

## **State Pension Reform: What Have They Accomplished?**

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*Since 2001, the combined funded ratio of the state level public systems in our data has gone from fully funded in 2002 to approximately 72% in 2013. In current-year dollars, this translates to a shortfall of almost \$1 trillion. We examine the financial impact of pension reform legislation since the beginning of 2009. We found that 49 of 50 states adopted reform legislation during this period; the impact of these reforms on funded ratios has been minimal due to the inability to apply reforms to existing employees. Funded ratios are not expected to improve without significant increases in plan contributions.*

*Keywords: State Pensions, Public Pensions, Defined Benefit, Unfunded Liabilities, Discount Rates, Asset Allocations, Mortality*

### **INTRODUCTION**

The funding shortfalls of defined benefit pension plans<sup>1</sup> have been well documented and pose a serious challenge at just about every level of government in the United States. One significant issue is that the plan sponsor typically takes all of the investment risk. Notable examples at the federal level are the U.S. Postal Service and Social Security Administration. Cities such as Chicago, Detroit, and Philadelphia face unfunded pension liabilities that are so vast that they are unlikely to be fully funded in the future. Moreover, deposits to pension systems are becoming a drain on government budgets, forcing significant reductions of essential government services like fire protection and law enforcement. As of 2012, the combined funded ratios<sup>2</sup> of all state level plans were approximately 72% of their current pension obligations and even more disconcerting, all fifty states combined made only 77% of their actuarially required contributions<sup>3</sup> (ARC) during the same year (Pew Charitable Trusts, March 2014). The fact that so many plans are not meeting their full ARCs does not bode well for the provision of essential services provided by states or the ongoing funding levels of state level public pensions in this country.

The unfunded actuarially accrued liability (UAAL<sup>4</sup>) refers to the funding shortfall, which is based on the selected amortization period and the actuarial assumptions of the given plan. The failure of governments to meet their ARCs is the direct result of the methods chosen to amortize their UAAL. Most state governments selected options that depend on payroll growth, however in recent years employment growth has either slowed or declined due to reductions in government services. Additionally, our data indicate that funded ratios are not likely to improve in the near future. The 2013 reporting year will be the last to feel the impact of the smoothed<sup>5</sup> losses that resulted from the 2008 recession and reports issued after June 30, 2014 will show funded ratios based on actual market values of assets instead of actuarially determined values.

The purpose of our paper is to examine the impact of state level pension reforms that have been implemented since the financial crisis to determine if there have been any real improvements in the way these pension systems are funded and are public pension funding levels likely to improve. We examine the impact of these reforms on both current and projected funded ratios. Our reason for selecting state level pension plans is due to the fact that pension benefits are constitutional or considered constitutional by judicial precedent, which means that default and or bankruptcy are not options for states as they are for some local municipalities. Forty-nine states have enacted pension reform legislation since 2009; some of these reforms have been small while others have been quite drastic. For example, Kentucky has pledged an additional \$100 million annually<sup>6</sup> for an estimated total of \$131 million in an effort to meet its pension obligations. Still others such as California, Illinois and Ohio, have attempted and failed to improve the funding of their pension funds. In 2012, these states made actuarially required contributions totaling 72, 76 and 57% respectively.<sup>7</sup> Clearly, these situations are not sustainable and they are not atypical. During 2012, a year where the stock market saw modest gains, the funded ratios of the pension plans in 38 states declined, eight were flat and four actually increased.<sup>8</sup> States, such as the previous examples, face obstacles in addressing pension funding levels, most notably structural budget deficits and adversarial unionized labor. Also, there is a problem with political will in many state legislatures as pension liability amortization payments are easy to ignore because they are not a hard obligation.

## **PRIOR LITERATURE**

Contributions to public pension literature have come from a variety of sources including the popular press, private research institutions, and the academic literature. The Pew Charitable Trusts, a private research institution, has contributed through its publications on public pensions, which included an examination of the fiscal health of state pension plans (March 2014) and its participation in reform process in the Commonwealth of Kentucky (September 2013).

Novy-Marx and Rauh (2011) apply various discount rates to public pension liabilities and found the liabilities to be much greater than previously thought. Novy-Marx and Rauh (2014) propose the introduction of a variable annuity at retirement in where positive benefit adjustments are only granted each year if asset returns exceed 5%. They find that this change would reduce unfunded accrued liabilities by over 50%, and would lower the annual contribution increases required to target full funding in 30 years by 44%. Rauh (2014) discovers that the growth of UAAL since 2000 has been primarily due to a combination of benefit increases, insufficient funding and poor investment returns and that cities are reducing public safety funding in an effort to make the necessary annual benefit payments. Costrell (May 2012) examines the resistance to public pension reform as it relates to Governmental Accounting Standards Board (GASB) guidelines and finds that the objection to reform was due to false interpretation of the GASB guidelines.

Munnell, et al, (June 2014), through the Center for Retirement Research at Boston College, produced a series of briefs that examined many of the issues faced by public pension systems. They project that public pension funded ratios would improve to approximately 80% funded while using their respective actuarially assumed rates as the discount rate and making the assumption that the stock market remains healthy. Additionally, Munnell, et al (July 2014) examine the effectiveness of pension obligation bond

issuance and found them to be marginally effective. Munnell, et al (September 2014) scrutinize the sensitivity of public pension liabilities to investment returns. They find real rates of return to be substantially more important to pension funding than nominal rates of return and that the combination of level percent of payroll with re-amortization<sup>9</sup> is a significant impediment to improving funded ratios. Munnell, et al (January 2015) develop a tool to determine the sources of public pension UAALs and conclude that poor investment returns were responsible for over half of the UAAL. Munnell, et al (April 2015) assess the impact of longer lifespans on public pension liabilities and report that their impact would likely be minimal. McGuinn (February 2014), through the Brown Center on Education Policy at Brookings examines reform in four states and presents a road map for the successful implementation of public pension reforms. Our paper differs from previous studies in that it is the first to comprehensively examine and tabulate the state level pension reforms in the post financial crisis era.

## **HISTORICAL PENSION FUNDING**

Pension funding problems began prior to 1985, when many state level pension plans operated on a pay as you go basis. This system appeared to work well when the number of covered employees and thus their payrolls were increasing over time. During the late '70s, inflation and payroll growth easily met the cash flow needs of the retirees. The pension funding situation began to change when the growth of state government employment slowed due to a combination of slower population growth and state budgetary shortfalls.

The establishment of the GASB in 1985 led to new guidelines for recognizing and funding pension obligations, which were first implemented in the 1986 reporting year. At that time GASB offered some flexibility as to how each state would amortize its pension obligations. First, states could select any amortization period up to a maximum of 40 years and many immediately selected a 40-year amortization period. In addition, states selected a method of calculating amortization payments from the following two options: (1) level percent of payroll, which calculates amortization payments as a constant percentage of projected payroll over a given number of years, and the more conservative and initially more costly (2) level dollar amortization methodology, which amortizes the cost into equal dollar amounts to be paid over a given number of years. The combination of the 40-year amortization and level percent of payroll method resulted in significantly lower required contributions and a negative amortization of pension liabilities for at least 10 years. So, during the initial decade states were supposed to be addressing pension funding while most were just passing the funding problem on to the next generation.

GASB Statement 25 reduced the 40-year maximum amortization to 30 years for accounting periods after June 15, 1996. In subsequent years, the GASB addressed additional relevant issues, including spiking and re-amortization of the UAAL. Spiking occurs when an employee's salary increases significantly in the final years of his or her employment. The result can create a large increase in the pension plan's liability that is greater than has been provided for by the contributions over the term of employment. Re-amortization is simply recalculating and extending the payments required to amortize the UAAL. Almost every state re-amortizes their UAAL payments; some states re-amortize every few years while others re-amortize annually. The practice and financial impact are examined in detail by Munnell, et al (September 2014). As an example that is comparable to how states' treatment of their pension funding, imagine refinancing a 30-year mortgage each year with new 30-year mortgage. One would always be starting a new mortgage at the first payment, which amortizes almost no principal. The individual would never pay off the mortgage and negative amortization would occur due to the necessary payment of closing costs for each new mortgage. A key problem is the fact that there are no limits on re-amortization unless they are imposed by each state.

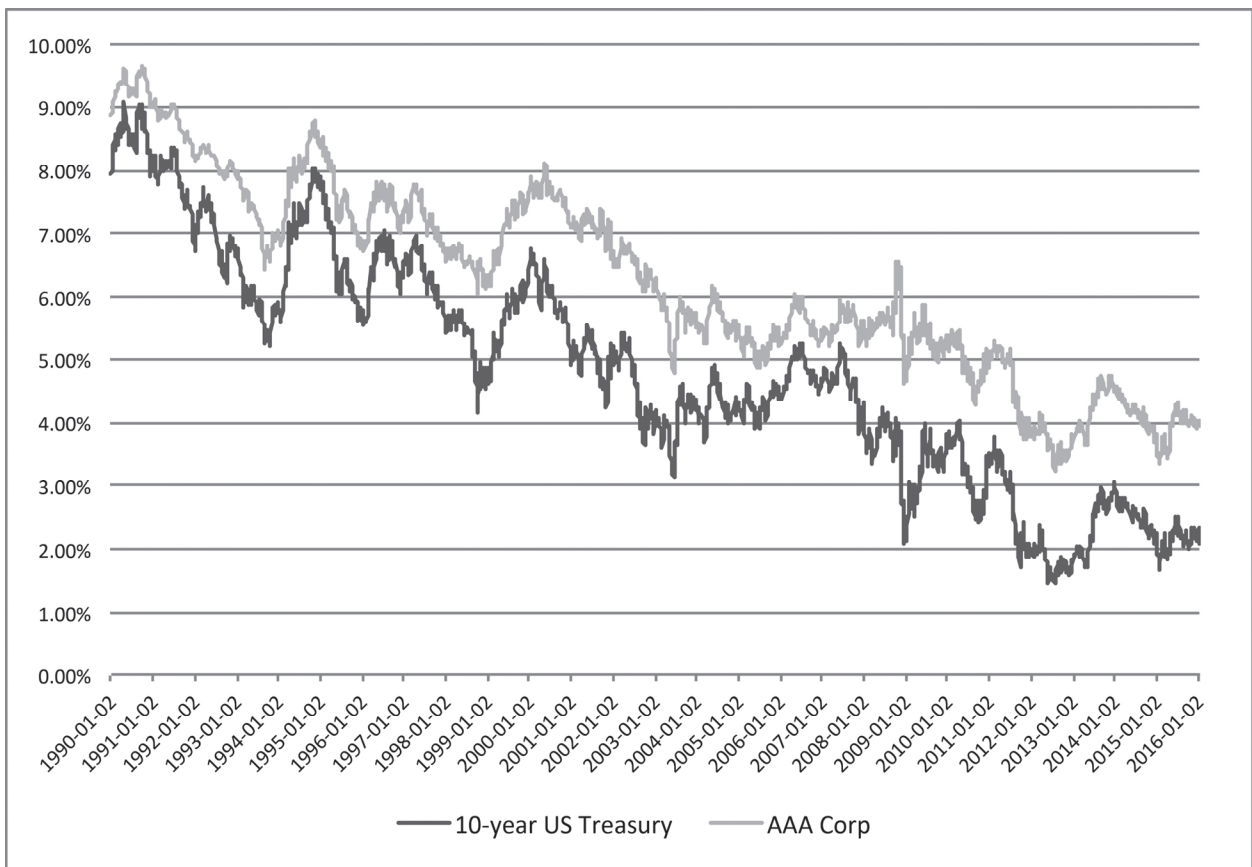
The unfunded pension liability issue was masked by the high stock market returns of the mid to late 1990s. During this time many states elected to give plan members unfunded benefit increases and allowed the taking of contribution holidays. A contribution holiday is simply not making the necessary ARC to sustain the plan and these were commonplace. More recently, pension holidays have been taken by states

out of necessity rather than by choice. For example, New Jersey and Pennsylvania made only 39% and 43% of their respective ARCs during 2012 (Pew Charitable Trusts, March 2014).

## RECENT PENSION FUNDING

Pension funding issues came to the forefront after the 2001 recession as interest rates and stock market returns declined during this economic slowdown. Pension plans were dealt another setback during the financial crisis of 2008, as declines in interest rates and stock prices became much more severe than the previous recession. Historically portfolio allocations were approximately a 60%/40% split, where plans would invest around 60% of their assets in equities and the remaining 40% of their assets in fixed income securities. However, allocations began to change in the 1990s due to declining interest rates and an increasing number of investment alternatives. Declines in interest rates have had an impact on the plans in our data set; the average fixed income allocation was approximately 34% in 2001 and the allocation had fallen to about 24% in 2014.

**FIGURE 1**  
**HISTORICAL INTEREST RATES**

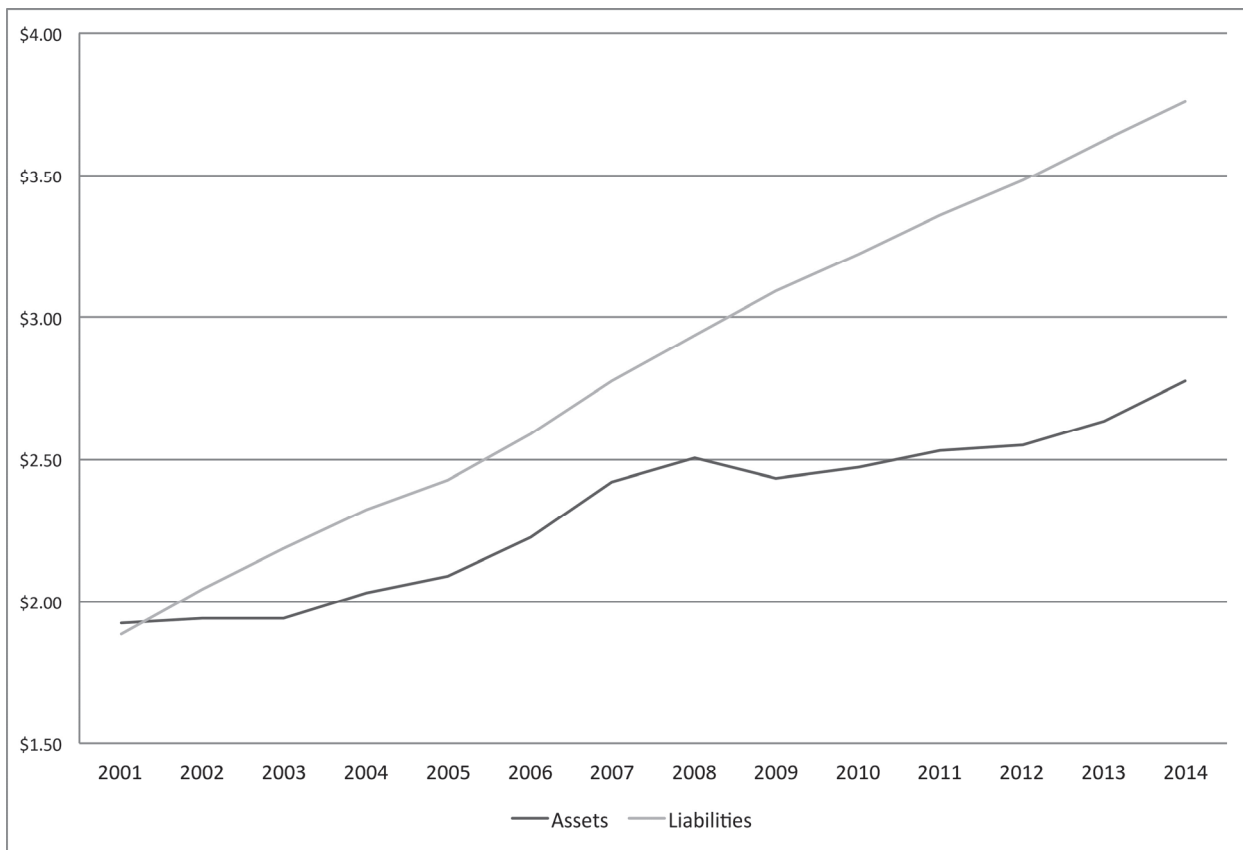


Source: Federal Reserve Bank of St. Louis: Federal Reserve Economic Data (FRED)

This allocation change away from fixed income investments is not a surprise due to persistent historically low levels of interest rates since the 2008 recession. Figure 1 shows the yields on the 10-year U.S. Treasury and a generic 10-year AAA rated corporate bond, both of which are representative of the types fixed income investments that are included in a pension fund portfolio. This new portfolio allocation places more importance on equity returns, which are usually more volatile than fixed income

investments. For example, prior to the 2008 recession a fixed income portfolio's return was commonly 5%, which means that a plan with a 35/65 fixed income/equity portfolio allocation needed to earn roughly 9¾% on its equity portfolio to meet an 8% actuarial assumed rate. In recent years, the plans fixed income return might have been 2% due to Quantitative Easing and lower interest rates meaning that the equity portfolio now must earn about 11¼% to obtain the same 8% portfolio return.

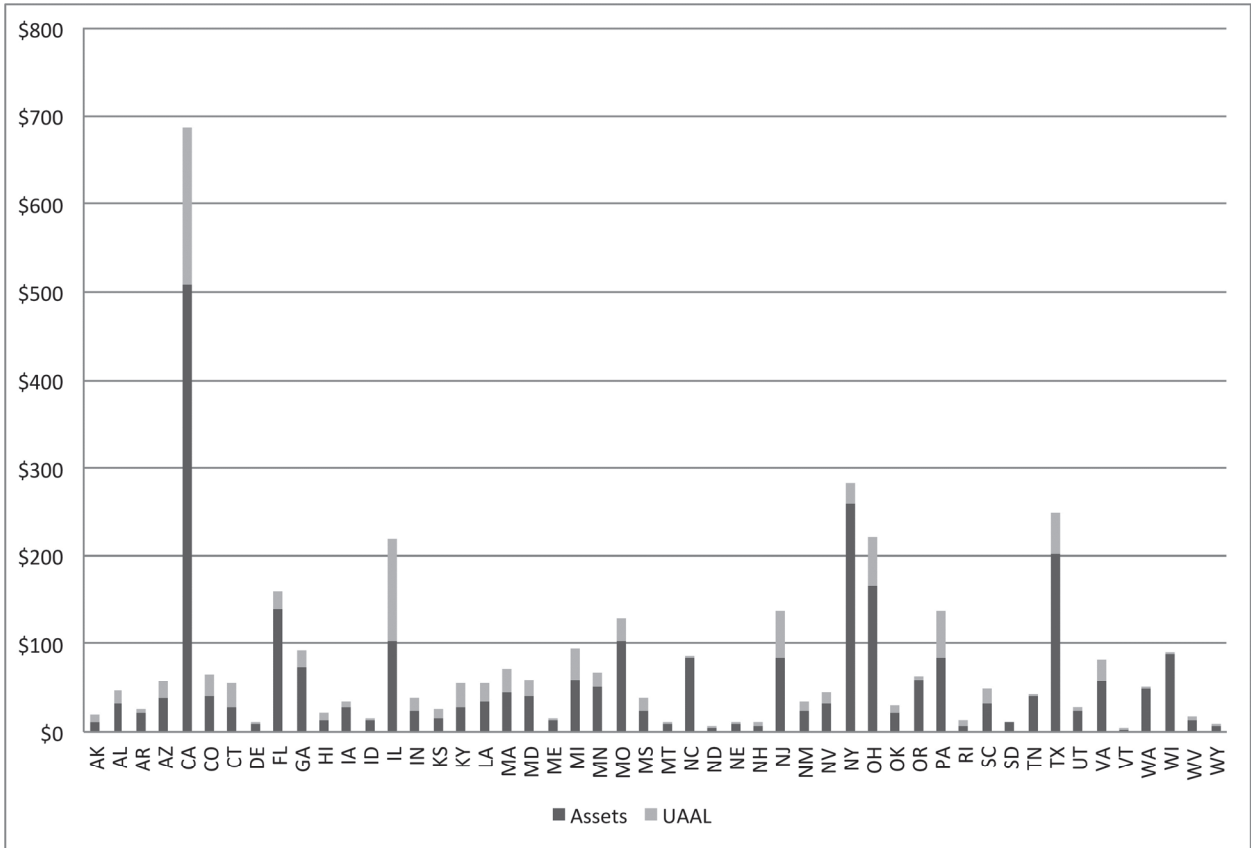
**FIGURE 2  
HISTORICAL PENSION FUNDING**



Source: Public Plans Database. 2001-2014. Center for Retirement Research at Boston College, Center for State and Local Government Excellence, and National Association of State Retirement Administrators.

As a result, pension assets only grew just over 44% between 2001 and 2014 while pension liabilities have grown almost 100% over the same period. Figure 2 tracks pension assets and liabilities during this period. The gap between assets and liabilities has significantly increased over time. It is also worth noting that many plans utilized asset smoothing, which tends to mask market volatility and presents a picture that appears to be much more stable than the actual results that occur.

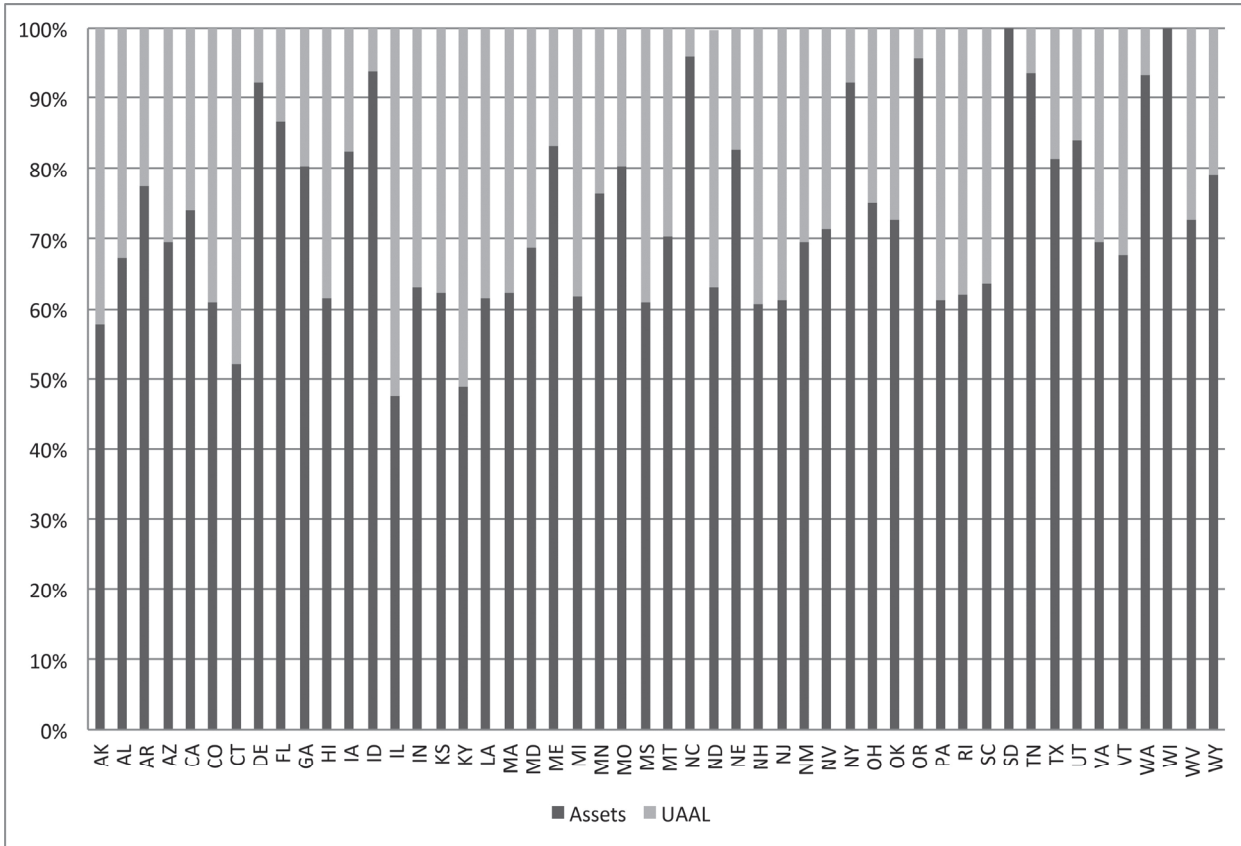
**FIGURE 3  
ASSETS AND LIABILITIES FOR 2014**



Source: Public Plans Database. 2001-2014. Center for Retirement Research at Boston College, Center for State and Local Government Excellence, and National Association of State Retirement Administrators.

Figure 3 shows pension assets and UAALs in billions of dollars for all fifty states. It is evident that California, Illinois and Ohio comprise a significant portion of the funding problem; however, the funded ratios are quite low in most states. Figure 4 presents the pension assets and liabilities on a percentage basis. Only two states, South Dakota and Wisconsin, were fully funded as of their 2014 reports. Figure 4 illustrates a clearer picture of the significance of the UAAL in almost every state in the country. Funding levels are likely to get worse before they improve due to the recent release of the RP-2014<sup>10</sup> mortality tables, which show increasing life expectancies of the plan members. We discuss the impact of increasing life expectancies in the next section.

**FIGURE 4  
RELATIVE ASSETS AND LIABILITIES FOR 2014**



Source: Center Public Plans Database, 2001-2014. Center for Retirement Research at Boston College, Center for State and Local Government Excellence, and National Association of State Retirement Administrators.

**GASB 67 AND 68**

GASB 67 and 68 will have a significant impact to the way plans prepare their annual reports. The changes are to be implemented in reports issued on and after June 30, 2014 and June 30, 2015. Analyst complaints arose regarding the likelihood that the new rules will reduce transparency in reporting due mainly to the elimination of the ARC calculation requirement. On a positive note, all plans will be required to use Entry Age Normal (EAN<sup>11</sup>) actuarial methodology for reporting purposes. EAN recognizes expected future salary increases in addition to the plans accrued liability. It is estimated that implementing EAN increases the pension obligation by approximately 15% over the termination liability<sup>12</sup> methodology which calculates the obligation based on previously known information (Novy-Marx and Rauh 2011). The overall impact of this change should be much less than 15% since a majority of plans already use EAN and those plans that don't use EAN utilize actuarial methodologies that fall somewhere between EAN and termination liability methodology in recognizing the plan liabilities. In addition, the new rules will require that funded ratios are calculated using actual market values versus actuarially smoothed values<sup>13</sup> that have been used previously. As a result of the new rules, annual reports will present a more comparable representation of funded ratios and comparisons may be made of the actuarial data between plans. However, differences in actuarial assumptions, which vary significantly, will still be an impediment to accurately comparing the actuarial data among plans.

One source of concern with the changes is the elimination of requirement for the calculation of the ARC. The percentage of ARC paid is one of the necessary tools used by analysts in measuring a plans

ongoing fiscal health, so this may provide less transparency in actuarial reports. As we mentioned earlier, many states are repeatedly unable or choose not to contribute the full amount of the ARC, which results in increases in UAAL and reduces the likelihood that funding levels will improve.

The next requirement specifies that plans with a UAAL are required to use a single discount rate that reflects: (1) a long-term expected rate of return on pension plan investments to the extent that the pension plan's fiduciary net position is projected to be sufficient to pay benefits and pension plan assets are expected to be invested using a strategy to achieve that return and (2) a tax-exempt, high-quality municipal bond rate to the extent that the conditions for use of the long-term expected rate of return are not met.<sup>14</sup> These rates will result in significantly higher UAAL amortization payments; however, there is no requirement that plans utilize these larger payments in determining how much they contribute to the plan in a given year. So, the impact of GASB 67 and 68 on plan funding levels will depend on the extent to which states and plans utilize the new calculations in the determination of annual contributions. If a large number of plans choose to use this methodology, there would likely be an improvement in pension funding over time.

## **DATA**

Our data are taken from two sources. Pension legislative data is collected from the National Conference of State Legislatures (NCSL). The NCSL provides data collected by the Pew Charitable Trusts to produce annual reports detailing enacted pension reform legislation. Specifically, we use the NCSL Reports<sup>15</sup> for 2009, 2010, 2011, and 2012. In addition, we use the Pew Charitable Trusts Pensions and Retirement State Legislation Database<sup>16</sup> located on the NCSL website to access enacted legislation for 2013 and 2014. Our state level pension funding information is gathered from the Public Plans Database from the Center for Retirement Research at Boston College<sup>17</sup>. The revised data set includes data for 115 state level pension plans covering the time period 2001 to 2014.

## **PENSION REFORM PRIOR TO THE FINANCIAL CRISIS**

States have historically been reluctant to reform defined benefit pension plans even though the funding problems have been readily apparent. Some of the first attempts at improving funding levels involved the issuance of pension obligations bonds (POBs). The state could issue taxable bonds at a significantly lower interest rate than the plans actuarially assumed rate thereby creating an arbitrage opportunity. The taxable bond approach theoretically benefits the plan by depositing the proceeds into the plan and the plan achieves its assumed rate of rate of return resulting in arbitrage earnings, due to the difference between earnings and the lower rate on the bonds. Governments can issue tax exempt bonds at much lower interest rates to fund pension obligations; however, they would not be permitted to arbitrage the proceeds. The Tax Reform Act of 1986 eliminated almost all arbitrage opportunities available to state and local governments though the use of tax-exempt bonds. This approach only works if the actuarial assumptions are sound and actually realized. Most POBs have been issued at all-in yields between 5% and 6%; given that our data show weighted average returns of about 6.5% over the past 15 years, then benefits of POBs have certainly been less than expected. In addition, the volatility of returns reduces the likelihood of success especially when there are losses in the early years.

The timing of POB issuance is very important. For example, the State of Illinois issued \$10 billion of POBs in 2003 and another \$3.5 billion and \$3.7 billion in 2010 and 2011, respectively. These amounts are not included in the UAALs and funded ratios discussed herein, which means that the state's funding situation is actually not transparent and appears to be superior to the actuality of the situation. One problem with Illinois' POB was the fact that almost 30% of the 2003 bond proceeds were used to pay normal cost or current pension expenses and the cost to issue the bonds. Additionally, the losses incurred during the 2008 recession exacerbated the situation. Due to the early failures to make necessary returns, it appears that the Illinois plans will have a difficult recovery.



Another issue with POB issuance is the conversion of a soft to a hard obligation. Although an employee pension obligation must be paid, there is a great deal of flexibility as to when it is paid. This flexibility is not the case with POBs, as they are a debt, and payments are made on a fixed schedule. Since the Tax Reform Act of 1986, governmental issuers have issued approximately \$105 billion of POBs and as of 2014. It is estimated that the real return on POBs was approximately 1.5% of legal arbitrage on average (Munnell, et al July 2014).

Historically, making changes to a defined benefit pension plan has meant closing access to an existing plan and creating a new plan for those hired after a certain date. This type of change poses a problem because it limits the impact of reforms until well into the future, thereby not creating the immediate budget relief that states desperately need. Another issue that states face relates to how GASB treats plans that are closed to new members. GASB requires that defined benefit plans to use “level dollar” amortization for these closed plans, which requires a significant increase in current payments over the “level percent of payroll” or a deferred amortization method used by the majority of these plans. Using level percent of payroll can be justified if the combined payroll is growing. The justification is that changes should be made because government payrolls are no longer growing. One important thing to note is that GASB provides a set of accounting standards or guidelines for financial reporting and does not address how the plan should be funded. States implementing reforms have continued to use the level percent of payroll methodology by using the payroll of the combined plans, closed and new (Costrell, May 2012).

## **PENSION REFORM POST FINANCIAL CRISIS**

Since 2009, a large majority of states have enacted legislation making changes to the funding of their pensions including the following: increases in employee and employer contributions; higher age and service requirements; reductions in post-retirement cost of living adjustments (COLAs), changes in benefit calculation formulas; pledging new revenue streams to retire UAALs; adding anti-spiking provisions; and switching to defined contribution pension plans or hybrid plans that combine both defined benefit and defined contribution plans. The purpose of these new hybrid pensions is to shift investment risk from the plan sponsor to the plan member.

Table 1.1 was compiled using NCSL Retirement Plan Legislation Reports and the Pew Charitable Trusts Pension and Retirement State Legislation Database. The data indicate that 49 states have enacted pension reform legislation from the beginning of 2009 and the end of 2014. The exception being the State of Idaho, which has been somewhat immune to the pension funding issues that continue to plague other states, as it had a respectable funded ratio of 84% in 2013.

Using the Pew Database, which contains data beginning in 2012 up to the present, we found a total of 458 pieces of legislation enacted by 48 states. The data indicates that states are making an effort to reduce their annual obligations and UAALs. These reforms have impacted new, existing and retired employees; however, only eight states increased age and service requirements for existing employees while 35 states increased age and service requirements for new employees. Age and service requirements are typically a minimum age and/or year of service required to collect benefits. Twelve states reduced benefits for existing employees while 25 reduced benefits for new employees. Benefit reductions typically come in the form of a reduction in the multiplier, which is a percentage of the final average annual salary that a member receives in benefits for each year of service. Previously, multipliers of 2.5% to 3.0% were common while revised plans usually have multipliers at or below 2.5%. These benefit reductions are reflective of the problem states face when they attempt to reduce benefits for existing employees because these benefits are considered constitutional in almost every state.

**TABLE 1  
STATE LEVEL PENSION REFORM SUMMARY: 2009 THROUGH 2014**

State	(1) Enacted Pension Reforms	(2) Closed Existing Plans	(3) Adopted Hybrid Plans	(4) Increased Employee Contributions	(5) Added Employee Contributions	(6) Increased Employer Contributions	(7) Increased State Contributions	(8) Increased Age and Salary Requirements - Existing Employees	(9) Increased Age and Salary Requirements - New Employees	(10) Benefit Reductions - Existing Employees	(11) Benefit Reductions - New Employees	(12) Increased Length of Average Salary Calculation	(13) Decreased Cost of Living Adjustments	(14) Created Penalties for Early Retirement	(15) Added Spiking Provisions	(16) Decreased Employer Contributions	(17) Decreased State Contributions
AL	x	x		x					x		x				x		
AK	x			x			x						x				
AZ	x			x					x		x	x	x	x			
AR	x			x		x				x	x	x	x				
CA	x	x		x		x	x		x		x	x					
CO	x			x		x	x		x				x		x		x
CT	x												x				
DE	x			x					x					x	x		
FL	x			x		x		x	x				x				
GA	x			x						x		x	x		x		
HI	x			x					x				x				
ID																	
IL	x			x			x		x			x	x		x	x	
IN	x	x	x	x													
IA	x								x			x					
KS	x			x		x		x	x	x	x		x				
KY	x			x			x						x				
LA	x	x		x		x		x	x		x	x	x	x	x		
ME	x			x					x			x	x	x			
MD	x			x									x				
MA	x							x	x	x		x	x		x	x	x
MI	x	x	x	x	x				x			x	x				
MN	x			x					x		x		x				
MS	x			x					x		x	x	x				
MO	x			x	x		x		x				x				
MT	x			x			x		x	x	x	x			x		
NE	x			x		x	x				x	x					
NV	x								x	x	x	x	x	x	x		
NH	x			x					x		x	x		x	x		
NJ	x			x					x	x	x	x		x		x	
NM	x	x		x		x		x	x	x	x	x	x			x	
NY	x	x		x		x			x								

**TABLE 1  
STATE LEVEL PENSION REFORM SUMMARY: 2009 THROUGH 2014 (CONTINUED)**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
State	Enacted Pension Reforms	Closed Existing Plans	Adopted Hybrid Plans	Increased Employee Contributions	Added Employee Contributions	Increased Employer Contributions	Increased State Contributions	Increased Age and Salary Requirements - Existing Employees	Increased Age and Salary Requirements - New Employees	Benefit Reductions - Existing Employees	Benefit Reductions - New Employees	Increased Length of Average Salary Calculation	Decreased Cost of Living Adjustments	Created Penalties for Early Retirement	Added Spiking Provisions	Decreased Employer Contributions	Decreased State Contributions
NC	x			x					x						x		
ND	x			x					x					x			
OH	x			x					x		x	x	x				
OK	x			x		x	x	x	x	x	x	x	x	x	x		
OR	x			x							x		x		x		
PA	x		x	x					x		x						
RI	x	x	x	x				x	x	x	x	x	x				x
SC	x			x						x	x	x	x				
SD	x			x									x				
TN	x	x	x	x													
TX	x			x	x				x	x	x	x	x	x			x
UT	x	x	x	x					x		x	x	x				
VT	x			x				x				x			x		x
VA	x	x	x	x	x				x		x	x	x				x
WA	x			x									x				
WV	x			x					x		x	x	x		x		
WI	x			x					x								
WY	x			x		x			x		x	x					
Totals	49	11	7	45	4	11	9	8	35	12	25	28	32	10	15	4	6

In most cases, unions have to agree to benefit reductions for existing employees, which can be a complicated endeavor in which to negotiate. One exception was the State of Utah, which included the unions in the reform process and was able to get them to agree to the process (McGuinn, February 2014). Table 1 also indicates that States have been able to reduce costs in other areas by increasing employee contributions, reducing COLAs and increasing the time period used in calculating the final average salary. These types of changes typically have not significantly improved pension funding. They provide budget relief for the individual state, but that brings us to the most discouraging information in Table 1, which relates to state contributions. Only eight states, Alaska, California, Colorado, Illinois, Kentucky, Missouri, Montana, and Nebraska increased their annual pension contributions and even this is somewhat misleading as only three of these states will likely pay over 90% of their ARC going forward. Six other states, Colorado, Massachusetts, Rhode Island, Texas, Vermont, and Virginia actually decreased their annual contributions.

The Commonwealth of Kentucky significantly increased annual appropriations for its retirement plans.<sup>18</sup> In 2008, the Commonwealth implemented almost all of the reforms mentioned above and had faced continuous declines in funded ratios during the period since implementation.<sup>19</sup> In addition, there were 25 states that limited employee access to post-retirement healthcare insurance or significantly increased employee contributions for such benefits. Another 24 states limited or prohibited post retirement employment within the system to limit so called “double-dipping,” which refers to the common occurrence of employees returning to work after they begin collecting their pension benefits. Also, many states added or strengthened ethics requirements, which usually relate to felony convictions.

**TABLE 2**  
**STATE PENSION PLANS CATEGORIZED BY FUNDED RATIO**

<b>Funded Ratio</b>	2002	2007	2009	2013	2014
<b>Greater than or equal to 90%</b>	31	15	6	7	9
<b>Greater than or equal to 80% and less than 90%</b>	10	15	13	6	8
<b>Greater than or equal to 70% and less than 80%</b>	5	11	12	11	9
<b>Less than 70%</b>	4	9	19	26	24
<b>Average</b>	91.6%	84.3%	75.9%	71.8%	74.1%

Source: Public Plans Database. 2001-2014. Center for Retirement Research at Boston College, Center for State and Local Government Excellence, and National Association of State Retirement Administrators.

Table 2 portrays the lack of progress with regard to pension funding. In 2002 there were 31 states with funded ratios at or above 90% and 10 more states had funded ratios at or above 80%. A funded ratio of 80% is one we consider acceptable or reasonably healthy,<sup>20</sup> but funded ratios below this level begin to be problematic and funded ratios below 70% generally imply financial distress. By 2007 the total number of states with funded ratios at or above 80% had declined to 30 from 41 just five years earlier. After the financial crisis, only six states had funded ratios at or above 90% with another 13 having funded ratios between 80% and 90%. Between 2009 and 2013 we would expect that pension plans would at least maintain funding levels and possibly start to see some improvement in funded ratios due to the current reforms and the investment returns during the period. After 2013, there were seven additional plans that produced funded ratios below 70%. During this period, 11 states managed to increase their funding ratio while there were 39 states with declines. Of the states that saw increases only four, Idaho, Oklahoma, Oregon and West Virginia had increases in their funded ratios of at least 10%. Seven states including California, Kentucky, Minnesota, New York, North Dakota, Pennsylvania, and Virginia show declining funded ratios of more than 10%. Finally, the average funded ratio for all plans in our sample has declined from 91.6% in 2002 to 71.8% in 2013. Some of these declines are certainly due to actuarial smoothing of losses that occurred during the financial crisis, but these declines can also be attributed to failing to meet

their respective actuarially assumed rates of return and the fact that many states continue to deposit some portion of the ARCs annually.

## STATE SPECIFIC REFORMS

In this section, we examine reform in two states with contrasting situations, Kentucky and Utah. Kentucky's pension system had been poorly managed and funded for many years while Utah's pension system was the exact opposite. However, the financial crisis created a level of distress for both systems that necessitated significant reforms.

In 2012, the Commonwealth of Kentucky's pensions were among the most poorly funded in the nation with a funded ratio of approximately 50%. The Commonwealth had not met its full ARC obligations since 2003, when its funded ratios were 100%. The Commonwealth realized that the situation was not sustainable and a bipartisan task force composed of house and senate members was created to make recommendations to the Kentucky General Assembly. The task force's recommendations became the basis for two bills passed by both houses of the General Assembly and signed by the Governor. The enacted legislation had four key points, (1) an annual commitment to begin paying the full amount owed by the Commonwealth to the pension system, (2) a limit on future COLAs unless they could be fully funded, (3) a new funding plan that provided an additional \$100 million annually to ensure the ARC could be paid, and (4) a new cash-balance retirement plan for employees hired after January 1, 2014. This new hybrid retirement plan is funded by employer and employee contributions where participants receive a guaranteed return of at least 4%; and at retirement, receive a life benefit based on the balance in the account.<sup>21</sup> The legislation enables the Commonwealth to meet its annual obligation going forward while sharing investment risk with plan members. It also prohibits unfunded COLAs and is more equitable to employees who are not long term because of the cash balance and the fact that benefits are transportable.

Utah's situation was completely different from that of Kentucky. Utah has historically made its full ARC and it had not increased benefits in over twenty years as the plan was well funded. However, the losses resulting from the financial crisis created a \$6.5 billion shortfall in 2009. Although the State constitution does not provide protection for pension benefits the State's courts interpreted the contractual relationship of the pensions based upon "impairment of contract principles." The ruling obligated the State legislature to honor and not terminate any retirement plan unless a "substantial substitute is provided." This situation was not sustainable as without a change to the current system all required employers would have to increase contributions by \$500 million annually. After considerable work in the legislature and negotiations with unions, the State was able to close the existing defined benefit plan and create two new plans for employees hired after July 1, 2010. These included a defined contribution plan and a hybrid plan which is the default plan, i.e. new employees must make an election to join the defined contribution plan; otherwise, they will default to the hybrid plan. The State's contributions were capped at 10% of salary and double-dipping is now prohibited (McGuinn, February 2014). As a result of these changes Utah now shares the investment risk with the employees and it has managed to maintain its funded ratio above the 80% level during a period where a majority of states were not able to maintain current funding levels.

## CONCLUSION

Most rational individuals would agree that pensions should be funded during the period of employment or when the employer receives the benefits from said employment; however, unions and some politicians continue to make the argument that future generations can fund our current public pension liabilities. Unfortunately, the choices the states have made along with lower than expected investment returns has created a difficult situation for these states. The goal of pension funding cannot be a funded ratio of 100% for every plan. This goal is unrealistic and it would likely lead to pressure to increase benefits for unionized employees. Alternatively, a goal of 85% to 90% funded ratio is more realistic and manageable. States have made considerable legislative efforts to improve pension funding;

however, many states are limited because applying such changes to existing employees is very difficult and much of their progress has been to shift the burden from themselves to employers and employees. The benefits of shifting obligations to employers will be minimal because employers likely depend on the states for some portion of their funding. In addition, pension liabilities are growing so rapidly, due to the cost recognition and amortization elections the plans made 30 years ago, maintaining current funded ratios is likely the best outcome.

There is only one proven solution for poorly funded pension plans, and that is to increase the annual plan contributions. Unfortunately, most states lack the resources to significantly increase pension funding. Since very few of these states have increased funding for pension obligations and some have even cut funding, it is not likely that funded ratios will improve substantially in the foreseeable future. States, like Utah that are fiscally responsible will probably tread water or see funded ratios improve slightly. It is also likely, given current return assumptions, that a majority of plans will not meet their actuarially assumed rates of return on a long term basis due to their failure to consider the volatility of returns in their assumptions. We expect that the contributions required to maintain current funding levels will continue to grow significantly placing even greater pressure on state budgets. The result will likely be more service reductions by states in the absence of increased funding e.g. tax increases. Lastly, there is the possibility of a lack of transparency in reporting due to the impact of GASB 67 and 68 and there is a great deal of concern on the part of analysts with the elimination of the ARC. The elimination of the ARC will certainly make analyzing and auditing funding progress more difficult.

## ENDNOTES

1. A defined benefit pension plan is one where the plan member receives retirement benefits for the rest of their lives, which are based on years of service and an average of the final year's salaries, which the average can range from three to eight years.
2. The funded ratio has historically been defined as the actuarial value of assets divided by the actuarial value of liabilities, for reports issued after June 30, 2014 the definition will be defined as the market value of assets divided by the actuarial value of liabilities.
3. The ARC is the combination of (1) the annual operating cost of the plan or normal cost and (2) the payment, for the current year, required to amortize the actuarially accrued unfunded liability.
4. The UAAL is the difference between the actuarial values of assets (AVA) and the actuarial accrued liabilities (AAL) of a plan.
5. Actuarial smoothing under GASB guidelines previously permitted pension plans to recognize gains and losses over a period of up to five years.
6. The Fiscal Health of State Pension Plans: Funding Gap Continues to Grow, Pew Charitable Trusts, March 2014.
7. Ibid 5.
8. Ibid 5.
9. Re-amortization is recalculating and extending the amortization payments required amortize the UAAL, extending payments reduces the required payments and increases the overall cost of funding the plan.
10. In February of 2015 the Society of Actuaries' Retirement Plans Experience Committee released the final report of the RP-2014 mortality tables, available at <https://www.soa.org/Research/Experience-Study/pension/research-2014-rp.aspx>. These tables replace and update the RP-2000 tables.
11. The Actuarial Standards Board defines EAN as the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s).
12. Termination liability is defined as the current value of retirement benefits without consideration for any future salary increases.
13. Historically plans were permitted to report asset values based on actuarial assumptions and the gains and losses of the plan could be smoothed or recognized over a period of up to five years.
14. [http://www.gasb.org/jsp/GASB/Pronouncement\\_C/GASBSummaryPage&cid=1176160219444](http://www.gasb.org/jsp/GASB/Pronouncement_C/GASBSummaryPage&cid=1176160219444)

15. National Conference of State Legislatures, The Forum for America's Ideas, Pension Plan Enactments by State Legislatures 2009-2012, available at <http://www.ncsl.org/research/fiscal-policy/pension-and-retirement-legislative-summaries-and-r.aspx> and <http://www.ncsl.org/research/fiscal-policy/2012-enacted-state-pension-legislation.aspx>
16. Pew Charitable Trusts Pensions and Retirement State Legislation Database, available at <http://www.ncsl.org/research/fiscal-policy/pension-legislation-database.aspx>
17. Public Plans Database. 2001-2013. Center for Retirement Research at Boston College, Center for State and Local Government Excellence, and National Association of State Retirement Administrators. Public Plans Database, Center for Retirement Research at Boston College, available at <http://crr.bc.edu/data/public-plans-database/>
18. Kentucky's Successful Public Pension Reform, Pew Charitable Trusts, September 2013.
19. Ibid 19.
20. The 80% funded ratio was originally cited as a "healthy level" by the U.S. Government Accountability Office in 2007 report titled "State and Local Government Retiree Benefits — Current Status of Benefit Structures, Protections, and Fiscal Outlook for Funding Future Costs". The report has been cited numerous times over the years.
21. Ibid 19.

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