"Breaking the Promise: The Burden of Unfunded Liabilities on Future Generations"

Abstract: This paper discusses the trillions of dollars in government debt accumulated by state governments as well as the costs of debt on future generations. It examines unfunded pension liabilities, and the crowding out effect of public debt onto state budgets. The paper also discusses opportunities for reform that can help alleviate the debt burden on future generations. Data are collected from state annual comprehensive financial reports (ACFRs) as well as public pension actuarial valuations.

JEL Subject Codes: H75 (State and Local Government: Health; Education; Welfare; Public Pensions).

Keywords: Public Finance; Debt; Debt Management; Sovereign Debt; State and Local Government Budgets and Expenditures; State and Local Borrowing

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Introduction

This paper explores the role that public pensions play in the growth of state government spending. Most states provide a defined-benefit style pensions, which are not adequately funded or managed by state governments. Poor funding and management have contributed to unfunded pension liabilities reaching over $8 trillion in FY 2020. In many states (such as Illinois), these benefits are constitutionally guaranteed and spending on these retirement payments represents a fixed cost. The more state governments spend on pensions, the less funds available for essential government services, infrastructure, or opportunities for tax cuts. Fortunately, states such as Wisconsin, Michigan, and Tennessee offer comprehensive reform solutions to the pension liability stress.

The first section provides context on unfunded liabilities and the tax burdens they create on future generations. The second section discusses the structure of the defined benefit pension plan (the most common type of public pension plan in the U.S.). The third section discuss how pension liabilities are calculated. The fourth section will show the differences in risk levels between pension assets and liabilities and then argue why lower discount rates are the best measurement for pension liabilities because they reflect a state's inability to default on pension promises. The fifth section examines public pension liabilities in the United States utilizing data collected by the American Legislative Exchange Council for its annual pension report. The sixth section examines cases of states enacting successful reforms for their respective pension systems. The seventh section examines two cautionary cases of states with excessive unfunded liabilities. The eigth section offers recommendations for pension reform, followed by a brief conclusion.

"Stealth Budgets" and the True Cost of Government Debt

In 1991, Senior Economist of the Federal Reserve Bank of Richmond Roy H. Webb published a paper titled "The Stealth Budget: Unfunded Liabilities of the Federal Government."[i] In the paper, Webb discussed unfunded liabilities of federal programs ranging from Social Security, Medicare and Medicaid to bank deposit insurance provided by the FDIC that did not appear on federal budget accounts. "In other words," Webb commented, "a stealth budget that is unseen by most observers will generate future taxing and spending."[ii] At the time, he calculated that the federal stealth budget totaled $4 trillion in 1989 dollars (about $9.6 trillion in current dollars), but that total has only grown since Webb's paper was published.[iii]

The unfunded liabilities Webb examined were just the tip of the iceberg. State government unfunded liabilities from pension and OPEB plans grew rapidly as well. The U.S. Census Bureau and the Board of Governors of the Federal Reserve System have data on public pensions dating back to 1945.[iv] Unfortunately, this data only shows aggregates for all state and local governments. In 1994, the Governmental Accounting Standards Board (GASB) issued statements Number 25 and 27, setting up financial reporting and accounting standards for public defined-benefit pension plans.[v] These standards, however, did not fully measure or report plan liabilities. GASB 25 and 27 allowed practices such as asset smoothing, where plans could obscure asset volatility by taking multiyear averages of market values and using a discount rate based on assumed rates of return to report a lower present value of liabilities.[vi] GASB 27 also allowed states to only report the net pension expense, the difference between the annual required contributions and the actual contributions.[vii] This allowed states with large unfunded liabilities to report a zero net pension expense if annual payments to the plan were made in full that year. [viii]

After years of criticism, GASB updated its guidance for reporting and measuring public pension data in 2012 with GASB statements 67 and 68. These statements went into effect in FY 2014 and 2015, respectively. As discussed in *Unaccountable and Unaffordable, 2019,* GASB 67 and 68 helped bring to light the massive unfunded liabilities hidden in the "stealth budgets," but these changes were far from perfect.[ix] As summarized by Eileen Norcross, VP of Policy Research at the Mercatus Center and Sheila Weinberg, Founder and CEO of Truth in Accounting,

> The implementation of GASB 67 and 68 was intended to improve the accuracy and transparency of pension reporting for US public sector plans. To date, the standards have had a mixed effect. State and local governments are now required to report the unfunded pension liability as part of their overall fiscal position, providing a more accurate assessment of fiscal health. The underlying assumptions used to measure pension obligations continue to need improvement.[x]

The changes under GASB 67 and 68 attempted to correct many of flawed assumptions allowed under GASB 25 and 27 but still allow for asset smoothing and allow plans to use discount rates greater than the risk-free discount rate, which reflects the inability of states to back out of their pension promises.

To put these "stealth budgets" in context, consider this quote from James M. Buchanan:

"Who suffers if public borrowing is unwise and the public expenditure wasteful...The burden must rest, therefore, on the taxpayer in the future and no one else. He must now reduce his real income to transfer funds to the bondholder, and he has no productive asset in the form of a public project to offset his genuine sacrifice."[xi]

Government debt represents tax burdens on future generations. As these unfunded liabilities grow, tax burdens increase and spending to pay these unfunded liabilities crowd out spending for essential public services. It is imperative that state leaders make the necessary reforms now to limit the debt burden on future generations.

Public Pensions Structure: Defined Benefit Plans

Most pension plans are issued in the form of a defined benefit. A defined benefit pension is a pension plan where employees (in the case of public pension plans, state workers) and employers (in the case of public pension plans, state governments) contribute funds during the employees' time at work and a specified amount of monthly retirement income is provided to the employee upon retirement. That retirement payment is typically based on the employee's salary, years of work, and age.[xii] This formula is determined by how long the retiree has worked in the public sector and their final average compensation at retirement. Generally, the formula resembles something like Equation 1 below:

$$(1)\ Annual\ Retirement\ Benefit = Benefit\ Multiplier \times Years\ of\ Service \times Final\ Average\ Salary$$

Divide the annual retirement benefit by 12 and that determines how much in benefits are paid per month.

Generally, the normal cost (the projected cost to pre-fund retirement promises during the years an employee works) is paid for by contributions from both employees and employers. Most pension plans are not fully funded, and the portion of accrued promised pension benefits that are not covered by plan assets are paid for by the employer and taxpayers (unless the plan is cost sharing, where employees cover these payments as well).

Each year, state governments must make an Actuarially Determined Contribution (ADC). The ADC is an annual payment that consists of the normal cost and the amortization payment (a catch-up payment for any unfunded liabilities over the past 30 years).[xiii] If a plan is consistently making 100% of its ADC payments, it is better able to adjust to fluctuating variables (i.e., cost of living adjustments and life expectancy) and pay off its unfunded liabilities in a timely manner.

Illinois has the second largest unfunded pension liabilities in the country at $467.9 billion (only California has greater unfunded liabilities) and the second largest unfunded liabilities per capita at $36,926 per resident (after Alaska). This is, in part, due to Illinois' pension contributions failing to meet the ADC due to state statutes Public Acts 100-0023 and 100-0340 using a methodology that does not conform with ADC calculation methods set by GASB. Illinois plans always make payments based upon the state statutes and not the ADC.[xiv] The table below has been recreated from the American Legislative Exchange Council annual report on public pensions with permission from the authors. The table highlights ADC payments for the pension plans in the state of Illinois for fiscal year 2021 (July 1, 2020-June 30, 2021).

Table 1: Actuarially Determined Contributions, Illinois Public Pension Plans and Systems

Plan	ADC	ADC Paid	Percent ADC Paid
Illinois General Assembly Retirement System	$34,410,810.00	$25,754,000.00	74.84%
Illinois Judges' Retirement System	$173,704,375.00	$144,160,000.00	82.99%
Illinois Municipal Retirement Fund	$926,000,000.00	$926,000,000.00	100.00%
Illinois State Employees' Retirement System	$2,913,649,500.00	$2,368,913,589.48	81.30%
Illinois Teachers' Retirement System	$7,988,612,000.00	$4,905,087,654.12	61.40%
Illinois University Retirement System	$2,299,031,000.00	$1,838,787,984.11	79.98%

Source: Savidge, Thomas and Williams, Jonathan. Unaccountable and Unaffordable 6th Edition. Nicholas Stark and Lee Schalk eds. American Legislative Exchange Council. 2022.

The one notable exception, the Illinois Municipal Retirement Fund (which uses ADC methodology to determine the required contribution), has the highest funding ratio of Illinois plans (a lowly 48.80%) and still has nearly $43 billion in unfunded liabilities. After years of not making the required contributions, liabilities have piled up, making Illinois' plans some of the worst funded pension plans in the country with nearly $360 billion in unfunded pension liabilities.[xv]

Public pension plans have been grossly underfunded and recent changes in pension reporting (as highlighted in the next section) have shown how poor the funding situation is (with a handful of exceptions). Generally, pensions are underfunded due to a combination of four major reasons:

1. Underfunding: State policymakers do not make the full ADC meet future obligations, creating debt for future generations. As states fail to make necessary contributions but continue to promise the same benefit payouts, the burden of unfunded liabilities is placed on future generations.
2. Poor management: Overly optimistic investment return goals, open amortization schedules, outdated or unclear actuarial assumptions, politicized pension boards. As will be discussed later, pension plans have drastically increased the risk in their asset portfolios and investment returns have become increasingly volatile. Later sections will discuss how pension board of trustee governance structures relate to investment performance.
3. Market conditions and volatility: Recessions, long-term decline in interest rates, and pension systems' vulnerability to unexpected market losses.
4. Benefit design issues: Plans that allow retirees to double-dip (receive two pensions), spike their pensions (use salary increases and bonuses to increase their final average salary). Recall equation (1) is partially based on the final average salary. In some cases, employees will use raises and bonuses to increase their final average salary, thus increasing their overall annual retirement benefit.

Unfunded pension liabilities totaled $8.28 trillion.[xvi] This number varies due to the various discount rates used to estimate the present value of unfunded liabilities. As mentioned above and in the following sections, the discount rate is used to determine the present value of liabilities. As will be recommended and explained, pension plans should use a lower discount rate to determine the value of unfunded liabilities.

Understanding Pension Liabilities

State governments have experienced increased pressure in their balance sheets from growing pension liabilities. This pressure is becoming more apparent with improved financial reporting. The Governmental Accounting Standards Board (GASB) statements 67 and 68 went into effect in FY 2014 and 2015, respectively. These statements focus on how pension plans measure assets and liabilities.

The new information required by GASB 67 and 68 is reported in the "Required Supplementary Information" section at the end of each state's comprehensive annual financial report (CAFR) and in actuarial valuation documents for each pension plan. These notes include breakdown of the ADC, asset valuations and Fiduciary Net Position for all pension plans, how the pension plan discount rate is calculated and information about liability valuations. The net pension liability is shown in equation (2) below:

$$(2) Net\ Pension\ Liability\ =\ Fiduciary\ Net\ Position\ -\ Total\ Pension\ Liability$$

If the value of the Actuarially Accrued Liabilities is greater than the Actuarial Value of Assets, the Net Pension Liability will show that there are unfunded pension liabilities. Another important measure of the health of a defined benefit pension plan is the plan's funding ratio. That is expressed in equation 3 below:

$$(3)\ Funding\ Ratio\ =\ \frac{Fiduciary\ Net\ Position}{Total\ Pension\ Liability}$$

The larger the value of liabilities, the lower the funding ratio, and the less "healthy" a defined benefit pension plan. As recommended by the American Academy of Actuaries, plans should strive for 100% funding ratio or greater.[xvii]

Improved reporting and more accurate estimates of state obligations have shed light on the actual value of unfunded pension liabilities. GASB 67 also provided guidance on how liabilities were to be valued. Prior to GASB 67, public pension plans used the expected return on pension assets to assess the value of liabilities. Economists objected to this valuation, stating that legally guaranteed pension promises should be valued with a lower discount rate (as will be described in detail in the next section). Weinberg and Norcross note that GASB 67 attempts to "split the difference" by valuing liabilities that are covered by pension assets with a higher discount rate and unfunded liabilities with a lower discount rate based on the low-risk return on tax-exempt municipal bonds.[xviii]

Many of the changes in assumptions based on actuarial experience studies conducted in 2016 are still in place today (i.e., inflation assumption remains at 2.25%), while other assumptions have changed. For example, some plans have lowered discount rates drastically (such as several Wyoming state pension plans lowering the discount rate from 7.75% to 7.00% in FY 2017), while other plans have incrementally decreased discount rates (such as the California Public Employee Retirement Multiemployer Fund, which gradually decreased its discount rate from 7.50% in FY 2016, to 7.25% in FY 2017, and then at 7.00% in FY 2018). [xix, xx]

Assumptions Matter: Rates of Return and Discount Rates

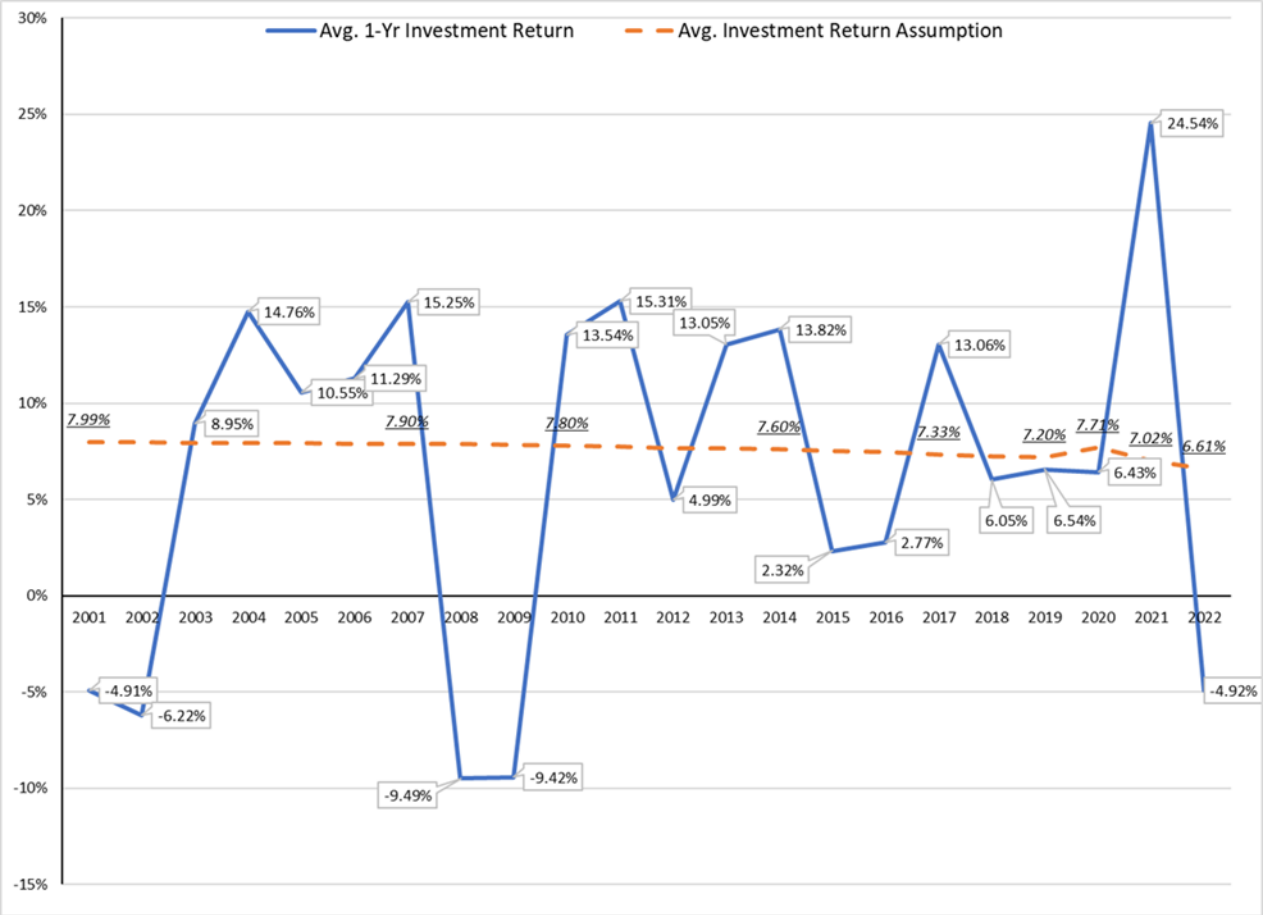
Pension Investments

The discount rate is the rate used to determine the present value of liabilities. Although public plans often use the term "discount rate" and "investment rate of return" interchangeably, the two terms refer to two different aspects of a pension plan. Specifically, the investment rate of return is based on a pension plan's portfolio of investment assets and what those investments will earn. It looks at the risk of the plan's investment assets.[xxi]

For public pensions, there are different risk levels with pension assets and pension liabilities. Over the past four decades, pension asset funds have changed from low-risk, fixed income investments (such as U.S. Treasury bonds) to an increasingly volatile portfolio of stocks, bonds, and alternative investments such as office buildings and golf courses.[xxii] This is the result of lower bond yields, the desire to chase higher returns, and politicians and plan managers using pension funds to advance their own economic development or political agendas — a perfect storm of bad incentives.

Figure 1 Table 2 shows the disparity between assumed rates of return (noted by the dotted line) and the actual annual return on investment (noted by the solid line). As pension plans invest in more riskier assets, meeting the assumed rate of return for that year becomes less likely. Some years this pays off and returns exceed expectations while other yeas fall far short of assumed returns.

Figure 1, Table 2: Assumed vs Annual Rates of Return, 2001-2022



Variable	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Avg. 1-Yr Investment Return	-4.91%	-6.22%	8.95%	14.76%	10.55%	11.29%	15.25%	-9.49%	-9.42%	13.54%	15.31%
Avg. Investment Return Assumption	7.99%	7.98%	7.95%	7.92%	7.92%	7.91%	7.90%	7.88%	7.85%	7.80%	7.74%
Variable	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Avg. 1-Yr Investment Return	4.99%	13.05%	13.82%	2.32%	2.77%	13.06%	6.05%	6.54%	6.43%	24.54%	-4.92%
Avg. Investment Return Assumption	7.67%	7.63%	7.60%	7.54%	7.45%	7.33%	7.22%	7.20%	7.71%	7.02%	6.61%

Source: Public Plans Database; Center for Retirement Research at Boston College and Reason Foundation

Two shocking points are the actual returns in 2021 and 2022. Investment returns in 2021 were the best on record, and 2022 average investment return showed the first loss since 2009. Believe it or not, these two results are connected. It's a classic example of a government-induced boom and bust. The market boom followed by the inevitable bust recalls the timeless example from economists Peter J. Boettke and Steven Horwitz. A man spending his Saturday night out drinking and then dealing with the inevitable hangover Sunday morning.[xxiii] At the party, he freely drinks and has a great time before stumbling home at 2 AM, where he crashes on the sofa. A few hours later, he awakens in the grip of the dreaded hangover. He then has two choices, Boettke and Horwitz note, get a short-term lift from another drink or endure a few hours of discomfort and fully recover. Boettke and Horwitz comment, "In any event, no one would say the hangover is when the harm is done; the harm was done the night before and the hangover is the evidence."[xxiv]

The market rebounds in 2021 began in 2020 as many states ended lockdown mandates and Americans were able to get back to work. In 2021, however, stimulus from the federal government by way of the American Rescue Plan Act (ARPA) and stimulus from the Federal Reserve drove up the rapid boom in the stock market. At the behest of the federal government, the Federal Reserve continued pumping billions of dollars into the market through bond-buying like the man downing one drink after another on a Saturday night.[xxv] Investors were then incentivized to buy higher-returning assets, like stocks, but printing billions of dollars per month also contributed to higher inflation. With supply-chain breakdowns and inflation ramping up in late 2021, investment returns began to take a hit but were still strong overall.[xxvi], The Federal Reserve scaled back its bond buying programs and began raising the federal funds effective interest rate in March 2022 to combat above-average inflation .[xxvii] The Federal Reserve tightening monetary policy, as well as international factors such as Russia's war in Ukraine and continued lockdowns in China crippling productivity, lead to the inevitable market decline in 2022[xxviii]

One silver lining over the past two years is that many plans lowered their assumed rates of returns. For the first time on record, the average assumed rate of return fell below 7% in 2022. Lowering assumed rates of return helps provide a more realistic picture of asset growth as well as the necessary contributions needed to cover annual costs and pay down unfunded liabilities.

Even an amazing investment year like 2021 cannot make up for the structural problems in public pension systems. As Figure X and Table X show, investment return assumptions over the past 20 years have only changed by fractions of a percentage point while actual annual returns have experienced major up and down swings. This is because pension plans have increased the level of risk in their investment portfolios since the year 2000. Marc Joffe, Federalism and State Policy analyst at the Cato Institute, notes that when data collection for public pensions began in the 1940s, most public pension fund assets were invested in municipal bonds.[xxix] By 1959, non-governmental securities had grown to 39% of total holdings, with most of these non-governmental holdings invested in corporate bonds.[xxx] In 1997, the Census Bureau added a category called, "International Securities" which represents a mix of non-US bonds and stocks.[xxxi] As the return on U.S. treasury notes decreased over time, public pension

investments looked to make up for returns in riskier assets.

Lower returns on municipal and corporate bonds incentivized greater investment into stocks and other riskier securities. Increasing risk in the portfolios coupled with increasing promised benefits without making required contributions allowed unfunded liabilities to grow.[xxxii]

In addition, GASB 68 allows pension plans to report "deferred inflows/outflows of resources." This allows state governments to defer the recognition of the difference between the assumed rate of return on plan assets and the actual rate of return. These "deferred inflow/outflow of resources" allow state governments to continue a form of asset smoothing even though GASB 67 eliminated asset smoothing.[xxxiii] By allowing a deferred inflow of resources to occur over a five-year period, market declines and gains are gradually incorporated into the plan over time, increasing the risk tolerance of sponsor behavior. [xxxiv]

Discount Rates: The Level of Risk in Plan Liabilities

While market conditions contributed to lower funding ratios by lowering the value of assets, the pension crisis is primarily a spending problem that stems from the intentional underfunding of a pension plan and the poor management of the plan. The ALEC pension report finds that states with relatively higher tax rates often have larger unfunded pension liabilities.[xxxv]

Meanwhile, as stated previously, states are still contractually and constitutionally obligated to pay pension liabilities, so there has been a major divergence between the risk premiums of pension assets and liabilities.

As the Society of Actuaries' Blue-Ribbon Panel on Public Pension Plan funding recommends, "the rate of return assumption should be based primarily on the current risk-free rate plus explicit risk premium or on other similar forward-looking techniques."[xxxvi] This is similar to the blended discount rate recommended by GASB.

The most recent example of the inability for states to alter pension payments comes from a ruling in the Illinois State Supreme Court on May 8, 2015. The state of Illinois passed pension reform in December 2013 state law that stopped automatic, compounded yearly cost-of-living increases, extended retirement ages for current state workers, and limited the amount of salary used to calculate pension benefits. Several public sector unions sued the state of Illinois and on May 8, 2015 the pension reforms were ruled unconstitutional.[xxxvii] After rolling back these pension reforms, unfunded liabilities continued to grow and left Illinois one of the worst funded public pension systems in the United States.

Because U.S. Treasury bonds are insured with the full faith and credit of the United States government, the rate of return for these bonds is the best proxy for a risk-free rate. A valuation of liabilities based on a risk-free rate contrasts sharply with the overly optimistic assumptions used by nearly every public sector pension plan. As economist Joshua Rauh notes:

> *The logic of financial economics is very clear that measuring the value of a pension promise requires using the yields on bonds that match the risk and duration of that promise. Therefore, to reflect the present value cost of actually delivering on a benefit promise requires the use of a default-free yield curve, such as the Treasury yield curve. Financial economists have spoken in*

near unison on this point. The fact that the stock market, whose performance drives that of most pension plan investments, has earned high historical returns does not justify the use of these historical returns as a discount rate for measuring pension liabilities.[xxxviii]

For this reason, it is recommended that states use the lower discount rate. In its annual pension report *Unaccountable and Unaffordable*, researchers at the American Legislative Exchange Council use a risk-free rate (based on US treasury bond yields) and a fixed discount rate (4.5%) in comparison to discount rates provided in state financial documents. For the 2019 report, a 15-year midpoint, using a hypothetical 15-year U.S. Treasury Bond yield, is used to derive an estimated risk-free discount rate of 2.96%. This is calculated as the average of the 10-year and 20-year bond yields.[xxxix]

The 15-year midpoint comes from the GASB recommendation that a pension plan take no longer than 30 years to pay off its pension liabilities. While state financial documents are not required to report their liabilities projected over a time series (i.e., reporting total liability due per year for the next 75 years), this report must assume the midpoint of state liabilities in order to recalculate state liabilities under different discount rate.[xl]

This methodology was developed by Bob Williams and Andy Biggs when this report was created by State Budget Solutions, which is now a project of the Center State Fiscal Reform at ALEC. It normalizes the liability values across plans and presents a more prudent valuation of liabilities than many state benefits plans with more rosy assumptions (such as higher discount rates). The inclusion of the fixed discount rate of 4.5%, was added by Thurston Powers in *Unaccountable and Unaffordable, 2018*.[xli]

Discount rates used for pension plans can vary even among plans within a state. The use of a risk-free discount rate normalizes discount rates across pension plans, providing the means to assess present value of liabilities across plans. This provides a basis of comparison for liabilities and funding ratios across the 50 states. Other variables provided by state financial documents such as mortality rates, demographics and health care costs were assumed to be correct and not normalized across plans.

This is a more prudent discount rate than many plans offer. The formula for calculating a risk-free present value for a liability requires first finding the future value of the liability. That formula, in which "i" represents a plan's assumed discount rate, is shown by equation 4[xlii]:

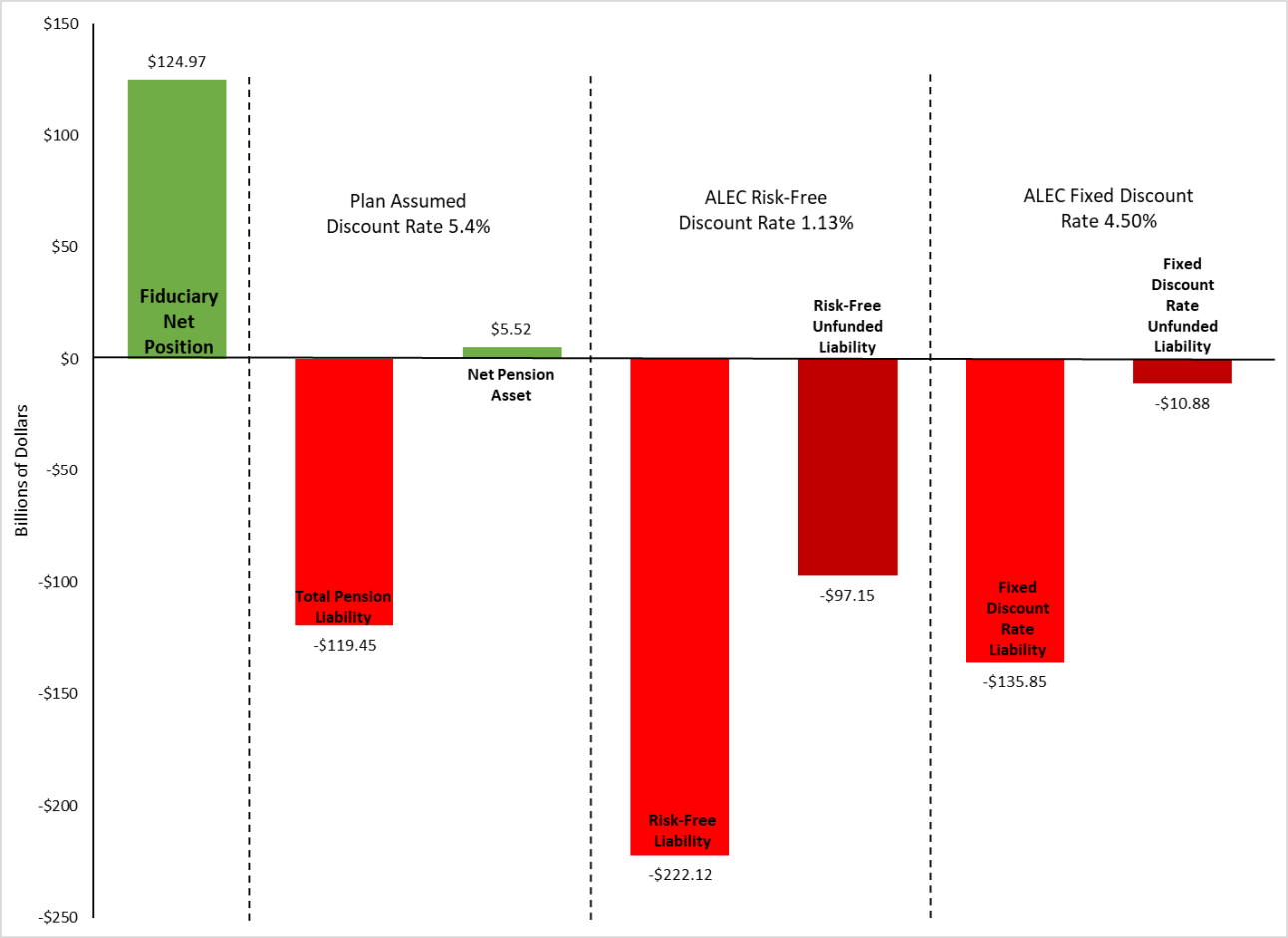
$$(4) Future\ Value\ = Total\ Pension\ Liability \times\ (1+i)^{15}$$

The second step is to discount the future value to arrive at the present value of the more reasonably valued liability. That formula is shown in equation 5 below, where "i" represents either the risk-free or fixed discount rate[xliii]:

$$(5)\ Present\ Value\ =\ \frac{Future\ Value}{(1+i)^{15}}$$

To demonstrate the differences in discount rates, Figure 2 shows an analysis of the Wisconsin Retirement system using both the ALEC risk-free discount rate and the ALEC fixed discount rate of 4.5% reveals different results. When using a risk-free discount rate or a discount rate average for private plans, liabilities increase dramatically. The three dividers show what unfunded liabilities look like using different discount rates. The plan fiduciary net position is shown in green on the left for comparison.

Figure 2: Wisconsin Retirement System Fiduciary Net Position and Liabilities (Various Discount Rates)



Sources: Wisconsin Retirement System Actuarial Valuations; American Legislative Exchange Council Center for State Fiscal Reform

If plan liabilities are valued using the Wisconsin Retirement System discount rate of 5.4%, which is 1.78 percentage points below the average public pension discount rate shown in Figure 8, the value of the liabilities show a net pension asset. If either of the ALEC discount rates are used, however, the Wisconsin Retirement System shows unfunded liabilities. Even a slight adjustment from the plan discount rate of 5.4% to the ALEC fixed discount rate of 4.5%, only a 0.9 percentage point difference, shows the WRS having over $10 billion in unfunded liabilities. Wisconsin currently has statutory protections for pensions under Section 40.19 WI State Statutes, stating that pensions are a contractual right, but the state is permitted to change the benefits terms with future statutes.[xliv] Using the risk-free discount rate to reflect the legal protections the WRS pensions have, it shows the WRS has over $97 billion in unfunded liabilities. Discount rates are a small detail that can result in major differences.

The purpose of these charts is to show that assumptions matter, especially the discount rate. Using lower discount rates do not "add" liabilities and using higher discount rates do not "take away" liabilities. The discount rate simply shows the value today of liabilities that are owed in the future. Using a more prudent rate of return, such as the ALEC risk-free rate of return, will provide a clearer picture of pension liabilities because, as previously stated, state governments are legally (and often

constitutionally) bound to make those pension payments. The lower discount rate reflects the state government's inability to default on its pension promises.

Unfunded Liabilities: An $8 Trillion Problem

The ALEC annual report on pensions found that, using a risk-free discount rate, unfunded liabilities totaled $8.28 trillion (just under $25,000 per person) for FY 2020.[xlv] Tables 3-6 have been recreated from the ALEC annual report on pensions *Unaccountable and Unaffordable 6th Edition* with permission from the authors.

Table 3: Total Risk-Free Unfunded Liabilities by State

Rank	State	Risk-Free Unfunded Liabilities	Rank	State	Risk-Free Unfunded Liabilities
1	Vermont	$14,436,915,023	26	Wisconsin	$97,154,455,679
2	South Dakota	$14,443,335,262	27	South Carolina	$114,660,456,761
3	North Dakota	$14,959,200,647	28	Louisiana	$128,821,669,699
4	Delaware	$18,467,436,374	29	Arizona	$133,128,569,669
5	Wyoming	$18,715,506,760	30	Kentucky	$137,219,561,720
6	Rhode Island	$24,614,454,336	31	Maryland	$139,840,588,394
7	New Hampshire	$25,939,504,194	32	Connecticut	$145,779,590,837
8	Maine	$26,056,952,442	33	Oregon	$147,779,453,200
9	Nebraska	$26,226,172,726	34	Minnesota	$148,316,886,233
10	Idaho	$29,276,256,967	35	Missouri	$157,405,710,149
11	West Virginia	$29,335,157,886	36	Virginia	$160,682,025,027
12	Montana	$30,665,520,502	37	Washington	$167,432,460,443
13	Alaska	$31,331,382,418	38	Colorado	$174,114,172,351
14	Utah	$55,458,770,068	39	North Carolina	$174,143,444,573
15	Hawaii	$58,122,692,070	40	Michigan	$178,933,605,482
16	Tennessee	$58,824,541,727	41	Massachusetts	$191,086,201,505
17	Kansas	$59,846,865,002	42	Georgia	$208,059,092,432
18	Arkansas	$67,682,576,006	43	Pennsylvania	$299,470,540,223
19	Indiana	$69,135,444,681	44	Florida	$302,873,520,482
20	Iowa	$69,171,677,447	45	New Jersey	$370,157,297,823
21	New Mexico	$76,037,898,187	46	Ohio	$429,533,379,710
22	Oklahoma	$80,636,914,666	47	New York	$508,708,887,680
23	Nevada	$82,252,281,510	48	Texas	$529,703,784,142
24	Alabama	$92,734,851,779	49	Illinois	$533,727,891,857
25	Mississippi	$96,029,349,197	50	California	$1,530,649,405,907

Source: Savidge, Thomas and Williams, Jonathan. Unaccountable and Unaffordable 6th Edition. Nicholas Stark and Lee Schalk eds. American Legislative Exchange Council. 2022.

As one can see, the unfunded liabilities are not evenly dispersed among the 50 states. The 10 states with the largest unfunded liabilities (the bottom 10 states in the ranking) are Georgia, Massachusetts, Michigan, Florida, New Jersey, Pennsylvania, New York, Ohio, Texas, Illinois, and California. Together these states have a combined sum of $2.97 trillion in unfunded liabilities. This sum makes up 60.27% of all unfunded pension liabilities in the country.

To put these unfunded liabilities in context, it is important to examine unfunded liabilities per capita. Table 4 shows the unfunded pension liabilities apportioned out to each state resident.

Table 4: Risk-Free Unfunded Liabilities Per Capita by State

Rank	State	Unfunded liabilities per capita	Rank	State	Unfunded liabilities per capita
1	Tennessee	$8,511.92	26	Rhode Island	$22,430.22
2	Indiana	$10,188.66	27	Vermont	$22,449.75
3	Nebraska	$13,370.44	28	Arkansas	$22,474.53
4	Florida	$14,062.16	29	Maryland	$22,638.10
5	Idaho	$15,918.74	30	Pennsylvania	$23,031.41
6	South Dakota	$16,289.47	31	New York	$25,182.05
7	West Virginia	$16,359.05	32	Missouri	$25,573.99
8	Wisconsin	$16,484.41	33	Minnesota	$25,990.89
9	North Carolina	$16,681.38	34	Nevada	$26,493.56
10	Utah	$16,951.49	35	Massachusetts	$27,181.86
11	Michigan	$17,756.05	36	Louisiana	$27,657.45
12	Texas	$18,174.46	37	Montana	$28,283.35
13	Alabama	$18,457.35	38	Colorado	$30,156.36
14	Arizona	$18,539.55	39	Kentucky	$30,453.74
15	Virginia	$18,616.00	40	Mississippi	$32,428.34
16	Delaware	$18,654.96	41	Wyoming	$32,444.27
17	New Hampshire	$18,830.46	42	Oregon	$34,876.22
18	Maine	$19,126.35	43	New Mexico	$35,908.91
19	North Dakota	$19,200.76	44	Ohio	$36,402.84
20	Georgia	$19,423.16	45	California	$38,713.16
21	Oklahoma	$20,366.18	46	New Jersey	$39,849.02
22	Kansas	$20,370.77	47	Hawaii	$39,939.43
23	Iowa	$21,681.40	48	Connecticut	$40,427.58
24	Washington	$21,729.57	49	Illinois	$41,656.79
25	South Carolina	$22,401.51	50	Alaska	$42,829.02

Source: Savidge, Thomas and Williams, Jonathan. Unaccountable and Unaffordable 6th Edition. Nicholas Stark and Lee Schalk eds. American Legislative Exchange Council. 2022.

This measurement is concerning because it shows the personal share of liability for every resident in each state. Each of these unfunded liabilities represents a future tax upon the residents of each state from these unfunded liabilities. States with relatively smaller populations face the largest burdens. Take Illinois for example, where unfunded liabilities are $28,200.06 per capita. That money could pay for tuition, fees, and room and board at Illinois State University for 2020-2021 academic year (just over $25,000) and have some money left over to pay for books and school supplies.[xlvi]

It is also important to note that these unfunded liabilities make up sizeable portions of their respective Gross State Product (GS) measurements.

Table 5: Risk-Free Unfunded Liabilities as a Percentage of Gross State Product (GSP)

Rank	State	Unfunded liabilities as a percentage of GSP	Rank	State	Unfunded liabilities as a percentage of GSP
1	Tennessee	15.47%	26	Maine	38.59%
2	Indiana	18.33%	27	Rhode Island	38.74%
3	Nebraska	20.64%	28	Minnesota	38.94%
4	Delaware	24.49%	29	Oklahoma	39.13%
5	North Dakota	26.23%	30	Alabama	40.15%
6	South Dakota	27.10%	31	Vermont	41.50%
7	Florida	27.70%	32	Colorado	44.61%
8	Washington	27.92%	33	Nevada	46.31%
9	Wisconsin	27.97%	34	South Carolina	46.55%
10	Texas	28.07%	35	Wyoming	47.21%
11	Virginia	28.99%	36	Missouri	47.40%
12	New Hampshire	29.28%	37	California	48.79%
13	New York	29.37%	38	Louisiana	48.82%
14	Utah	29.42%	39	Arkansas	50.82%
15	North Carolina	29.63%	40	Connecticut	51.04%
16	Massachusetts	32.09%	41	Alaska	56.55%
17	Maryland	32.65%	42	New Jersey	57.40%
18	Michigan	33.04%	43	Oregon	58.73%
19	Georgia	33.76%	44	Montana	58.78%
20	Kansas	34.57%	45	Illinois	59.49%
21	Iowa	35.51%	46	Hawaii	59.75%
22	Idaho	36.18%	47	Ohio	61.50%
23	Arizona	36.36%	48	Kentucky	63.92%
24	Pennsylvania	36.81%	49	New Mexico	73.11%
25	West Virginia	37.52%	50	Mississippi	80.85%

Source: Savidge, Thomas and Williams, Jonathan. Unaccountable and Unaffordable 6th Edition. Nicholas Stark and Lee Schalk eds. American Legislative Exchange Council. 2022.

Unfunded liabilities as a percentage of state GDP shows a state's ability to pay its unfunded liabilities. This measurement highlights the severity of a pension crisis in a relatively smaller economy (such as Illinois, Kentucky, or Mississippi). However, large unfunded liabilities can even have a significant impact on relatively larger economies. States can no longer simply grow their way out of the problem.

As previously mentioned, the funding ratio is an important measure of a defined benefit pension plan's health. Table 6 shows state funding ratios.

Table 6: Risk-Free Funding Ratios by State

Rank	State	Risk-Free Funding Ratio	Rank	State	Risk-Free Funding Ratio
1	Wisconsin	56.26%	26	Indiana	30.65%
2	South Dakota	46.10%	27	Nevada	30.31%
3	Tennessee	41.14%	28	Alabama	30.21%
4	Washington	38.57%	29	Oklahoma	29.52%
5	New York	38.51%	30	Maryland	28.59%
6	Utah	38.29%	31	North Dakota	28.57%
7	Idaho	37.95%	32	Louisiana	27.97%
8	North Carolina	37.21%	33	Montana	27.85%
9	Delaware	36.99%	34	Arizona	27.57%
10	Nebraska	36.92%	35	New Mexico	26.84%
11	Maine	36.76%	36	Michigan	26.79%
12	West Virginia	35.68%	37	New Hampshire	26.08%
13	Iowa	35.14%	38	Kansas	25.61%
14	Florida	34.79%	39	Rhode Island	25.47%
15	Missouri	33.33%	40	Vermont	24.36%
16	Texas	33.30%	41	Pennsylvania	23.85%
17	Virginia	33.06%	42	Hawaii	23.73%
18	Alaska	32.53%	43	Massachusetts	23.67%
19	Minnesota	32.08%	44	Mississippi	22.81%
20	Georgia	32.07%	45	South Carolina	21.42%
21	Wyoming	31.63%	46	Illinois	20.58%
22	Oregon	31.61%	47	Kentucky	19.78%
23	California	31.61%	48	Connecticut	19.14%
24	Ohio	31.52%	49	New Jersey	17.96%
25	Arkansas	30.84%	50	Colorado	15.16%

Source: Savidge, Thomas and Williams, Jonathan. Unaccountable and Unaffordable 6th Edition. Nicholas Stark and Lee Schalk eds. American Legislative Exchange Council. 2022.

Also, as previously mentioned, states must always strive for 100% funding ratio, however most states fell far below the 100% range. For 2018, the weighted average funding ratio was 45.2%.[xlvii] This is

dangerously low for pension plans. The best funded state, Wisconsin, has consistently had the highest funding ratio among the ALEC rankings for all years measured (FY 2012-2021).

Case Studies for Reform: Maine, Michigan, Tennessee, and Wisconsin

This section will discuss how the states of Maine, Michigan, Tennessee, and Wisconsin have all made workable reforms to their public pension systems in order to keep them sustainable for the future. Among these pension reforms, there are many similarities between the state pension systems.

Wisconsin (as previously mentioned) has the best funded pension system in the country at 56.26%, controlling for difference in discount rates, because it has a variable benefit rate, meaning the disbursement varies over time. State retirees are entitled to a low, guaranteed pension payment paired with a variable payment based on the pension system's funding ratio.[xlviii] This means when tax revenue is lower during economic recessions, the fund lowers payments to retirees and allows the fund to recover rather than exhausting the fund or taking on debt to keep making payments.[xlix] While the plan has been criticized for diminishing benefits during economic downturns, it has succeeded in providing retirement security with few significant changes to the plan since 1975.[l]

One significant change in Wisconsin occurred in 2011. That year, the Wisconsin Legislature and then-Gov. Scott Walker signed pension reform Acts 10 and 32.[li] These acts introduced several pension cost and risk-sharing measures, including requiring WRS participants to contribute half of the ADC payment.[lii] By requiring participants and the state to split the ADC payment ever year, it incentivizes prudent investment practices to minimize financial risks and annual costs.

In 2016, Maine pursued a series of reforms to implement variable contribution rates for their state pension system.[liii] Due to these reforms, in the past two years Maine's unfunded pension liabilities have decreased by almost $10 billion (about 50%). Normally, employer contribution rates fluctuate to meet the ADC or other contribution standards, whereas employee contributions are a fixed rate set by contract. Under a "risk-sharing" plan, changes in the ADC result in changes in contributions for both employer and employee.

The models share a key aspect: both Maine and Wisconsin have automatic "triggers", either on contribution rates, benefit rates, or cost of living adjustments. These triggers serve as an objective management tool to ensure pensions are funded. Automatic adjustments based on actuarial science are difficult to argue against, particularly when the potential deviation will underfund the pension system.

In addition, Michigan and Tennessee have introduced hybrid pension plans and options for full defined-contribution pensions. In most cases, a hybrid is a relatively small defined-benefit pension plan offered in tandem with a defined-contribution plan. The defined-benefit portion of these hybrids carries all the same risks as traditional pension plans. The risks, however, are mitigated by the smaller size and, often, better contract terms, such as benefit formulas that block spiking (getting large raises or bonuses in the time immediately before retiring in order to get a higher pension payout during retirement) or higher employer contribution rates.

Tennessee currently offers a hybrid pension plan for all state and higher education employees hired on or after July 1, 2014. All state and higher education employees hired before that date have been incorporated in the defined-benefit legacy plan.[liv] The hybrid plan incorporates both a defined-

benefit plan and the option to set aside money in a 401(k) plan. Tennessee is consistently one of the states with the best funding ratios and the lowest unfunded liabilities per capita in the ALEC pension reports since 2016. Unfunded liabilities will continue to fall as more retirees participate in hybrid pension plans and the state legacy pension plan liabilities are paid off.

Similarly, Michigan transitioned its Public School Employees' Retirement System (MPSERS) to a hybrid pensions for all new hires in 2017. The plan auto-enrolls new hires in a defined-contribution plan, but new teachers have the choice of opting into a hybrid plan with a mix of defined-contribution and defined-benefit plans.[lv] The defined-benefit plan splits all costs 50-50 between employers and employees, uses a 10-year amortization schedule and uses a 6% discount rate. In addition, if the hybrid plan's funding ratio falls below 85% for two consecutive years, the plan is closed to new hires until the funding ratio rises above the 85% threshold for two consecutive years.[lvi]

In 1996, Michigan was the first state in the nation to close its defined-benefit State Employee Retirement System (MSERS) and enroll new hires in a hybrid plan. [lvii] However, other state employee plans (such as MPSERS, the State Police Retirement System, State Judges Retirement System, Municipal Employees Retirement System, and the Legislative Retirement System) kept the defined-benefit option open to new hires. Thus, unfunded liabilities continue to accumulate in the other Michigan pension plans.[lviii]

The case of Michigan demonstrates that a transition to defined-contribution plans does not mean unfunded liabilities will disappear overnight (or even in one fiscal year). Michigan still ranks 40th in the nation on unfunded liabilities, but the counterfactual would be much worse. If these reforms were not in place, Michigan would resemble its neighbor to the southeast, Ohio, or nearby Illinois. Ohio (48th in the nation) has $290 billion in unfunded liabilities, while Illinois (49th in the nation) has nearly $360 billion in unfunded liabilities. A study conducted by Richard Dreyfuss and the Mackinac Center found that Michigan's reforms saved taxpayers $167 million in pension liabilities, $2.3 billion to $4.3 billion in unfunded liabilities and improved the political incentives of pension funding.[lix] By continuing reforms to transition more pension plans to defined-contribution, Michigan can steadily improve its retirement plans and reduce its unfunded liabilities.

By following the examples of these states, other state pension plans can make improvements to their respective pension systems, keep pensions sustainable for years to come and lower the burden of pension debt on taxpayers.

Two Warnings to Heed: Puerto Rico and Illinois

Just as there are examples for states the follow, there are also examples that states must avoid at all cost. Two such cases in recent years are that of the territory of Puerto Rico and the state of Illinois.

In *State Bonded Obligations, 2019*, the litigation over Puerto Rico debt defaults and bankruptcy litigation were ongoing.[lx] In 2016, Congress passed the Puerto Rico Oversight, Management, and Economic Stability Act (PROMESA) which established the Puerto Rico Financial Oversight and Management Board (FOMB).[lxi] In March 2022, a federal court confirmed a plan that reduced Puerto Rico's debt by 80%.[lxii] In a July 2022 panel during the Brookings Institute Municipal Finance Conference, David Skeel, Chairman of the FOMB and Professor of Corporate Law at the University of Pennsylvania Carey Law School, stated that the primary goal was to prevent this from happening again in Puerto Rico. Under the bankruptcy

plan, Puerto Rico currently has a borrowing limit of $1.15 billion, about 8% of commonwealth revenues excluding federal aid.[lxiii] In addition, a Contingent Value Instrument is used that connects bondholder payouts to sales tax revenues. Thus, the more Puerto Rico's economy improves, the more money bondholders receive, but bondholders will still take a large "haircut."[lxiv]

Unfunded pension liabilities were a major contributor to Puerto Rico's bankruptcy. Although the original defined benefit system was closed and new hires were enrolled in defined contribution systems before PROMESA, these negotiations still set a precedent for future bankruptcies. On that same Brookings panel, John Ceffalio, senior research analyst for Municipals at CreditSights, noted, that between Detroit and municipal bankruptcies in California, there is a clear precedent set that favors pensioners in negotiations over bondholders.[lxv] In these cases, pensioners took less of a haircut than the bondholders, showing that these municipalities could are more likely to payout pension promises in full than they are to pay bondholders. Thus, pension promises must be treated as though these entities cannot back out of their pension promises and must be valued using a risk-free discount rate such as the one used in the ALEC annual report on pension liabilities, *Unaccountable and Unaffordable*.

State Bonded Obligations, 2020 extensively discussed the reckless spending habits of Illinois and subsequent bailout from the Federal Reserve's Municipal Liquidity Facility (MLF).[lxvi] As a reminder to readers, the MLF purchased $3.2 billion in general obligation bonds from Illinois at below-market interest rates and Illinois had until the end of calendar year 2023 to pay the Federal Reserve back.[lxvii] If Illinois did not pay back the Federal Reserve in time, the U.S. Treasury, under the CARES Act, promised to cover the Federal Reserve's losses in full.[lxviii] Since 2020, Illinois has not made any substantial changes to its budgeting practices, continues to issue debt, and remains on the path to fiscal crisis. The Land of Lincoln even paid back the loans to the Federal Reserve in 2021 and 2022 through tax collections thanks to federal aid covering a large portion of the state expenditures.[lxix]

As of October 2022, Governor Pritzker has declared his 35th COVID Disaster Proclamation.[lxx] According to WirePoints, Pritzker says he's maintaining his Disaster Declaration, "to keep getting additional federal funds for food stamps and Medicaid."[lxxi] Despite claims from Pritzker that Illinois has a budget surplus, the Land of Lincoln is running on federal aid and borrowed time.[lxxii] The Illinois Policy Institute found that Illinois has not had a balanced budget since 2001 and entered FY 2023 with a $1.5 billion deficit. [lxxiii] Relying on hundreds of billions of dollars in federal aid has contributed to the largest increase in the money supply since World War II, spurring record high inflation.

Illinois could have enacted tax, budget, and pension reforms to fix its budget problems, but instead Illinois is still counting on federal taxpayers to bail them out. With sluggish GDP growth and concerns of a recession looming, it is reasonable to expect Illinois to appeal to Washington for additional bailouts in the near future.

As discussed in *State Bonded Obligations, 4th Edition*, states cannot technically go bankrupt because there is no chapter in the U.S. Bankruptcy Code pertaining to state governments.[lxxiv] David Skeel has made the case for creating a chapter in the U.S. bankruptcy code specifically for state governments.[lxxv] Skeel notes that allowing the states to declare bankruptcy would help provide a clear path to take when a state is in danger of default and the threat of bankruptcy would give state officials leverage to

negotiate state obligations outside of bankruptcy. [lxxvi] Skeel notes, however, an objection from E.J. McMahon of the Empire Center for Public Policy that state financial distress is a political problem. "If states have a bankruptcy option, legislators won't work as hard to make the difficult choices necessary to relieve a state's financial distress." [lxxvii] Skeel notes that this path can also be risky and destructive because it may take years and deep cuts to essential public services before fiscal balance is restored. [lxxviii]

The events transpiring in Puerto Rico and Illinois serve as a warning to other states and may be a sign of things to come. As state debt continues to grow, it is essential for states to get their fiscal affairs in order *before* the next crisis.

Further Recommendations: Protecting Workers and Taxpayers from Growing Debt

This section will explore several specific recommendations to keep pension debt below the target rate: Adjusting pension plan board governance structure, rules for investment, and enrolling new hires in a defined contribution plan (the structure of most 401(k) plans). The first is a more modest adjust while the second is a complete change to the pension plan.

When discussing the governance structure of pension plan boards, it is important to note that not all pension board structures are created equal. Recent research from Aleksandar Andonov, Yael Hochberg, and Joshua Rauh note that the structure of the pension boards strongly correlates with pension asset investment performance. Andonov, Hochberg, and Rauh find that pension funds whose boards have high fractions of *ex officio* members (i.e. state treasurers) or members appointed by a state official underperform the most, followed by funds whose boards have a high fraction of members elected by participants.[lxxix] The authors noticed that the worst performing governance structures invest more in riskier assets such as real estate and funds of funds, partially explaining the lower performance. Lack of financial experience among public pension board members partially contributes to poor performance but does not explain the performance of boards with state officials who have expertise on the subject.[lxxx] Political contributions from the finance industry to state officials on pension fund boards are strongly and negatively related to performance, but the authors found it did not fully explain lower performance.[lxxxi]

Currently, legislation in the New Mexico state senate would restructure its Public Employee Retirement Association (PERA) Board. The proposed bill (Senate Bill 201), would remove 3 trustees (reducing the total trustees from 12 to 9) with 4 active employees, 2 retired PERA members, New Mexico's Secretary of Finance and Administration (replacing the Secretary of State and the Treasurer), and add two non-PERA members that have "skill, knowledge, and experience in retirement investment products or retirement plan designs" (i.e. experts in finance and retirement portfolio management).[lxxxii] Those in favor of Senate Bill 201 cite Andonov, Hochberg, and Rauh's research on pension board governance structures.[lxxxiii]

Public pension plans would also benefit from a rule regarding protecting investment returns. In November 2020, the Department of Labor finalized a rule clarifying "investment duties" under Title I of the Employee Retirement Income Security Act of 1974.[lxxxiv] This rule requires private pension plan managers to make investment decisions solely on the basis of financial considerations relevant to the risk-adjusted economic value of a particular investment or investment course of action.[lxxxv] This means

that retirement portfolio managers cannot invest in political causes if such investments yield lower returns than a portfolio with optimized risk.

Several states, such as California and Alabama, invest public pension funds in environmental, social, and governance (ESG) investing practices and economic development. The California Public Employees Retirement System (CalPERS) and the California Teachers Retirement System (CalSTRS) have had volatile investment returns, costing the pension plans billions of dollars in missed investment returns.[lxxxvi] The state of Alabama invests public pension funds in economic development projects, such as golf courses and movie theaters, yielding extremely volatile investment returns.[lxxxvii] These volatile investment returns mean that the state and public employees must make higher ADC payments to make up for lost investments. If states were to issue a rule similar to the Department of Labor for their respective public pension systems, they could maximize investment returns and increase predictability and stability for pension contributions in the future.

Ultimately, the way to ensure that unfunded pension liabilities are reduced, and large burdens are not placed on taxpayers is to completely transition to defined contribution. The defined contribution pension (a structure like that of the 401(k) plan in the private sector) is a type of plan where employees make contributions to their own personal retirement accounts (and in some cases employers will match retirement contributions up to a certain dollar amount). The funds put into the retirement account are invested in an index fund and retirement savings accumulate value through investment returns and contributions. Upon retirement, it is up to the retiree to budget what he or she has saved and invested while working.[lxxxviii] While a defined contribution plan does not promise the annual payments of a defined benefit plan, it offers employees greater flexibility. The employee does not have to wait to be vested in a defined contribution retirement plan and follows the employee if he or she chooses to change careers. That flexibility can allow public sector workers to leave his or her public sector job for another job (whether in the public or private sector) and not worry about losing retirement savings. The defined contribution will follow him or her wherever their career takes them all the while lowering the cost of retirement payments for taxpayers.

Conclusion

To ensure the promises of the American Founding to future generations, states must reign in rapidly growing unfunded liabilities. If state policymakers fail to make the necessary reforms, they leave future generations saddled with excessive tax burdens, deteriorating public services, and the possibility of government default.

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