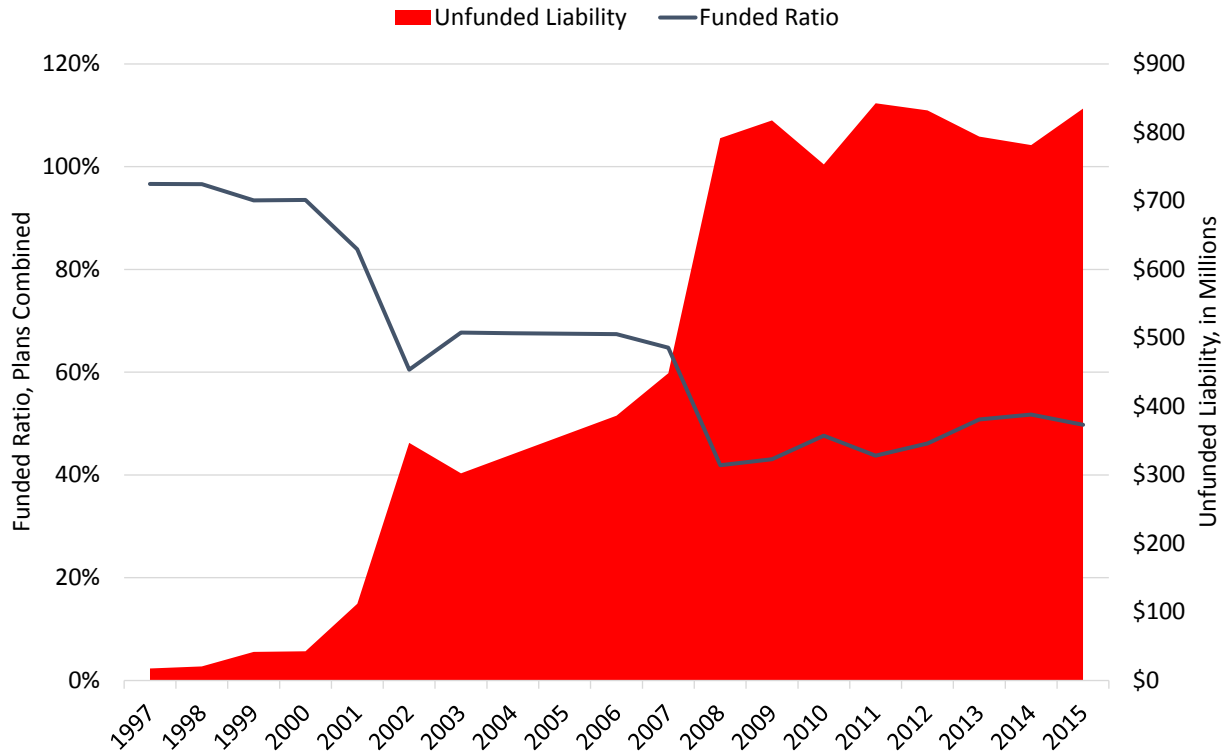
TABLE 1: Omaha Pension System Financial Summary as of January 2016 (in Millions)

Plan	Market Value of Assets	Actuarial Accrued Liability	Unfunded Liability	Funded Ratio	Pension Debt As A % of General Fund Revenue
PFRS	\$594.2 M	\$1,224.0 M	\$629.8 M	48.5%	181%
ERS DB Plan	\$232.2 M	\$437.1 M	\$205.0 M	53.1%	59%
Total	\$826.3 M	\$1,661.1 M	\$834.8 M	49.7%	240%

Source: Omaha PFRS and ERS valuations reports as of January 1, 2016.

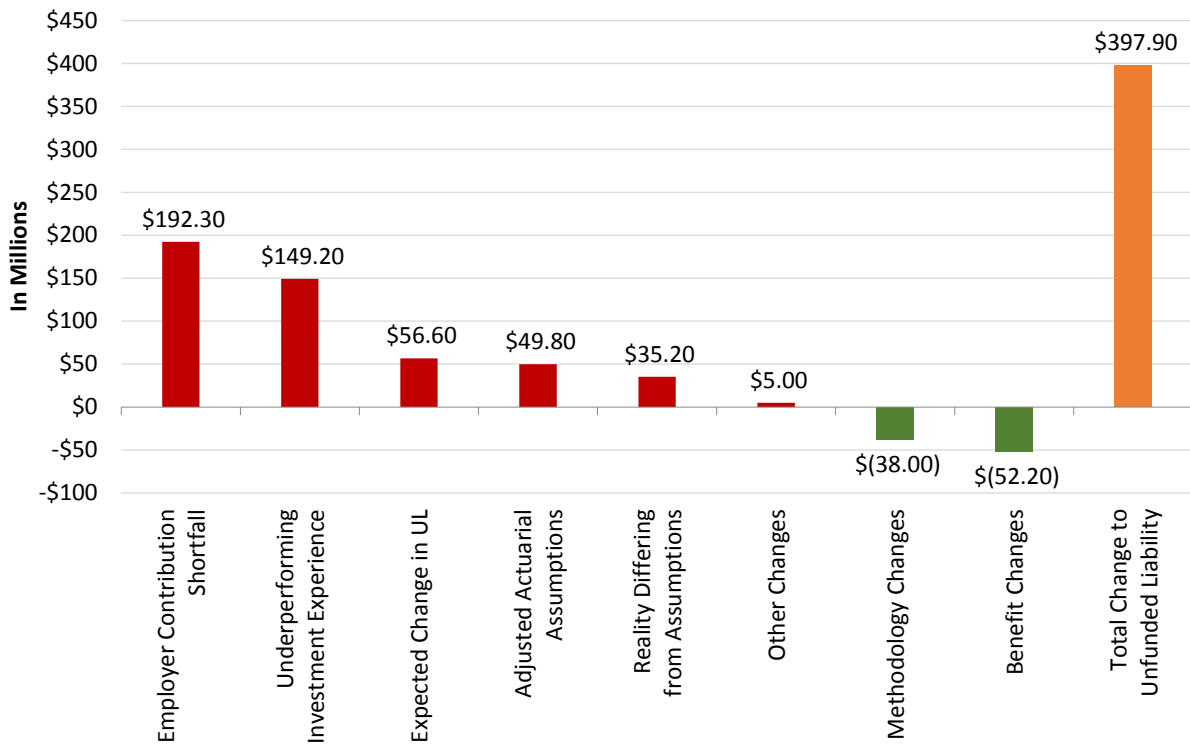
Note: The actuarial accrued liability represents the present value of all accumulated promised pension benefits. The unfunded actuarially accrued liability (simply "unfunded liability") is the difference between the value of a plan's assets and its liabilities. A common way to measure the health of a pension plan, the funded ratio is equal to the value of these assets divided by the accrued liability.

FIGURE 1: Omaha's Pension System Funding History, 1997-2015



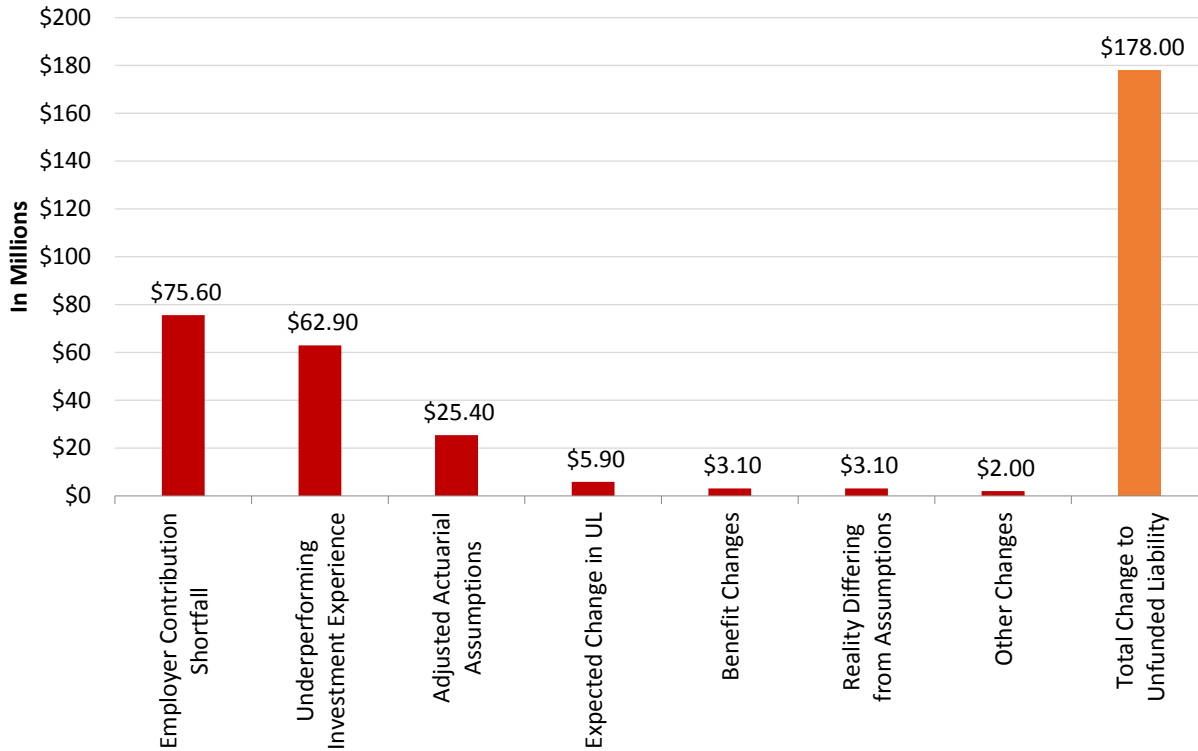
Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data (years shown are contribution year end dates).

FIGURE 2: Composition of Changes to Omaha PFRS Unfunded Liability, 2003-2015 (in Millions)



Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data.

FIGURE 3: Composition of Changes to Omaha ERS Unfunded Liability, 2000-2015 (in Millions)



Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data.

There were some positive changes for PFRS, though. In 2003, benefit enhancements increased the unfunded liabilities of plan for police and fire by about \$25 million, but benefit reductions for current and future police and fire members in 2010 and 2012, respectively, collectively reduced unfunded liabilities by about \$77 million. The net result over the past decade and a half is a combined \$52 million reduction in pension debt from changes to benefits. Still, as can be seen in Figure 2, this change has been marginal relative to the total scope of pension debt.

This leads us to three underlying causes of unfunded liability growth in Omaha: employer contribution shortfalls, underperforming investment returns, and—not explicitly visible in the above illustrations—underpriced liabilities.

Problem 1: Not Paying the Full Actuarially Determined Employer Contribution

Defined benefit pension plans are designed to be “pre-funded.” As pension benefits are earned, an amount equivalent to those earned benefits minus an expected investment return is paid into the pension fund. The

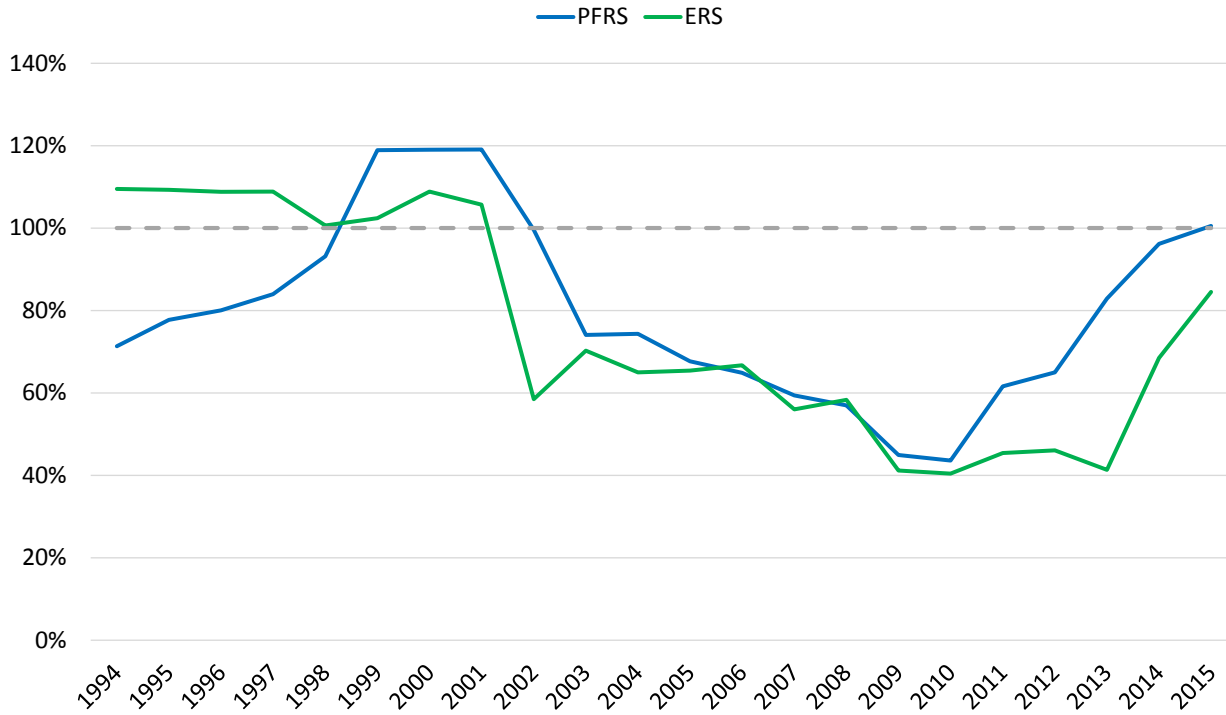
necessary amount that should be contributed in a given year is called “normal cost,” with employees paying a share of this cost out of their paychecks and the city employers picking up the rest.

Whenever actuarial assumptions about the future turn out to be wrong (or if benefits are increased without additional contributions) then a pension plan experiences an “unfunded liability,” known colloquially as pension debt, that requires amortized payments. In Omaha, the city employers pay 100% of the unfunded liability amortization payments.

The combined total of the employer’s share of normal cost and whatever the necessary unfunded liability amortization payments are for a given year is known as the actuarially determined employer contribution (ADEC).⁶

Unfortunately, Omaha has a history of not always contributing 100% of this actuarially calculated contribution rate. As shown in Figure 4, since 2001, Omaha has missed its required contribution payment every year—with the exception of 2015 for PFRS.

FIGURE 4: Omaha Percentage of Actuarially Determined Contributions Actually Paid, 1994-2015



Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data (years shown are contribution year end dates).

Since 2009, there has been steady improvement in the amount of required contributions paid, but even as the public safety pension plan’s actuarially determined contribution was paid in full, the civilian employee plan only received 84.5% of the actuarially calculated amount. Collectively, since 1994, the city has paid only 73% of the ADEC for PFRS’s, and 62% of ERS’s total ADEC.

Any time a government fails to fully pay the ADEC, it must make up those contributions at a later date as amortization payments. This shortfall is added to next year’s ADEC, and if the government chooses not to make the full payment again, the difference is added to the ADEC for the following year. Thus, failing to pay the ADEC creates a vicious cycle where choices to under contribute compound over time until it is impossible to pay the full ADEC because the required payments are too unaffordable for the city’s budget. This cycle has been allowed to develop in Omaha because there is no law forcing the city pay the actuarially determined contribution rate. The Government Accounting Standards Board (GASB) does establish accounting rules that most states and cities voluntarily choose to follow, but GASB does not enforce payment of the ADEC or any other amount.

Problem 2: Underperforming Investment Returns

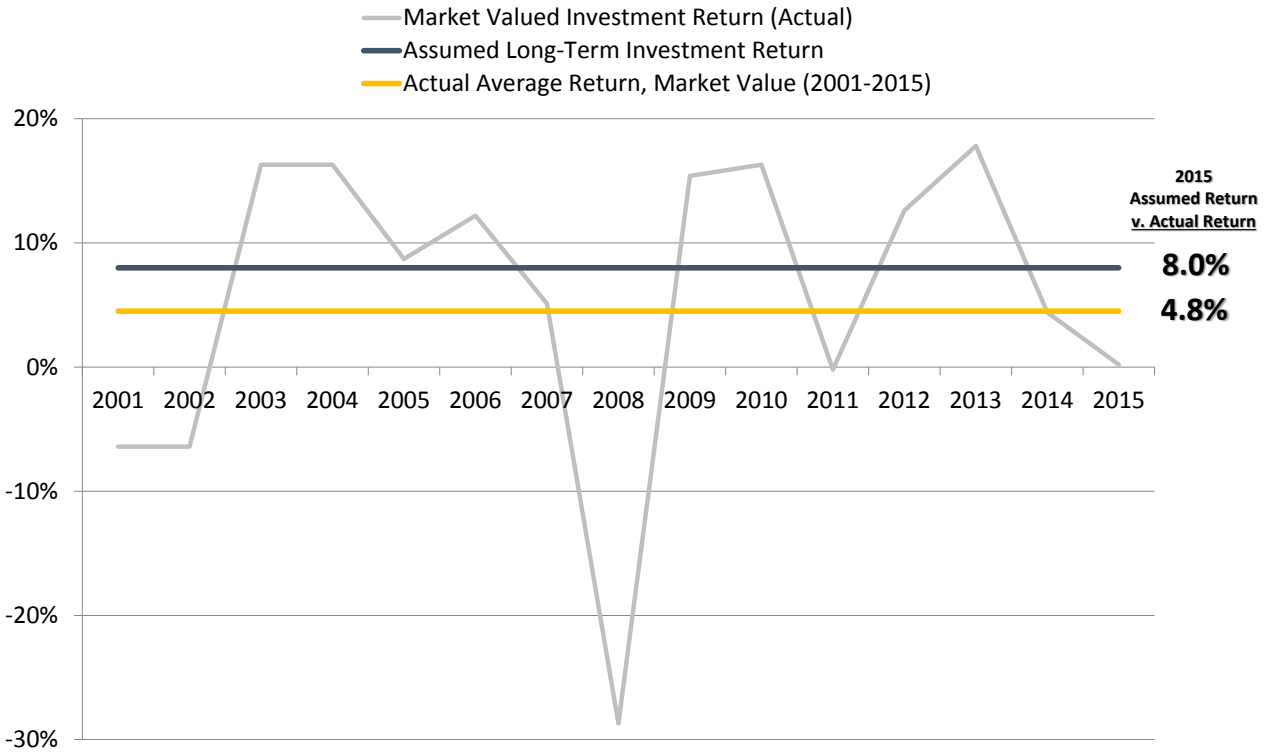
Both the PFRS and ERS have been underperforming their 8% long-term assumed rates of return. As we show in Table 2, whether we take a near-term outlook (i.e. 10-years) or long-term outlook (i.e. 20-years), the average annual returns for Omaha’s pension systems are far less than expected. The story of underperformance is clear visually too, as shown for PFRS in Figure 5 and ERS in Figure 6.

TABLE 2: Omaha PFRS and ERS Investment Return History, 1996-2015

	PFRS	ERS
Current Assumed Return	8.00%	8.00%
10 Year Average Return, 2006-2015	4.56%	4.56%
15 Year Average Return, 2001-2015	4.77%	4.78%
20 Year Average Return, 1996-2015	N/A	6.00%

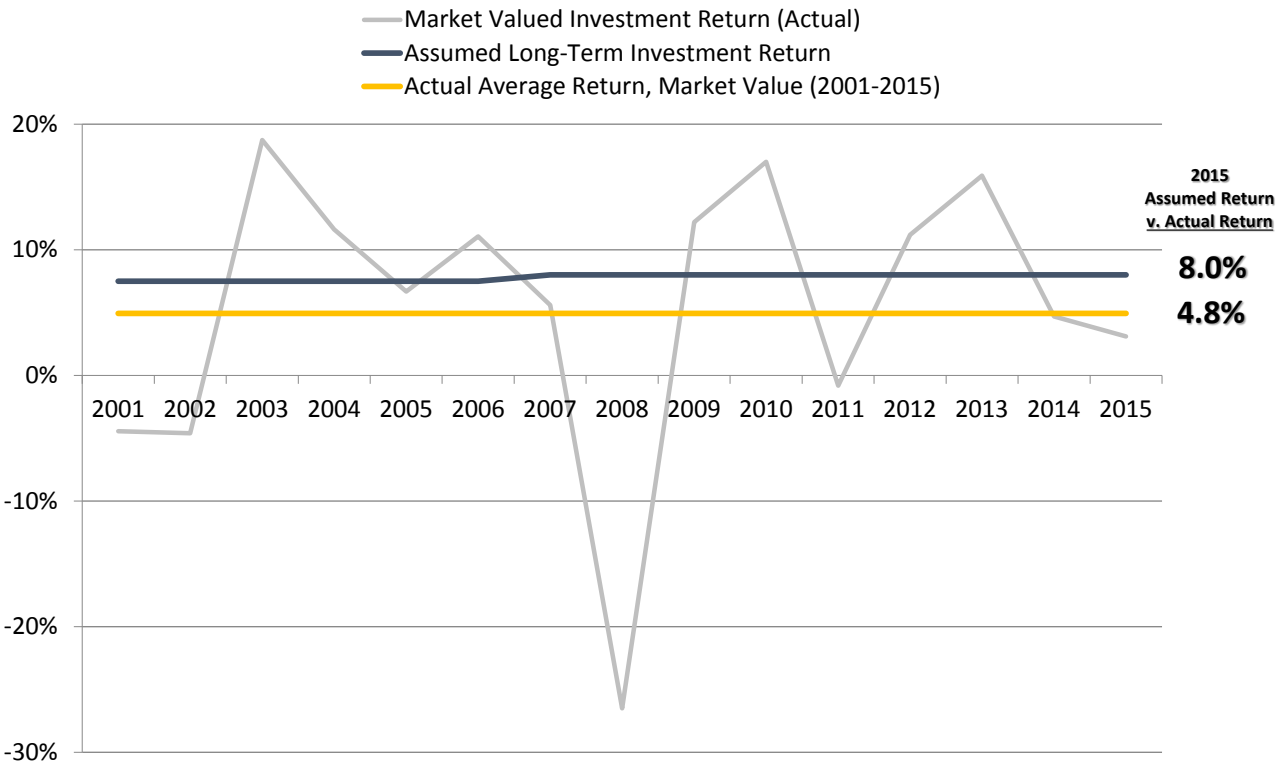
Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data. Data for a 20-year ERS analysis was determined based on experience study data. Data for a 20-year PFRS analysis was not publicly available, however because the investment returns for the two plans typically track closely, we expect a similar 20-year return for PFRS as ERS.

FIGURE 5: Omaha PFRS Historic Investment Returns & Actual Experience, 2001-2015



Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data (years shown are contribution year end dates).

FIGURE 6: Omaha ERS Historic Investment Returns & Actual Experience, 2001-2015



Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data (years shown are contribution year end dates).

Looking at the 15-year averages, returns are more than 3% below the assumed 8% return. This kind of underperformance is what is reflected in the previous figures showing \$212.1 million being added to unfunded liabilities for PFRS and ERS from investment returns not matching expectations.

Part of the reason for these losses was the negative investment experience of the financial crisis (2008-09) and dot-com bubble crash (2001-02). However, both plans saw strong periods of investment return growth in the housing bubble years, and even in some years since the financial crisis. Plus, long-term investment returns are supposed to account for significant cycles in the market.

The more substantial reason why returns have underperformed is that there have been significant shifts in the way institutional investors are earning returns on their portfolios over the past two decades.

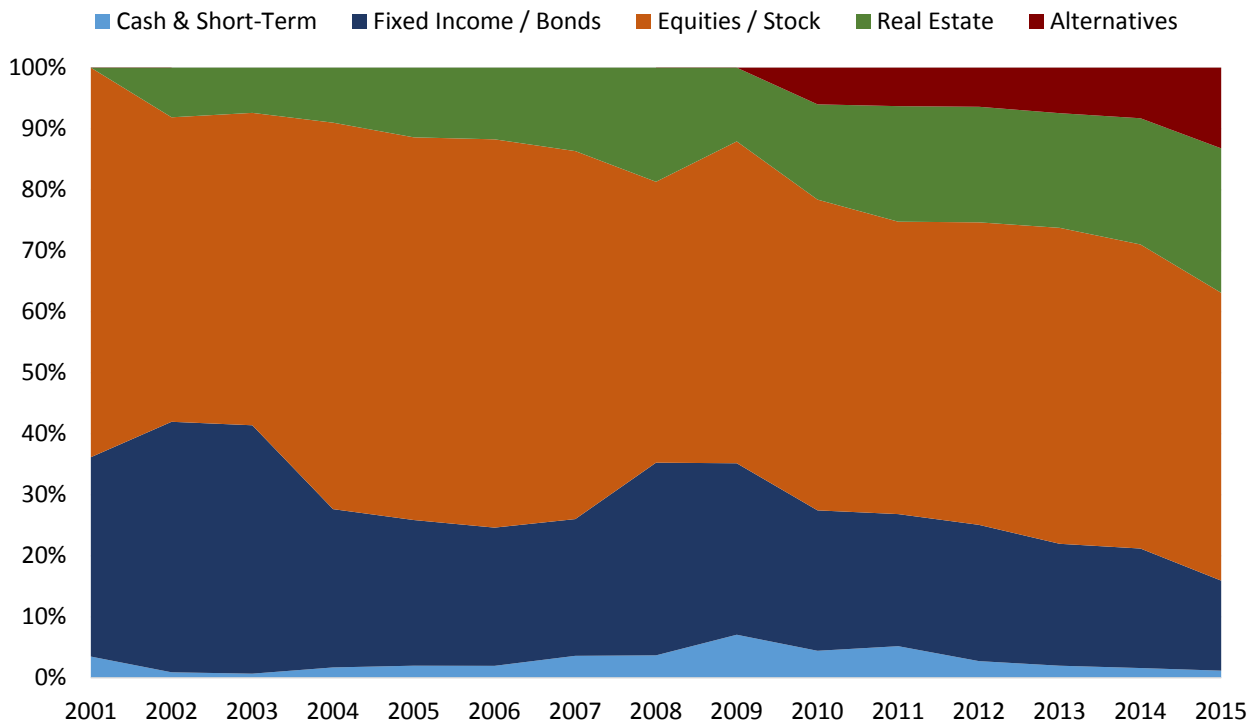
In the 1990s, pension funds could invest primarily in bonds—i.e. fixed income products that had lower yields

than stocks, but more stable returns and less risk—and earn returns of 7% and 8%. Since then, the yield on 30-year U.S. treasuries has fallen to less than 3%, and loans to the government for 10-years will only get you about 2%. Globally, investment returns from relatively safe, fixed income investments have hit rock bottom. McKinsey & Co. estimate that the average yield on U.S. and foreign bonds will be between 0% and 2% over the next two decades, as compared to the nearly 5% average over the past three decades.⁷

This change in sources for investment yield has forced pension plans across the country to do one of two things: either diversify portfolios with increased holdings of stocks and alternative investments, or reduce their assumed rates of return. Omaha’s pension systems have pursued the former option, keeping their 8% assumed return constant since 1998 for PFRS and 2007 for ERS, while taking on more risk with the assets in their portfolios.

Figure 7 shows the trend in combined asset allocation over time for PFRS and ERS. The chart shows a clear

FIGURE 7: PFRS & ERS Combined Asset Allocation Change Over Time, 2001-2015



Source: Reason Foundation analysis of Omaha PFRS and ERS plan valuation data (years shown are contribution year end dates).

shift toward real estate and risky alternative investments such as private equity, hedge fund strategies, and commodity trading, and away from fixed-income investments and bonds. In the private sector, there is nothing wrong with investing in private equity or hedge funds, or in expanding investments in risky asset classes over time. For a public sector investment strategy, however, there are separate considerations. Because Omaha's taxpayers ultimately share the downside risk of the investment strategies used by the city's pension systems, there is a need for explicit buy-in from the electorate as to just how much risk the plans should be taking. Instead, the shift in portfolios has been tacitly increasing taxpayer risks.

In 2001, the combined pension funds had a 67%/33% portfolio allocation between stocks and bonds, respectively, and there was zero investment in alternatives or real estate. As of January 2016, the share of alternatives and real estate had jumped to 37% of the combined portfolios, while the share of fixed income had dropped more than half to just 15%. This shift in asset allocation parallels a similar trend in other public pension funds.⁸

What exactly does this shift in asset allocation mean for the long-term rate of return performance for PFRS and ERS? First, it highlights the increasingly lower yields on safer fixed income—a pattern that is likely to persist into the future. Second, it means larger volatility of investment returns as the portfolio more consistently tracks market swings and consequently more volatile pension contribution rates. Third, it means that in order to maintain an 8% assumed return—or even a 7% assumed return—Omaha's pension systems will have to maintain or add to the risk in the existing portfolio.

In this context, is the 8% assumed return used by Omaha's pension systems realistic and reasonable? For a traditional investment portfolio today, such as a 60%/40% mix of stocks and bonds, the answer is clearly no. Of course, the current portfolio is far from that traditional mix.

For the existing portfolios, the best-case scenario is a 50/50 chance of achieving a long-term average return

of 8%. But market trends today and expected going forward are significantly different from long-term historic patterns, making long-term averages like 30-year returns a less meaningful guide than they would have been 10 years ago.

In almost any context, past investment performance is no guarantee of future results, but, particularly for pension plans like PFRS and ERS, the slow global growth, change in yields to fixed income, the short nature of the recent tech boom, and changing demographics as baby boomers retire are all contributing to a “new normal” for investment returns that suggests there is a significant likelihood that Omaha will continue underperforming an 8% assumed rate of return over the next few decades.

Problem 3: Undervalued Liabilities

Unfortunately, even if investments were performing as expected over the long run, Omaha may still have seen unfunded liability amortization payments grow over the past few years. This is because the plan is undervaluing the amount of all promised future benefits in today's dollars.

In order to determine the funded level of PFRS or ERS, actuaries have to assign a value in present dollars to all of the expected pension checks that the systems will have to pay in the future. Because money today is worth more than the same amount of money in the future (e.g., the time value of money), it is necessary to “discount” future payments to determine how much a future stream of payments is worth in today's money. Actuaries use a “discount rate” to put a value on future, promised pension benefits paid to each member over their lifetime, and this number is reported as the total pension liability (previously known as the actuarially accrued liability).

Selecting an appropriate discount rate is thus critical for properly calculating the value of liabilities, which is in turn necessary for knowing what the amount of unfunded liabilities is today, and subsequently setting up an appropriate amortization schedule. The higher the discount rate, the lower the value assigned to the total pension liability. So if the discount rate is too high,

liabilities will be undervalued, the recognized amount of unfunded liabilities on an accounting basis will be too low, and amortization payments will inherently be less than necessary to get a pension plan fully funded.

A properly calculated discount rate for valuing liabilities will reflect *the risk in a plan's liabilities*, or the probability that the city defaults on its payments.⁹ However, Omaha's pension plans use the assumed rate of return as a proxy for the discount rate (which is a standard practice for public defined benefit plans). The assumed return is a reflection of a pension plan's portfolio of assets and thus, the *risk in the plan's investment assets*. Using the assumed rate of return as the discount rate for plan liabilities is therefore economically unsound, as the likely performance of a portfolio and the probability of the city's making pension benefit payments are two different things.

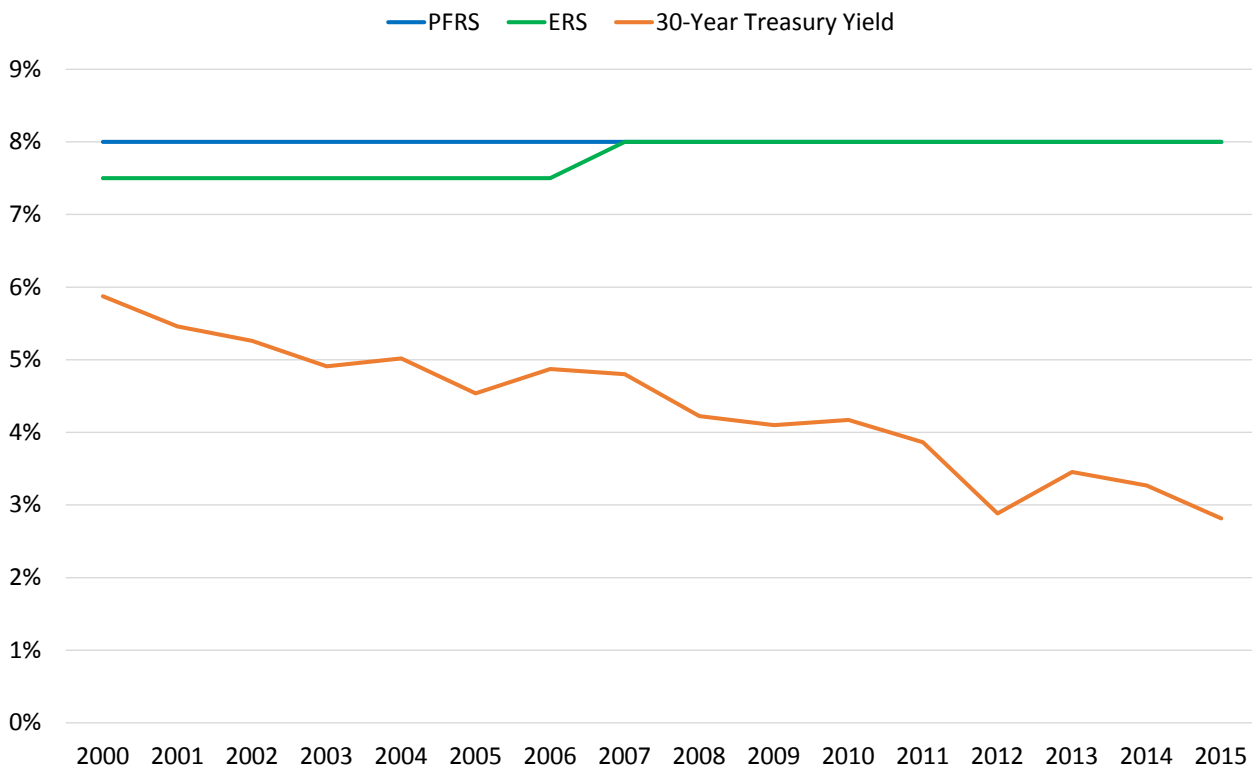
What discount rate should PFRS and ERS be using? It depends on how risky the liabilities are—i.e. what is the probability of Omaha defaulting on these promised

pension benefits. If there is no risk for bankruptcy or benefits being cut, then the discount rate should reflect a 'risk-free' rate of return. A commonly cited proxy for a risk-free return is the yield on 30-year Treasury bonds, and this could serve as a baseline for thinking about how low the discount rate should be set. If there is some risk of city insolvency, then the discount rate for Omaha's pension systems may want to reflect some *risk premium*.

Back in the 1980s, the yield on 30-year Treasury bonds averaged around 8%, suggesting a similar discount rate for the plan would be appropriate. But that number has been falling ever since. By 2001, the yield on 30-year Treasuries was about 5.5% and the discount rates for PFRS and ERS were 8% and 7.5% respectively. Thus, the discount rates used in Omaha at the turn of the century reflected a 250-200 basis point *risk premium* above a risk-free rate of return.

As shown in Figure 8, while the yield on 30-year Treasury bonds has continued to fall, the discount rates for PFRS and ERS have not made similar moves. In practice, this

FIGURE 8: Omaha PFRS & ERS Discount Rates vs. 30-Year Treasury Yield, 2000-2015



Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data (years shown are contribution year end dates).

means that as of today there is an implied risk premium of more than 500 basis points—suggesting Omaha is considerably likely to default on promised pension benefits. However, at the same time, the benefit payments are guaranteed by the city with its taxing power and backed by numerous court rulings protecting pension benefits.¹⁰ Therefore, the risk that the city will not pay the pension benefits is quite low in reality and the discount rate used should thus be similarly low.

A better discount rate approach would be to use an average of Omaha municipal bond yields that have a matching duration as the existing liabilities.¹¹ Failing that, another best practice would be to estimate the discount rate using a high-grade corporate bond index yield rate, which is currently about 4%.¹² Table 3 shows how unfunded liabilities would change for both Omaha defined benefit plans given a range of lower discount rates.

As seen from the table, dropping the discount rate by just 100 basis points below the current 8% would raise the combined unfunded liability by more than \$231 million and reduce the funded ratio to 44%. If the discount rate used were 4%, which approximates the yield of high-quality corporate bonds with similar maturities as liabilities for PFRS and ERS, the reported unfunded liability would be more than double the existing recognized amount to near \$2 billion and the funded ratio would fall to only 29%.

To be clear, changing the discount rate does not *create additional* unfunded liabilities, it simply changes the way the unfunded liabilities are accounted for and the amount

recognized when actuaries are compiling financials for PFRS and ERS.

Understanding that the currently adopted discount rate is not an accurate reflection of the risks of the plans' liabilities means the actuarially determined contribution rate does not reflect the true cost of funding the pension plan. Even if Omaha pays 100% of the ADEC, it may still be underfunding the plans and not saving enough to pay benefits. This systematic, structural underfunding manifests in two ways. First, if reported unfunded liabilities are too low then amortization payments should be higher to ensure the pension debt is actually paid off. Second, the normal cost paid for each year of new benefits earned should be higher too.

Part II: The Risk of Doing Nothing

Without appropriate changes made to the existing pension systems, Omaha is likely to see investment returns underperform, unfunded liabilities continue to grow, and employer contribution rates continue to rise. Those contributions rates will be further exposed to contribution shortfalls, but even if 100% of the actuarially determined rates are paid, if the discount rates remain inappropriately high, PFRS and ERS will be tacitly underfunded anyway. What would all of this mean for Omaha's finances and taxpayer resources?

Risk: Growing Unfunded Liability

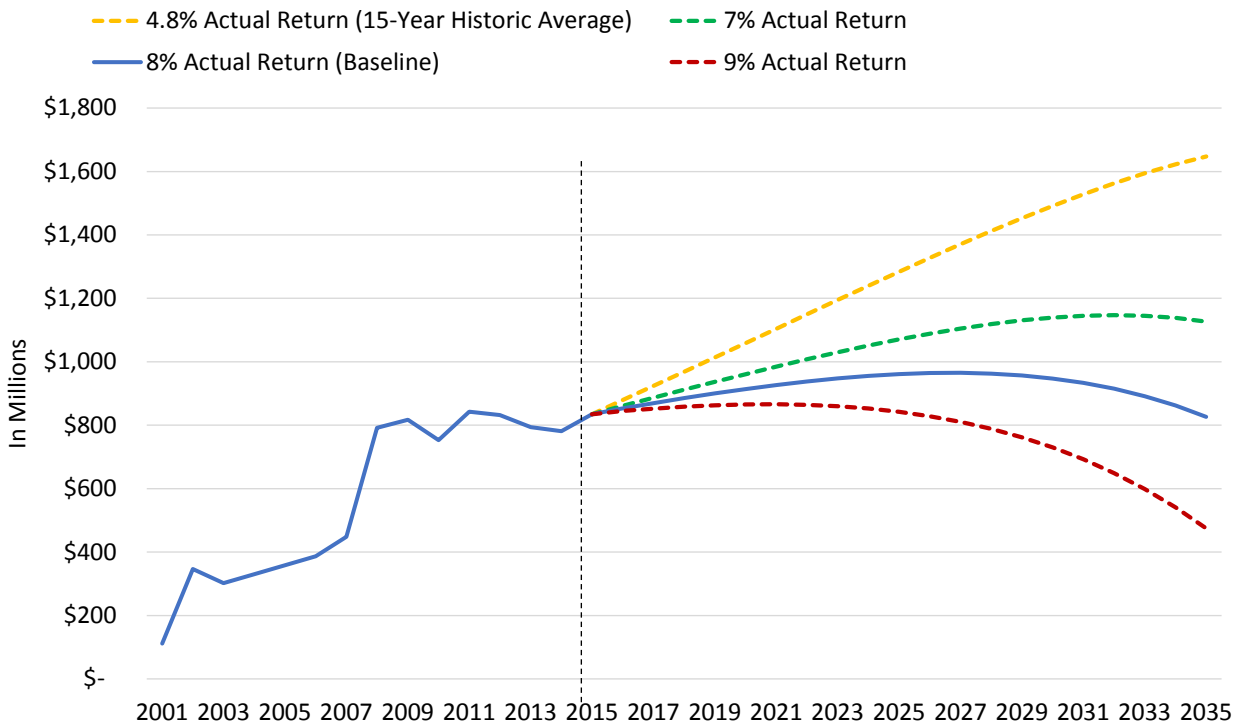
Our previous investment return analysis for PFRS and ERS suggests that actual returns will be less than 8%

TABLE 3: Omaha Pension Plan Solvency Under Alternative Discount Rates, as of January 1, 2016 (in Millions)

Discount Rate	PFRS		ERS		Combined	
	Unfunded Liability	Funded Ratio	Unfunded Liability	Funded Ratio	Unfunded Liability	Funded Ratio
8% (Official)	\$629.8 M	48.5%	\$205.0 M	53.1%	\$834.8 M	49.7%
7%	\$800.0 M	42.6%	\$265.8 M	46.6%	\$1,065.8 M	43.7%
6%	\$995.9 M	37.4%	\$335.7 M	40.9%	\$1,331.6 M	38.3%
5%	\$1,221.6 M	32.7%	\$416.3 M	35.8%	\$1,637.9 M	33.5%
4%	\$1,481.9 M	28.6%	\$509.3 M	31.3%	\$1,991.1 M	29.3%

Source: Reason Foundation Analysis of Omaha PFRS and ERS Valuation Data

FIGURE 9: Omaha PFRS and ERS Collective Unfunded Liability Forecast Given Varying Rates of Return, 2016-2035



Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data (years shown are contribution year end dates).

on average in the long-term under the “new normal” for markets. Figure 9 shows a forecast of the combined unfunded liabilities for PFRS and ERS should investment returns differ from current expectations.¹³ As the sensitivity analysis shows, if actual returns are just 1% percentage point lower (100 basis points) than the assumed return, Omaha should expect to see its unfunded liabilities grow approximately \$300 million by 2035 to around \$1.2 billion. In fact, the forecasted unfunded liability in 2035 for Omaha’s combined defined benefit systems grows an average of \$225 million for every 1 percentage point return below the assumed 8% return.

Risk: Growing Employer Contributions

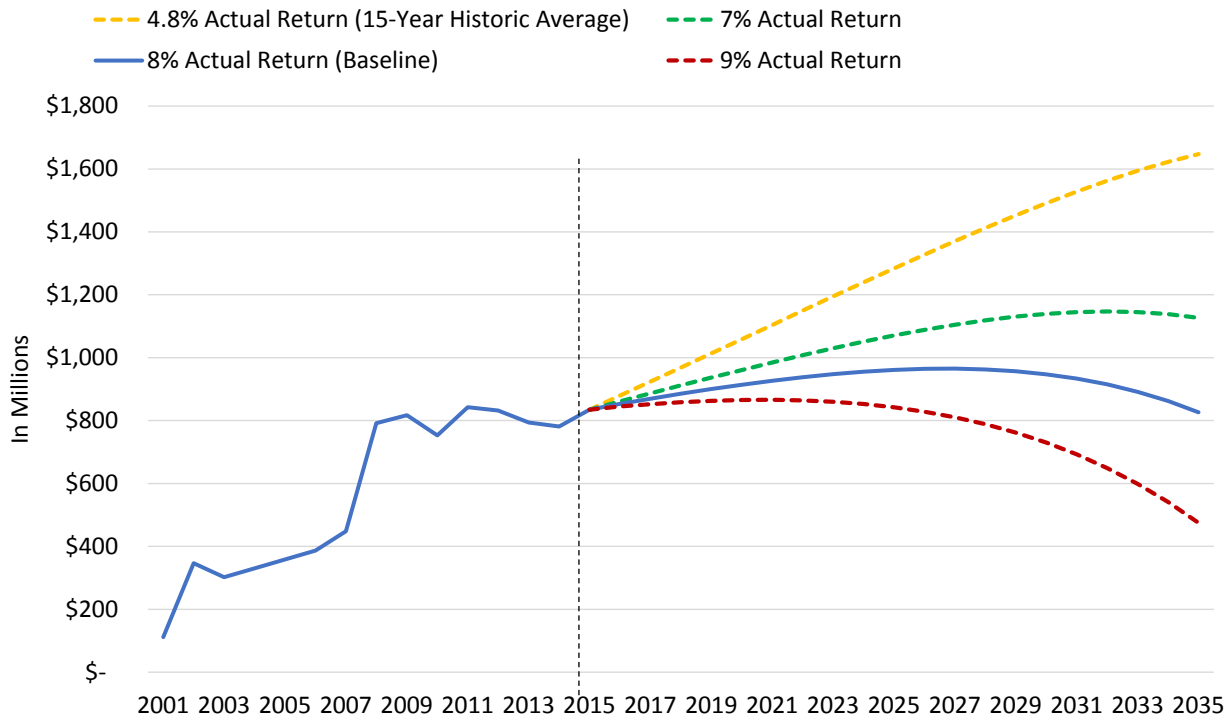
These additional unfunded liabilities would translate into larger amortization payments and thus higher employer contribution rates. Figures 10 and 11 show probable projections of the required employer contribution rates for the PFRS and ERS defined benefit plans given alternative actual investment returns over the next 20 years.

The ideal budgeting scenario is to have stable, constant contribution rates. Upward growth or volatility make it difficult to manage a city budget from year to year. Given the likelihood of future investment performance diverging from return assumptions, this volatility risk is very real for Omaha. If future investment performance remains the same as that of the last 15 years (averaging at about 4.8%), then actuarially determined employer contribution rates for PFRS could rise to more than 50% of payroll over the next two decades, and near 30% of payroll for ERS—even though the plan is closed to new hires.

Risk: Contribution Rates Crowding Out Omaha’s City Budget

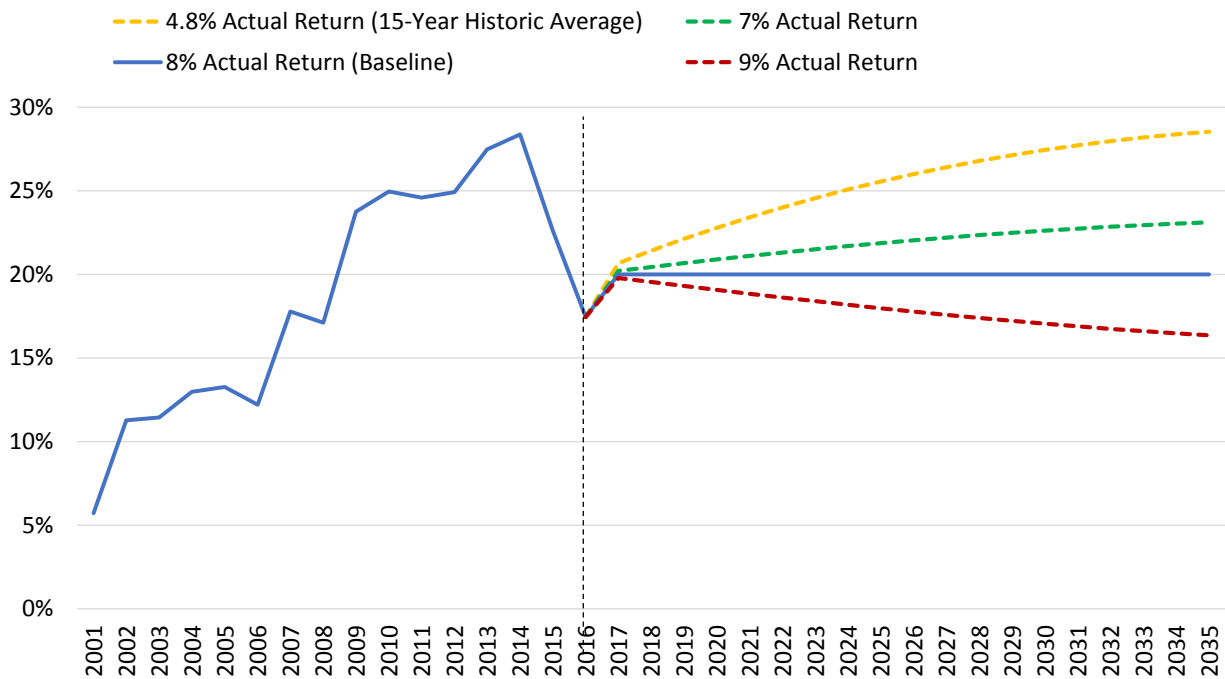
Ever-increasing employer contributions would almost certainly crowd out Omaha’s capacity to finance other public services such as public safety, road repairs and snow removal. Should pension contributions simply grow at the same rate as the city’s revenue, then budgetary costs may be manageable. However, the trends over the past decade have seen contribution rates rise faster than city revenue.

FIGURE 10: Omaha PFRS Employer Contribution Rate Forecast Given Varying Actual Rates of Return, 2016-2035



Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data (years shown are contribution year end dates).

FIGURE 11: Omaha ERS Employer Contribution Rate Forecast Given Varying Actual Rates of Return, 2016-2035, Defined Benefit Plan Only



Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data (years shown are contribution year end dates).

In 2007, unfunded liability amortization payments alone consumed 10% of Omaha’s general fund revenue, and by January 2016, contributions toward the pension debt had increased to near 15%.¹⁴ And those costs would likely be higher if the city had not refinanced unfunded liabilities in 2014 (for PFRS) and 2016 (for ERS) by stretching out the years in the amortization schedule to 30 years—a practice which helps with near-term budgeting, but increases the total interest payments that will ultimately be covered by taxpayers in the long-run.

Looking forward, Figure 12 shows a forecast of total amortization payments for PFRS and ERS as a percentage of Omaha’s general fund revenue. Again, should the plans earn their expected 8% rate of return, contributions toward unfunded liabilities will be stable. However, underperforming assets could lead to as much as 22% of city revenues being crowded out by pension debt payments in the 2030s.

Part III: A Two-Step Solution

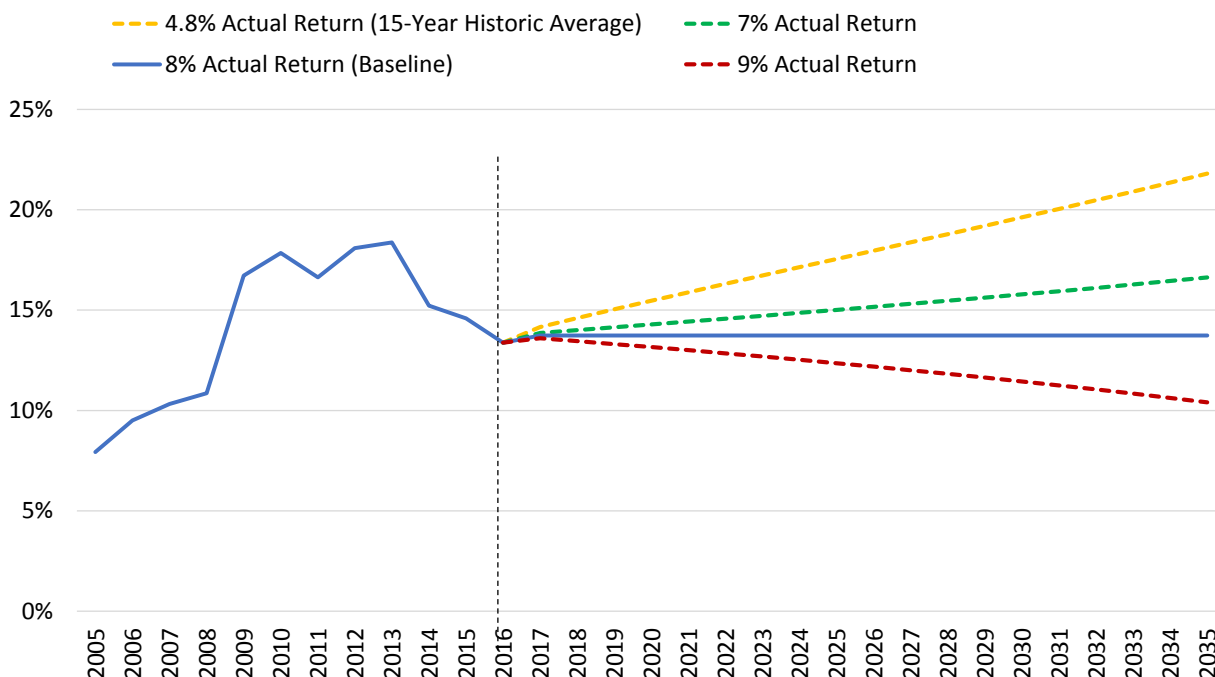
Omaha has already taken a meaningful step toward addressing its billion-dollar problem: agreeing with labor representatives to provide new civilian city employees a retirement plan that caps the growth of ERS liabilities.

However, the pension reform effort underway can only be completed with two final steps. First, Omaha needs to finish the project of capping the growth of liabilities exposed to volatility and significant risk. Second, Omaha needs to ensure the funding policy for existing liabilities does not remain a threat to the city’s budget, given the aggressively optimistic actuarial assumptions currently being used by PFRS and ERS.

1. Capping the Liabilities

CIVILIAN PLAN: Capping liabilities should begin by seeking to formally codify the new cash balance plan for ERS into law. If the new retirement plan is subject only to collective bargaining agreements, then it can be undone in a future agreement. Thus, today’s liabilities

FIGURE 12: Omaha ERS Employer Contribution Rate Forecast Given Varying Actual Rates of Return, 2016-2035, Defined Benefit Plan Only



Source: Reason Foundation analysis of Omaha PFRS and ERS valuation data (years shown are contribution year end dates).

haven't been truly capped in the long run, they are merely being held at bay.

POLICE AND FIRE PLAN: Similarly, Omaha should adopt a new plan design for future hires into the city's public safety pension plan that caps liabilities in a similar manner as the civilian plan. A 2010 agreement between the city and labor representatives for police and fire did already make changes to the existing plan that led to a reduction in benefits and increase in employer contributions. However, these changes only addressed part of the unfunded liabilities at the time, and they neither addressed the long-term growth of pension debt, nor did they cap liability growth.

The alternative plan design for future public safety employees could be another cash balance plan, a defined contribution plan, or an alternatively designed defined benefit plan that has built-in mechanisms to minimize risk and ensure benefits are accurately priced.

Cash Balance Plans

The cash balance plan design developed for Omaha civilian workers would be a prudent option to consider for PFRS. The guaranteed 4% return on investments is a reasonable balance between an investment target for the plan investments and a meaningful retirement benefit. The investment return sharing above 7% returns allows for a buffer to be developed by the plan to offset years where investment returns are below 4% while also ensuring that employees share in the upside of strong investment performance. Similar cash balance plan designs Omaha could consider for PFRS would be the newly adopted plan for Kentucky Retirement Systems or the state's civilian employee plan within the Nebraska Public Employees Retirement System.

Defined Contribution Plans

The primary features of defined contribution (DC) plans for members include allowing employees ownership over their retirement benefit, the ability to keep both the employee and employer contributions if they change jobs,

and ensuring the benefit itself aligns with the retirement goals of the member and their family. For the city, 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, and the ability to recruit and retain 21st century workers who are more mobile and have varying preferences for how much of their compensation they want in the form of retirement contributions or salary. By definition, DC plans are always fully funded because they cannot develop unfunded liabilities. Defined contribution plan designs used by other police and fire employers that Omaha could consider include the Arizona Public Safety Personnel Retirement System and Utah Retirement System.

Defined Benefit Plans

Finally, Omaha could theoretically continue to use a defined benefit (DB) system, as it has in the past, but with significant changes to funding policy and governance. The modified DB plan would need to use a risk-free rate of return to value liabilities and a very conservative asset allocation strategy with a low assumed return. In addition, a well designed DB plan would include cost-sharing between employees and the city—including a variable employee contribution that shares any future unfunded liability amortization payments—paired with an increased employee voice in the decision making process for actuarial assumptions. However, the budgetary cost of DB plans are highly sensitive to these kind of assumptions and governance designs and the subsequent normal cost for such a DB plan would likely be much more than is feasible or desirable for Omaha's budget.

(One of the reasons why the 2010 agreement to change benefits for PFRS did not lead to long-term solvency is that there were no changes to the underlying funding policy of the plan or future risk sharing. But a likely reason that funding policy changes were not adopted was the necessary increase in contributions that conservatively priced DB plans require.)

2. Improving the Existing Funding Policy

At a fundamental level, defined benefit pension plans like PFRS and ERS work when:

contributions + investment returns = promised benefit payments + expenses

Calculating the right amount of *contributions* depends on correctly estimating both *investment returns* and total *promised benefit payments*. The more aggressive the assumptions about investments and liability values, the more risk that the contribution rates will be wrong.

This reality holds true whether or not a defined benefit plan is open to new hires. For ERS, even though new hires are accruing benefits in the cash balance plan, if the investment return assumption for the defined benefit plan is wrong, then the contributions being paid into that system will not be enough to cover promised benefit payments in the future. For PFRS, the same risks exist now with the defined benefit plan that is open to new hires.

Omaha should improve the funding policy for PFRS and ERS by first adopting more conservative actuarial assumptions. The discount rate used to value existing liabilities should be lower than the status quo and based on a market-valuation of liabilities. The assumed rate of return used to price new benefits earned each year should reflect a less risky allocation of assets. Mortality and longevity estimates should reflect the most current actuarial tables. Inflation assumptions should favor conservative estimates about the future.

Funding policy could be further improved by shrinking the number of years used to amortize unfunded liabilities and requiring in the city charter that employer contributions to pension funds be among the first liabilities paid out as revenues are collected.

Collectively, this would mean adopting a new comprehensive funding policy for the defined benefit plans such that they would not continue to undermine city finances even while being closed to new hires.

Part IV: Conclusion

The growth of accrued liabilities with significant risk exposure is similar to a hazardous waste spill. The first step in cleaning up a spill is always to make sure that the leak is capped and no more destructive waste is piling up. That's what capping the liabilities of Omaha would be seeking to do. However, even once the leak has been contained, there is still a need to clean up what's been spilled. That is what the recommended funding policy improvements would accomplish.

The cash balance plan for ERS was a good first step toward improved solvency, but the existing liabilities of the defined benefit plan in that system are still exposed to the risk of underperforming the plan's assumed rate of return. The same risks exist for the liabilities of the PFRS defined benefit plan. So despite efforts to address pension issues over the past decade in one form or another, unfunded liabilities are still likely to continue growing and harm city finances—just as leaving toxic waste alone without cleaning it up is likely to lead to increased environmental damage.

Objectives for Good Pension Reform

Fortunately for Omaha, the billion-dollar crisis it is facing is not uncommon across the United States, and a wide range of policy tools have been developed for addressing pension insolvency problems. The following six objectives can serve as a guide for how to select the best mix of pension reform options and consider the trade-offs that different policy proposals offer:

1. Provide retirement security for all employees, current and future.

Promised pension benefits are not optional, they are deferred compensation that employers should take every effort to ensure gets honored. For future employees, the retirement benefit design should emphasize security through minimizing volatility and risk, while also taking care to avoid problems of the past.

2. Stabilize contribution rates for the long term.

Volatile contribution rates are challenging for municipal budgeting and can create a perverse incentive to skip out on portions of the actuarially determined contribution.

3. Reduce taxpayer and pension system exposure to financial risk and market volatility.

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

4. Reduce long-term costs for employers, taxpayers, and employees.

By minimizing the costs for all parties involved, policymakers make previously unavailable resources usable for other projects.

5. 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 demands for fixed pensions versus flexible, portable retirement benefits, as well as preferences for salary today over 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.

6. Improve governance.

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 Omaha's pension system means aligning the incentives of pension fund administrators and board members with long-term solvency.

Methodology

Data reflecting historic analysis is drawn directly from actuarial valuations or comprehensive annual financial reports for PFRS, ERS, and the city of Omaha.

Data for forecasts is based on a roll forward model developed using information gathered from the actuarial valuations as of January 1, 2016. The baseline analysis for the roll forward model uses all published actuarial assumptions by PFRS and ERS themselves. The comparative analysis with employer contributions as a percentage of city revenue assumes the city's general fund revenue will grow at 4%, which is the payroll growth rate.

Our modeling method for forecasting accrued pension liabilities (AAL) and market valued assets (MVA) use the following formulas:

$$AAL_{t+1} = AL_t + I_t + N_t - P_t$$

$$MVA_{t+1} = MA_t + R_t + C_t - P_t$$

where I is the interest accrued on the pension liability; N is the normal cost; P is the total benefit payout including benefits and refunds; R is the market investment return on pension assets; and C is the total actual contribution to cover the normal cost and the amortization cost.

The normal cost as a percentage of payroll is projected to equal the average the normal costs determined by the last three actuarial valuation reports, and to remain level during the projection period. This necessarily creates a limitation to the long-term specificity of our roll forward model as normal cost is likely going to be adjusted over time. However, this limitation does not change the accuracy of the representativeness the model forecasts.

Alternative assumptions and experience will necessarily yield different results than forecasted. Forecasts based on data not publicly available may also show different results.

Endnotes

1. Omaha PFRS and ERS 2007 valuation reports.
2. Omaha ERS valuation report as of January 1, 2016, market valued return.
3. Liz Farmer (2016), "Public Pensions Facing Worst Returns Since Recession," *Governing*.
4. Omaha ERS 2015 valuation report.
5. Anthony Randazzo, Truong Bui, and Leonard Gilroy (2014), "Pension Debt: Omaha's Billion Dollar Problem," *Platte Institute*, November 2014.
6. Prior to 2015, the actuarial term for the combined normal cost and unfunded liability amortization payment was the "actuarially required contribution" (ARC). The Government Accounting Standards Board adopted new rules that were implemented as of 2015 that changed some methods of calculation and terminology. While subtle differences exist between the ARC and ADEC, for purposes of this level of analysis they are equivalent and interchangeable terms for the amount the employer is supposed to pay based on actuarial calculations.
7. Richard Dobbs, et al. (2016), "Diminishing Returns: Why Investors May Need to Lower Their Expectations," *McKinsey Global Institute*.
8. The PEW Charitable Trusts, "State Public Pension Investments Shift Over Past 30 Years," June 2014.
9. Truong Bui and Anthony Randazzo (2015), "Why Discount Rates Should Reflect Liabilities: Best Practices for Setting Public Sector Pension Fund Discount Rates," *Reason Foundation*, Policy Brief 130
10. Alexander Volokh (2014), "Overprotecting Public Employee Pensions: The Contract Clause and the California Rule," *Reason Foundation*
11. Truong Bui and Anthony Randazzo (2015), "Why Discount Rates Should Reflect Liabilities: Best Practices for Setting Public Sector Pension Fund Discount Rates," *Reason Foundation*, Policy Brief 130.
12. U.S. Department of the Treasury (2016), "The Treasury High Quality Market Corporate Bond Yield Curve."
13. See the methodology note at the end for details about our forecasting.
14. Omaha PFRS and ERS valuation reports and Omaha city's CAFRs.

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6910 Pacific Street, Suite 216 | Omaha, NE 68106
402.452.3737 | platteinstitute.org

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OWEN PALM

President and CEO of 21st Century Holdings in Gering. A current commissioner of the Nebraska Department of Natural Resources, former president of the Twin Cities Economic Development Corporation, and a trustee of the Chadron State College Foundation.



JEFF DINKLAGE

Owner and operator of Herman Dinklage, Inc. A fourth-generation cattle feeder, he served on the Nebraska Cattle Board for four years and was a bank director for twenty years. He is also an avid Husker fan and enjoys flying.



NANCY JOHNER

CEO of Pathfinder Support Services, formerly state director and deputy chief of staff for U.S. Senator Mike Johanns, director of Nebraska's Division of Children and Family Services, and under secretary of the U.S. Department of Agriculture's Food, Nutrition and Consumers Services agency.



BRYAN SLONE

Over 30 years experience including governmental and private practice tax experience in the United States and Germany. Co-founding partner of a law firm practice in Berlin, Germany, and a tax attorney with Koley Jessen in Omaha.