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# **A Review of Defined Benefit, Defined Contribution, and Alternative Retirement Plans**

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# ***Executive Summary***

Debate over the merits and costs of various retirement plan structures has intensified recently as state and local pension funds address funding deficits and consider potential plan modifications. This paper outlines plan design options, and presents potential redesigns and case studies based on changes already enacted in several states. Throughout this review, the interests of both the sponsoring entity and the plan participant were considered while evaluating how best to maintain the long-term solvency of the plans and ensure participants are financially prepared for retirement.

## ***Plan Designs Are Generally Comprised of Defined Benefit, Defined Contribution, and Hybrid Plans***

Plan design options include defined benefit plans, which provide formula-derived benefits to plan members at retirement, and defined contribution plans, which consist of participant and sponsor funded individual plan accounts that provide benefits at retirement based on individual savings. Additionally, plan sponsors may consider hybrid plan designs, which incorporate elements of both defined benefit and defined contribution plans.

Plan design benefits and costs to plan participants and plan sponsors depend on the type of plan provided. For instance, defined benefit plans guarantee a minimum benefit to plan participants, and generally provide the greatest assurance that employees enter retirement financially secure. However, since the employer is guaranteeing a certain benefit at retirement, defined benefit plans create an obligation that is owed by the employer regardless of the adequacy of plan contribution levels or changes in economic conditions.

Defined contribution plans resolve the obligation issue by not guaranteeing a minimum benefit payment to plan participants. Instead, employees and the plan sponsor contribute set amounts to individual retirement accounts. The employees receive the benefits of these savings at retirement with no additional funding required from the plan sponsor. While this reduces the sponsoring entity's financial risk, it increases the responsibility placed on the plan participant. By not ensuring a minimum annuity payment to plan participants, there is a possibility that the participants will outlive their savings at retirement.

## ***Policy Modifications Must Balance the Two Goals of Ensuring Employees are Financially Prepared for Retirement, and Maintaining the Fiscal Solvency of Retirement Plan Structures***

Ensuring that employees are financially prepared to exit the workforce also has societal consequences. If individuals outlive their savings in retirement, they may require public assistance to survive. Public assistance expenditures place a financial burden on government budgets and taxpayers, and could be mitigated through careful deliberation of retirement policy

decisions. By helping employees plan for retirement now, policymakers can reduce the chance that they will require assistance in the future.

Plan design modifications should include consideration of defined benefit plan structure changes, such as adjusting contribution policy and benefit payments in order to ensure long term financial viability of the current plan. Alternatively, redesign could include transitioning from a defined benefit plan to a defined contribution plan or a hybrid defined benefit/defined contribution plan.

This paper reviews various plan structures and provides examples of states that have enacted redesigns to their retirement plans. Retirement plan alteration requires careful consideration of the equitable allocation of benefits and risks between employer and employee, assurance that employees are financially prepared to exit the workforce, and the assurance of long-term financial solvency for the plan sponsor. By presenting these issues, potential plan alternatives, and case studies, the Pension Review Board hopes to facilitate this debate with objective information.

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# *A Review of Defined Benefit, Defined Contribution, and Alternative Plans*

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## *Introduction*

Texas has over two million active and retired members in state and local retirement systems, and 358 public retirement plans.<sup>1</sup> Public sector employment covers a diverse group, including city, county, and state employees working in education, public safety, and general services.

Public sector employers generally provide retirement benefits within two primary structures: defined benefit plans and defined contribution plans. For a significant segment of these employees, these benefits may comprise the majority of income at retirement. Employers may also provide a hybrid plan that incorporates elements of both plan structures.

The assurance of retirement security for public sector workers through fiscally responsible means has generated a debate on the merits of the two major plan structures. A fundamental question in this discussion is whether governmental plan sponsors should offer their employees a defined benefit or defined contribution plan.

### *Public Sector Plans Reporting to the Pension Review Board for Fiscal Year 2012<sup>2</sup>*

#### **Defined Benefit**

- 184 Texas Plans
- 2.3 Million Participants

#### **Defined Contribution**

- 172 Texas Plans
- 149,000 Participants

#### **Hybrid Plans**

- Two Texas Plans
- 406,000 Participants

In recent years, the debate has grown in magnitude and public awareness, in part due to the economic downturn of 2008-2009, which left governmental plan sponsors with lower tax revenues to fund government expenditures, including pension costs. A significant number of plan sponsors have contributed less than the Actuarially Required Contribution (ARC) rate during this time,<sup>3</sup> which, in addition to investment losses sustained by their pension funds, has increased Unfunded Actuarial Accrued Liabilities (UAAL) of plans. Other factors impacting the debate include the impending retirements of the baby boomer generation and the rising costs of retiree health care.

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<sup>1</sup> PRB Board Meeting Packet, 5/23/2012 – *Public Retirement System Reporting and Compliance*, p. 14; can be requested from the agency.

<sup>2</sup> PRB Data – Membership Data Run 2/27/2012.xls, can be requested from the agency.

<sup>3</sup> Keith Brainard, *Public Fund Survey Summary of Findings for FY 2009*, National Association of State Retirement Administrators (November 2010).

In designing a plan that best meets the needs of the individual and the sponsoring entity, consideration should include assurance that employees depart the workforce financially secure, and that benefits are fiscally responsible and financially supportable.

### *This paper analyzes these issues by reviewing*

- *The traditional defined benefit and defined contribution plan structures*
- *The benefits and costs of the traditional plan structures*
- *Alternative plan designs currently being administered, including hybrid plans*
- *Potential Plan Modifications*
- *Case studies highlighting Plan Redesigns already enacted in other states*

## **Traditional Plan Structure Comparison**

### **Defined Benefit (DB) Plan**

A defined benefit plan is a retirement plan that promises the participant a specified monthly benefit at retirement.<sup>4</sup> Defined benefit plans are financed under the following structure:

$$\text{Contributions} + \text{Investment Returns} = \text{Benefit Payments} + \text{Operating Expenses}$$

Generally, both the employee and the employer contribute to the plan, and the contributions are pooled and invested by the plan sponsor. Ensuring contributions plus investment returns are adequate to cover benefit costs is critical to the defined benefit plan design.

The level of benefits an employee will receive at retirement is derived from a formula based on years of service, salary, and a multiplier factor. The formula is typically calculated as follows:

$$(\text{years of service}) \times (\text{final average salary}) \times (\text{multiplier}) = \text{annual benefit}$$

For example, if a member participates in a plan that offers one percent of the final average three years of salary, the member's final average salary is \$50,000, and the member had worked for 25 years for the employer, then their annual benefit at retirement would be:

$$(25 \text{ years of service}) \times (\$50,000 \text{ final average salary}) \times (1\% \text{ multiplier}) = \$12,500 \text{ annual benefit}$$

Many state and local plans use this simplified version of the formula to calculate benefits owed to retirees. The definition of final average salary and the multiplier varies for each plan.

In defined benefit plans, maintaining agreed upon benefit levels for plan participants at retirement is the obligation of the plan sponsor. In addition to retirement benefits, defined benefit plans may also

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<sup>4</sup> Internal Revenue Service Definitions, <http://www.irs.gov/retirement/participant/article/0,,id=211142,00.html> (accessed May 2, 2012).



include disability benefits, survivorship benefits, early retirement incentives, and post-retirement cost-of-living adjustments.

### **Defined Contribution (DC) Plan**

In defined contribution plans, the employee and/or the employer contribute to the employee's individual account under the plan. The amount in the account at distribution includes the contributions and investment gains or losses, minus any investment and administrative fees. For participants in defined contribution plans, the amount of the contribution is defined, and the benefit at retirement is variable. The benefit amount at retirement is based on the ending account balance.<sup>5</sup> At retirement, the benefit can be received as a lump sum, as equal payments over a specified number of years, or can be used to purchase an annuity for a lifetime benefit. Examples of defined contribution plans include:

- 401(k) Plans – Programs where employees can make contributions from their paychecks either before or after-tax, often with an employer contribution match. The contributions go into a 401(k) account, with employees often choosing the investments based on options provided under the plan.<sup>6</sup>
- 403(b) Plans – Also known as a tax-sheltered annuity plan (TSA), 403(b) plans are for certain employees of public schools and employees of certain tax-exempt organizations.<sup>7</sup>
- 457(b) Plans – Defined as deferred compensation and are available for certain state and local governments and non-governmental tax exempt entities.<sup>8</sup>

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<sup>5</sup> Internal Revenue Service Definitions, *available at* <http://www.irs.gov/retirement/participant/article/0,,id=211142,00.html> (accessed May 2, 2012).

<sup>6</sup> *Ibid.*

*Note: Section 401(k)(4)(B)(ii) of the Internal Revenue Code (Code) generally prohibits a governmental employer from maintaining a qualified 401(k) plan. This Code provision was added by the Tax Reform Act of 1986 (P.L. 99-514). However, Section 1116(f)(2)(B)(i) of the 1986 Tax Reform Act grandfathered governmental 401(k) plans adopted before May 6, 1986.*

<sup>7</sup> Internal Revenue Service 403(b) Plan Basics, *available at* <http://www.irs.gov/publications/p571/ch01.html> (accessed May 2, 2012).

<sup>8</sup> Internal Revenue Service Definitions, *Supra* note 5.

# **Comparison of Traditional Plan Structure Benefits, Costs, and Performance**

## **Recruitment and Retention**

Defined benefit plans provide a greater benefit to employees that participate in the plan for a longer time period. They also generally have longer vesting periods than defined contribution plans, and the benefit formula for retirees is based on age, years of service, salary, and a multiplier, which rewards employees for tenure with most employees achieving their highest benefit accruals at the end of their career.

As a result of the inherent structure of defined benefit plans, portability of earned retirement benefits is more difficult than portability associated with defined contribution plans. Employees changing from one employer to another under a defined contribution plan have the ability to roll their retirement to the new employer's plan. However, employees that change jobs under a defined benefit plan must either leave their money in the plan to receive their vested benefits, or roll only the amount contributed by the participant into an IRA or 401(k) plan, thereby losing their employer matched contributions.

Defined benefit plans are more restrictive in terms of mobility. However, the security associated with a defined benefit plan versus a defined contribution plan may offset the portability issue. Defined benefit members often work in careers that promote longevity (e.g. public safety, education, and government).

Additionally, defined benefit plans may provide employees with disability and survivor benefits through the plan. These benefits are funded through contributions and investment earnings. In the absence of a defined benefit plan, employers may need to obtain disability and pre-retirement death benefits through commercial insurance or fund the benefits internally. Access to disability and survivor benefits is especially important for employees in hazardous occupations such as firefighters and police officers.

## **Benefit Obligation**

Under defined benefit plans, employers guarantee benefit payments and are typically obligated to bear the costs of funding deficits. When a funding deficit occurs, it generates unfunded benefit obligations for the plan sponsor. The benefit obligation in a defined benefit plan is also called the Actuarial Accrued Liability. The defined benefit plan sponsor's unfunded obligation fluctuates each year according to the following annual formula:

$$\text{Beginning Unfunded Benefit Obligation} + \text{Benefits Earned} - \text{Contributions} - \text{Investment Returns} = \text{Ending Unfunded Benefit Obligation}$$

If the contributions from employees and employers, plus the investment returns are not adequate to cover the additional benefits earned each year, the unfunded benefit obligation increases, and the funded status of the plan deteriorates. In some instances, sponsor and/or participant contribution

rates can be increased to ensure plan viability.<sup>9</sup> During periods of prolonged economic contraction, contributions may be increased to offset lower investment returns.

If promised benefits are prudently designed, actuarial assumptions are met, and the Actuarially Required Contribution (ARC) is made, the unfunded obligation should be minimized. According to the Public Fund Survey by the National Association of State Retirement Administrators, contribution payments for state plans averaged 91 percent of the ARC from fiscal year 2001 through fiscal year 2009.<sup>10</sup> However, in 2010 the average contribution for state plans had fallen to 88 percent of the ARC.<sup>11</sup> By underfunding the ARC, plan sponsors defer costs into the future and the deferred costs will need to be made up with interest. Additionally, underfunding the ARC will likely cause the funded status of the plan to deteriorate.

Since defined contribution plans do not guarantee a specific benefit payment amount to participants, there is no unfunded benefit obligation. As a result, defined contribution plans do not create future cost obligations for the plan sponsor.

### **Administration and Investment Costs**

Plan sponsors have some discretion in determining whether to classify costs as administrative or investment related. Consequently, it is difficult to compare these costs within different plans, and it is therefore necessary to compare an “all in” cost, which includes costs related to administration, record keeping, and investment fees.

A 2011 study by Deloitte surveyed 520 defined contribution plan sponsors and found that the total for administrative, record keeping, and investment fees was a weighted mean of .78 percent of plan assets.<sup>12</sup> A 2011 report by the Boston College Center for Retirement Research found that the administrative and investment cost for defined benefit plans to be .43 percent of assets, and defined contribution plans to be .95 percent of assets.<sup>13</sup>

A 2006 report by the Boston College Center for Retirement Research found that investment fees for mutual funds can vary widely. “For example, an actively managed Global Fund costs 1.72 percent of

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<sup>9</sup> Kate Alexander, *State Employee’s Retirement Contribution to Rise*, Texas Public Employees Association (May 2009), available at <http://www.tpea.org/news/newsarticle.php?id=49>.

<sup>10</sup> Keith Brainard, *Public Fund Survey Summary of Findings for FY 2009*, National Association of State Retirement Administrators (November 2010).

<sup>11</sup> Keith Brainard, *Public Fund Survey Summary of Findings for FY 2010*, National Association of State Retirement Administrators (November 2011).

<sup>12</sup> Investment Company Institute & Deloitte Consulting LLP, *Inside the Structure of Defined Contribution/401(k) Plan Fees: A Study Assessing the Mechanics of the ‘All In’ Fee*, (November 2011).

<sup>13</sup> Alicia H. Munnell, Jean-Pierre Aubry, Josh Hurwitz, and Laura Quinby, *A Role for Defined Contribution Plans in the Public Sector*, Center for Retirement Research (April 2011).

assets annually compared to .59 percent for an S&P Index Fund.”<sup>14</sup> Recent data shows that approximately 45 percent of defined contribution plan assets are invested in mutual funds.<sup>15</sup> The fees associated with the mutual funds are generally borne by the plan participants.

## **Investment Performance**

Studies indicate that defined benefit plans outperform defined contribution plan investment performance, and expose plan participants to less risk. An analysis of investment returns from 1988 to 2004 by the Center for Retirement Research at Boston College found that defined benefit plans had a weighted median rate of return equal to 10.7 percent, compared to 9.7 percent for 401(k) plans.<sup>16</sup>

A second report by Towers Watson analyzed returns from 1995 to 2008, and found that defined benefit plans generated a 7.51 percent asset-weighted median rate of return, and defined contribution plans generated 6.48 percent.<sup>17</sup>

There are several reasons for the observed disparities. First, the additional expenses, including increased investment fees, attributed to defined contribution plans reduce returns. Second, defined benefit plans use professional investment management teams to manage fund assets. These managers diversify risk by investing in different asset classes (e.g. equities, bonds, etc.), with the goal of maximizing return while minimizing risk of loss. Conversely, asset allocations in defined contribution plans are often set by the individual employee.

Review of aggregate defined contribution data shows that defined contribution plans as a whole appear to be well diversified. However, to understand fully whether defined contribution plans are well diversified, it is necessary to review investment data for individual accounts. A 2006 analysis of defined contribution plan participants by the Boston College Center for Retirement Research found that:

“...nearly half of all participants have either none of their account in equities or virtually all of the account in equities. So even though the aggregate data suggest that participants make sensible investment choices on average, the individual data reveal that a majority of participants are not well diversified.”<sup>18</sup>

This leads to a third reason for defined contribution plan’s underperformance. Plan participants in defined contribution plans must change asset allocations to reduce risk as they approach retirement.

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<sup>14</sup> Alicia H. Munnell, Mauricio Soto, Jerilyn Libby, and John Prinzivalli, *Investment Returns: Defined Benefit Vs. 401(K) Plans*, Center for Retirement Research at Boston College (September 2006).

<sup>15</sup> Vishal Apte and Brendan McFarland, *DB Versus DC Plan Investment Returns: The 2008-2009 Update*, Towers Watson, (March 2011), available at <http://www.towerswatson.com/united-states/newsletters/insider/3955> (accessed May 14, 2012).

<sup>16</sup> Alicia H. Munnell, Mauricio Soto, Jerilyn Libby, and John Prinzivalli, *Investment Returns: Defined Benefit Vs. 401(K) Plans*, Center for Retirement Research at Boston College (September 2006).

<sup>17</sup> Apte, *supra* note 15.

<sup>18</sup> Munnell, *supra* note 16.

High allocations to more volatile assets such as equities may be acceptable for individuals when they are young and early in their careers. However, as individuals reach retirement age, they tend to shift their portfolio to less risky, and therefore lower return, fixed income assets. While this is prudent financial planning for an individual, it also means that defined contribution plan participants may lose the opportunity to earn higher returns as they reach retirement.

By contrast, the continuous long-term outlook associated with defined benefit plans allows plan fiduciaries to have a higher risk tolerance and to set portfolio allocation based on current and future economic outlook and current funding needs. This results in a greater ability to take on risk, and generate greater returns over the long term.

Investment returns for defined contribution plans are reduced further when accounting for Individual Retirement Account (IRA) participation. The Investment Company Institute, the national association for mutual fund companies, reported that 94 percent of money flowing into traditional IRAs was rolled over from employer sponsored plans from 1997-2003.<sup>19</sup> Analysis of IRA rates of return shows that their investments significantly underperformed compared to defined benefit or 401(k) plans from 1998-2003. During the six year period, IRAs generated an average rate of return equal to 3.8 percent, which is less than the 6.6 percent for defined benefit plans and 5.6 percent for 401(k) plans.<sup>20</sup>

These poor results may stem from several issues relating to IRAs. First, individual investors, inexperienced with investment management, may miss opportunities to invest their IRA into funds with strong performance.<sup>21</sup> They may also fail to consider fund fee structure and commissions when entering investments, both of which can place significant drag on an investment's performance.<sup>22</sup> By contrast, the sponsoring entity of a 401(k) plan has a fiduciary obligation to select investment options for plan participants, and to negotiate lower fees by buying in bulk.<sup>23</sup>

## **Investment Risk**

The investment risk for plan participants is lower for defined benefit plans compared to defined contribution plans. In defined benefit plans, the employer and employee may split the investment risk or the employer could assume all of the investment risk. Contribution rates to defined benefit plans will change over time to offset investment gains and losses. Furthermore, a defined benefit plan guarantees a set benefit level at retirement, ensuring that no individual plan participant's retirement income will be affected by short term changes in economic conditions.

Defined contribution plan participants are solely responsible for their savings and investment performance. To illustrate the potential impact of changes in economic conditions on an individual,

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<sup>19</sup> Munell, *supra* note 16.

<sup>20</sup> Munell, *supra* note 16.

<sup>21</sup> Forbes.com, How to Avoid Costly IRA Mistakes, *available at* <http://www.forbes.com/2009/11/14/independent-retirement-account-personal-finance-low-cost.html> (accessed May 14, 2012).

<sup>22</sup> *Ibid.*

<sup>23</sup> Forbes.com, *supra* note 21.

assume it is 2008 and a plan participant is expecting to retire in the near future. If this individual's portfolio were significantly exposed to equity markets, she would have experienced considerable losses over the course of the year. These losses, borne solely by the individual, would force her to delay retirement, or enter retirement with less available savings.

Conversely, the pooled nature and long-term outlook of defined benefit plans allows the plans to provide benefits based on the previously mentioned benefit formula regardless of market fluctuations. Any short-term losses are absorbed by the defined benefit plan, and may be recovered through long-term investment returns and contributions.

### **Retirement Income Security**

Financial advisors generally agree that the replacement rate, defined as the percentage of a worker's pre-retirement income that is paid out upon retirement, should average approximately 80 percent of pre-retirement income.<sup>24</sup> A study by the *Journal of Financial Planning* showed that in 2007 the average worker making \$40,000 per year would need to save \$190,647 to maintain an 80% replacement rate. This assumes the annuity from the \$190,647 equals \$10,298 and is combined with Social Security income equal to \$17,798 per year, and that gross contributions to savings of approximately \$4,800 is discontinued.<sup>25</sup> For an individual earning \$60,000, \$343,847 savings would be required.<sup>26</sup>

The required savings are increased significantly when considering that many public sector employees do not contribute to social security.<sup>27</sup> A 2011 survey of Texas pension funds conducted by the Pension Review Board (PRB) found that, of the 277 plans that responded (77 percent of the total 362 plans), 39 percent of defined contribution plan employees and 56 percent of defined benefit employees do not participate in social security.<sup>28</sup>

On average, participants in 401(k)/IRA plans are reaching retirement age with less saved than is recommended by financial planners. In 2004, the actual amount saved for individuals close to retirement (age 55-64), was around \$60,000.<sup>29</sup> Adjusted for the three years of average two percent inflation from 2004 to 2007, the \$60,000 grows to approximately \$64,000. This is far less than the minimum of \$190,647.

There are several reasons for this under-saving. First, plan participants may elect to cash out of their savings plans when changing jobs. A study by Hewitt Associates found that "...about 45 percent of

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<sup>24</sup> Aon Consulting, *Replacement Ratio Study - A Measurement Tool For Retirement Planning* (2008).

<sup>25</sup> Roger Ibbotson, James Xiong, Robert P. Kreitler, Charles F. Kreitler, and Peng Chen, *National Savings Rate Guidelines for Individuals*, *Journal of Financial Planning* (April 2007).

<sup>26</sup> *Ibid.*

<sup>27</sup> PRB survey Data – SS Results 2011.xls, can be requested from the agency.

<sup>28</sup> PRB Data – Membership Data Run 2/27/2012.xls, can be requested from the agency.

<sup>29</sup> Alicia H. Munnell and Annika Sundén, *401(k) Plans Are Still Coming Up Short*, Center For Retirement Research At Boston College, (March 2006).

participants in 2004 cashed out when they changed jobs.”<sup>30</sup> Second, plan participants may not adequately contribute to the plan. In 2004, the Survey of Consumer Finances found that only 11 percent of 401(k) participants contributed the legal maximum amount.<sup>31</sup> Contribution rates were closely related to salary, with more participants with higher salaries contributing the maximum than those with lower salaries. For individuals with salaries between \$40-\$60,000, the total contributing the maximum amount was one percent.<sup>32</sup> Finally, as stated in the Investment Performance section, participants may not properly diversify the investments in their 401(k) plans.

Additionally, defined benefit plans often allow for the implementation of cost-of-living adjustments (COLAs) for plan participants during retirement. Cost-of-living adjustments increase retirement benefits paid to retirees and can be provided on a scheduled or ad hoc basis. The addition of a cost-of-living adjustment helps protect the retiree against a reduced standard of living due to the erosion of benefit value from annual inflation. Defined contribution plans do not have provisions for cost-of-living adjustments, as the benefit payment is generally limited to the balance in the participant’s retirement account at retirement.

### **Plan Participant Education**

Defined benefit plans have set contribution rates for plan participants and provide formula based retirement benefits for plan participant retirees. This requires little input from the participant, since the benefits are set.

Defined contribution plans place more responsibility on individual participants to save and invest for their retirement. As discussed in the Investment Performance section, individuals managing their own investments may have difficulty generating returns comparable to defined benefit plans, which are managed by professional investment staff. Additionally, as mentioned in the Retirement Income Security section, individuals may not know how much to contribute to their plan to ensure adequate savings at retirement. As a result of these issues, defined contribution plan sponsors may need to incur additional expenses to educate participants in retirement planning and investment allocation.

### **Longevity Risk Pooling**

Longevity risk is the risk attached to the increasing life expectancy of pension plan participants, which can eventually translate into higher than expected pay-out-ratios for many pension funds.<sup>33</sup> In a defined benefit plan, benefits are normally distributed in a lifetime annuity, or a series of monthly

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<sup>30</sup> Alicia H. Munnell and Annika Sundén, *401(k) Plans Are Still Coming Up Short*, Center For Retirement Research At Boston College, (March 2006).

Hewitt Associates, *Hewitt Study Shows Nearly Half of U.S. Workers Cash Out of 401(k) Plans When Leaving Jobs* (July 25, 2005), *available at* [www.retirementplanblog.com/Hewitt%20Distribution%20Study\(1\).pdf](http://www.retirementplanblog.com/Hewitt%20Distribution%20Study(1).pdf).

<sup>31</sup> Alicia H. Munnell and Annika Sundén, *401(k) Plans Are Still Coming Up Short*, Center For Retirement Research At Boston College, (March 2006).

<sup>32</sup> *Ibid.*

<sup>33</sup> Society of Actuaries, *Longevity: The Underlying Driver of Retirement Risk*, 2005 Risks and Process of Retirement Survey Report (July 2006), *available at* [www.soa.org/files/pdf/Longevity%20Short%20Report.pdf](http://www.soa.org/files/pdf/Longevity%20Short%20Report.pdf).

payments that lasts until death. A defined benefit plan with a large number of participants can plan for the fact that some individuals will live longer than others. As a result, the defined benefit plan only needs to ensure that it has enough assets available to pay benefits for the member's average life expectancy, assumed by many actuaries to be 85 years.<sup>34</sup>

Longevity risk can also describe the risk that individuals will live longer than expected and thus exhaust their savings.<sup>35</sup> A plan participant in a defined contribution plan does not know exactly how long she will live, and therefore, will probably not be satisfied to save only enough for the average life span of 85.<sup>36</sup> If the individual lives past 85 she will have depleted all of her retirement savings. As a result, an individual in a defined contribution plan will want to save for the maximum life span. This increases the amount of saving required by the individual over the course of his or her working years.

If retirees die before exhausting all of their savings, the money will pass to their estate. Benefits that were intended to be pension benefits become death benefits paid to heirs instead. The "oversaving" dilemma is inherent in defined contribution plans. A 2008 analysis by the National Institute of Retirement Security found that the aggregate amount of money transferred to estates was approximately 24 percent of all assets accumulated in the plan.<sup>37</sup>

### **Public Assistance Expenditures**

The main goal of any retirement plan should be to ensure that its participants are financially prepared to exit the workforce when they reach retirement age. A 2008 Ernst and Young study found that among married couples with income of \$75,000 before retirement, those without defined benefit income had a 90 percent chance of outliving their assets in retirement, as compared to just 31 percent for those with defined benefit plans.<sup>38</sup>

A study by the National Institute on Retirement Security found that 2006 poverty rates among older households lacking pension income were approximately six times greater than those with such income.<sup>39</sup> Additionally, a 2009 National Institute on Retirement Security report found that:

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<sup>34</sup> Beth Almeida and William B. Forna, *A Better Bang for the Buck, The Economic Efficiencies of Defined Benefit Pensions Plans*, National Institute on Retirement Security (August 2008).

<sup>35</sup> Society of Actuaries, *Longevity: The Underlying Driver of Retirement Risk, 2005 Risks and Process of Retirement Survey Report* (July 2006), available at [www.soa.org/files/pdf/Longevity%20Short%20Report.pdf](http://www.soa.org/files/pdf/Longevity%20Short%20Report.pdf).

<sup>36</sup> *Ibid.*

<sup>37</sup> *A Better Bang for the Buck*, *supra* note 35.

<sup>38</sup> Roger Ibbotson, James Xiong, Robert P. Kreitler, Charles F. Kreitler, and Peng Chen, *National Savings Rate Guidelines for Individuals*, *Journal of Financial Planning* (April 2007).

<sup>39</sup> National Institute on Retirement Security, *Why Do Pensions Matter?* (January 2010), available at [www.iaff.org/pensions/documents/why\\_do\\_pensions\\_matter.pdf](http://www.iaff.org/pensions/documents/why_do_pensions_matter.pdf).

Frank Porell, and Beth Almeida, *The Pension Factor, Assessing the Role of Defined Benefit Plans in Reducing Elder Hardships*, National Institute on Retirement Security (July 2009), available at [http://www.nirsonline.org/index.php?option=com\\_content&task=view&id=285&Itemid=48](http://www.nirsonline.org/index.php?option=com_content&task=view&id=285&Itemid=48).



“...when fewer households experience poverty and financial hardship, federal, state, and local governments see a cost savings in terms of public assistance expenditures avoided. The report calculates a savings of \$7.3 billion in public assistance expenditures in 2006 attributable to receipt of pension income. In the absence of DB pensions, spending on public assistance for the elderly would be about 40% higher than we actually observe.”<sup>40</sup>

Reviewers of these data may disagree on the total costs identified in the report. However, despite the intrinsic difficulty associated with exactly quantifying the costs of supporting retirees in poverty, it should be agreed that the costs, whether through planning and saving for future retirees or through direct public assistance expenditures, do exist and may be borne to some extent by taxpayers and society.

A summarization of the comparison of Defined Benefit and Defined Contribution Plan attributes is presented in the following table.

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<sup>40</sup> National Institute on Retirement Security, *Why Do Pensions Matter?* (January 2010), available at [www.iaff.org/pensions/documents/why\\_do\\_pensions\\_matter.pdf](http://www.iaff.org/pensions/documents/why_do_pensions_matter.pdf).

Defined Benefit/Defined Contribution Comparison		
Attribute	Defined Benefit	Defined Contribution
Recruitment and Retention	Better benefits for long-service employees with low turnover	Better benefits for short-service employees with high turnover
Benefit Obligation	Can have unfunded obligations	Fully funded
Administration Costs	Higher costs for actuarial analysis	Higher costs for maintaining individual accounts
Investment Costs	Lower due to pooling of fund assets	Higher fees associated with mutual fund investments borne by the plan participants
Investment Performance	Better performance due to lower costs and pooled investment structure	Individual accounts lack diversification causing investment performance disparity
Investment Risk	Borne by plan sponsor	Borne by the plan participant
Retirement Income Security	Greater financial security for plan participants	Less assurance that plan participants will retire securely
Cashing Out	Less likely due to loss of longevity benefit of employee	Evidence of greater cash out when changing employers
Participant Education	Lower education costs	Education costs higher due to plan structure allowing employees to direct investments
Longevity Risk Pooling	Mitigates risk of over/under saving	Individuals tend to over or under save. Difficult to accurately estimate required savings.
Public Assistance Expenditures	Participants face less risk of needing public assistance at retirement	Evidence exists showing participants outlive savings and require public assistance in retirement
Ancillary Benefits	May provide cost-of-living adjustments, pre-retirement death benefits, and disability benefits through the plan	Generally does not provide for cost-of-living adjustments. Pre-retirement death benefits and disability benefits may be purchased from third-party insurer.

## Hybrid Plan Designs

Along with the traditional defined benefit and defined contribution plans, a number of hybrid pension plans have also evolved in the public sector. No standardized definition for hybrid plans is currently available, but hybrid plans generally are defined as those that attempt to combine the key features of defined benefit (DB) and defined contribution (DC) plans and may be offered as a mandatory or optional plan.<sup>41</sup>

Studies show that a majority of statewide public retirement systems have retained defined benefit plans to provide pension security for state employees and teachers; however, in light of the recent economic downturn, a number of states are considering alternatives to this model.<sup>42</sup> Current trends indicate that a majority of public retirement systems that have implemented plan design changes have either opted for hybrid plans or are offering employees choices between defined benefit, defined contribution, or hybrid plans.<sup>43</sup>

There are a variety of hybrid pension plan models, including combined DB/DC plans, cash balance plans, pension equity plans, floor-offset plans, and target balance plans. The most common types of hybrid plans in the public sector are cash balance plans and combined DB/DC plans.<sup>44</sup> Of the two, combined DB/DC plans are most prevalent in state retirement systems.

### Combined DB/DC Plans

As the name suggests, under a Combined DB/DC plan employees receive two-fold coverage from a traditional defined benefit and defined contribution plan. This type of hybrid plan has two separate elements, one defined benefit and one defined contribution plan that provide coordinated retirement coverage through a lifetime annuity and individual retirement account, respectively. Generally, the defined benefit component of the plan has provisions similar to a traditional defined benefit plan, but it provides a smaller benefit. The Combined DB/DC plan is the most common type of hybrid pension plan currently being offered by eight states across the country for their state employees or teachers, with slight variations in the features relating to contributions, enrollment, and investment choices.

The motivation for forming a Combined DB/DC plan may include creating a reduced obligation for the plan sponsor. This reduced obligation to the sponsor is achieved by providing a smaller defined benefit plan and requiring employees to compensate for the difference through participation in a defined contribution plan. While this plan design may reduce the plan sponsor's obligation, it may also transfer risk exposure to the plan participants.

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<sup>41</sup> In this paper, a reference to a hybrid plan does not include voluntary defined contribution plans, like 457, 403(b), and 401(k) which are currently offered by a majority of governmental employers to supplement their mandatory DB plan, including Texas.

<sup>42</sup> Ron Snell, *Tables showing which states have defined benefit, defined contribution and hybrid plans for state employees and teachers*, National Conference of State Legislatures (January 2012).

<sup>43</sup> See **Appendix C**.

<sup>44</sup> Paul Zorn, *Alternative Retirement Plan Designs, Hybrid Plans*, Government Finance Review (April 2011), available at [www.gabrielroeder.com/pdf/GFR\\_apr\\_11\\_hybrid\\_plans.pdf](http://www.gabrielroeder.com/pdf/GFR_apr_11_hybrid_plans.pdf).

Examples of combined DB/DC pension plans can be found in the statewide employees and/or teachers' retirement systems of Georgia, Indiana, Michigan, Ohio, Oregon, Rhode Island, Washington, and Utah.

### **Combined DB/DC Plan Summary**

- Mandatory enrollment in the defined benefit plan, and optional or mandatory enrollment in the defined contribution plan.
- The defined benefit portion of the benefit is usually funded by the employer.
- The employee usually contributes to the defined contribution plan; some plans offer a small employer match as well.
- The defined benefit plan may have a reduced multiplier ranging from 1 percent to 1.5 percent reflecting a smaller guaranteed benefit than traditional defined benefit plans.
- The defined benefit portion of the plan provides a lifetime annuity. The defined contribution portion allows various distribution options including a lump sum, annuity payable for life, a partial lump-sum, or installment payments.
- Typically, defined benefit plan investments are directed by the employer and the defined contribution component's investments are directed by the employee.

### **Cash Balance Plan**

A cash balance pension plan is a defined benefit plan that includes some defined contribution plan features.<sup>45</sup> The U.S. Department of Labor (DOL) considers a cash balance plan to be a defined benefit plan with the benefit being more characteristic of a defined contribution plan. Like traditional defined benefit plans, cash balance plans are funded on an actuarial basis and guarantee a future benefit to covered employees. The employer administers the plan and makes investment decisions.<sup>46</sup>

The benefits under cash balance plans are expressed in terms of individual account balances credited with pay credits and interest credits. Pay credits are usually expressed as a percentage of salary; and interest credits are specified in the plan's formula that can be a fixed rate or a variable rate linked to an index such as the one-year Treasury rate. However, unlike a defined contribution plan's individual accounts, cash balance accounts are hypothetical or notional in nature and are used only to communicate the account balance of each participant's accrued pension benefits.

Cash balance plans benefit employees by offering a steady rate of accrual and guaranteed benefit payments. Unlike in the private-sector, cash balance plans in the public-sector are typically funded by both the employer and employees.

Examples of cash balance plans can be found in Texas and Nebraska. The Texas County and District Retirement System (TCDRS) and Texas Municipal Retirement System (TMRS) are two statewide cash

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<sup>45</sup> Employee Benefit Research Institute, *Hybrid Retirement Plans: The Retirement Income System Continue to Evolve*; March 1996, page 7.

<sup>46</sup> *Ibid.*

balance plans for local government employers in Texas, including counties and municipalities. Nebraska provides two separate cash balance plans for state and county employees.

### ***Cash Balance Plan Summary***

- Employee benefits are expressed in terms of individual account balances.
- Contributions to the plan are placed in a pension trust fund.
- Assets of the plan are pooled and invested by the employer.
- The employer bears the investment risk and is required to maintain sufficient funds to pay future benefits.
- Employees are assigned notional or hypothetical accounts which are credited by a percentage of salary and interest credits as specified in the plan formula.
- Employees' individual accounts are not affected by the plan's investment gains or losses.
- The payment options available under a cash balance plan are similar to a defined benefit plan; however, vested members may be allowed to access their account balance in lump sum, or partial lump sum.

### ***Additional Hybrid Plan Designs***

Additional hybrid plan designs include pension equity plans, floor-offset plans, and target balance plans. Unlike combined DB/DC and cash balance plans, these hybrid pension plans are used primarily in the private sector, although they are uncommon.

## ***Fundamental Plan Redesign Transition Issues***

Advocates of public retirement plan change have proposed phasing out existing defined benefit plans and instituting defined contribution plans. When analyzing potential effects of these redesigns, policymakers should consider that moving from a defined benefit plan to a defined contribution plan may require the sponsoring entity to incur transitional costs. These costs include continued funding of benefits earned by participants in the existing defined benefit plan, and the additional administrative costs associated with building and maintaining the new defined contribution plan. The timing of the transition in relation to plan funding levels and market performance is also an important consideration, as these may also influence transition costs. Finally, policy examination should evaluate how proposed changes may affect the plan participants' income security in retirement.

### ***Funding Benefits Under the Existing Defined Benefit Plan***

The most significant transition cost incurred by a plan sponsor in shifting from a defined benefit plan to a defined contribution plan is funding the benefits earned by employees under the existing defined benefit plan. Defined benefit plans are funded through an "open group" basis. Under this structure, it is assumed that new entrants will join the plan each year and the total payroll of the active members will grow continuously. Payroll increases over time generate increased contributions for the plan, thereby funding benefits for current and retired members. However, under a phase-out of an existing defined benefit plan, new entrants stop contributing to the plan and the responsibility to pay benefits owed to current members is borne exclusively by the sponsoring entity.

Plan sponsors generally have two options to implement a transition from a defined benefit plan to a defined contribution plan: a "soft freeze" or a "hard freeze". Under a "soft freeze," the plan is only amended to not allow new participants into the plan; however, current participants remain in the plan and continue to accrue additional benefits. Under a "hard freeze," in addition to not allowing new participants into the plan, the plan is amended to not allow current participants to accrue additional benefits beyond those already earned. However, there may be potential legal challenges on the implementation of a "hard freeze." Public retirement systems across the country may have varying legal protections for retirement benefits, including state constitutional, general law and common law protections. In Texas, the State Constitution prohibits the impairment or reduction of accrued benefits under certain local public retirement systems.<sup>47</sup> The effect of the constitutional language on the ability of these retirement systems and plan sponsors to implement a "hard freeze" has not yet been tested in the Texas courts.<sup>48</sup>

Under either option, the sponsoring entity becomes primarily responsible for funding benefits owed. This can result in costs for years after the transition is initiated, as sponsors fund participant benefits throughout their retirements. In planning a transition, the timing of a transitional policy decision is

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<sup>47</sup> T.X. Const. art. XVI, § 66.

<sup>48</sup> The Texas Attorney General, in Opinion No. GA-0615, stated that the City of Fort Worth's 12% cap on increases in earnings used to determine the compensation base for calculating retirement benefits contravened art. XVI, section 66(d) to the extent it reduced or impaired retirement benefits that vested employees would have received on or before the effective date of the change.

also important. Closing a well-funded defined benefit plan to new hires may reduce obligations imposed on the sponsor; however, even fully funded plan closures generate transition costs that must be paid. These costs can result in the creation of an unfunded obligation, similar to the situation that occurred in the Michigan State Employees plan in 1997 (See Case Studies of Plan Modification Implementation Section).

### **Administrative Costs**

Plan administration becomes more expensive and complicated when transitioning from a defined benefit to a defined contribution plan. Maintaining an existing defined benefit plan as it is phased out, while concurrently building and implementing a new defined contribution plan could place significant administrative costs on a sponsoring entity.

### **Social Security**

Many public retirement plan members do not participate in Social Security.<sup>49</sup> In deciding whether to close an existing defined benefit plan, the plan sponsor will have to consider what benefits, if any, from Social Security their employees are entitled to receive. The Internal Revenue Code (IRC) states that State and local governments providing Social Security exempt plans must adhere to the following requirements:<sup>50</sup>

- “A defined benefit retirement system that qualifies as an alternative to social security provides for a retirement benefit to the employee that is comparable to the benefit provided by the social security part of FICA.”<sup>51</sup>
- “A defined contribution plan that satisfies the definition of a retirement system must provide for an allocation to the employee’s account of at least 7.5 percent of the employee’s compensation during any period under consideration. Contributions from both the employer and the employee may be used to make up the 7.5 percent.”<sup>52</sup>

Policymakers must ensure that modifications involving retirement plans whose members do not participate in Social Security comply with IRS Code, and should consider how plan changes will compensate employees that are not able to collect Social Security benefits at retirement.

### **Employee Compensation and Perception**

Implementing policy modifications that specify different benefits for new employees and existing employees can cause morale issues and related pressures on plan sponsors. If retirement benefits for new hires are perceived to be less generous than benefits in place for current members, the implication may be that future employees are expected to work for a lower total compensation package. Policymakers should consider whether this discrepancy should be alleviated through another form of compensation such as increased salaries or employer matching payments for retirement

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<sup>49</sup> PRB Survey Data – *Social Security Survey Results 2011.xls*, can be requested from the agency.

<sup>50</sup> 26 CFR 31.3121(B)(&)-2 – Service by Employees Who Are Not Members of a Public Retirement System.

<sup>51</sup> Internal Revenue Service, Federal-State Reference Guide. Publication 963 (Rev. 11-2011). Pages 80-81. Available at - [www.irs.gov/pub/irs-pdf/p963.pdf](http://www.irs.gov/pub/irs-pdf/p963.pdf) (accessed May 15, 2012).

<sup>52</sup> *Ibid.*

benefits. Conversely, if the retirement plan offered to new hires is perceived to be more generous than the plan for current members, then there would be pressure from current members to have an option to participate in the new plan.

In either scenario, retirement plan sponsors and policymakers must be prepared to show how plan changes are in the best interest of the long term financial health of the plan. Communicating these issues and obtaining participant support may be crucial for redesign success.



## ***Moderate Plan Modification Alternatives***

Many proposed solutions to defined benefit plan funding deficits have focused on whether these plans should be phased out in favor of defined contribution plan structures. Framing the issue as either defined benefit or defined contribution fails to consider more moderate modifications that could be made to existing plan structures. Transitioning from a defined benefit plan to a defined contribution plan results in many costs, both expected and unexpected. In many instances these costs may be significant and could be mitigated through more moderate plan modifications.

Moderate modifications to improve defined benefit plan funded status may include:

- Increasing participant/sponsor plan contributions
- Reducing future benefit accruals for new hires
- Prospectively reducing future benefit accruals for all employees
- Modifying existing benefit enhancements, such as Cost-of-Living Adjustments (COLAs) or Deferred Retirement Option Plans (DROPs)

## ***Current Moderate Redesigns***

Nationally, many state policymakers are opting for more moderate pension modifications. A review by The National Conference of State Legislatures found that 18 states made revisions to at least one statewide plan between 2005 and 2009 aimed at shoring up declining funding levels. More recently this trend has increased. In 2010-2011, 40 states passed significant legislation to alter pension plan designs.<sup>53</sup>

In Texas, many defined benefit plans have already initiated plan modifications. The El Paso Firemen's Pension Fund, the El Paso Police Pension Fund, the Houston Police Officers Pension Fund, the Houston Municipal Employees Pension System, the Fort Worth Employees' Retirement Fund, the Employees Retirement System of Texas and the Teacher Retirement System of Texas have all enacted changes to their existing defined benefit plans. The following list summarizes many of the modifications already enacted in Texas defined benefit plans:

- Creating new tiers for new hires with lower multipliers
- Increasing retirement ages
- Increasing both employer and employee contributions
- Changing automatic COLAs<sup>54</sup> to ad-hoc COLAs
- Eliminating or changing DROPs
- Changing the final average salary calculation to include more years, which reduces the possibility that benefits will be calculated on only a few abnormally high-salary years preceding retirement.

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<sup>53</sup> National Conference of State Legislatures, *Pensions and Retirement Plan Enactments in 2011 State Legislatures*, January 31, 2012, p. 1.

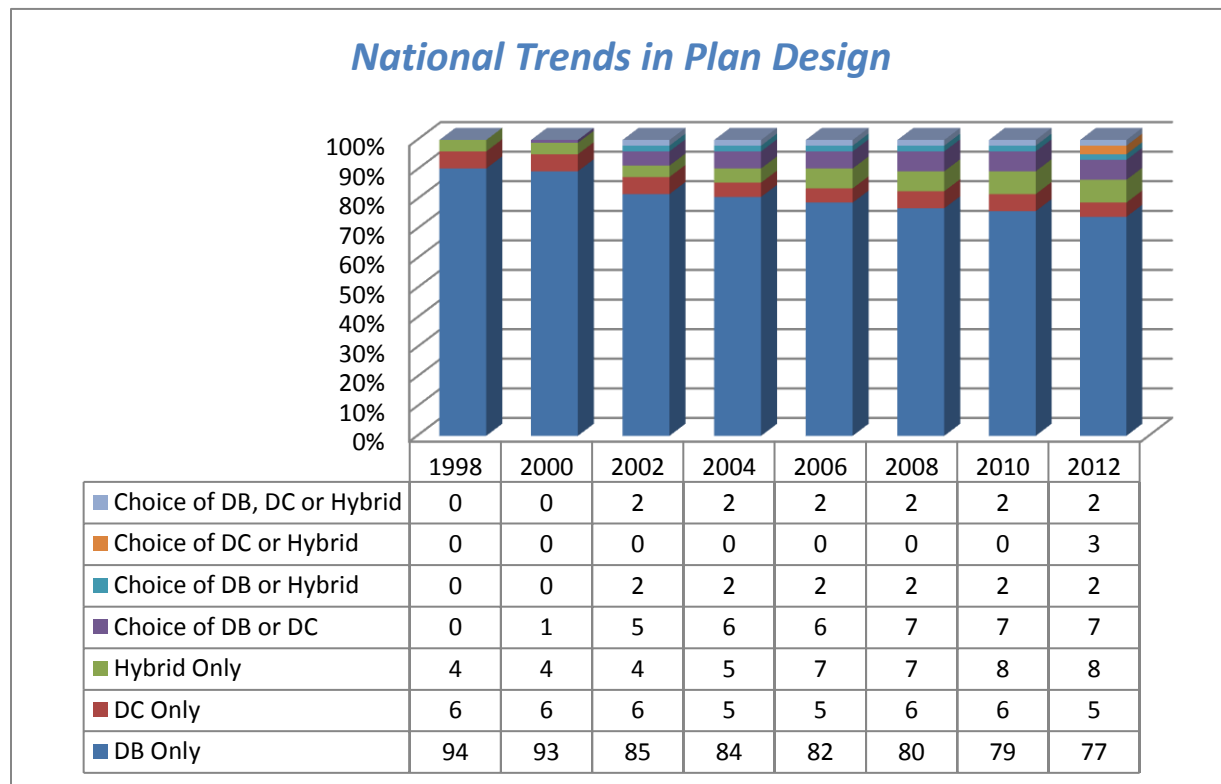
<sup>54</sup> *Automatic Cost-of-Living Adjustment (COLA)* provides automatic increases to employee benefit received during retirement without consideration of plan funded status or investment performance.

## Case Studies of Plan Modification Implementation

During the 2011 legislative session, the Texas Legislature instructed that both the Employees Retirement System of Texas and the Teacher Retirement System of Texas report on the actuarial and fiscal effects of changes to their retirement plans, including but not limited to: retirement eligibility, final average salary, benefit multiplier, and the creation of a hybrid plan that includes defined benefit and defined contribution features such as a two-part plan or a cash balance plan. The reports are to be submitted to the Legislative Budget Board and the Governor no later than September 1, 2012.

As governmental plan sponsors, boards of trustees, taxpayers and public employees across Texas consider options for how best to provide adequate retirement security for public employees while controlling costs, it is helpful to evaluate the experiences of other plans. While no two situations are exactly alike, the following case studies of structural redesigns can help guide decision makers by demonstrating how pension modification initiatives have performed in the real world.

The following graph illustrates national trends in plan design among statewide plans from 1998 to present, based on data published by the National Conference of State Legislatures.<sup>55</sup>



<sup>55</sup> National Conference of State Legislatures, *Tables Showing Which States Have Defined Benefit, Defined Contribution and Hybrid Plans for State Employees and Teachers*, January 2012.

As the above graph demonstrates, in the past 14 years the percentage of statewide defined benefit plans has decreased, the percentage of statewide defined contribution plans has stayed relatively constant, and the percentage of plans adopting a hybrid structure or offering employees a choice between two or more plans has increased. It is important to note that some plans have made plan modifications counter to these trends, including moving from defined contribution to defined benefit or hybrid structures.

### ***Michigan – Defined Benefit to Defined Contribution***

Michigan is one of only two states nationwide that provides a mandatory-participation defined contribution plan for state employees. All Michigan state employees participate in Social Security.<sup>56</sup>

The Michigan 401(k) Defined Contribution Plan for state employees was established effective April 1, 1997, after the state employees' defined benefit plan was closed to new enrollment due to concerns about cost unpredictability.<sup>57</sup> Employees hired prior to April 1, 1997, retained active membership in the defined benefit plan, unless they chose to make an irrevocable transfer to the new defined contribution plan during a one-time window of opportunity immediately following defined contribution plan establishment.

Those choosing to switch to the defined contribution plan had the actuarial present value of their accrued benefit transferred into their defined contribution plan account, and were no longer entitled to a benefit under the defined benefit plan upon retirement.<sup>58</sup> Approximately 5.5 percent of all eligible employees took advantage of this opportunity.<sup>59</sup> Defined benefit plan members were given another opportunity to transfer to the defined contribution plan effective April 1, 2012. Employees electing to transfer to the defined contribution plan at that time retained all pension benefits earned prior to their switch and will receive a pension benefit as well as their defined contribution plan account balance upon retirement.<sup>60</sup>

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<sup>56</sup> Wisconsin Legislative Council, *2010 Comparative Study of Major Public Employee Retirement Systems*, December 2011, p. 33.

<sup>57</sup> Institutional Investor, *State Pension Plans Scramble to Avoid Bankruptcy*, February 17, 2011, p. 4, available at <http://www.cnbc.com/id/41642979/> (accessed May 14, 2012).

<sup>58</sup> Michigan State Employees Retirement System, 1997 CAFR, p. 50, available at [http://www.michigan.gov/documents/sers1997cafr\\_115293\\_7.pdf](http://www.michigan.gov/documents/sers1997cafr_115293_7.pdf).

<sup>59</sup> Leslie E. Papke, *Pension plan choice in the public sector: The case of Michigan state employees*, Michigan State University (March 2004), available at <https://www.msu.edu/~ec/faculty/papke/NTJforum.vr1.pdf>.

<sup>60</sup> Michigan State Employees Retirement System, *Defined Benefit Plan Reform - DB/DC Blend*, <http://www.michigan.gov/orsstatedb/0,4654,7-208-58637-273635--,00.html> (accessed May 11, 2012).

<b>Michigan - Current Plan Design Comparison</b> (as of September 30, 2010)		
	<b>Defined Benefit Plan</b>	<b>Defined Contribution Plan</b>
<b>Status</b>	Closed to new enrollment, effective 4/1/97	Active
<b>Membership</b>	25,478 Active, 50,462 Retiree/Beneficiary	26,519 Active, 6,340 Retiree/Non-active
<b>Employer Contributions</b>	Actuarially determined; 22.8% in 2010	4% plus employee match of up to 3%
<b>Employee Contributions</b>	Non-contributory	None required, must contribute 3% to receive max. state match
<b>Full Vesting</b>	10 years	4 years

### *Plan Experience*

At the time the defined benefit plan was closed to new entrants in 1997, it was 109 percent funded.<sup>61</sup> The funding ratio has declined to 72.6 percent as of the 2010 valuation. Pension benefits expressed as a percentage of active member payroll rose from approximately 20 percent in 1999 to 56.7 percent in 2010, and employer contributions grew from 9 percent in 1997 to 22.8 percent in 2010.<sup>62</sup> Active member payroll is based on defined benefit plan membership, and is gradually declining because the plan is closed to new hires. The annual required employer contribution expressed in dollar amounts has increased from \$229.5 million in 1997 to \$447.9 million in 2011, which reflects an approximate 4.89 percent compound annual growth rate.<sup>63</sup>

According to an asset liability study conducted by the Michigan Employees' Retirement System, the defined benefit plan will need to pursue an increasingly conservative investment strategy to reduce risk of incurring difficult-to-absorb market losses as the ratio of benefit payments to active members rises. This could potentially result in a sharp increase in required employer contributions during the last 25-35 years of plan life if investments underperform the assumed rate of return.<sup>64</sup>

Michigan's declining funding ratios and increasing contribution rates illustrate the challenges of funding a closed group plan, where active member payroll steadily decreases due to no new enrollment. Every plan choosing to transition from a defined benefit to a defined contribution structure will face these costs, regardless of whether or not they have an unfunded obligation at the time of transition.

<sup>61</sup> Michigan State Employees Retirement System, 1998 CAFR, *available at* [http://www.michigan.gov/documents/sers1998cafr\\_115294\\_7.pdf](http://www.michigan.gov/documents/sers1998cafr_115294_7.pdf).

<sup>62</sup> Michigan State Employees Retirement System, 2010 Actuarial Valuation Report, *available at* [http://www.michigan.gov/documents/orsstatedb/SERS\\_-\\_Pension\\_2010\\_-\\_2011-05-16\\_355931\\_7.pdf](http://www.michigan.gov/documents/orsstatedb/SERS_-_Pension_2010_-_2011-05-16_355931_7.pdf).

<sup>63</sup> Michigan State Employees Retirement System, CAFRs for FY 1997-2011, *available at* [http://www.michigan.gov/ors/0,1607,7-144-6183\\_34726-109600--,00.html](http://www.michigan.gov/ors/0,1607,7-144-6183_34726-109600--,00.html).

<sup>64</sup> Michigan State Employees Retirement System, Asset Liability Study, November 2009, p. 7, *available at* [http://www.michigan.gov/documents/treasury/AssetLiabilityStudy\\_StateEmployees\\_368378\\_7.pdf](http://www.michigan.gov/documents/treasury/AssetLiabilityStudy_StateEmployees_368378_7.pdf).

At the time of transition in 1997, investments were performing well, which increased support for the switch among employees desiring increased portability and the ability to manage their own investments.<sup>65</sup> Fifteen years following the switch, studies show that members who elected to remain in the defined benefit plan are receiving, on average, a significantly higher benefit upon retirement than defined contribution plan members. As of 2010, the average account balance for defined contribution plan members approaching retirement (age 60 or over) was approximately \$123,000, an amount plan actuaries have estimated would provide a post-retirement annual income of about \$9,000. In contrast, the average defined benefit plan member receives an annual benefit of approximately \$30,000.<sup>66</sup>

Executives in Michigan's Office of Retirement Services have stated that current defined contribution plan balances "clearly need to grow" in order for Michigan's retirees to have stable and predictable retirement incomes.<sup>67</sup> The state legislature's recent decision to move new public school employees to a hybrid plan was widely regarded as public acknowledgment of the state's need for greater retirement income security.

### ***Alaska – Defined Benefit to Defined Contribution***

Alaska provides a mandatory defined contribution plan for both state employees and teachers. It is currently the only state where teachers are covered under a mandatory defined contribution plan. Neither teachers nor state employees participate in Social Security.

The state legislature's 2006 decision to close the defined benefit Public Employees Retirement System (PERS) and Teachers Retirement System (TRS) to new membership, allowing current nonvested members the choice to remain in the defined benefit plan or transfer their account balance and membership to the defined contribution plan, was made in response to concerns over growing unfunded obligations.

Alaska transitioned from defined benefit to defined contribution during a period of strong market performance prior to the 2008 financial crisis and the state's experience managing defined contribution plans has been relatively brief.

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<sup>65</sup> Institutional Investor, *State Pension Plans Scramble to Avoid Bankruptcy*, February 17, 2011, p. 4, available at <http://www.cnbc.com/id/41642979/> (accessed May 14, 2012).

<sup>66</sup> *Ibid.*

<sup>67</sup> *Ibid.*

<b>Alaska - Current Plan Design Comparison</b> (as of June 30, 2010)		
	<b>Defined Benefit Plan</b>	<b>Defined Contribution Plan</b>
<b>Status</b>	Closed to new enrollment, effective 7/1/2006	Active
<b>Membership</b>	PERS: 26,442 Active TRS: 7,832 Active	PERS: 11,182 Active TRS: 2,738 Active
<b>Employer Contributions</b>	Actuarially determined. PERS: 22% statutory max TRS: 12.56% statutory max	PERS: 10.32% (public safety), 9.57% (civilian) TRS: 11.61%
<b>Employee Contributions</b>	PERS: 6.75%-9.6% TRS: 8.65%.	PERS: 8% TRS: 8%
<b>Full Vesting</b>	PERS: 5 Years TRS: 8 Years	5 Years

### **Plan Experience**

PERS was 63 percent funded when the plan was frozen to new entrants in 2006, and 61.5 percent funded in 2010. TRS was 57 percent funded in 2006, and 54 percent funded in 2010.<sup>68</sup> The unfunded accrued liabilities in both plans are amortized as a level percent of total payroll, which includes members of the new defined contribution plans as well as all active members of the defined benefit plans.<sup>69</sup>

To pay down the unfunded liability and continue meeting obligations to vested defined benefit plan members as membership in the defined benefit plan shrinks, actuarially determined employer contribution requirements are expected to increase significantly. Contribution rates for PERS are projected to be \$719 million in 2012 (33 percent of payroll), exceed \$1 billion by 2016 (40 percent of payroll), and peak at \$1.6 billion in 2029 (39 percent of payroll).<sup>70</sup> The compound annual growth rate for PERS projected contributions is 8.60 percent from 2012-2016, and 4.80 percent from 2016-2029. TRS contribution requirements increase even more significantly, projected to be \$332 million in 2012 (45 percent of payroll), \$513 million in 2016 (62 percent of payroll), and peak at \$862 million in 2029

<sup>68</sup> Unless noted, all funding ratio and employer contribution calculations for Alaska PERS and TRS take into account the normal cost and liability amortization of retiree health benefits as well as those of the pension plans. While discussion of Other Post-Employment Benefits is beyond the scope of this paper, it is important to note that prior to the 2006 redesign, Alaska prefunded retiree healthcare benefits alongside pension benefits. Healthcare benefits continue to be funded on a defined benefit basis following the 2006 plan changes. Health benefit prefunding has garnered the state a “Solid Performer” rating for Health Care and Other Benefits by The Pew Center on the States, but has also resulted in significantly higher contribution rates.

<sup>69</sup> Alaska Public Employees’ Retirement System, *Actuarial Valuation* for Fiscal Year 2010, p. 2.; Alaska Teachers’ Retirement System, *Actuarial Valuation* for Fiscal Year 2010, p. 2.

<sup>70</sup> Alaska Public Employees’ Retirement System, *Actuarial Valuation* for Fiscal Year 2010, p. 36.

(66 percent of payroll).<sup>71</sup> The compound annual growth rate for TRS projected contributions is 11.49 percent from 2012-2016, and 5.77 percent from 2016-2029.

The State is required to appropriate additional “State Assistance” funds to cover the difference between the actuarially required contribution and statutory maximum employee contribution rates.<sup>72</sup> The State Assistance funding requirement from 2012 to 2029 is projected to average approximately 18 percent of payroll for PERS, and to grow from 32.5 percent to 53.2 percent for TRS. Plan actuaries’ projections showing funding ratio improvement are dependent on the assumption that the actuarially required contributions are being consistently met. If the State is unwilling or unable to contribute the full amount, including the employer statutory maximum and full State Assistance amount, funding levels will deteriorate.

Since Alaska’s transition from defined benefit to defined contribution occurred recently, defined contribution plan balances have not had time to mature. A comparison of average benefits under Alaska’s defined benefit and defined contribution plans will only be possible once adequate numbers of defined contribution plan members reach retirement eligibility.

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<sup>71</sup> Alaska Teachers’ Retirement System, *Actuarial Valuation* for Fiscal Year 2011, p. 31-32.

<sup>72</sup> Alaska Retirement Management Board, *Resolution 2011-23 - Relating to the Unfunded Liability of PERS and TRS*, available at <http://www.revenue.state.ak.us/treasury/programs/documentviewer/viewer.aspx?879>.

## West Virginia – Defined Contribution to Defined Benefit

The West Virginia Teachers' Retirement System (TRS), which currently enrolls all new hires in a defined benefit plan, has undergone major plan restructuring three times since its 1941 founding. The most recent redesign occurred in 2005 when the mandatory Teachers' Defined Contribution Plan was closed to new enrollment following results of a study that showed reinstatement of a defined benefit plan structure would result in decreased costs to the state and improved retirement income security. Following the 2005 plan changes, all new employees became members of the Teachers' Retirement System defined benefit plan and current members were given several windows of opportunity to transfer.

<b>West Virginia - Current Plan Design Comparison</b> (as of July 1, 2011)		
	<b>Defined Benefit Plan</b>	<b>Defined Contribution Plan</b>
<b>Status</b>	Active	Closed to new enrollment, effective 6/30/2005
<b>Membership</b>	35,855 Active	4,554 Active
<b>Employer Contributions</b>	Statutory Contribution: 7.5% ARC: 27.66%	7.5%
<b>Employee Contributions</b>	6.0%	4.5%
<b>Full Vesting</b>	5 years	12 years

## Plan Experience

### Prior Plan Changes

Originally established as a defined contribution plan in 1941, West Virginia TRS first transitioned to a defined benefit plan design during the 1960s to provide retirees a more stable, guaranteed benefit.<sup>73</sup> Though benefits under the new defined benefit plan were based on actuarial calculations, the plan's funding strategy did not fully transition from the pay-as-you-go model used to determine contributions under the defined contribution plan structure which contributed to an extended period of severe underfunding. By the late 1980s, extremely high unfunded obligations resulting from years of insufficient contributions created impetus for structural change and in 1991 the defined benefit plan was frozen. All new teachers became members of the new Teachers' Defined Contribution 401(a) Plan. It was only after the defined benefit plan was frozen that the state began making contributions on an actuarially-determined basis, and plan health did not improve due to the decline in its contribution base. At its lowest point, the defined benefit plan saw funding ratios of only 19 percent in 2002 and 2003.

### 2005 Redesign

Plan funding has improved from 22.2 percent in 2004, just prior to re-opening the defined benefit plan, to 46.5 percent in 2010 based on market value of assets. Following the 2005 plan redesign, the state has continued to work towards improved funding by making additional appropriations of \$290.1

<sup>73</sup> Plan Sponsor, *State Plan Sponsor of the Year: A Lesson in Funding*, March 2009, p. 1, available at <http://www.plansponsor.com/MagazineArticle.aspx?id=4294990027> (accessed May 14, 2012).



million in 2006, and \$1.1 billion in 2007 (\$807.5 million of which were proceeds from a tobacco bond securitization).<sup>74</sup> Employer contributions to the plan are established by state law and do not fluctuate on an annual basis based on actuarial valuations.

Under the defined contribution plan, many teachers held total assets equivalent to only a single year's annuity payment in the defined benefit plan.<sup>75</sup> As of 2005, the average total balance was \$23,193 for defined contribution plan members aged 60 and over. In contrast, the average annual benefit for teachers retiring under the defined benefit plan was \$29,777.<sup>76</sup> According to the West Virginia Consolidated Public Retirement Board's deputy director, the legislature decided providing teachers a guaranteed benefit was the most prudent course of action to prevent retirees from needing additional state assistance when their defined contribution funds were exhausted.<sup>77</sup> Three years after the transition, teachers who had initially elected to remain in the defined contribution plan were given another opportunity to switch to the defined benefit plan. Seventy-nine percent of remaining defined contribution plan members chose to transfer at that time.<sup>78</sup>

The 2003 study that prompted defined benefit plan reinstatement found that not only was the defined contribution plan providing inferior benefits, it was also costing the state more to fund on a normal cost basis.<sup>79</sup> An actuary for the state retirement board calculated that returning to a defined benefit plan structure could save the state an estimated \$1.4 billion by 2034 based on an assumed investment return of 7.5 percent. Studies also demonstrated higher returns in the defined benefit plan than in the defined contribution plan over a 10-year period from 2001-2010; defined benefit plan assets earned 3.93 percent, while defined contribution plan assets earned 2.32 percent.<sup>80</sup> Actual savings based on normal cost or investment performance gained from returning to a defined benefit plan structure cannot be accurately reported until the end of the projection period.

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<sup>74</sup> Mark Olleman, *Public plan DB/DC choices*, Milliman (January 2009), p.3, available at [http://nasra.org/resources/Milliman\\_DBDC\\_Choice.pdf](http://nasra.org/resources/Milliman_DBDC_Choice.pdf).

<sup>75</sup> Jennifer Levitz, *When 401(k) Investing Goes Bad: Teachers in West Virginia offer a valuable lesson*, Wall Street Journal (August 4, 2008), available at <http://online.wsj.com/article/SB121744530152197819.html> (accessed February 29, 2012).

<sup>76</sup> Plan Sponsor, *supra* note 68.

<sup>77</sup> Institutional Investor, *supra* note 60.

<sup>78</sup> *Ibid* at p. 9.

<sup>79</sup> Institutional Investor, *supra* note 60 at p. 4.

<sup>80</sup> Mark Olleman, and Ilana Boivie, *Decisions, Decisions: Retirement Plan Choices for Public Employees and Employers*, National Institute on Retirement Security and Milliman (September 2011), p. 31.

## Florida – Choice between Defined Benefit and Defined Contribution

Florida currently offers its employees the choice to participate in a traditional defined benefit plan or a defined contribution plan, both administered by the Florida Retirement System. The Florida State Legislature established the defined contribution Investment Plan effective July 1, 2002, but did not close the existing defined benefit pension plan. The decision to offer employees options for retirement planning was made in response to results of a survey that indicated a large number of Florida employees preferred the portability and individual control of a defined contribution plan, while many others preferred the stability of a traditional defined benefit plan.<sup>81</sup> As of 2011, 25 percent of new hires have elected to join the defined contribution plan and 75 percent have chosen the defined benefit plan.<sup>82</sup>

Florida - Current Plan Design Comparison (as of June 30, 2010)		
	Defined Benefit Plan	Defined Contribution Plan
<b>Status</b>	Active	Active
<b>Membership</b>	557,585 Active	97,782 Active
<b>Employer Contributions</b>	3.77% (Civilian)	6.0% (Civilian)
	12.96% (Public safety)	17.0% (Public safety)
<b>Employee Contributions</b>	3%	3%
<b>Full Vesting</b>	6 years	1 year

All employees are allowed one additional chance to transfer between plans after they make their initial selection. This “Do-Over Option” was a controversial provision given its potential to add strain to the defined benefit plan by requiring it to absorb losses from late-career switches by defined contribution members whose investments did not perform well. From 2002-2011, 53,112 members elected to utilize the Do-Over Option. 51,005 of these switched from the defined benefit plan to the defined contribution plan, 138 switched from defined benefit to a hybrid plan (only available to a small segment of employees), and 1,919 switched from defined contribution to defined benefit.<sup>83</sup>

### Plan Experience

At the time the defined contribution plan was established, the defined benefit plan was overfunded, with a funding ratio in excess of 110 percent. Defined benefit plan funding declined to 87.9 percent in 2010 as a result of poor investment performance during the 2008-2009 financial crisis.<sup>84</sup>

In 2011, the legislature made notable changes to several plan provisions aimed at ensuring continued funding. These included adding a 3 percent employee contribution requirement to both defined

<sup>81</sup> *Texas Pensions and Investments Committee*, 2000 Interim Report, p. 28, can be requested from the agency.

<sup>82</sup> Olleman and Boivie, *supra* note 75.

<sup>83</sup> Olleman and Boivie, *supra* note 75.

<sup>84</sup> Florida House of Representatives, Pre-Session Information Session, January 20, 2011, p. 23.

benefit and defined contribution plans, lowering the deferred retirement option plan (DROP) interest credit rate, and suspending accumulation of service credits for annual cost-of-living adjustments (COLAs). The defined benefit and defined contribution plans had both previously been non-contributory for employees. Under the new provisions, members who enter the DROP program after July 1, 2011, will earn 1.3 percent interest, compared to 6.5 percent earned by those who entered prior to that date. Accumulation of service credit for annual cost-of-living increases was suspended through 2016, resulting in lower COLA amounts paid.<sup>85</sup> These changes are designed to ensure the plan funding ratio does not dip below the 80 percent benchmark commonly used to determine whether or not a plan is adequately funded.

### **Nebraska – Defined Contribution to Cash Balance**

The Nebraska State Employees' and County Employees' Retirement Systems are two of the nation's few statewide cash balance plans. Originally, Nebraska state and county government employees were covered by defined contribution plans established in 1967. In 2002, 35 years after their inception, the Nebraska Legislature closed both defined contribution plans to new enrollment and established cash balance plans. Current employees were given two opportunities to transfer to the new cash balance plan, the first in 2003 and the second in 2007. Approximately one-third of eligible plan members switched to the cash balance plan during the 2003 window, and another third transferred in 2007.<sup>86</sup>

<b>Nebraska - Current Plan Design Comparison</b> (as of June 30, 2010)		
	<b>Hybrid Plan</b>	<b>Defined Contribution Plan</b>
<b>Status</b>	Active	Closed to new enrollment, effective 12/31/2002
<b>Membership</b>	State: 11,238 Members County: 5,637 Members	State: 5,224 Members County: 1,982 Members
<b>Employer Contributions</b>	State: Employee Rate x 156% County: Employee Rate x 150%	State: 7.5% County: Employee Rate x 150%
<b>Employee Contributions</b>	State: 4.8% County: 4.5%	State: 4.8% County: 4.5%
<b>Full Vesting</b>	3 years	3 years

<sup>85</sup> Mary Ellen, Breaking down Florida's pension reform changes, May 2011, *available at* <http://www.tampabay.com/news/politics/stateroundup/breaking-down-floridas-pension-reform-changes/1172229> (accessed May 14, 2012).

<sup>86</sup> Nebraska Public Employees Retirement Systems, *Presentation on Cash Balance Plans*, August 31, 2011, *available at* [http://skyways.lib.ks.us/ksleg/KLRD/Resources/Documents/KPERS\\_StudyCommission/2011-08-31\\_MeetingMaterials/NPERS-CashBalancePlan.pdf](http://skyways.lib.ks.us/ksleg/KLRD/Resources/Documents/KPERS_StudyCommission/2011-08-31_MeetingMaterials/NPERS-CashBalancePlan.pdf) (accessed May 14, 2012).

### ***Plan Experience***

The legislature's initial decision to create defined contribution plans rather than defined benefit plans for state and county workers was due to concerns about underfunding in the state's preexisting defined benefit plans for school employees and state judges.<sup>87</sup> The transition from defined contribution to cash balance hybrid plan structure was initiated in the late 1990s based on the results of several state-commissioned studies that demonstrated the defined contribution plans' disproportionately high administrative costs, lower benefits and lower investment returns compared to statewide defined benefit plans. These reports found that the 20-year return average for Nebraska's defined benefit plans was 11 percent between 1982 and 2002, whereas the defined contribution plans' average return was between 6 percent and 7 percent during that same time period.<sup>88</sup>

The Director of the Nebraska Public Employees Retirement System stated just prior to the transition that Nebraska's experience with defined contribution plans had been "mixed," but that defined contribution plan members typically retire with lower benefits than defined benefit plan members, and that administrative costs for the defined contribution plans were twice as high as for defined benefit plans.<sup>89</sup> Nebraska's hybrid plan allows the average plan member to earn a better rate of return than in the defined contribution plan by providing professional investment management services, increasing individual member risk tolerance through investment pooling, and allowing members to benefit from economies of scale.

### ***Rhode Island – Defined Benefit to Combined DB/DC Hybrid***

In mid-November 2011, Rhode Island closed the state's defined benefit pension plan and established a new combined DB/DC hybrid plan for all employees. Rhode Island's pension reform differs from all other presented case studies in that it affects benefit accrual rates and plan membership for all employees, not just new hires. Passage of the statewide Rhode Island Retirement Security Act of 2011 ("RIRSA") followed the bankruptcy filing and subsequent renegotiation of benefits in the City of Central Falls, RI, where years of underfunding the actuarially required contribution left the pension fund insolvent.<sup>90</sup> RIRSA plan changes take full effect July 1, 2012.

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<sup>87</sup> Texas Pensions and Investments Committee, *2000 Interim Report*, p. 26, can be requested from the agency.

<sup>88</sup> Alicia H. Munnell, Alex Golub-Sass, Kelly Haverstick, Mauricio Soto, and Gregory Wiles, *Why Have Some States Introduced Defined Contribution Plans?*, Center for State & Local Government Excellence (January 2008), p. 6, available at [http://crr.bc.edu/wp-content/uploads/2008/01/slp\\_3.pdf](http://crr.bc.edu/wp-content/uploads/2008/01/slp_3.pdf) (accessed May 14, 2012).

<sup>89</sup> Texas Pensions and Investments Committee, *supra* note 82 at p. 27.

<sup>90</sup> The New York Times, *A Small City's Depleted Pension Fund Rattles Rhode Island*, July 2011, available at <http://www.nytimes.com/2011/07/12/business/central-falls-ri-faces-bankruptcy-over-pension-promises.html?pagewanted=all> (accessed May 14, 2012).

Rhode Island - Current Plan Design Comparison (as of July 1, 2012)		
	Defined Benefit Plan	DB/DC Combo Hybrid Plan
<b>Status</b>	Closed effective 7/1/2012, all members transferred to hybrid	Active
<b>Membership</b> (as of 2010 Actuarial Valuation)	25,061 Members	Not yet available
<b>Employer Contributions</b>	Actuarially required contribution 36.34%, as of latest valuation (6/30/2010)	State: Varies (DB portion actuarially determined, DC portion – 1%) Teacher: Same as State, + 2% for EEs not covered in Social Security
<b>Employee Contributions</b>	8.75%	State: 8.75% (DB portion - 3.75%; DC portion – 5%) Teacher: 8.75%, + 2% for EEs not covered in Social Security
<b>Full Vesting</b>	10 Years	DB contributions – 5 years; DC contributions – 3 years

### Plan Experience

Prior to adoption of RIRSA, state employee plan funding had deteriorated from 64.5 percent in 2003 to 48.4 percent in 2010; teacher plan funding had similarly eroded, from 64.2 percent in 2003 to 48.4 percent in 2010.<sup>91</sup> Employer contribution rates increased at an unsustainable rate over the same period, increasing from 5.59 percent in 1999 to 36.34 percent in 2010 for the state employee plan, and 9.95 percent in 1999 to 35.25 percent in 2010 for the teacher plan.<sup>92</sup>

Detailed information on RIRSA's changes to benefit accrual rates, retirement eligibility schedules, and cost-of-living adjustments can be found in the following tables. These changes are predicted to save the State of Rhode Island approximately \$4 billion over the next 20 years. Additionally, the changes are expected to remove immediately about \$3 billion in unfunded obligations owed by the state and raise plan funding ratios to 60 percent. Because the RIRSA plan changes affect current employees along with new hires, court challenges are possible. It will be necessary to continue to evaluate the effects of these redesigns on the plans' financial health and funding status as these changes are implemented and allowed time to produce results.

<sup>91</sup> Rhode Island Employees' Retirement System, *Actuarial Valuation* for Fiscal Year 2010, p. 15.

<sup>92</sup> Rhode Island Employees' Retirement System, *Actuarial Valuation* for Fiscal Year 2010, p. 24.

## Rhode Island Pension Reform<sup>93</sup>

### Retirement Eligibility Schedules and Benefit Accrual Rates for State Employees

#### **2009 Article 7<sup>94</sup> Reforms:**

- **Schedules AB and B1**– Applied a proportional downward adjustment credit to retirement eligibility calculations for members not yet eligible for retirement as of September 30, 2009 (“Article 7 retirement eligibility date”).
- **Schedule B2** – Set retirement eligibility age for newly-hired employees equal to the normal Social Security retirement eligibility age.

#### **2011 Rhode Island Retirement Security Act (RIRSA) Reforms:**

(all changes and eligibility calculations as of July 1, 2012)

- **All Employees** – benefit accrual rate change; automatic COLAs suspended for all members, including current retirees, until plan funding exceeds 80%, supplanted by interim COLAs calculated by plan’s 5-year avg. return minus 5.5% (0-4%);
- **New/Non-Vested Employees** – will retire at Social Security retirement age, capped at age 67.
- **Vested with 5+ Years of Service** – applied additional proportional downward adjustment credit towards an earlier retirement date calculated using the following formula (“RIRSA retirement eligibility date”); minimum retirement age is 59.

$$SS \text{ Eligibility Age} - \left( \frac{\text{Years Cumulative Service thru June 30, 2012}}{\text{Proj. YCS thru Article 7 Retirement Date}} \times [SS \text{ Eligibility Age} - \text{Article 7 Eligibility Age}] \right)$$

- **Vested with 10+ Years of Service** – may choose to retire at Article 7 retirement date, but benefits will be calculated based on salary and benefits accrued as of June 30, 2012.
- **20+ Years of Service and Within 5 Years of RIRSA Retirement Eligibility** – may choose to retire at any time with an actuarially reduced benefit.

#### **Pre-July 1, 2012 Benefit Accrual Rates:**

Benefit Accrual Rates: Schedule A	Benefit Accrual Rates: Schedule B
Years 1-10: 1.7%	Years 1-10: 1.6%
Years 11-20: 1.9%	Years 11-20: 1.8%
Years 21-34: 3%	Years 21-25: 2%
Year 35: 2%	Years 26-30: 2.25%
	Years 31-37: 2.5%
	Year 38: 2.25%

#### **Post-July 1, 2012 Benefit Accrual Rate:**

1% for each year worked after July 1, 2012. Final pension benefit equals total benefit accruals times average of five highest consecutive years of compensation.

<sup>93</sup> Data and Tables adapted from “An Employee’s Guide to Understanding the Rhode Island Retirement Security Act”, January 2012, Employees’ Retirement System of Rhode Island.

<sup>94</sup> Article 7, Chapter 68, Laws of 2009 (HB 5983 substitute as amended).

## Rhode Island Pension Reform (continued)

### Retirement Eligibility Schedules & Benefit Accrual Rates under Retirement Security Act of 2011

**Schedule A** – State employees or public school teachers eligible for retirement as of September 30, 2009 (28 years of service at any age, or age 60 with 10 years of service), and vested with 10 years of service credit as of July 1, 2005.

- **Eligible to retire at any time.**
- **Accrue benefits at Schedule A rates until July 1, 2012.**

**Schedule B** – State employees or public school teachers eligible for retirement as of September 30, 2009 (age 65 with 10 years of service), but not vested with 10 years of service as of July 1, 2005.

- **Eligible to retire at any time.**
- **Accrue benefits at Schedule B rates until July 1, 2012.**

**Schedule AB** – State employees or public school teachers not eligible for retirement as of September 30, 2009, but vested with 10 years of service as of July 1, 2005.

- **Options available contingent upon age and years cumulative service (YCS) include: choosing to retire at Article 7 retirement date** with benefits calculated as of June 30, 2012, **choosing to work until new retirement eligibility date under RIRSA formula** with benefits and salary increases calculated as of retirement date, and **choosing to retire immediately and receive an actuarially reduced benefit** (only available if  $YCS \geq 20$  and member is within 5 years of retirement eligibility). DC plan balances disbursed upon retirement, regardless of option chosen.

**Accrue benefits at Schedule A rates until September 30, 2009, and then at Schedule B rates until July 1, 2012.**

**Schedule B1** – State employees or public school teachers not eligible for retirement as of September 30, 2009, and not vested with 10 years of service as of July 1, 2005.

- Options dependent on employee's years of service as of July 1, 2012. Those with **more than 10 YCS will have the option to retire on their Article 7 date or their RIRSA date**, those with **greater than or equal to 5 but less than 10 YCS will retire on the RIRSA eligibility date**, and those with **fewer than 5 YCS will retire at the normal Social Security retirement age**.
- **Accrue benefits at Schedule B rates until July 1, 2012.**

**Schedule B2** – State employee or public school teacher who became a member of the Employees' Retirement System of Rhode Island after September 30, 2009.

- **Eligible to retire at normal Social Security retirement age.**  
**Accrue benefits at Schedule B rates until July 1, 2012.**

## Appendices



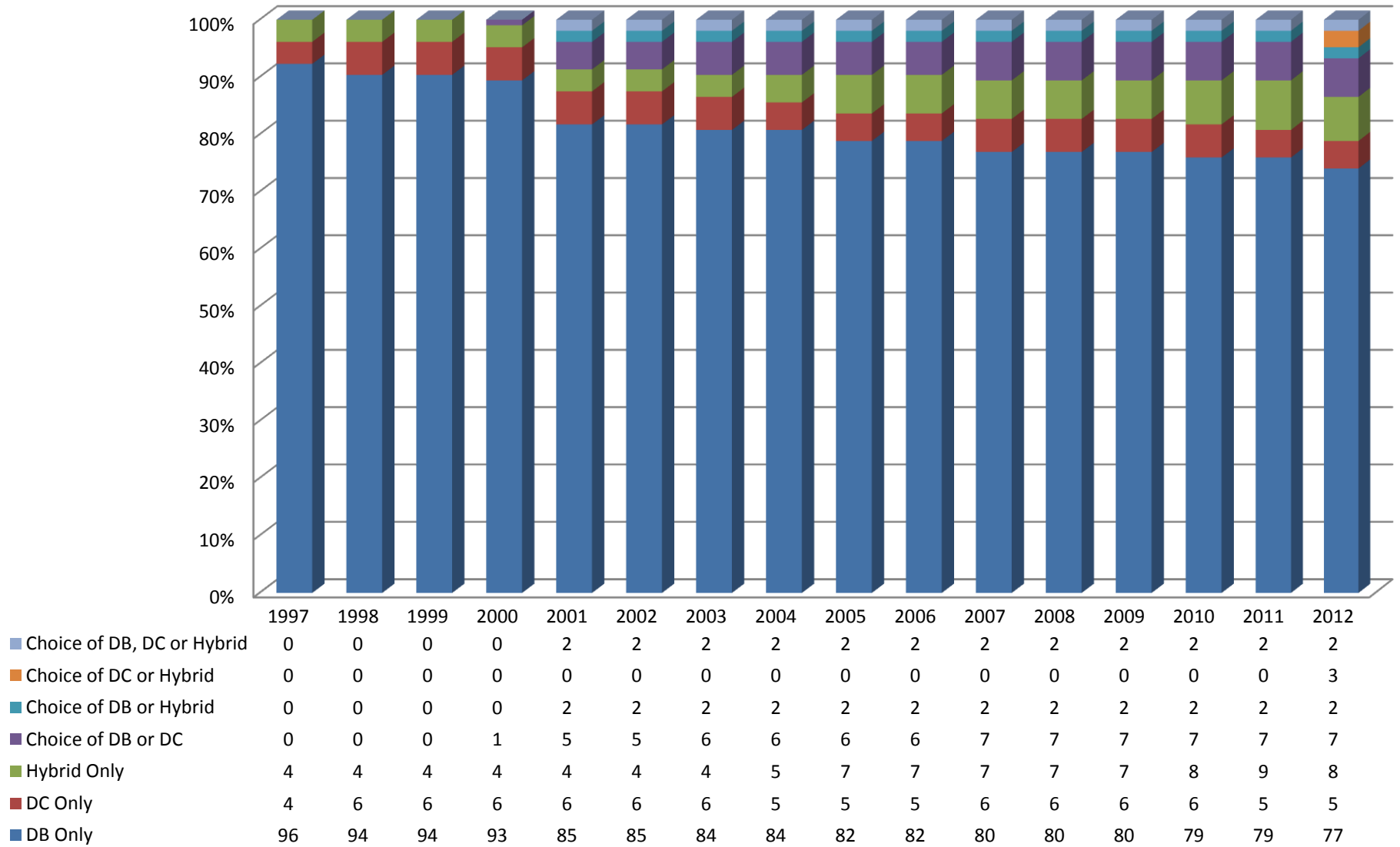
## Appendix A - Statewide Retirement Systems' Combined DB/DC Plan Features

State	Year Approved	Employee Groups	DB/DC Enrollment	Employer Contribution	Employee Contribution	DB Multiplier	Vesting	Investment Risk
Georgia	2009	State Employees	DB-Mandatory DC – Auto Enrollment with Opt-out	DB – 11.5% (actuarially determined) DC – 1-3% (match)	DB – 1.25% DC – 1% (option to increase)	1%	DB – 10 years  DC – 5-year vesting schedule ( ER contribution)	DB – State DC – Member
Indiana	1955	State Employees and Teachers	Mandatory for both plans	DB – 9.7% (determined by the Board)  DC - None	DB - None  DC – 3% (option to increase)	1.10%	DB – 10 years  DC - None	DB – State DC – Member
Oregon	2003	State Employees and Teachers	Mandatory for both plans	DB – 8.4% (Actuarially determined)  DC - None	DB - None  DC – 6%	1.50%	DB – 5 years  DC - None	DB – State DC – Member (employer manages the investment)
Ohio	2011	State Employees and Teachers	Mandatory for both plans	DB – 14%  DC - None	DB - None  DC – 10%	1% (for 30 years) & 1.25% (for every year over 30)	DB – 5 years  DC - None	DB – State DC – Member
Rhode Island	2011	State Employees and Teachers	Mandatory for both plans	DB – Actuarially determined DC – 1% (+2% for teachers not in SS)	DB – 3.75% DC – 5% (+2% for teachers not in SS)	1%	DB – 5 years  DC – 3 years  (ER contribution)	DB – State DC – Member
Michigan	2010	Teachers	DB – Mandatory DC – auto enrollment with Opt-out	DB – Actuarially determined DC – 1% (match)	DB – 6.4% DC – 2%	1.50%	DB – 10 years  DC – 4 years (ER contribution)	DB – State DC – Member
Washington State	1996/ 2002	State Employees and Teachers	Mandatory for both plans	DB – Actuarially determined  DC - None	DB - None  DC – 5% to 15% (employee selection)	1%	DB – 10 years  DC - None	DB – State DC – Member
Utah	2011	State Employees and Teachers	Mandatory for both plans	DB – 10% DC – any excess DB contribution	DB – any contribution required in excess of employer's 10% DC – employee selection	1.50%	DB – 4 years  DC – 4 years (ER contribution)	DB – State DC – Member

## Appendix B - Statewide Retirement Systems' Cash Balance Plan Features

Plan Name	Year Approved	Employee (EE) Groups	Enrollment	Employer (ER) Contributions	Employee (EE) Contribution	Interest Rate	Benefit Payment Options
Texas Municipal Retirement System	1947	EEs of cities and municipalities that have elected to participate	Mandatory	100, 150, or 200% match of EE actuarially determined rate (based on ER election and adjusted for unfunded obligation)	5, 6, or 7%	Minimum 5% (set by statute)	Annuity with or without partial lump sum
Texas County and District Retirement System	1967	EEs of counties and districts that have elected to participate	Mandatory	Ranges from 100% to 250% match of EE actuarially determined rate (based on ER election and adjusted for unfunded obligation)	4, 5, 6, or 7%	7% (set by statute)	Annuity with or without partial lump sum
Nebraska	2002	State Employees	Mandatory	7.5% (156% of EE rate)	4.8%	Greater of 5% or the federal mid-term rate plus 1.5%	Rollover, lump sum, and annuity

## Appendix C – Trends in Plan Design by Percentages



Appendix D - Index of Statewide Plans by Plan Type <sup>95</sup>		
Plan Type(s) Offered	State Employees' Plan	Teachers' Plan
<b>Mandatory DB Plan</b>	Alabama, Arizona, Arkansas, California, Connecticut, Delaware, Hawaii, Idaho, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Oklahoma, Pennsylvania, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin, Wyoming, Puerto Rico	Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Georgia, Hawaii, Idaho, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oklahoma, Pennsylvania, South Dakota, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin, Wyoming, Puerto Rico
<b>Mandatory DC Plan</b>	Alaska, Michigan, Washington DC	Alaska, Washington DC
<b>Mandatory Hybrid Plan</b>	Georgia, Nebraska, Oregon, Rhode Island	Indiana, Michigan, Oregon, Rhode Island
<b>Choice of DB or DC Plan</b>	Colorado, Florida, Montana, North Dakota, South Carolina	Florida, South Carolina
<b>Choice of DB or Hybrid Plan</b>	Washington	Washington
<b>Choice of DC or Hybrid Plan</b>	Utah; Indiana	Utah
<b>Choice of DB, DC or Hybrid Plan</b>	Ohio	Ohio

<sup>95</sup> Tables adapted from National Conference of State Legislatures, Tables showing which states have defined benefit, defined contribution and hybrid plans for state employees and teachers. January 2012.

## ***Glossary of Terms***

### **Actuarial Accrued Liability**

Computed differently under different funding methods, the actuarial accrued liability generally represents the portion of the Present Value of Future Projected Benefits attributable to service credit earned (or accrued) as of the valuation date.

### **Actuarial Assumptions**

Factors which actuaries use in estimating the cost of funding a defined benefit pension plan. Examples include: the rate of return on plan investments; mortality rates; and the rates at which plan participants are expected to leave the system because of retirement, disability, termination, etc.

### **Actuarial Cost Methods**

An actuarial method which defines the allocation of pension costs (and contributions) over a member's working career. All standard actuarial cost methods are comprised of two components: normal cost and the actuarial accrued liability. An actuarial cost method determines the incidence of pension costs, not the ultimate cost of a pension plan; that cost is determined by the actual benefits paid less the actual investment income.

### **Actuarial Equivalent**

A benefit having the same present value as the benefit it replaces. Also, the amount of annuity that can be provided at the same present value cost as a specified annuity of a different type or a specified annuity payable from a different age.

### **Actuarial Gain or Loss**

Experience of the plan, from one year to the next, which differs from that assumed results in an actuarial gain or loss. For example, an actuarial gain would occur if assets earned 10 percent for a given year since the assumed interest rate in the valuation is 8 percent.

### **Actuarial Present Value**

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions (i.e. interest rate, rate of salary increases, mortality, etc).

### **Actuarial Value of Assets**

The value of pension plan investments and other property used by the actuary for the purpose of an actuarial valuation (sometimes referred to as valuation assets). Actuaries often select an asset valuation method that smoothes the effects of short-term volatility in the market value of assets.

### **Actuarially Reduced**

The method of adjusting a benefit received at an early date so that the expected total cost to the retirement system is equivalent to the cost if the benefit did not begin until later.

### **Annual Required Contribution (ARC)**

The ARC is the actuarially-determined level of employer contribution that would be required on a sustained, ongoing basis to systematically fund the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL) attributed to past service over a period not to exceed thirty years. It is the amount needed to pay benefits as they come due plus amortize the UAAL. The ARC has two components: Normal cost and amortization of the UAAL for both active employees and retirees.

### **Actuary**

A business professional who analyzes the financial consequences of risk. Actuaries use mathematics, statistics and financial theory to study uncertain future events, especially those of concern to insurance and pension programs. They evaluate the likelihood of those events, design creative ways to reduce the likelihood and decrease the impact of adverse events that actually do occur.

### **Age (Retirement)**

Normal retirement dependent upon attainment of a specified age.

### **Aggregate Funding Method**

The aggregate funding method is a standard actuarial funding method. The annual cost of benefits under the aggregate method is equal to the normal cost. The method does not produce an unfunded liability. The normal cost is determined for the entire group rather than on an individual basis.

### **Amortization**

Paying off an interest bearing liability by gradual reduction through a series of installments, as opposed to paying it off by one lump sum payment.

### **Annuitant**

One who receives periodic payments from the retirement system. This term includes service and disability retirees, and their survivors.

### **Annuity**

A series of periodic payments, usually for life, payable monthly or at other specified intervals. The term is frequently used to describe the part of a retirement allowance derived from a participant's contributions. Compare with "pension".

### **Beneficiary**

The person designated to receive benefits under an employee benefit plan in the event of the death of the person covered by the plan.

### **Cash-Out**

A lump sum payment of the member's contributions prior to retirement.

### **Credited Service**

A period of employment which is recognized as service for purposes of determining eligibility to receive pension payments and/or determining the amount of such payments.

**Death Benefit**

A benefit payable by reason of a member's death. The benefit can be in the form of a lump sum, an annuity or a refund of the member's contributions.

**Deferred Annuity**

An annuity for which payments do not commence until a designated time in the future.

**Deferred Compensation**

Compensation for employment that is not payable until after the regular pay period. The most common form of deferred compensation is pension plans, but private employers may also offer bonuses, incentive clauses, etc.

**Deferred Retirement Option Plan (DROP)**

A DROP plan is an arrangement under which an employee, who would otherwise be entitled to retire and receive retirement benefits, instead, continues working. However, instead of accruing additional retirement benefits, the employee has their monthly benefit credited for the period of their continued employment to a separate balance under the employer's retirement plan. The balance may earn interest (either at a rate stated in the plan, or based on the earnings of the trust underlying the retirement plan). The DROP balance is paid to the employee, in addition to whatever benefit the employee has accrued under the defined benefit plan based on earlier years of service, when the employee eventually retires.

**Defined Benefit Plan (DB)**

A pension plan providing a definite benefit formula for calculating benefit amounts -such as a flat amount per year of service; a percentage of salary; or a percentage of salary, times years of service.

**Defined Contribution Plan (DC)**

A pension plan in which the contributions are made to an individual account for each employee. The retirement benefit is dependent upon the account balance at retirement. The balance depends upon amounts contributed during the employee's participation in the plan and the investment experience on those contributions.

**Disability Retirement**

A termination of employment involving the payment of a retirement allowance as a result of an accident or sickness occurring before a participant is eligible for normal retirement.

**Early Retirement**

A termination of employment involving the payment of a retirement allowance before a participant is eligible for normal retirement. The retirement allowance payable in the event of early retirement is often lower than the accrued portion of the normal retirement allowance.

**Entry Age Normal Cost Method (EANC)**

The EANC method is a standard actuarial funding method. The annual cost of benefits under EANC is comprised of two components:

- Normal cost

- Amortization of the unfunded liability

The normal cost is determined on an individual basis, from a member's age at plan entry, and is designed to be a level percentage of pay throughout a member's career.

### **Equities**

Ownership of a company (as opposed to debt). Examples include stocks, venture capital, and leveraged buy-outs.

### **ERISA**

Employee Retirement Income Security Act acronym. This federal legislation sets minimum standards for pension design to increase the security of private sector employees' benefits.

### **401(k), 403(b), and 457 Plans**

These defined contribution plans allow employees to save for retirement on a tax-deferred basis. 401(k) plans are found in the private sector and the public sector in some states. 403(b) plans are for employees of public educational institutions and certain non-profit tax-exempt organization. 457 plans (also known as deferred compensation plans) are for governmental employees and non-church-controlled tax-exempt organizations.

### **Fiduciary**

(1) Indicates the relationship of trust and confidence where one person (the fiduciary) holds or controls property for the benefit of another person; (2) anyone who exercises power and control, management or disposition with regard to a fund's assets, or who has authority to do so or who has authority or responsibility in the plan's administration. Fiduciaries must discharge their duties solely in the interest of the participants and their beneficiaries, and are accountable for any actions which may be construed by the courts as breaching that trust.

### **Funded Ratio**

The ratio of a plan's current assets to the present value of earned pensions. There are several acceptable methods of measuring a plan's assets and liabilities. In financial reporting of public pension plans, funded status is reported using consistent measures by all governmental entities. According to the Government Accounting Standards Board (GASB), the funded ratio equals the actuarial value of assets divided by the actuarial accrued liability calculated under the Projected Unit Credit cost method.

### **General Accounting Standards Board (GASB)**

This governmental agency sets the accounting standards for state and local government operations.

### **Individual Retirement Account (IRA)**

A retirement account to which an individual can make annual tax-deductible contributions according to annual limits that are specified by the Internal Revenue Service.



**Joint and Survivor Annuity**

A provision that enables a plan participant to take annuity payments with continuing payments of all or part of the benefits after his or her death going to a designated beneficiary. The survivor annuity will automatically be provided to a married participant if he or she does not choose against it. The annual pension benefits of the participant electing to have such a survivor annuity are generally reduced to provide for the survivor.

**Life Annuity**

A monthly benefit payable as long as the annuitant is alive. There are no residual payments to survivors.

**Life Expectancy**

The average number of years a person of a given age might be expected to live.

**Lump Sum Distribution**

Payment within one taxable year of the entire balance payable to the participant from a qualified pension or employee annuity plan.

**Money Purchase Plan**

A type of pension plan where the employer agrees to make a fixed contribution each year for each eligible employee. The contribution is typically expressed as a percentage of the employee's pay and the contribution constitutes a non-discretionary commitment on the part of the employer. The contribution must be made each year, regardless of employer profits, and can only be varied by plan amendment. Although treated differently under federal tax law, money purchase plans are fundamentally defined contribution plans.

**Non-Contributory Plan**

A retirement system in which no contributions are required of its members to aid in its financing.

**Normal Cost**

Computed differently under different funding methods, the normal cost generally represents the portion of the cost of projected benefits allocated to the current plan year. The employer normal cost equals the total normal cost of the plan reduced by employee contributions.

**Normal Retirement Age**

The age, as established by a plan, when unreduced benefits can be received.

**Offset Plan**

A pension plan in which the employer's participation in Social Security is used as "credit" against members' benefits.

**Pay-As-You-Go**

A method of recognizing the costs of a retirement system only as benefits are paid. Also known as the current disbursement cost method.

**Pension**

A series of periodic payments, usually for life, payable monthly or at other specified intervals. The term is frequently used to describe the part of a retirement allowance financed by employer contributions. Compare with "annuity".

**Portability**

The ability of an employee who changes jobs and joins a different retirement system to become a dual member, maintaining membership in both systems. Dual members may combine service for benefit eligibility. They may also use their highest salary from either system for benefit calculation.

**Pre-Funding**

To accumulate a reserve fund in advance of paying benefits. This is the opposite of "pay-as-you-go."

**Present Value**

The current worth of an amount or series of amounts payable in the future, after discounting each amount at an assumed rate of interest and adjusting for the probability of its payment or receipt.

**Present Value of Future Projected Benefits (PVFB)**

Computed by projecting the total future benefit payments from the plan, using actuarial assumptions (i.e. probability of death or retirement, salary increase, etc.), and discounting the payments to the valuation date using the valuation interest rate to determine the present value (today's value).

**Projected Benefits**

Pension benefit amounts which are expected to be paid in the future taking into account such items as the effect of advancement in age as well as past and anticipated future compensation and service credits.

**Projected Unit Credit (PUC) Funding Method**

The PUC funding method is a standard actuarial funding method. The annual cost of benefits under PUC is comprised of two components:

- Normal cost
- Amortization of the unfunded actuarial accrued liability

The PUC normal cost equals the difference between the accrued liability at the beginning and end of the year.

**Projected Unit Credit (PUC) Liability**

The portion of the Actuarial Present Value of future benefits attributable to service credit that has been earned to date (past service).

**Prudent Man Rule**

A requirement imposed by the Employee Retirement Income Security Act (ERISA) that plan fiduciaries carry out their duties with the care, skill prudence and diligence which a prudent man, acting in a like capacity and familiar with such matters, would use under conditions prevailing at the time.

**Qualified Plan**

An employee benefit plan approved by the Internal Revenue Service, meeting requirements set forth in IRS Code Section 401. Contributions to such plans are subject to favorable tax treatment.

**Replacement Ratio**

A calculation of the degree to which retirement income supplants a pre-retirement member's "take home" pay, less working expenses. To determine this ratio, several factors must be taken into account: a retiree's pre-retirement earnings; changes in tax liabilities after retirement; changes in Social Security tax liability; the elimination of work-related expenses -including contributions to the retirement system; and savings.

**Reserve**

A collection of assets set aside to meet future liabilities.

**Roth IRA**

A retirement account which an individual can make after-tax contributions according to annual limits that are specified by the IRS.

**Service Retirement**

Retirement dependent upon completion of a specified period of service. In some usages, the term has the same meaning as "normal retirement".

**Supplemental Cost**

A separate element of actuarial cost which results from future normal costs having a present value less than the present value of the total prospective benefits of the system. Such supplemental cost is generally the result of assuming actuarial costs accrued before the establishment of the retirement system. A supplemental cost may also arise after inception of the system because of benefit changes, changes in actuarial assumptions, actuarial losses, or failure to fund or otherwise recognize normal cost accruals or interest.

**Thirteenth Check**

An annual supplemental retirement payment arising from earnings on investments of the system in excess of those determined as needed.

**Ultimate Entry Age Normal Cost Method (Ultimate EANC)**

The Ultimate EANC method is a variation of EANC, where the normal cost is calculated for each active member based on the plan provisions applicable to a new or recent entrant to the plan. For a plan that has a lower cost tier for new or recent entrants, use of the Ultimate EANC method lowers the normal cost and increases the actuarial accrued liability, as compared to EANC.

**Unfunded Actuarial Accrued Liability (UAAL)**

The excess, if any, of the Actuarial Accrued Liability over the Actuarial Value of Assets. In other words, the present value of benefits earned to date that are not covered by current plan assets.

**Unfunded Liability or Unfunded PBO**

The excess, if any, of the pension benefit obligation over the valuation assets. This is the portion of all benefits earned to date that are not covered by plan assets.

**Variable Annuity**

A benefit whose payments vary from year to year depending upon the value of a portfolio of securities (usually common stocks).

**Vesting**

The right of an employee to the benefits he or she has accrued, or some portion of them, even if employment under the plan is terminated. An employee who has met the vesting requirements of a pension plan is said to have a vested right. Voluntary and mandatory employee contributions are always fully vested.

**Withdrawal**

The termination of employment prior to becoming eligible for any benefits. The term sometimes refers to subsequent termination of membership in a system by withdrawal of the employee's accumulated contributions from the system.

