A brief from THE PEW CHARITABLE TRUSTS | Apr 2015

Hybrid Public Pension Plans

A primer

Overview

The challenges of managing growing public pension costs while recruiting and retaining a strong workforce have prompted policymakers across the country to take a closer look at the way they deliver retirement benefits to employees. Ten states have adopted hybrid pension plans that combine smaller, defined benefit pensions with defined contribution plans. When designing a retirement plan, there is no one-size-fits-all solution. The purpose of this brief is to explain the elements of a well-designed hybrid plan to help those interested in such plans make a more informed evaluation. Like a well-designed defined benefit or defined contribution plan, a well-designed hybrid plan can be part of an attractive compensation package that includes the elements necessary to promote retirement security for workers:

- A commitment to fully funding retirement promises.
- A combined benefit and savings rate that helps put workers on the path to a secure retirement.
- Professionally managed, low-fee, pooled investments with appropriate asset allocations.
- Access to lifetime income in the form of annuities.

All workers need access to a secure retirement, and government employers need retirement systems that are financially sustainable over time. By combining a smaller, defined benefit plan with a defined contribution component, hybrid plans allow employers to improve the predictability of their costs. Moreover, there are specific cases in which a well-designed hybrid plan can be expected to provide a better benefit than a traditional pension for the large number of workers who change jobs during their working lives—while also providing career employees with substantial retirement benefits.

This brief reviews 12 hybrid plans in 10 states and includes a limited examination of the Federal Employees Retirement System's hybrid plan. It describes the major features of the plans and specific aspects that policymakers should pay particular attention to if they are considering hybrid systems.

How does a hybrid plan work?

"Hybrid" is often used to refer to any retirement plan that combines some elements of a traditional defined benefit pension plan and a defined contribution plan with an individual retirement savings account to which the employee and employer contribute money. In this brief, we focus on the plan design known as a side-by-side hybrid, which combines a defined benefit (DB) based on the employee's final average salary with a separate defined contribution (DC) savings account.[1] Typically, the separate DB and DC portions in a hybrid plan provide a smaller benefit than they would in a stand-alone DB or DC plan, but when combined, they can provide a comparable level of total benefits.

Table 1

Common Retirement Plan Terms

Term	Definition
Annuity	A financial product that provides guaranteed periodic benefit payments, typically for a retiree's lifetime.
Vesting requirement	The number of years an employee must work before becoming fully eligible to receive benefits. Cliff vesting occurs when the employee becomes fully eligible at a specified time. Gradual vesting occurs when an employee becomes partially vested in increasing amounts over an extended period of time.
Defined contribution (DC) plan	A plan in which retirement savings are based on accumulated employer and employee contributions and the investment returns on those contributions. Annual investment returns are generally based on actual asset returns.[2] DC plans can provide workers with access to annuities upon retirement.
Defined benefit (DB) plan	A plan in which the employer promises a specific amount of monthly retirement income based on a formula that typically takes into account the employee's salary, years of service, and age.
Final average salary DB plan	A type of DB plan in which the benefit formula is based on average annual salary over a predetermined number of years typically at the end of the employee's career.
Benefit multiplier	The factor in a DB plan formula that determines the size of the annuity. For example, if the plan has a 2 percent multiplier, an individual who worked for 30 years with a final average salary of $50,000 would have an annual annuity equal to $30,000, or 2 percent x 30 years x $50,000. If the multiplier is 1 percent, the annual benefit would be $15,000.
Cost-of-living adjustment (COLA)	Annual increases to the annuities based on the annual cost-of-living increase. COLAs were historically provided in many public-sector DB plans. They can be fixed increases or based on the consumer price index (CPI) to keep pace with inflation.
Normal retirement age	The age at which vested employees are entitled to the full calculated level of fixed retirement income according to the DB plan formula.
Early retirement age	The age at which vested employees are entitled to receive a reduced level of benefit that is adjusted to reflect the expected cost of providing benefits for a greater number of years than would be the case at the normal retirement age.

Defined benefit

The defined benefit portions of the 12 hybrid plans in our study are all final average salary DB plans. As noted, the benefit formula is based on an employee's age, years of service, and a benefit multiplier, which is the factor (expressed as a percentage of salary) in the formula that determines the size of the annuity. (See Table 1.) Within the hybrid plans, the multiplier used to calculate the final benefit is typically lower than in DB-only plans. The retirement options are similar to those offered under DB-only plans, generally including lump-sum options as well as various types of lifetime annuities.

Defined contribution

The defined contribution portion of a public-sector hybrid plan is similar to a private-sector 401(k) plan.[3] Workers have their own accounts and upon retirement draw on the savings through a variety of payout methods, including lump-sum payments, periodic withdrawals, and the purchase of annuities. Workers can also take the DC portion with them if they leave employment before retirement, directly transferring or rolling it over into a new employer's DC plan or into an individual retirement account or annuity.[4]

Key factors in designing a hybrid retirement plan

When considering the design of a hybrid plan, policymakers should evaluate the impact on costs and cost predictability for the government employer, as well as level of risk and benefit for employees.

When projecting DB plan costs, policymakers must take into account long-term investment returns, salary increases, employee turnover, and workers' life expectancy. If these estimates are inaccurate, especially if investment returns are lower than expected, there can be unanticipated increased costs. But even higher-than-estimated investment returns can bring uncertainty. In economic booms, governments have faced pressure to reduce contributions and increase benefits. Then, in subsequent market downturns, prior benefit increases and smaller contributions have sometimes resulted in deficit funding levels.[5]

Hybrid plan costs are more predictable than those of DB-only plans, because the DB portion of the hybrid plan is smaller and employer contributions for the DC portion are predetermined and do not fluctuate with the market. In such instances, government employers are better able to manage budgets and are less likely to fall short on contributions, thereby reducing the potential for unfunded pension liabilities.

Hybrid plans expose employees to greater investment risk than do DB-only plans. Workers' final accumulated savings in the DC portion are substantially dependent on investment returns that are subject to gains and losses in the financial markets. Policymakers can help mitigate this risk by increasing employer and/or employee contributions; providing employees with a limited number of low-risk, low-fee investments; offering an annuity option for the DC account; and providing financial education programs to employees.

Policymakers should also consider how well the retirement benefit and savings rate help meet the retirement needs of career workers as well as employees who leave government service early or in the middle of their careers. Retirement income is commonly calculated as a percentage of pre-retirement income and is referred to as replacement income. Although there is no fixed rule on how much replacement income is adequate, several studies have argued that at least 70 percent of final average salary allows retirees to maintain their standard of living after leaving the workforce. A frequently cited Georgia State RETIRE Project recommends nearly 80 percent of salary.[6]

A hybrid plan can provide better retirement saving rates than a DB-only plan for early and mid-career workers

who change jobs. Because the majority of DB benefits are earned in the final years before retirement age, employees build more savings in a DC plan during their early work years and can take the entire balance with them if they change jobs.[7] Under a DB-only plan, workers who leave service at any time other than the last years before retirement often retain only their contributions plus interest that is typically lower than the plan's investment return rate.

The hybrid plan's combination of DB and DC allows all employees to build retirement savings: Career workers who retire from state employment probably will receive substantial income from the plan, especially from the defined benefit, and workers who change jobs benefit from the savings in the defined contribution plan.

A Tennessee case study: Comparing benefits of a hybrid and traditional plan

In 2013, Tennessee policymakers adopted a mandatory hybrid retirement plan for state workers, higher education employees, and teachers hired after June 30, 2014. State officials designed the hybrid plan to increase the predictability of retirement benefit costs, ensure retirement security for career workers, and provide flexible benefits for workers who do not stay in public service for their entire careers. Local governments were also given the option to move new employees into the state system.[8]

Tennessee's hybrid plan includes a defined benefit with a 1 percent multiplier, a normal retirement age of 65, and a defined contribution plan with an automatic combined contribution of 7 percent from the employee and the employer.[9] Under the hybrid plan, participants have 26 investment options: 15 index funds and 11 life-cycle funds.[10] State retirement officials also plan to give employees the option of allowing the state to manage their DC savings.[11]

The legacy defined benefit plan has a 1.575 percent multiplier and a normal retirement age of 60, and employees have the option to contribute to a supplemental defined contribution plan.[12] Most workers in the legacy plan participate in the optional DC plan and have contributed 3.5 percent of salary on average.[13]

Appendix B details the differences between Tennessee's legacy and hybrid plans. As the table shows, total employee contributions are projected to remain at approximately 7 percent of payroll, and employer contributions are projected to increase by an estimated 2.6 percent of payroll. However, the majority of this increase does not reflect additional cost, but rather the state's decision to provide a reserve for the defined benefit portion of the plan in the event that investment returns fail to meet expectations. The result is that the state has limited exposure to higher costs while providing better benefits for many workers.

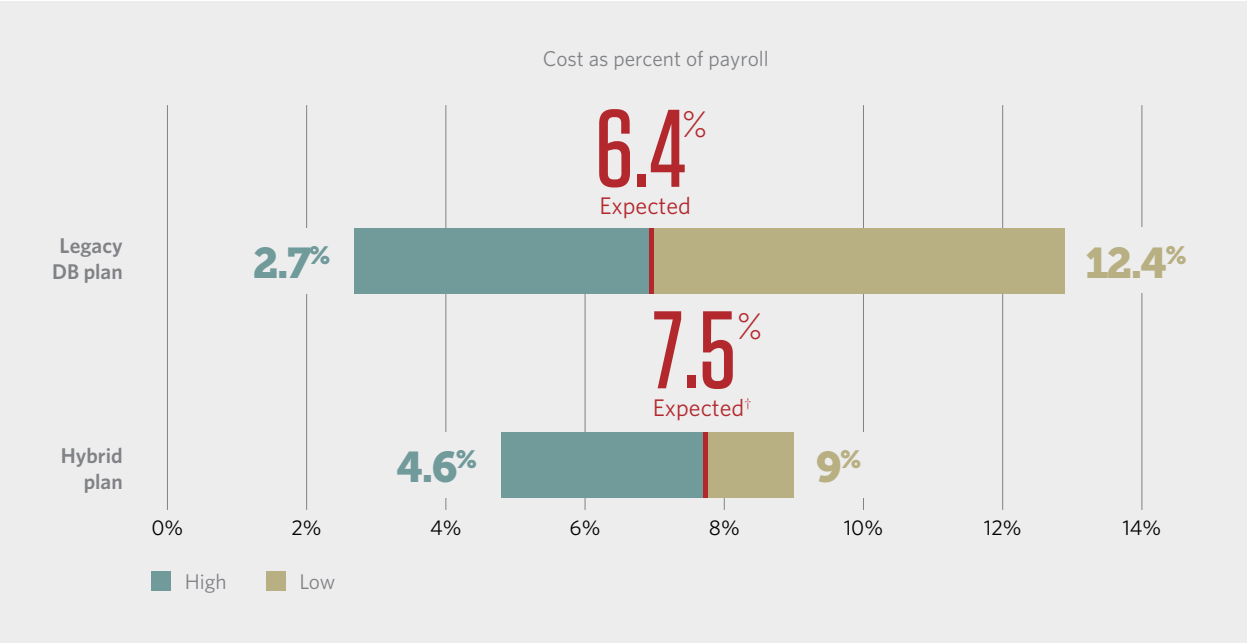
Improved cost predictability

The Tennessee hybrid plan, which reduces the DB and adds a DC, improves cost predictability in several ways. Scaling back the DB portion reduces the state's exposure to the cost uncertainty associated with plan assumptions of DB plans. The employer's contribution to the DB is set at 4 percent of payroll, which is currently estimated to exceed the employer's expected cost by 1.5 percent of payroll.[14] This extra funding will be saved as a reserve to provide a cushion in leaner years. Finally, an additional cost control allows the plan to adjust COLAs and employee contribution levels when rates of return fall below expectations.

The long-term costs of the hybrid plan are less variable compared with the legacy DB plan. Figure 1 illustrates projected cost under the expected 7.5 percent return and for the range of expected costs assuming a return between 5.5 and 9.5 percent. Under this scenario, the legacy plan's costs range from 2.7 to 12.4 percent of total payroll compared with 4.6 to 9 percent for the hybrid plan. Lower cost variation allows policymakers to more accurately project long-term expenses.

Figure 1

Projected Employer Cost Variation Under Legacy DB and Hybrid Plans With Low (5.5%), Expected (7.5%), and High (9.5%) Investment Returns*



Notes:

* This graph reflects aggregate average employer costs for the combined state, judges, and teachers plan and estimated long-term costs of benefits under different investment assumptions. The range of expected costs is an approximation based on the 25th to 75th percentile investment outcomes. The defined benefit component in the legacy and hybrid plans was analyzed based on long-term assumed normal cost. Analysis of the hybrid plan included the cost control measures designed to keep employer costs at or below 9 percent. Employer normal cost is based on estimates by The Pew Charitable Trusts and the Terry Group of the sensitivity to gross normal cost from changes in long-term investment returns.

† Expected costs for the hybrid plan reflect the state's 9 percent total contributions, less the estimated 1.5 percent additional contribution to provide a cushion in leaner years.

Sources: Tennessee Consolidated Retirement System Hybrid Plan With Cost Controls, Tennessee Consolidated Retirement System Valuation and Report 2013

Retirement security

The hybrid plan improves retirement security for many Tennessee workers. Figure 2 illustrates the expected replacement rate under the hybrid and legacy plans for employees who begin work at age 27 and leave at age 35, 45, or 65. The benefits are shown under the plan's expected rate of return of 7.5 percent and a low-return scenario of 5 percent. Most employees who start at age 27 are expected to leave state employment by their early 40s, so the hybrid plan is likely to provide better retirement security for many workers while still offering a substantial replacement rate for career workers.[15]

A career employee, starting work at age 27 and retiring at 65, can expect to receive replacement income of approximately 56 percent from the legacy plan. As Figure 2 shows, this increases to 63 to 67 percent if the

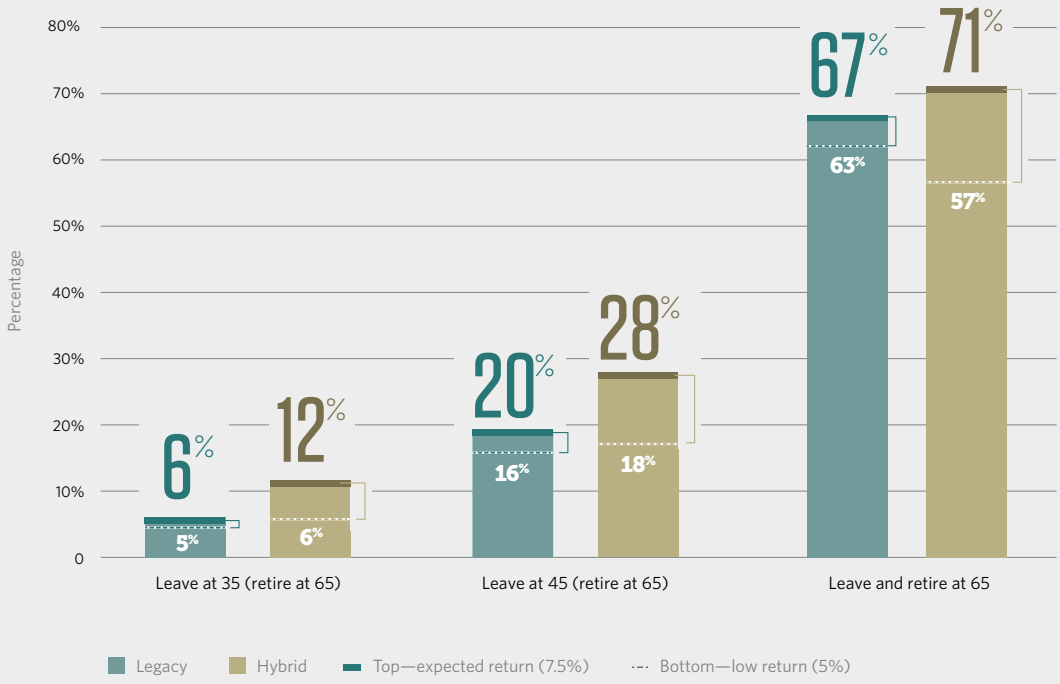
employee participates in the voluntary DC plan, and to 57 to 71 percent from the new state hybrid plan.

The defined contribution components in these plans do not include cost-of-living adjustments to protect against inflation, but that is more than offset by Social Security retirement benefits. With Social Security benefits and accounting for inflation, the estimated average replacement income during retirement in the hybrid plan would be above 80 percent.[16]

Tennessee can provide an attractive benefit, in part, because its plan is well-funded—at 94 percent as of 2013.[17] This reduces the resources the state must allocate to pay down pension debt. Although states with large unfunded liabilities may be constrained from providing a benefit identical to Tennessee's, they can design a hybrid plan with a combined benefit and savings rate that puts workers on the path to a secure retirement.

Figure 2

Income Replacement Rates at Retirement Under the Tennessee Legacy DB and Hybrid Plans for Workers Who Start at Age 27*



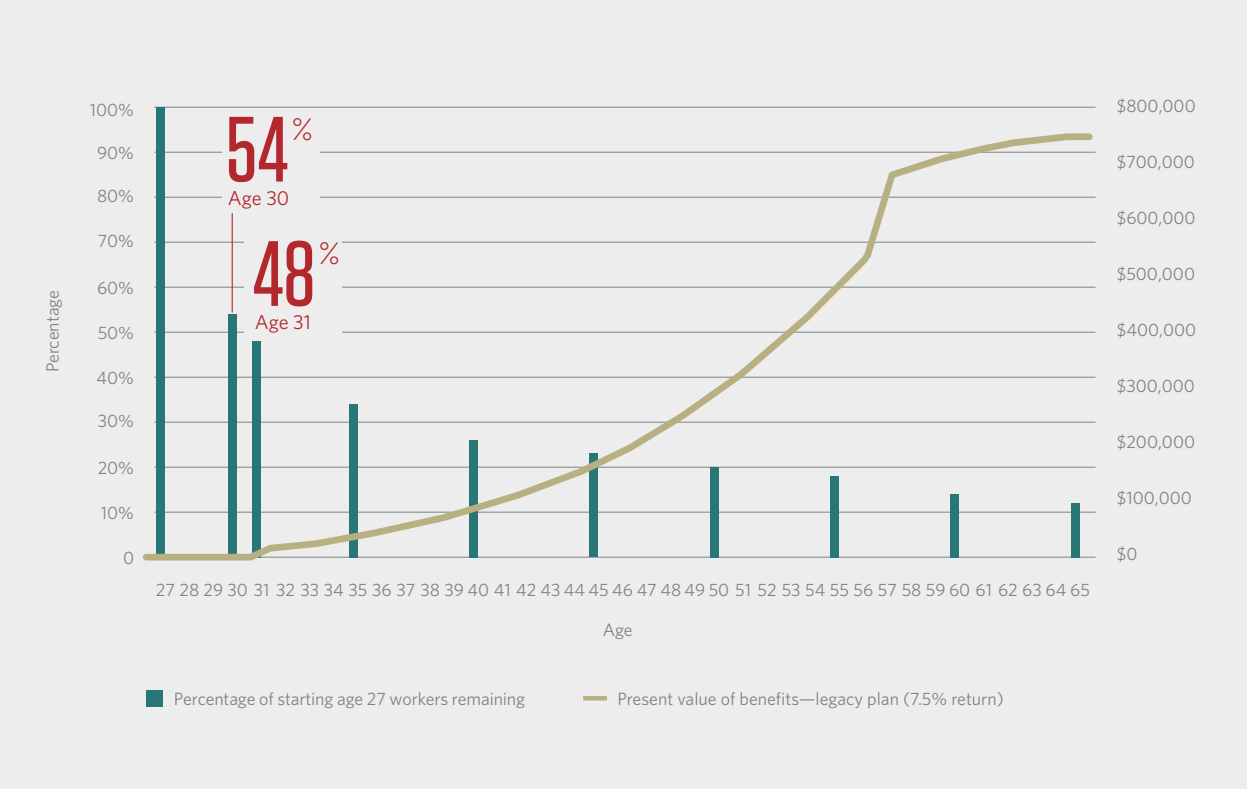
Note:

* This graph represents income replacement rates under the hybrid and legacy plans for state employees. It makes the following assumptions for both plans: starting salary of $40,000, 2.5 percent annual inflation, a 2.5 percent COLA on the DB, annual salary growth based on plan assumptions, and a 4 percent annuitization rate for the hybrid DC component at retirement and for the optional DC plan. The retiree is assumed to convert the entire DC hybrid account and the optional DC account into an annuity at retirement. The analysis assumes that members contribute 2.4 percent to the DC portion of the hybrid plan and to the optional defined contribution plan. Members of the legacy plan are assumed to participate in the optional DC account.

Figure 3 shows the present value of future benefits under the legacy plan in relation to expected worker attrition. Nearly two-thirds of workers who start at age 27 are expected to leave state employment by age 35, and 75 percent will leave their jobs by age 45. More than half of the workers who start at age 27 will leave before accruing any benefits under the legacy plan.[18]

Figure 3

Present Value of Benefits per Worker Under the Legacy DB and Expected Worker Attrition*



Note:

* This graph represents the present value of benefits in current dollars under the legacy plan for state employees. The graph assumes that workers start at age 27 and retire at 65. Employee contributions are included in the overall benefit. The graph has the following assumptions: starting salary of $40,000, annual salary growth and inflation based on plan assumptions, a 2.5 percent COLA on the DB, and present value discount rate of 5 percent. The assumed withdrawal rate is based on state actuarial assumptions. This graph does not include savings for workers who participate in the optional DC account.

Source: Analysis by the Terry Group and The Pew Charitable Trusts

Designing a hybrid plan

Misgivings about a new type of retirement system can be proactively addressed through the plan's design. For example, policymakers who are concerned about a reduced benefit for career workers can ensure that the contribution level to the DC account is sufficient by increasing employer and/or employee contributions. To provide a lifetime income stream for employees, policymakers can provide participants the option of an annuity for both the DB and DC portions. To address worries that employees will make poor investment decisions with their DC funds, policymakers have a variety of options: setting up plans that provide a limited number of appropriate investment options, automatically enrolling employees in life-cycle investment funds, and providing access or automatic default to annuities or an annuity purchase program.[19]

The 12 hybrid plans adopted in 10 states and the federal employee hybrid plan provide useful references for those considering adopting a hybrid pension system. The parameters of each state plan are compared in Appendix A. Here are highlights from these plans:

> The 12 hybrid plans adopted in 10 states and the federal employee hybrid plan provide useful references for those considering adopting a hybrid pension system.

Defined benefit component

Multiplier

The DB multipliers in the state hybrid plans are substantially lower than those in a typical DB-only plan. Seven of the 12 state plans use a 1 percent multiplier. The Indiana Public Retirement System offers a slightly higher multiplier of 1.1 percent. The Michigan Public Schools Retirement System, the Utah Retirement System, and the Oregon Public Employees Retirement System offer a more generous multiplier of 1.5 percent. The Michigan State Police Retirement System has a 2 percent multiplier.[20] In contrast, the multiplier for DB-only plans is typically about 2 percent.[21]

Retirement eligibility

Most hybrid plans offer normal retirement (under which employees can retire with full benefits after meeting age and service thresholds) and early retirement (under which employees retire with a reduced benefit at an earlier age). Retirement eligibility ages have a significant impact on the total value of pension benefits, and earlier retirement ages tend to result in a greater lifetime benefit for the employee. Most hybrid plans offer full retirement between 55 and 65 years with varying levels of required years of service, and a few allow employees to retire at any age after completing a set number of years of employment. For example, the Michigan Public Schools Retirement System offers full benefits to any worker age 60 or older with 10 years of experience, while the Utah Retirement System allows full retirement at age 65 with four years of service or at any age with 35 years of service.

Cost-of-living adjustments

Eight of the state hybrid plans provide a cost-of-living adjustment, which protects benefits from being eroded by inflation and therefore can have a significant impact on the lifetime value of benefits for retirees. Four of the

state plans do not provide a COLA. The Rhode Island Employee Retirement System provides COLAs at five-year intervals until the plan reaches a set funded level; Oregon's plan offers a 1.25 percent COLA for the first $60,000 of a yearly benefit and 0.15 percent on any additional amount; and in Indiana, COLA benefits are provided only if approved by the state Legislature. The remaining five plans and the federal plan provide COLAs tied to the consumer price index, typically with a cap of 2 to 3 percent.

Contributions

In four of the state hybrid plans, employers fully fund the defined benefit portion while the employees do not contribute anything. In seven plans and the federal plan, employees are required to contribute some amount, ranging from about 1 percent to 5 percent. In Utah, employee contributions vary in relation to the overall plan cost. The employer contributes up to 10 percent of payroll, and employees fund any costs that exceed 10 percent.

Defined contribution component

Contributions

The level of contributions to the DC plan is critical in determining how successful a hybrid plan will be in achieving the government's goals for helping workers reach a secure retirement.

There are several possible sources of contributions to the DC portion, including default employee contributions, additional optional employee contributions, default employer contributions, and matching employer contributions.

Eleven of the 12 state plans and the federal system have a default contribution rate for employees so that a pre-set percentage of their pay is automatically contributed to their DC accounts. In some cases, this contribution is mandatory, and in other cases, the employee can opt out.[22] Ohio and Rhode Island have two of the highest levels of default contributions and do not allow employees to opt out of contributing. Ohio's two plans have default contribution rates of 10 and 11 percent, and Rhode Island's is 5 or 7 percent. States with the lowest default contribution rates are Virginia (1 percent), Michigan (2 percent), and Tennessee (2 percent). Only Utah does not have default employee contributions.[23]

Employer contributions vary. They are either a default amount, contributed regardless of the employee's contribution level, or a matching amount based on the worker's contributions to the plan.

In the Rhode Island and Tennessee plans, employers contribute only a default amount. Under the Georgia plan and two Michigan plans, employers contribute only matching funds, and in Virginia and in the federal plan, employers contribute both a default amount and an additional matching amount. In Oregon and Indiana, employers have the option to contribute to the DC portion, and in Ohio and Washington, employers do not contribute at all.[24] In Utah, the employer contributes up to 10 percent on the DB and DC portions. If the cost of the DB portion is less than 10 percent, then the employer contributes that difference to the DC component.

See Appendix A for more details on the breakdown in employee and employer contributions to the DC component.

Investment options

Limiting investment options can reduce the possibility of workers making poor financial decisions. Most DC plans work with outside providers to offer options ranging from 10 to 28 investment funds. A few hybrid plans manage employee DC accounts in-house or alongside the state's DB funds. For example, all DC funds in Oregon's

hybrid plan are invested with the state's Public Employees Retirement System and managed by the Oregon State Treasury.[25] The Indiana Public Retirement System allows employees to invest their DC accounts with a fund managed by the board of trustees that provides a guaranteed return rate annually.[26]

The federal Thrift Savings Plan, which works with an external provider to manage funds, is a good example of a plan that offers straightforward, low-fee investment options. Employees choose among 10 funds, half of them life-cycle funds and the other half individual index funds, and can make their own investment decisions.[27] Providing a limited choice of plans and several life-cycle funds reduces the chances of workers making poor investment decisions, and the low fees increase retirement savings by reducing the cost of investment management.

Annuities

Six of the state hybrid plans and the federal plan report that the DC component includes an annuity option, provided either by the plan or through an external annuity provider.

The annuitization rate refers to the interest rate used to convert a lump sum into lifetime payments, in which a higher rate will result in a higher monthly benefit in retirement. If governments themselves provide annuities, they can choose to offer above-market rates—for example, at the plan's assumed rate of return—which can result in higher income for participants. But this also means that the state is responsible to make up the difference if investment returns fall below the promised rate. Annuities provided by external insurance or financial services companies will typically provide a group annuitization market rate, which can be substantially lower than the plan's assumed rate of return.[28] Use of external annuity providers allows plan sponsors to decrease risk but may lower benefit levels for employees. If necessary, policymakers can consider increasing employer contributions to the DC plan to help mitigate a lower annuitization rate for employee benefits.

> As with any pension system, the value of a hybrid plan to participating employees and employers depends on its design. A well-designed plan can help put employees on the path to a secure retirement and provide greater cost certainty for plan sponsors.

The Employees' Retirement System of Rhode Island's annuity provider, TIAA-CREF, offered an interest crediting rate of between 3 and 4 percent as of 2014.[29] The Indiana Public Retirement System, which provides an annuity in-house, offered a rate of 7.5 percent before October 2014 and 5.75 percent starting that month.[30]

Hybrid plan provisions for workers who separate before retirement

Shorter vesting periods and portable benefits for employees who change jobs help workers preserve the retirement funds they have accumulated if they leave their positions.

Compared with the private sector, public-sector retirement plans are subject to looser regulations on vesting periods. In the private sector, federal law sets maximum vesting schedules of three-year cliff vesting or six-year gradual vesting for DC plans and five-year cliff vesting or seven-year gradual vesting for DB plans.[31] Public-sector retirement plans, which are not held to the same standards, are typically required only to set vesting periods of

15 or 20 years of service.[32] Most state plans had vesting periods for the DC component of five years or less, with several providing immediate vesting. For the DB portion, the vesting period typically ranged from four to 10 years.

Withdrawal options for the DB portions vary among states. For all plans, employees have the option of taking their contributions out after leaving employment. In most cases, vested employees can leave their DB contributions with the state and receive a pension benefit upon reaching retirement age.

Conclusion

As with any pension system, the value of a hybrid plan to participating employees and employers depends on its design. A well-designed plan can help put employees on the path to a secure retirement and provide greater cost certainty for plan sponsors. Workers who do not spend their entire careers in public employment are able to take their entire defined contribution savings with them when they change jobs, but they can also be exposed to greater investment risk. Careful design of the DC portion can help to address this risk and ensure that the plan meets the government's workforce and budget goals. In particular, policymakers should ensure that the DC component has sufficient contribution levels, includes appropriate investment options, encourages participation, and offers access to lifetime guaranteed income.

Appendix A: State hybrid plan provisions

Table A.1

Key Provisions

	Defined benefit				Defined contribution					Total employee default contri-butions (percent of salary)
	Benefit multiplier	Normal retire-ment age (age/ years of service)	COLA	Employee contribu-tion rate (percent of salary)	Employee default contri-butions (percent of salary)	Employer default contri-butions (percent of salary)	Total default contri-butions (percent of salary)	Number of in-vestment options (14)	Plan annuities (17)	
Georgia Employees' Retirement System	1%	60/10; Any/30	None	1.25%	5%	3%	8%	21	No	6.25%
Indiana Public Retirement System	1.1%	65/10; 60/15; age 55 and age + YOS = 85	Ad hoc (5)	None	3%	None (10)	3%	17	Yes	3%
Michigan Public Schools Retirement System	1.5%	60/10	None	4.9% (7)	2%	1%	3%	28	No	6.9%
Michigan State Police Retirement System	2% (1)	55/25; 60/10	None	4%	2%	1%	3%	28	No	6%
Ohio Public Employees Retirement System	1% (2)	55/32, 67/5 (3)	Yes	None	10%	None	10%	16	Yes	10%
Ohio State Teachers Retirement System	1%	60 (4)	None	1%	11%	None	11%	16	Yes	12% (16)
Oregon Public Employees Retirement System (general service)	1.5%	65/5; 58/30	Yes	None	6%	None (11)	6%	None (15)	No	6%

Continued on next page

	Defined benefit				Defined contribution					Total employee default contributions (percent of salary)
	Benefit multiplier	Normal retirement age (age/ years of service)	COLA	Employee contribution rate (percent of salary)	Employee default contributions (percent of salary)	Employer default contributions (percent of salary)	Total default contributions (percent of salary)	Number of investment options (14)	Plan annuities (17)	
Rhode Island Employee Retirement System (state and teachers)	1%	Social Security normal retirement age	Ad hoc (6)	3.75%	5% (8)	1% (12)	6%	23	Yes	8.75%
Tennessee Consolidated Retirement System	1%	65/5, Rule of 90	Yes	5%	2%	5%	7%	26	No	7%
Utah Retirement System	1.5%	65/4; Any/35	Yes	Only if cost of DB exceeds 10%	None (9)	Difference between 10% and DB cost	Difference between 10% and DB cost	12	No	Only if cost of DB exceeds 10%
Virginia Retirement System	1%	Change to Social Security normal retirement age or Rule of 90	Yes	4%	1%	1% (13)	2%	21	Yes	5%
Washington Department of Retirement Services	1%	65/10; 65/5 with 1+ YOS after age 44	Yes	None	5%	None	5%	13	Yes	5%

Notes:

1 Under the Michigan State Police Retirement System's hybrid plan, the 2 percent multiplier applies for the first 25 years of service. The factor declines by 0.4 for each year after 25 years.

2 In the Ohio Public Employees Retirement System's hybrid plan, a multiplier of 1.25 percent is applied to each year after 35 years of service.

3 These retirement ages apply to members who are eligible to retire during or after 2023. Members who are eligible to retiree earlier are able to retire at a younger age.

4 Under the Ohio teachers plan, employees are eligible to retire under the DC portion starting at age 50 and under the DB portion starting at age 60.

5 The Indiana Public Retirement System does not guarantee COLAs to hybrid plan members, and COLAs are approved on a year-to-year basis by the Legislature.

6 Under the Rhode Island Employee Retirement System's hybrid plan, the COLA is suspended until plans are greater than 80 percent funded. While COLA is suspended, interim COLAs are awarded at 5-year intervals.

7 For the Michigan Public Schools Retirement System, the DB employee contribution is a calculation based on employees contributing 3 percent of their first $5,000, 3.6 percent of $5,001 through $15,000, and 6.4 percent of all wages over $15,000. Calculation assumes a $30,000 annual salary.

8 For employees in the Rhode Island hybrid plan who do not participate in Social Security, the automatic employee contribution to the DC is 7 percent instead of 5 percent.

9 The Utah Retirement System hybrid plan has no employee default contribution, but the employee can contribute to the DC if he or she wants to.

10 Under the Indiana hybrid plan, the employer can pick up all or some of the employee's 3 percent contribution to the DC.

11 Under the Oregon Public Employees Retirement System, the employer can cover the employee contribution of 6 percent and/or contribute additional funds to the DC if it chooses.

12 For employees in the Rhode Island hybrid plan who do not participate in Social Security, the employer contribution to the DC is 3 percent instead of 1 percent.

13 Default contributions include employer match in all cases except for the Virginia Retirement System, which allows employees to contribute a total of 5 percent of pay and provides a total match of 2.5 percent on that amount.

14 Each target date option is counted seperately as opposed to all target date options being counted as one single investment option. If target date options were counted as one fund, many of the plans would have fewer investment options. For example, both the Michigan schools and Michigan police plans would have 17 investment options if all the target date options were counted together.

15 Under Oregon's hybrid plan, the DC assets are manged by the retirement system.

16 The total employee contribution in the Ohio State Teachers Retirement System will increase each year by 1 percent until reaching 14 percent in 2016.

17 Many plans that do not offer annuities to participants provide information on options to purchase annuities externally at retirement.

Sources: NASRA Issue Brief: State Hybrid Retirement Plans, Urban Institute's State and Local Employee Pension Plan Database, Summary of the Thrift Savings Plan, The Georgia State Employees' Pension and Savings Plan Highlights, Indiana Public Employees' Retirement Fund Hybrid Plan Member Handbook, Michigan Public School Employees Retirement System Pension Plus, Michigan State Police Retirement System Pension Plus, Ohio Public Employees Retirement System The Benefits of Membership: A Comprehensive Overview, Oregon Public Service Retirement Plan New Member Brochure, State Teachers Retirement System of Ohio New Members, Employees' Retirement System of Rhode Island Rhode to Retirement FAQs, Tennessee Consolidated Retirement System Introduction to Your Retirement System: Hybrid Pension Plan, Utah Retirement Systems Tier 2 Public Employees Contributory Retirement System Highlights, Virginia Retirement System Hybrid Retirement Plan for New Members, Washington State Department of Retirement Services Plan 3 Overview

Appendix B: Comparison of Tennessee's Legacy and Hybrid Plans

Employer and employee contributions expressed as a percentage of payroll based on normal cost*

	Legacy plan†	Hybrid plan
Date of hire	Hired on or before June 30, 2014	Hired on July 1, 2014, or later
Defined benefit multiplier	1.575%‡	1.0%
Retirement age	60 or any age with 30 years of service	65 or Rule of 90§
COLA	CPI, up to 3%	CPI, up to 3%‖
Vesting for DB	5 years	5 years
Employer DC contribution	0%	5%
Expected employer DB contribution	6.4%#	4%**
Total employer contribution (A)	6.4%	9%**
Employee DB contribution	3.2%	5%††
Employee DC contribution‡‡	3.5%	2%
Total employee contributions (B)	6.7%	7%
Total contributions (A+B)	13.1%	16%**

Notes:

* The employer and employee contributions do not include the cost of the amortization payment needed to pay down the unfunded liability.

† The legacy DB plan provisions reflect the aggregate weighted average for the combined state, judges, and teachers plan.

‡ There is an additional 0.25 percent multiplier for average final compensation above the Social Security integration level. Tennessee

Consolidated Retirement System, "Summary of General Provisions: Non-Contributory State Employees," http://www.treasury.state.tn.us/tcrs/PDFs/StateEmp.pdf.

§ The Rule of 90 means that once the employee's age and years of service total 90, the employee is eligible for an unreduced retirement.

|| COLA benefits may be decreased if DB plan assumptions (e.g., investment returns) are not achieved.

The employer must contribute 6.4 percent to fund the normal cost of the legacy plan. The total employer contribution to the legacy plan is much higher, around 11 percent, because it includes the cost of amortizing the unfunded liability as well as the normal cost. The normal contribution rate is a weighted average rate for the teachers, state workers, and judges.

** These figures include an excess employer contribution of 1.5 percent above the excepted normal cost of the plan as discussed in the Tennessee case study section. Without the excess 1.5 percent, the expected employer DB contribution would be 2.5 percent, the total employer contribution would be 7.5 percent, and the total contributions would be 14.5 percent.

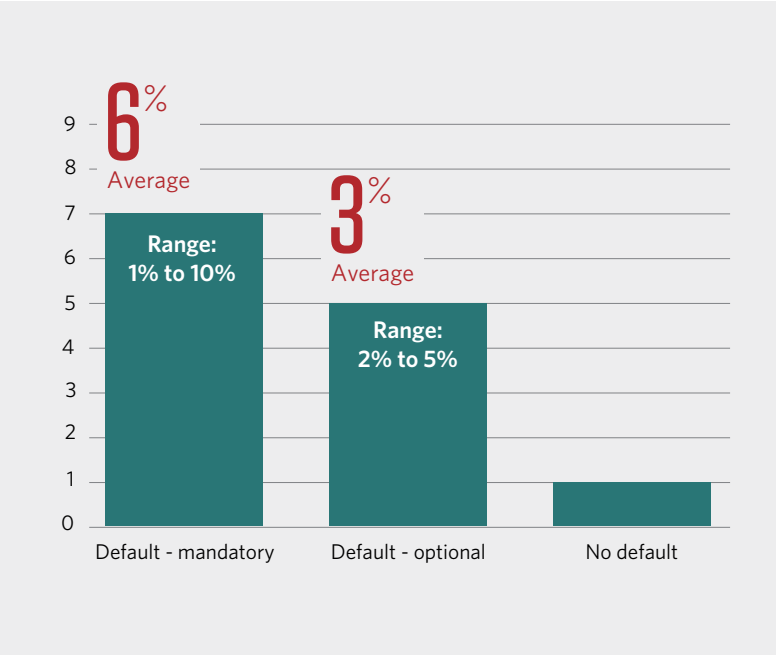
†† Employee contributions may be increased if DB plan assumptions (e.g., investment returns) are not achieved.

‡‡ Under the legacy plan, employees have the option to participate in voluntary 401(k) and 457 plans. As of June 30, 2014, 83,000 employees are eligible to contribute to the 401(k) plan and 3,600 to the 457. Members who participate in the optional plans contribute an average of 3.5 percent to the 401(k) plan and 4.8 percent to the 457 plan. We estimate this translates to an average contribution of 2.4 percent for all plan members. Under the hybrid plan, employees are automatically enrolled in the DC component at a contribution rate of 2 percent. They can increase or decrease their contribution and are not required to contribute to the DC component at all. Because the Tennessee hybrid plan was implemented in 2014, officials do not yet know what the average employee contribution to the DC component will be. Jill Bachus, pers. comm., Oct. 24, 2014.

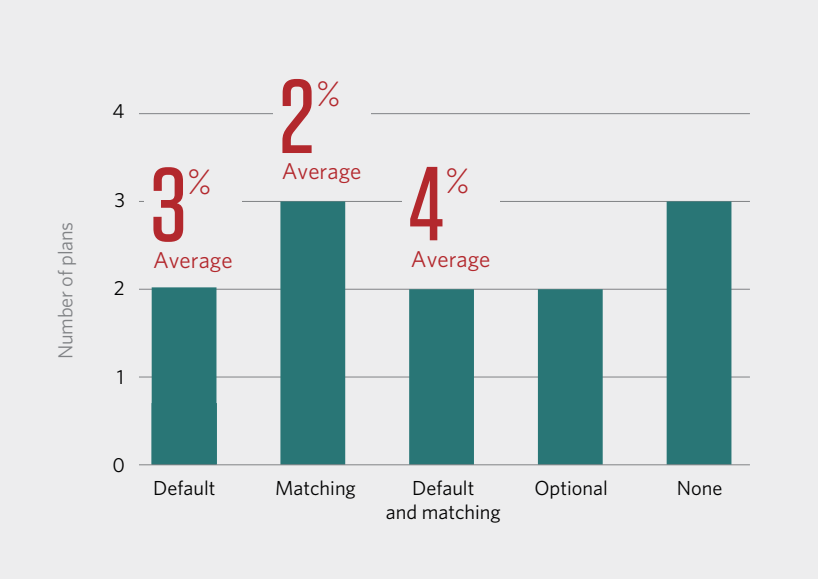
Sources: Tennessee Consolidated Retirement System New State, Higher Education and Teacher Hybrid Plan; Tennessee Department of Treasury Summary of General Provisions; Tennessee Consolidated Retirement System Valuation and Report as of July 1, 2013, http://www.treasury.state.tn.us/tcrs/PDFs/StateEmp.pdf http://treasury.tn.gov/tcrs/PDFs/HybridQRG.pdf

Appendix C: Employer and Employee Contributions to DC Plans

Number of hybrid plans (including the Federal Employees Retirement System) that have default employee contribution rates to the DC component



Types of employer contributions to the DC component in hybrid plans (including the federal system and excluding Utah's hybrid plan)



Endnotes

1 In addition to the "side-by-side" hybrid plan, there is a hybrid "stacked" model in which earnings below a certain point are covered by a DB plan and earnings above that point are covered by a DC plan. Stacked hybrid plans are not currently offered by any states. "Hybrid" is also used to refer to a number of other retirement plan designs, including cash balance plans and any plan that combines the investment and longevity protection of traditional DB plans with the risk sharing and portability commonly associated with 401(k)-style defined contribution plans. These plan types—such as risk-sharing defined benefit plans and risk-managed defined contribution plans—will be covered in separate briefs.

2 Defined contribution plans can be designed in a fund that guarantees a fixed rate of return. Teachers' Retirement System of the City of New York, "TDA Program Summary: Tax-Deferred Annuity Program," https://www.trsnyc.org/WebContent/tools/brochure/tdaBook.pdf.

3 The DC component of a public-sector hybrid plan is ordinarily in the form of an Internal Revenue Code 403(b) or 457 tax sheltered account.

4 Employees who leave before retirement may roll over or transfer the vested portion of their DC components into individual retirement accounts (IRAs) or other tax-qualified plans, including their new employers' plans, upon separating employment without being subject to income taxes or an additional penalty. The employees also can choose to withdraw the entire account as a lump sum before retirement, but if they do so before age 59½, the account balance will be subject to penalty in addition to income taxes.

5 For example, pension funds in Pennsylvania increased benefits right before the recession of the early 2000s in response to high return rates and high funded levels. The Pew Charitable Trusts, "The Trillion Dollar Gap: Underfunded State Retirement Systems and the Roads to Reform," http://www.pewtrusts.org/~/media/legacy/uploadedfiles/pcs_assets/2010/TrillionDollarGapUnderfundedStateRetirementSystemsandtheRoadstoReformpdf.pdf.

6 John Karl Scholz and Ananth Seshadri, "What Replacement Rates Should Households Use?," working paper, University of Michigan Retirement Research Center (2009), http://www.mrrc.isr.umich.edu/publications/papers/pdf/wp214.pdf; Aon Consulting, "2008 Aon Consulting's Replacement Ratio Study: A Measurement Tool For Retirement Planning," http://www.aon.com/about-aon/intellectual-capital/attachments/human-capital-consulting/RRStudy070308.pdf. See also Roderick Crane, Michael Heller, and Paul J. Yakoboski, "Best-Practice Benchmarks for Public-Sector Core Defined Contribution Plan," TIAACREF Institute (2008), http://www.tiaa-crefinstitute.org/institute/research/trends_issues/ti_bestpractice_0708.html. According to the Crane, Heller, and Yakoboski study, this 75 percent to 89 percent rate can be achieved through a total DC contribution rate of at least 12 percent of salary if the employee is eligible for the Social Security retirement benefit, and 18 to 20 percent of salary if the worker does not participate in Social Security. The study uses assumptions such as rate of return and annuitization rate that may be higher than current market levels. As a result, the adequate contribution levels findings may require additional analysis.

7 In instances in which the DC includes employer contributions, employees must be fully vested in order to take their entire account with them upon withdrawing from employment.

8 Tennessee Department of Treasury, "Tennessee Consolidated Retirement System: New State, Higher Education and Teacher Hybrid Plan," http://treasury.tn.gov/tcrs/PDFs/HybridPlanSummarySheet.pdf.

9 Tennessee Department of Treasury, "Tennessee Consolidated Retirement System Hybrid Plan With Cost Controls," http://treasury.tn.gov/tcrs/PDFs/HybridQRG.pdf.

10 Tennessee Consolidated Retirement System, "New Hybrid Pension Plan With Cost Controls Presentation," http://www.treasury.state.tn.us/tcrs/PDFs/NewHybridPresentation.pdf.

11 Jill Bachus, Tennessee Consolidated Retirement System director, pers. comm., Dec. 10, 2014.

12 Tennessee Department of Treasury, "Tennessee Consolidated Retirement System Hybrid Plan With Cost Controls."

13 Jill Bachus, pers. comm., Oct. 24, 2014.

14 The expected normal cost of the DB component will vary based on the plan's annual actuarial valuation.

15 Analysis by the Terry Group based on 2013 Tennessee Consolidated Retirement System actuarial valuation.

16 Nearly all state and local workers in Tennessee participate in Social Security. Tennessee Department of Treasury Old Age and Survivors Insurance Agency, http://treasury.state.tn.us/oasi/index.html. Expected Social Security benefit analysis by the Terry Group.

17 2013 Tennessee Consolidated Retirement System Valuation Report.

18 Analysis by the Terry Group based on 2013 Tennessee Consolidated Retirement System actuarial valuation.

19 Olivia Mitchell and Stephen Utkus, "Lessons From Behavioral Finance for Retirement Plan Design," Pension Research Council working paper (2003); John Beshears et al., "The Importance of Default Options for Retirement Saving Outcomes: Evidence From the United States," in *Social Security Policy in a Changing Environment*, ed. Jeffrey Brown et al. (Chicago: University of Chicago Press, 2009). A pension plan may offer employees the opportunity to invest a percentage of ongoing contributions in an "in-plan" investment option that will build

up a stream of guaranteed income for life that is not subject to the market volatility of typical equity or bond investment options. Such plans are known as in-plan guaranteed lifetime income options. See "IRI 2014 Fact Book: A Guide to Information, Trends, and Data in the Retirement Income Industry," Insured Retirement Institute, 13th edition, 115 et. seq.

20 The 2 percent multiplier applies for the first 25 years of service. The factor declines by 0.4 for each year after 25 years.

21 Elizabeth McNichol and Iris J. Law, "A Common-Sense Strategy for Fixing State Pension Problems in Tough Economic Times," Center on Budget and Policy Priorities, http://www.cbpp.org/cms/?fa=view&id=3492.

22 For seven of the state plans with a default employee contribution, employee contributions are mandatory. For the other four of the state plans, employees can opt out of the automatic contribution. For example, the Employees' Retirement System of Georgia's hybrid plan has a default employee contribution of 5 percent and gives employees only 90 days to opt out of the DC portion.

23 In addition to the default amount, most plans allow employees to make additional contributions to the DC account, constrained only by Internal Revenue Service rules. However, five plans cap employee contributions. The Rhode Island Employees Retirement System and the Virginia Retirement System have 5 percent caps on employee contributions, the lowest limits in our sample of plans. The cap on employee contributions is unnecessary, because there is already an IRS-determined limit, and it potentially reduces employee retirement savings.

24 In Indiana, employers have the option to contribute some or all of the 3 percent employee contribution, and in Oregon, some employers contribute 6 percent to the employee DC account.

25 Oregon Public Employees Retirement System, "Tell Me About My PERS Benefits," http://www.oregon.gov/pers/mem/docs/new_member%20_brochure.pdf.

26 Indiana Public Retirement System, "Guaranteed Fund," accessed Oct. 20, 2014, http://www.in.gov/inprs/files/INPRSGuaranteedFund.pdf.

27 Thrift Savings Plan, "Summary of the Thrift Savings Plan," September 2014, https://www.tsp.gov/PDF/formspubs/tspbk08.pdf. Life-cycle funds are invested in a professionally determined mix of stocks, bonds, and securities and prepared for employees who expect to retire within a specific time frame.

28 See for example Aon Hewitt Investment Consulting Sample Annuity Pricing Rates, February 28, 2015, https://retirementandinvestmentblog.aon.com/getattachment/8e244081-29d4-4024-ad03-2cbc924f94af/AHIC-Sample-Annuity-Rates-2-28-2015.pdf.aspx.

29 TIAA-CREF, "Retirement Annuities, IRAs & Mutual Funds," https://www.tiaa-cref.org/public/tcfpi/InvestResearch.

30 The Indiana Public Retirement System (INPRS) recently made changes to its annuitization rate and annuity provider. Before October 2014, INPRS provided in-house annuitization at a rate of 7.5 percent. Starting that month, the annuitization rate dropped to 5.75 percent. In the fall of 2015, the annuitization rate will shift down again to the greater of the market rate or 4.5 percent. Finally, in 2017, an external provider will begin providing annuities with a rate equal to the market rate. Indiana Public Retirement System, "Changes May Impact Future PERF & TRF Retirees' Benefits."

31 Cliff vesting means the employee becomes 100 percent vested after three years of employment. Under a gradual vesting schedule, the employee becomes partially vested each year until reaching 100 percent. U.S. Department of Labor, "What You Should Know About Your Retirement Plan," http://www.dol.gov/ebsa/publications/wyskapr.html; U.S. Department of Labor, "Frequently Asked Questions About Retirement Plans and ERISA," http://www.dol.gov/ebsa/faqs/faq_consumer_pension.html.

32 Government plans must satisfy certain Internal Revenue Code provisions related to vesting that were in effect before the passage of the Employee Retirement Income Security Act in 1974. In order to receive a favorable determination letter from the IRS, public retirement plans must satisfy a vesting requirement of 15-year cliff vesting, 20-year gradual vesting, or 20-year cliff vesting for qualified public safety employees. Department of the Treasury, Internal Revenue Service, "Memorandum for Manager, EP Determinations" (April 30, 2012).

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