

BACKGROUND STUDY
FOR
THE SPECIAL COMMISSION TO STUDY THE
MASSACHUSETTS CONTRIBUTORY RETIREMENT SYSTEMS*

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* The original version of this Background Study was drafted by Alicia H. Munnell, Chair, and Peter A. Diamond. Virtually all members of the Commission or their staff commented on the original draft, and many have commented on a revised draft. Nevertheless, some Commission members may still not agree with every statement in the final document.

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1. The Challenge

The Commonwealth of Massachusetts' public employee retirement system provides retirement and disability benefits that are similar to other states with defined benefit plans and no Social Security coverage, and, before the recent financial collapse, the system was on a path toward full funding by 2028.

Yet, taxpayers often perceive the retirement system as excessively generous, particularly in the wake of celebrated abuses reported in the press. But the public often fails to recognize that public employees are not covered by Social Security and make substantial contributions to their own benefits. Moreover, taxpayers are often unaware that their taxes are contributing largely to pay off the system's large prior unfunded liability, and not to pay for the benefits of current workers. In fact, for fiscal year 2008, 77 percent of the Commonwealth's \$1.3 billion contribution to State and Teachers' pensions went to cover the unfunded liability; only 23 percent was for the normal cost, the cost of benefits earned by current employees in that year.¹

Public employees and their employers are also concerned about the system. Employees see increasing contribution rates for new employees, perceive that some can "game" the system at their expense, and worry that – once retired – their benefits will lose too much purchasing power due to limited cost-of-living adjustments (COLAs). Employers are concerned about their ability to attract and retain employees.

In June 2009, the Massachusetts Legislature passed unanimously and the Governor signed a bill addressing what were viewed as some of the most egregious abuses in the Massachusetts Contributory Retirement System.² The enactment of these reforms addressed concerns that would otherwise have been part of this Commission's charge to undertake a comprehensive study of the Massachusetts Contributory Retirement Systems. The Commission therefore addressed the fundamental structure of the system to see if it meets the needs of today's employees and the employing governments, and provides transparency, predictability, and consistency in the calculation, determination, and funding of retirement benefits.

The Commission agreed from the outset that, as a matter of fiscal policy, Massachusetts should continue to oppose Social Security coverage of its public employees. While coverage would eliminate some gaps in insurance protection, the increased costs to the Commonwealth would exceed the benefits received. This discrepancy arises because the Social Security system has legacy costs associated with providing benefits to early generations of retirees in excess of what could be financed by their own contributions. That is, while Massachusetts employers and employees would each be required to pay 6.2 percent of payroll to Social Security, only three quarters of that amount would pay for benefits; at least one quarter would go to cover Social Security's legacy costs.

¹ Commonwealth of Massachusetts Retirement Systems, *Actuarial Valuation Report, January 1, 2008*.

² Chapter 21 of the Acts of 2009, An Act Providing Responsible Reforms in the Pension System.

This document provides background information that was designed to assist the Commission in identifying problems and making recommendations. It begins by reaffirming the commitment to a defined benefit structure. It then lays out principles of fairness and efficiency as criteria against which to evaluate plan provisions and identifies the major policy and financing questions to be resolved.

Four major issues emerge from this review of the contributory retirement system. First, short earnings averaging periods for calculating retirement and disability benefits favor those with rapidly rising earnings profiles, who tend to be high earners, and opens the system to manipulation. Second, the limited COLA means that many older retirees see too large an erosion in the purchasing power of their benefits and are at risk should inflation accelerate. Third, the current classification system involves considerable ambiguity in its definitions and invites “gaming.” And finally, the contribution rate for new employees is nearly the highest of any state-administered system, which raises two important issues – how the cost of the pension system should be shared between workers and employers and how to achieve fairness among future new hires who will enter the system at different times.

Beyond the pension system, a question arises as to the equity of providing the same health insurance benefits for retirees regardless of the length of previous employment and the distribution of the burden of that provision, particularly on local governments.

2. Defined Benefit vs. Defined Contribution Plan

Defined benefit plans dominated both the private and state and local sectors in the 1970s. Today they are disappearing in the private sector, but are alive and well in the state and local sector. The reasons for these divergent trajectories include the different nature of the public sector workforce – older, more risk averse, and less mobile; the different nature of the public employer – a perpetual entity facing fewer market pressures; and a different regulatory environment – free from the administrative costs of ERISA and the cost of the Pension Benefit Guaranty Corporation.

Impact on Employees

Defined benefit and defined contribution plans subject the employee to very different types of risk. In the typical public sector defined benefit plan, the employer bears the investment risk during the worker’s employment and retirement, longevity risk after retirement, and some of the inflation risk. But employees face ‘mobility risk.’ That is, under final earnings plans and plans with delayed vesting, workers who leave public service early typically accrue substantially lower benefits than they would have under either defined contribution plans or career-average defined benefit plans.

In defined contribution plans, employees bear all the investment risk during the accumulation phase as well as longevity and inflation risk after retirement, unless they annuitize their balances, in which case they face annuity pricing risk. The employee, and

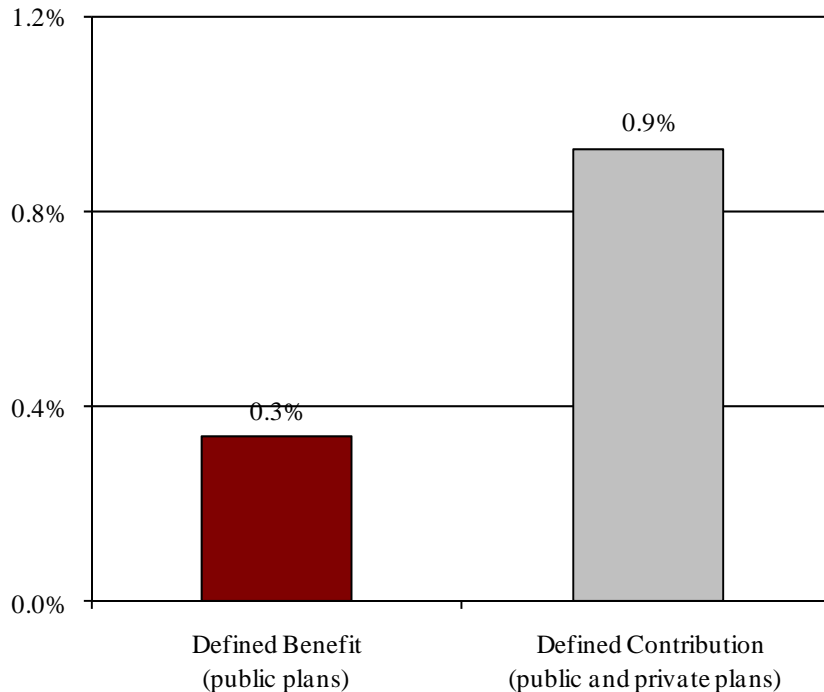
often the employer, contributes a specified percentage of earnings into the account. These contributions are invested, usually at the direction of the employee, mostly in mutual funds consisting of stocks and bonds. Upon retirement, the worker generally receives the balance in the account as a lump sum. One important advantage of these plans is that mobile employees do not lose benefits when they shift jobs as their accumulated assets can move with them.

For long-service employees, defined benefit plans sponsored by perpetual entities such as state and local governments provide a more secure retirement for long-tenured employees than defined contribution plans. And state and local employees tend to have longer tenures than their private sector counterparts. State and local governments can more easily bear investment risk than most individuals because they can adapt to risky outcomes slowly over time. This adaptive approach spreads risk more widely, and when risks are spread more widely they are less costly to bear. In addition, defined benefit plans put portfolio management in the hands of professionals, thereby circumventing the widespread tendency of individual investors to make basic errors in investment decisions.

Impact on Costs

Despite the advantages of a defined benefit plan, critics sometimes suggest that introducing a defined contribution plan could save the state money. In fact, *for any given level of benefits*, administrative expenses make defined contribution plans more expensive than defined benefit plans (see Figure 1). The freedom from private sector regulatory costs and the economies of scale achieved by large state pension funds has kept the cost of administering these plans very low. According to the U.S. Census of Governments, the weighted average administrative cost (including cost of administration and investment management) for the nation's public defined benefit plans is 0.3 percent of assets. Defined contribution plans maintain individual accounts and typically update these accounts daily. In addition, most defined contribution plans use mutual funds or similar instruments as investment options and, as a result, have costs that average 0.9 percent of assets.

Figure 1. *Administrative Expenses as a Percent of Assets by Type of Plan, 2006*



Sources: U.S. Census Bureau (2006) and Investment Company Institute (2009).

Even if aggregate costs increased, taxpayers could hope for relief if by switching to a defined contribution plan they could transfer the burden of future accruals under the new plan from the government employer to the individual employee. After all, transferring the contribution burden to the employee provided a major economic incentive to move from defined benefit to 401(k) plans in the private sector. But such an outcome would be difficult to achieve in the public sector where employee contributions to defined benefit pensions are already high.

Finally, in the debate over retirement plans, supporters of defined contribution plans often use the magnitude of the unfunded liabilities to highlight the need to shift to a defined contribution plan. The reality, however, is that, even with a switch to a new defined contribution plan, the public employer must still cover the cost of accrued benefits from past service and of continuing accrual for workers currently in the existing defined benefit plan. Public employees have considerable legal protection against any reduction in their expected benefits or any increase in required contributions. Thus, even if the introduction of a new plan – either defined benefit or defined contribution – reduces pension costs going forward, such a step does nothing to solve the current funding problem.

In short, it is absolutely clear that *for a given level of protection* a defined benefit plan is cheaper.

3. Principles

Beyond providing an adequate level of retirement benefits in return for the service of its employees, several principles should guide the construction of any retirement system. First, the system should be fair and its rules understandable – workers in similar positions with similar work histories should receive similar benefits. Excessively generous benefits for some will raise public criticism and create an incentive for others to lobby for better treatment. Similarly, dramatically different ratios of benefits to contributions are hard to justify. This outcome can arise when newly hired workers, who pay higher contribution rates, and older workers, who pay much lower contributions, are doing the same job and receiving similar benefits. Dramatically different benefit-to-contribution ratios can also occur when a worker receives a large increase in earnings in the three-year window before retirement.

Efficiency is another important principle. The pension is part of the system of incentives that influences recruitment, retention, and retirement decisions, and thereby the willingness of employees to move across jobs within and outside the employment covered by the pension system. The goal to “retain” means encouraging employment within the system when workers have acquired skills and abilities that the Commonwealth particularly values. Thus, the pension system should not unduly encourage early departures. At the same time, it should not foster continued employment at a job with the Commonwealth when moving to other employment or retirement makes sense for the Commonwealth and the worker together. Efficiency also encompasses the sharing of risks between workers and employers.

Reducing the need for frequent legislation is also a desirable goal of pension design.³ The legislative process can be slow and the outcomes uncertain and not always well-designed, making properly designed automatic adjustments more attractive. For example, automatic indexation gives retirees predictability in how their pensions will adapt to changing circumstances, much greater predictability than relying on repeated legislation. Moreover, if legislated increases in benefits are not accompanied by legislated provision of funds, the degree of actuarial funding of the pension system will decline, increasing the cost to future taxpayers. Social security systems around the world rely heavily on automatic indexing. In the United States, a wage index is used to update earlier earnings when calculating average earnings, a key step in determining initial benefits. And a full COLA offsets inflation after age 62.⁴ Another form of indexing

³ The ability of the Commonwealth to lower the value of pensions is limited by the court’s interpretation of the contractual nature of the pension system for current employees, although some changes are likely to be allowed and no such restriction applies to future hires. The Commonwealth can increase benefits, as has happened from time to time in the past.

⁴ The approach taken in France and Germany is equivalent to wage indexing in both the calculation of initial benefits and the adjustment of benefits in payment. Finland uses a weighted average of prices and wages, with different weights before and after retirement. In a recent reform of its pension system for civil servants, the United Kingdom closed its final salary pension plans to civil service workers hired after July 30, 2007 and introduced a career average revalued earnings plan (Novus) with full inflation indexing in both the determination of initial benefits and the adjustment of benefits in payment. This plan is an option along with a defined contribution alternative with mandatory annuitization.

used in some countries (but not US Social Security) is to adjust for increases in life expectancy at retirement age. Examples, in quite different forms, include Sweden and Germany. Some additional automatic indexing in Massachusetts may be able to play a useful role, as discussed below.

The principles outlined above have implications for the financing and the provision of benefits under the retirement system.

4. The Financing of the Massachusetts System

Massachusetts public employees are covered by a defined benefit pension plan that is administered by 104 local retirement boards, the Massachusetts State Retirement Board, and the Massachusetts Teachers Retirement Board. The Public Employee Retirement Administration Commission (PERAC) is responsible for the regulation and oversight of all boards and all the systems are governed by Chapter 32 of the Massachusetts General Laws. As shown in Table 1, the system now includes almost 320,000 active workers and almost 190,000 retirees.

Table 1. *Participants in Massachusetts Public Employee Retirement System, 2009*

System	Participants		
	Active	Terminated Vested	Retired
State*	86,529	3,663	50,873
Teachers**	89,788	NA	52,107
Local***	142,454	1,250	86,166
Total	318,771	4,913	189,146

Source: PERAC.

* As of 1/1/09.

** Preliminary as of 1/1/09.

*** Based on date of most recent valuation, which varies by system.

Contribution Rates

The Massachusetts system is funded by a combination of employee contributions, investment returns, and state or local funding. Employee contribution rates are based on the dates they joined the system (see Table 2).⁵ The rate for new hires has been raised repeatedly so that contribution rates within the system now range from 5 percent to 12 percent of pay, depending on the date of hire.

⁵ The State began to raise the employee contribution rate during the 1970s, but the Supreme Judicial Court ruled that the rate was part of a contract so that rate hikes were limited to new employees. Opinion of the Justices, 364 Mass. 847 (1973).

Table 2. *Contribution Rates in Massachusetts Public Employee Retirement System*

Date of hire	Contribution rate
Pre-1945	0%
1945-74	5%
1975-78	7%
1979-83	7% + 2 % on portion of salary over \$30,000
1984-96	8% + 2 % on portion of salary over \$30,000
1996-present ^a	9% + 2 % on portion of salary over \$30,000
Teachers who elected “Retirement Plus”	11%
Teachers hired after 7/1/01	11%
State police hired after 7/1/96	12% + 2% on portion of salary over \$30,000

^aThe new contribution rate applied to employees hired as of 7/1/1996

Source: *Commonwealth Actuarial Valuation Report, 2008.*

Massachusetts contribution rates for new employees are high relative to other plans. This pattern is to be expected given that Massachusetts public employees are not covered by Social Security and therefore require a larger pension than public employees in states where Social Security benefits serve as the basic retirement income. But the notable fact is that among plans without Social Security the Massachusetts plans are among the highest in terms of employee contribution and the lowest in terms of normal cost (see Table 3).⁶

Table 3. *Employee Contribution Rates among State Plans without Social Security Coverage*

Plan name	Employee contribution ^a	Total normal cost	Employee contribution as a percent of total normal cost
Alaska PERS	6.8%	10.3%	65.9%
Alaska Teachers	8.7	11.5	75.4
California Teachers	8.0	17.3	46.3
Colorado Municipal	8.0	13.7	58.5
Colorado School	8.0	14.0	57.1
Colorado State	8.0	13.9	57.6
Connecticut Teachers	6.0	10.4	57.7
District of Columbia Teachers	8.0	10.0	80.0
District of Columbia Police and Fire	8.0	25.7	31.1
Illinois Teachers	9.4	18.7	50.4
Illinois Universities	8.0	18.8	42.7
Kentucky Teachers ^b	7.6	13.5	56.7
Louisiana SERS ^c	8.0	9.7	82.5

⁶ A rigorous comparison of contribution rates across states would involve examining the assumptions used in determining normal costs, and estimates of total compensation would be relevant for analyzing contribution rates.

Louisiana Teachers	8.0	15.4	52.1
Maine Local ^d	6.5	Varies	Varies
Maine State and Teacher	7.7	13.2	58.1
Massachusetts SERS ^e	9.0	12.2	73.8
Massachusetts Teachers	11.0	11.6	94.8
Missouri Teachers	13.0	21.7	59.9
Nevada Police and Fire	17.3	30.2	57.2
Nevada Regular Employees	10.5	17.0	61.8
Ohio PERS	10.0	14.9	67.2
Ohio Police & Fire	10.0	22.1	45.3
Ohio School Employees	10.0	14.1	71.0
Ohio Teachers	10.0	14.8	67.5
Texas Teachers	6.4	10.4	61.4

^aThe reported employee contribution percentages pertain to general employees hired as of the date of the most current annual reports and benefit handbooks and does not reflect the average contribution rates of current employees.

^bFor University Employees. Non-University employees contribute 9.105 percent and the total normal cost is 17.11 percent.

^cLouisiana SERS employees hired prior to 2006 contribute 7.5 percent with a total normal cost of 15.6 percent in 2008.

^dPertains to Regular AC & AN Employees of Maine. Normal costs vary by locality.

^eMassachusetts SERS employees contribute 9 percent plus an additional 2 percent for the portion of their salary above \$30,000.

Sources: The Center for Retirement Research at Boston College *State and Local Public Pension Survey*; Survey of various annual reports and benefit handbooks.

Table 3 reports on contributions of the most recently hired workers. Since contribution rates have risen with date of hire, the current average contribution in Massachusetts is below the figures in the table. On average, in 2006 those in Group 1 were projected to pay for 74 percent of their retirement benefits, and the average across all groups is projected was 68 percent (see Table 4). The assertion is frequently made that for some new hires, their contributions will more than cover their pension benefits according to actuarial calculations.⁷ These calculations assume a safe rate of interest of 8 percent, which is unlikely to be achieved by the workers without the Commonwealth absorbing all of the risk of the investment portfolio. That is, the actuarial calculation looks at expected contributions and expenditures and does not recognize any cost to bearing risk. Using a lower interest rate, more comparable to what individuals could earn on their own with safe investments, and thus attributing to the employers the cost of bearing portfolio risk in line with standard financial economics, would considerably reduce the measure of the share that employees pay for their benefits.

⁷ This is likely to occur for some Group 1 employees who are contributing at the 9 plus 2 percent rate and who do not retire with a disability benefit, according to James R. Lamenza, PERAC, Actuary.

Table 4. *Employee Contributions as a Percent of Total Normal Cost for the State Retirement System as of January 1, 2006*

Group	Total normal cost	Expected employee contributions	Employer normal cost	Employee contributions as a percent of total normal cost
Group 1	11.2%	8.3%	2.9%	74.1%
Group 2	12.7	8.1	4.6	63.8
Group 3	21.2	8.6	12.6	40.6
Group 4	19.8	8.9	10.9	44.9
All	12.3	8.3	4.0	67.5

Note: Teachers, who are included in Group 1, have a normal cost of 11.61 percent and an employee contribution rate of 9.65 percent, which means the employee share of the total normal cost is 83.1 percent.
Source: James R. Lamenza, PERAC, Actuary

Looking beyond Massachusetts, public employees generally are covered by Social Security and also make contributions to their public employer’s plan. Employees and employers in both the public and private sectors who are covered by Social Security make payments of 6.2 percent for retirement, survivor, and disability benefits (up to the maximum taxable earnings of \$106,800 for 2009). In the private sector, the share of retirement contributions paid by employees depends on the nature of their pension coverage. Roughly half of private employees at any moment in time are also covered by an employer-sponsored plan. Nearly two-thirds of employees with coverage participate in a 401(k) plan, where typically the employee contributes 6 percent and the employer makes a 3-percent matching contribution.⁸ The other one-third with coverage participates in a defined benefit plan where the employer is responsible for funding and the employee makes no contribution. Given the variation in coverage and the different types of plans, comparisons between private sector and public sector employees depend on the particular situation.

Three issues arise when assessing the current financing of the Massachusetts pension system: (i) How should the anticipated costs of a cohort of workers be shared between the workers and the Commonwealth?; (ii) How should the sharing change over time as normal costs change after a worker has been hired?; and (iii) How should the contribution rates change as new cohorts of workers are hired, cohorts who are likely to have longer life expectancies and therefore more costly pensions as long as the pension system makes no adjustments directly for life expectancy?

Under current arrangements, normal costs not covered by employee contributions are paid by the Commonwealth and other government entities, and the Commonwealth and cities, towns and counties make payments to amortize the unfunded liability. Changes in normal cost from changes in life expectancy, interest rates, or any legislated improvements in secondary benefits for current employees fall fully on the government or on future hires in the form of legislated higher contribution rates. In some instances,

⁸ The most common match in a 401(k) plan is 50 percent of the employee’s contribution up to 6 percent of earnings, which produces an effective employer match rate of 3 percent of earnings. See Profit Sharing/401(k) Council of America, *48th Annual Survey of Profit Sharing and 401(k) Plans* (2005).

benefit improvements have been introduced as an option for current employees subject to additional contributions.⁹ Under the current arrangement, where pay is related to the employee's job and the contribution rate related to the employee's date of hire, workers doing the same job can have very different levels of total compensation. Selecting a suitable degree of sharing of the normal cost of pensions between employer and employee could keep contribution rates uniform over employees with different future hire dates and so lead to a more equitable outcome.

Instead of setting a concrete contribution rate for new hires, one option might be to set the share of normal costs to be paid by the Commonwealth and the employees. Such an arrangement would mean that both parties would have to respond to evolving circumstances. For example, in 2006 employees covered under the State Retirement System paid roughly 68 percent and the Commonwealth pays 32 percent of normal cost (see Table 4). Assume for the moment, that this existing ratio is the desired target. The question then is what happens when the normal cost for a cohort of workers increases? Under such a scheme, the Commonwealth would pick up 32 percent of the additional cost and the public employees 68 percent.¹⁰ Of course, any such arrangement would require new legislation.

Then the question is whether a 68/32 split is fair. To answer that question requires two pieces of information: (i) How does the compensation of workers in the public sector compare to that of their private sector counterparts? and (ii) Does the Commonwealth want to pay more, less, or the same in total compensation as the private sector? Assume that the Commonwealth wants to pay the same as the private sector for a given type of job. To oversimplify, if we knew that public sector workers were paid one half what their private sector counterparts earned, then, if cash wages are not adjusted, the equitable ratio would be 100 percent for the Commonwealth and zero percent for public employees. On the other hand, if public sector workers were paid twice their private sector counterparts and if cash wages are not adjusted, then they probably should pay 100 percent of the normal cost and the Commonwealth zero. Thus, it may be useful for the Commonwealth to request a comparative study on public versus private sector compensation to inform a determination of how pension costs should be distributed between employees and the employing entity, a determination that might accompany a review of the other elements in total compensation.¹¹

Since it has been deemed desirable to have different pension systems for police and firefighters than the rest of employees, the question arises whether a consistent cost sharing across categories is appropriate. If police and fire paid the same percent of the total normal cost as the other groups, their absolute contribution would be higher because the total normal costs of their pensions are greater. To date, the Commonwealth has

⁹ For example, when "Retirement Plus" was introduced for teachers, the contribution rate for new hires no longer excluded the first \$30,000 of earnings from the 2 percent additional contribution cap. Current employees could opt into Retirement Plus if they paid at least 5 years of contributions at the higher rate.

¹⁰ A slightly more complex option, but one that would represent less of a break from current practice, is to have the sharing of changes in normal costs apply only to future changes.

¹¹ Legislated changes in the pension system would not have to wait for the result of such a study; a level of rate and sharing could be established and then adjusted for new hires once the results were available.

contributed a greater share to the pensions of police and fire than to other public employees.

In all cases, the burden of amortizing the unfunded liability from past service should be spread broadly among taxpayers and not borne by today's public employees. The amortization schedule determines how this burden is allocated across taxpayers in different years.

Impact of the Financial Crisis

Prior to the financial crisis, the Massachusetts systems generally were on their way to fully funding their pension liabilities by 2028.¹² In 2008, assets were 89 percent of liabilities for the State Employees system and 74 percent for the Teachers Retirement System. These ratios put Massachusetts in the middle of the pack of state-administered plans in terms of funding. Funding ratios at the local level varied significantly across the Commonwealth.

The recent financial crisis has seriously challenged the ability of Massachusetts' public employers to meet the payments required under the current funding schedule when the impact of the 2008 investment losses are reflected.¹³ Recent legislation extended the funding deadline from 2028 to 2030. A two-year extension, however, does not provide adequate flexibility for many Massachusetts public employers. In addition, current law has a number of anomalies that require attention. For example, it is silent as to what occurs when the system becomes fully funded and on how to amortize unfunded liabilities or surpluses after 2030.

To provide funding relief and to flesh out guidance, the PERAC Actuarial Advisory Committee recommends a new funding procedure. The new schedule allows for lower funding now, but also requires maintenance of effort when the stock market rebounds. This requirement provides symmetry. Plan sponsors are not being asked to put more money into the pension exactly when they cannot afford it, but also they will not be able to reduce future appropriations when stock values increase. Below is a summary of the PERAC recommendations:

The unfunded liability will be amortized as follows:

- a. The full funding date will be extended so that the current unfunded liability and any additional amount accumulated over the next ten years will be fully paid off by a fixed date, which is no later than 30 years from the date the legislature allows the funding schedule to be extended, with a cap on the increase in amortization payments of 4 percent a year.
- b. Any *additional* unfunded liability attributed to experienced gains or losses after the initial ten years will be separately amortized within a 20-year period of its

¹² The funding requirements in Chapter 32 were established in 1987 and initially required that each system be fully funded by June 30, 2028, 40 years after the implementation of the law.

¹³ The following discussion is drawn from PERAC Actuarial Advisory Committee (2009).

occurrence, again with a cap on the increase in amortization payments of 4 percent a year.

The funding schedule outlined above is subject to the following additional limits if the funding ratio is less than 90 percent:

- a. At the discretion of the Retirement Board, the increase in the appropriation from one fiscal year to the next will be limited to 8 percent.
- b. The appropriation cannot decrease from one fiscal year to the next.

5. Retirement Benefits Provided by the Massachusetts System¹⁴

“Recruit, retain, and provide retirement income to quality workers” nicely summarizes the goals of the Massachusetts retirement system.¹⁵ Workers are concerned with having adequate retirement income, and so appreciate having a pension as part of compensation for their work. A pension serves as a commitment device that helps employees save for retirement and allows them to take advantage of the favorable tax treatment afforded pensions under the federal personal income tax. By being part of a defined benefit pension system, participants do not bear the risks of fluctuating asset values and do not need to make investment decisions (for this portion of their retirement incomes), which can require expertise they may not have. Participants also receive their benefits as an annuity and can avoid the risks and costs of seeking out private market annuities or failing to annuitize when they should.

It is generally agreed that retirees need roughly 70 to 80 percent of previous earnings in initial benefits in order to maintain the standard of living to which they may have become accustomed. The need is less than 100 percent because retirees no longer need to save for retirement and can use their considerable additional time to provide themselves services that they had previously purchased. In their later years, however, many often need to purchase services – cooking dinner, paying bills, shopping etc – that they had provided themselves their whole lives. The “standard of living to which they may have become accustomed” is not an employee’s earnings during the final period prior to retirement, but rather a measure of the consumption they could have been financing with the salary earned over a somewhat extended period leading up to retirement. Maintaining this standard of living during retirement requires some degree of cost-of-living adjustments.

Most public employees do not spend their entire careers in public employment.¹⁶ Some enter at young ages and then leave for other jobs after a period of years; others work in the private sector and enter public employment mid-career. For workers leaving

¹⁴ For a complete list of benefits, see the PERAC “Massachusetts Public Employee Retirement Guide.”

¹⁵ Letter to Representatives Kaufman and Dorcena Forry from Joan Schloss, Executive Director of the Massachusetts Teachers’ Retirement Board, dated January 21, 2009.

¹⁶ In analysis based on the retirement of state employees between 1991 and 1995, Ellen Bruce found that only 11 percent of retirees had 30 or more years of service and 72 percent left prior to vesting (Bruce, 1997).

employment with the Commonwealth before ending work (and so having the continuing ability to save for retirement), the contribution to retirement income needs to be put in a context with additional savings. And for those entering later in their career, their ability to have saved for retirement before employment as a public employee needs to be taken into account.

A member may begin receiving benefits after completion of 20 years of service or after age 55. Workers in Groups 1 and 2 hired after 1978 must have at least ten years of service to retire at age 55.

The determination of benefits paid to a new retiree in a year is the result of a multi-step process. The steps are:

A.	Calculate average earnings
B.	Classify the retiree for benefit determination
C.	Determine the benefit accrual rate for normal retirements
D.	Determine eligibility for termination benefits
E.	Apply a benefit limit, if relevant
F.	Adjust for type of annuity
G.	Consider vesting, withdrawals, deferred benefits, and buybacks

A. Average Earnings

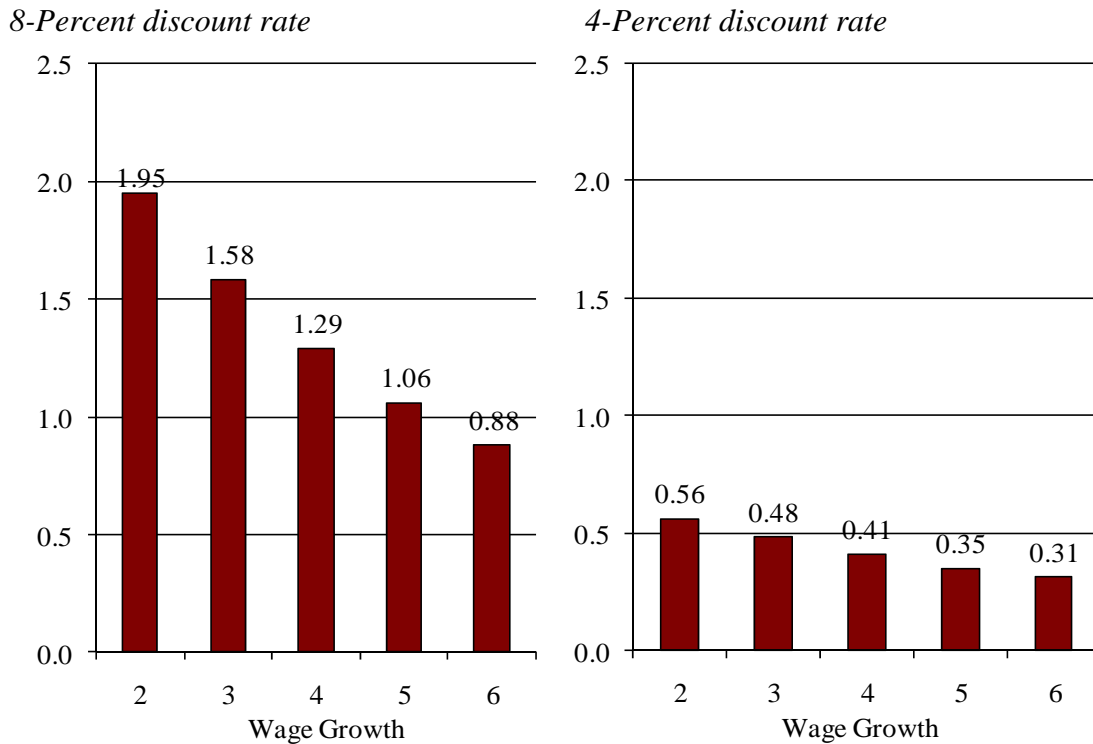
The calculation of average earnings requires three decisions:¹⁷ (i) What to include in earnings? (ii) How many years of earnings to count?; and (iii) What adjustments, if any, to make to earlier earnings in order to reflect rising wages and prices over time?; Note that none of these decisions need affect the overall level of benefits because the benefit accrual rate can be adjusted to offset any change in average earnings.

What to include in earnings? The recent legislation redefines “regular compensation” to specifically exclude certain monetary benefits like housing, lodging, travel, automobile usage or annuities for the purposes of a pension benefit calculation. This change is one that we applaud. Similarly, no rationale exists for including accumulated unused sick or vacation days, and these forms of compensation are not included in average earnings under Chapter 32.

¹⁷ A somewhat lesser issue is the question of whether to use highest years, last years, or highest consecutive years. Massachusetts uses the higher of the highest three consecutive or the last three, whether or not consecutive. An advantage of using highest years is that workers who would like to reduce their work load, at the price of lower pay, may choose easier, lower-paid jobs without damaging their pension benefit levels as much. Using consecutive years has advantages and disadvantages relative to highest years in trying to be representative of overall earnings. On the one hand, a scattering of higher-paid temporary assignments over a career might give an unrepresentative picture of overall earnings. Conversely, the use of consecutive years can severely penalize someone taking a furlough or temporary assignment that is not part of the pension system and can make a worker reluctant to take such a furlough or temporary assignment when it might be desirable.

How many years of earnings to count in determining the average? Massachusetts currently uses 3 years, which is consistent with the 3-5 years widely used by other state systems. A short averaging period has the advantage of limited record keeping and producing an earnings base that reflects resources available near retirement. But a short averaging period also: i) benefits those with the most rapidly rising earnings trajectories, who tend to be the higher paid (see Figure 2); ii) exposes employees to the risk that expected earnings growth in those last few years does not materialize; and creates an incentive to manipulate earnings in the last years.¹⁸ On the other hand, the longer the averaging period, the less the base resembles earnings towards the end of life. However, wage or price indexing can bring early years more in line with later ones without reintroducing the potential for manipulation.

Figure 2. *The Ratio of Contributions to Benefits by Wage Growth, 8-Percent and 4-Percent Discount Rate*



Source: Preliminary estimates by Peter A. Diamond. Results to be reviewed by James Lamenzo, Chief Actuary, PERAC.

Note: Workers are assumed to work from age 25-65.

This report uses both 8-percent and 4-percent discount rates when considering the accumulated value of worker contributions and the expected present discounted value of pension benefits. An 8-percent rate is a typical rate used in actuarial analyses of the finances of a pension system and reflects the expected return on the portfolio of assets used to help finance pensions. A calculation using an 8-percent rate can be thought of as

¹⁸ Such an outcome could occur if expected general pay increases do not materialize or an expected promotion does not happen.

the expected cost to the Commonwealth of providing a particular benefit.¹⁹ A separate issue is how much it costs workers to make contributions over their working lives. For this calculation, it is appropriate to recognize that workers do not have the opportunity to earn a safe rate of return of 8 percent if they invest directly. Using a 4-percent return then measures the value of safe alternatives for workers and also for retirees. So calculations using the two different discount rates are suggestive of how the system works from the cost perspectives of the Commonwealth and the worker.

In short, moving away from a very short averaging period has distinct advantages. Five years, ten years, and career average are possible candidates. If the averaging period were lengthened significantly, indexing of annual earnings before averaging should also be done, in contrast with the current practice of averaging nominal dollars

How to adjust earlier earnings to reflect rising wages and prices over time? The U.S. Social Security system adjusts previous earnings with a wage index.²⁰ Other national systems use a weighted average of wages and prices. More simply, one can use just a price index as is done by the Nuvos system which has recently been created for new hires of UK civil servants.

Anti-Spiking Provisions

In order to protect against potential abuse, 45 of the 108 largest state-administered plans currently have anti-spiking laws in place. These provisions limit the increases in annual salary applicable when calculating the pension benefit. Some states simply have language that prohibits unusual payments in the years just prior to retirement, but 27 plans have percentage limits on the annual increases that can be considered for calculating final average salary. These anti-spiking provisions vary, with limits on annual salary growth of 5 to 20 percent, with a median of 10 percent (see Appendix Table A1).²¹

¹⁹ An assumed rate of 8-percent does not recognize the riskiness in the returns on assets held in pension funds. The current financial crisis has driven home that the higher expected return associated with equity investment comes with a high level of risk. Stock returns have been extremely low for extended periods. For example, from 1965 to 1979 the return on stocks was only 5 percent.

²⁰ Since the Social Security benefit formula is progressive, indexing break points to average wages and using a wage index roughly preserves the distribution of replacement rates, which would not happen with price indexing in both places. The Massachusetts benefit formula is linear, so this issue does not arise.

²¹ While such nominal limits control manipulation, they also put employees at risk if inflation were to accelerate. A better formulation might be some rate of real wage growth, such as 2 percent plus inflation.

B. Classification

The Commonwealth's retirement system is defined by four different classes of employees.²² When originally created, these classes were based on the then current understanding of life expectancy of employees in different professions.

Group 1: Officials and general employees

Group 2: Employees with job titles presumably reflecting hazardous duties

Group 3: State police officers

Group 4: Fire fighters, police officers, and some correction officers

The current classification has a rationale shared by many systems in the country in that it separates general employees from employees in positions that carry greater physical challenges. However, the Chapter 32 enumeration of those covered under the different classes belies the rather straightforward justification for the four groups. As a result, the classification system presents a number of problems for retirement boards, the legislature, and participants: i) Lack of clarity leads to anomalies where people doing very similar jobs fall into different groups; ii) Classifying by job held at retirement, rather than pro-rating based on years employed in each group, can give a large payoff to people changing jobs late in their careers; iii) Basing benefits on final job creates a sense of inequity in that retirement benefits do not reflect the whole of the service provided by the employee to the Commonwealth; iv) No mechanism connects the move to a higher group with the need for more revenues into the fund; and v) Procedures for moving from one group to another are cumbersome and confusing due to the ambiguity of the definitions.

In 2006, The Blue Ribbon Panel made the following recommendations, which we modify in *italics* for greater clarity:

- The system should have only two groups:
 - Given the enormous improvements in health, life expectancy, and education, most Massachusetts employees should be able to work productively until age 65. *Workers should be able to retire earlier or later than this age, with a suitable adjustment of pension benefits.*
 - An earlier retirement age should be available for Fire, Police, and those Corrections Officers whose jobs involve significant daily physical exertion AND, given the skills required for their jobs and the numbers of such workers, are unlikely to find suitable alternative employment in the public or private sector.
- Benefits should be pro-rated over the number of years in each group. This change may make people more willing to accept administrative positions after having been *in a job covered by pensions for police and fire*, and it will

²² Although technically in Group 1, teachers hired after 2001 and those hired prior to 2001 that opted-in are covered under the Retirement Plus Plan. Under Retirement Plus, retirement benefits for participating members with at least 30 years of service are increased by 2 percent for each full year of creditable service in excess of 24 years, up to the statutory maximum of 80 percent. The contribution rate for Retirement Plus participants is set at a flat 11 percent.

prevent windfalls for people who have only short service in the higher *benefit* group.

- *Reclassification requests may arise despite the clarity of the distinction.* Amend Chapter 32 to require that individual reclassification requests be filed with the employee's retirement board. Individuals dissatisfied with the board's classification should be able to appeal to the Contributory Retirement Appeal Board (CRAB) and if dissatisfied should follow the established appeal process. No individual requests for reclassification should be entertained by the legislature.
- All requests to the legislature for group reclassifications should be accompanied by a price tag that shows the impact of the reclassification on the retirement system's unfunded liability.²³
- When groups of employees petition the legislature to change their classifications, the Public Service Committee should require an opinion of the affected retirement board as to the appropriate classification and a justification for the change based on the criteria set out for each group.
- The criteria for movement to *the Police and Fire Group* should be based on job responsibilities – not job title.
 - The basis for classification to this group should be: (i) the daily physical exertion of the job makes it impossible to safely and effectively carry out the functions beyond a certain age, AND (ii) given the skills required for their jobs and the numbers of such employees, workers with these responsibilities are unlikely to find suitable alternative employment in the public or private sector.
 - Training, certification, and exposure to hazardous substances should be reflected in compensation, NOT in movement to a higher group.
- Earlier ages for full pensions should be reflected in higher contribution rates. An explicit decision should be made of how those higher contribution rates should be divided between employee and employer. Thus, employee contributions should no longer be based on date of hire as under current law.

The 2006 Blue Ribbon Panel concluded that, whether the number of groups is reduced or not, a thorough review and clarification of the Chapter 32 rules is required for allocating workers to different groups.

²³ Increases in the unfunded liability due to reclassification should be amortized over three years rather than over the remainder of the funding period. In addition, a system should be established for charging any costs related to reclassification of workers back to the employing entity.

C. Benefit Rates

Retirement benefits are determined by a formula that multiplies the employee's years of service times the average of his highest three years of earnings times a factor that is determined by age at retirement.²⁴ Group 1 employees receive an accrual rate that ranges from 1.5 percent of final salary at 55 to 2.5 percent at 65, with lower rates should a retiree (with sufficient service) claim before age 55. Group 2 employees reach an accrual rate of 2.5 percent at age 60, and Group 4 employees achieve an accrual rate of 2.5 percent at age 55 (see Table 5). State police have a separate system in Group 3 whereby they receive 75 percent of final pay after 25 years of service.

Table 5. *Benefit Accrual Rates*

Age	Group		
	1	2	4
65	2.5	2.5	2.5
64	2.4	2.5	2.5
...		2.5	2.5
60	2.0	2.5	2.5
59	1.9	2.4	2.5
...	2.5
55	1.5	2.0	2.5
54	1.4	1.4	2.4
53	1.3	1.3	2.3
...			
41	0.1	0.1	1.1

Source: Commonwealth Actuarial Report, 2005.

Massachusetts is unusual in expressing benefit rates as factors that vary by age. Most other state-administered systems apply the same factor regardless of age (see Table 6) and then adjust explicitly for taking benefits early. The two approaches, however, are equivalent. Massachusetts simply does the multiplication, reducing the benefit factor to reflect the longer expected retirement period.

²⁴ Massachusetts public retirement systems also provide accidental and ordinary disability retirement benefits for employees whose injuries are job-related as well as those that are unrelated to their job and keep them from performing their employment duties. Benefits under ordinary disability are equal to a superannuation benefit based on service and salary at time of injury, applying the age 55 factor if the employee is under age 55. Benefits under accidental disability are 72 percent of pay at the time of injury.

Table 6. *Distribution of the Largest State Plans, by Type of Accrual Rate*

Type of accrual rate	Number of plans		
	Total	With Social Security	Without Social Security
Constant accrual rate	82	68	14
Accrual rate varies by service	21	13	8
Accrual rate varies by age	4	1	3

Note: Accrual rates are for general employees hired as of the most current annual report.

Sources: Center for Retirement Research at Boston College *State and Local Public Pension Survey*; Survey of various annual reports and benefit handbooks.

D. Termination Benefits

Section 10 of Chapter 32 has special provisions for employees with 20 years of service who are terminated involuntarily. The termination allowance is calculated as 1/3 of the member's 3-year final salary plus the annuitized balance of the employee's contributions, determined using a 7-percent return. For a typical worker, the 1/3 rule determines the bulk of the benefit, which is typically somewhat more than 40 percent of the final average salary. The June 2009 legislation eliminated termination benefits for public employees who are terminated through failed re-election, or nomination.²⁵

The rationale for the termination benefits for general public employees is straightforward. Benefits are back-loaded in part to encourage continued work. But the incentive to continue work is not relevant for someone who was terminated. Some individuals planning a career in public service may be terminated through no fault of their own and end up with relatively little in the way of pension benefits, especially since they are not covered by Social Security. For example, under rules for superannuation benefits, a person in Group 1 entering at age 29 who is terminated at 49 would be entitled to a pension of 18 percent (0.9×20 years) of high-three salary. Similarly, someone who entered at 32 and was terminated at 52 would be entitled to a benefit of 24 percent (1.2×20 years).²⁶ In each case, the termination benefit would boost that amount to one third plus the annuity.

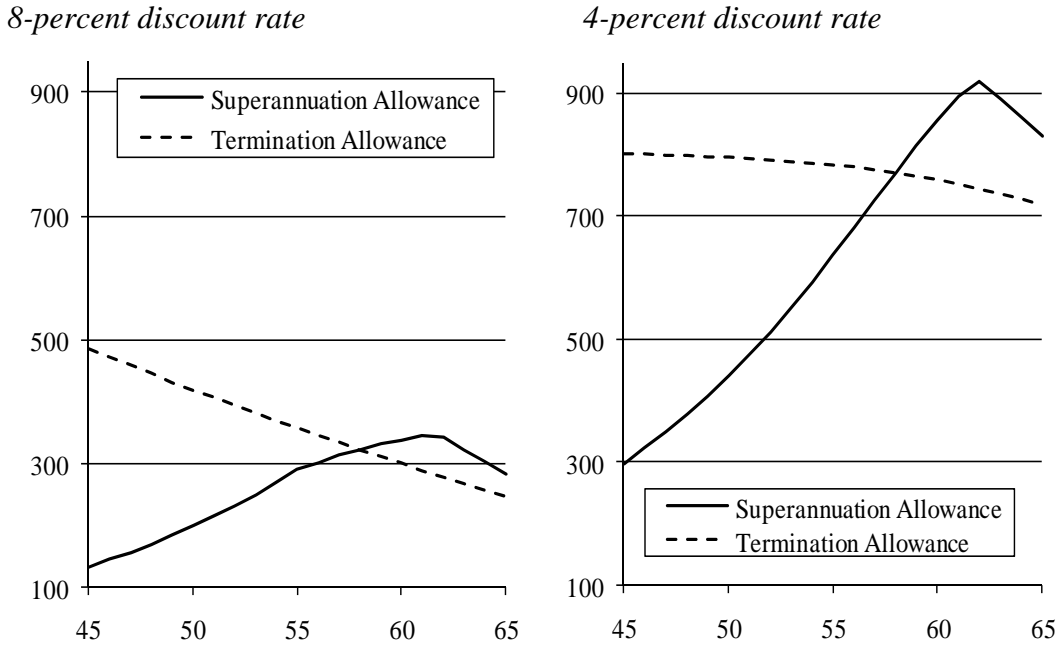
While the case exists for some type of termination benefit, the pattern resulting from the current structure produces some anomalies. The dashed lines in Figure 3 report the present discounted value of termination benefits for a worker with a typical earnings trajectory who began employment at age 25 and was terminated at different ages. The solid lines show the superannuation benefits for the same worker who departs voluntarily and claims his benefit at the age of separation or age 55, whichever is later. Two patterns are evident. First, termination benefits are high relative to superannuation benefits, particularly at younger ages. For example, the value of the termination benefit is 3.5

²⁵ Prior to the recent legislation, those in appointed positions and elected officials were also vested for normal retirement benefits at age 55 after 6 years of service. The Pension Reform bill extended the required service from 6 to 10 years, to align with the majority of employees for the state.

²⁶ Terminated workers can defer the start of superannuation benefits to increase the monthly benefit level.

times the superannuation benefit when claimed at age 45. Second, the lifetime values of termination benefits are lower for people who claim them later, despite the fact that they have worked longer.

Figure 3. *Present Discounted Value of Lifetime Retirement and Termination Benefits for Typical Public Employee, at 8-percent and 4-percent Discount Rate, in Thousands*



Source: Preliminary estimates by Peter A. Diamond. Results to be reviewed by James Lamenzo, Chief Actuary, PERAC.

Note: Workers are assumed to start work at age 25.

If the 1/3 portion of the termination benefit were reduced, or the annuity were not added to the benefit, the termination benefit would be smaller, but it would still have some unsatisfactory properties. While the superannuation benefit is larger for a retiree with more years of service (age and earnings held constant) and for an older worker (years of service and earnings held constant), neither pattern holds for the one-third rule.²⁷

From the perspective of providing adequate income at ages when most people fully retire, the early start in termination benefits is probably not as valuable as a sufficiently larger benefit starting later, but the one-third portion of the termination benefit does not include an increased monthly amount for a delayed start.

An examination of the member handbooks of the 107 largest state retirement systems outside of Massachusetts revealed only two other major plans that provide widely applicable involuntary termination benefits – Montana and the District of Columbia

²⁷ The first pattern holds until the 80 percent maximum binds; the second holds until age 65 for a retiree in Group 1.

Teachers Retirement Plan.²⁸ The DC Teachers Plan gives workers over age 55 the same benefit as if they were 60 and eligible for the retirement benefit.²⁹ The Montana Public Employees' Retirement System allows terminated workers to buy up to three additional years of service with the employer paying part of the cost. Both of these approaches appear to have better properties than the current 1/3 rule. Allowing purchase of three additional years of service would permit terminated workers with 20 years of service to have a 15 percent larger benefit than they would receive without the special treatment. Similarly, adding two years to a worker's age would allow a terminated worker claiming benefits at age 53 to receive the 15.4 percent larger superannuation benefit than a worker at age 55.³⁰

E. Benefit Limits

Currently, the amount determined by the benefit formula cannot exceed 80 percent of the member's highest three-year average salary. Since the benefit formula multiplies average earnings by years of service and the benefit rate, this limit is equivalent to a constraint on the number of years of creditable service that can count for the benefit formula when retiring at any given age.³¹ With rates at the highest ages of 2.5 percent (and 3 percent for those in Group 3), this amounts to a limit of 32 years (27 for those in Group 3 where a maximum benefit of 75 percent of earnings is used in the calculation). More than half of other state plans have similar limits, although some of them have Deferred Retirement Option Program ("DROP") accounts so that a worker continuing in covered employment does not face as large a financial impact from reaching the limit.

F. Type of Annuity

Retirees currently have three benefit options at retirement:

- Option A: Total annual allowance, payable in monthly installments, commencing at retirement and terminating at the death of the member.
- Option B: A reduced annual allowance payable in monthly installments, commencing at retirement and terminating at the death of the member with potential for lump-sum payment to the designated beneficiary.³²
- Option C: A reduced annual allowance payable in monthly installments, commencing at retirement and terminating at the death of the member. At the death of the retired employee, 2/3 of the allowance is payable to the designated

²⁸ Some workers in Virginia have a termination benefit that removes the early retirement reduction for involuntarily terminated workers claiming prior to the normal retirement age.

²⁹ Workers under age 55 receive a .167 percent reduction in their retirement benefit for every month prior to age 55.

³⁰ The benefit provided under this approach is worth somewhat less than in percentage terms to an older terminated worker, which may be appropriate as the older worker probably anticipated fewer years of further employment.

³¹ This rule is supplemented by limits on earnings for workers who start retirement benefits and also do consulting work within the framework of the pension system.

³² The lump-sum payment is the amount by which the member's contributions plus interest exceed the annuity payments received.

beneficiary. If the designated beneficiary dies before the member, the payment “pops up” prospectively to the amount payable under Option A.³³

Although these options provide various types of protection for both member and spouse, it is not clear that these options are well-suited to the needs of all married couples. For example, a member selecting Option B who lived long enough to receive payments in excess of contributions plus interest would leave nothing for his or her spouse. Option C provides the peculiar pattern that if the member survives he gets a larger benefit than the spouse, who receives 2/3 of the reduced amount. Thus, the pop-up, while possibly serving to encourage selection of Option C, does not seem to provide benefits when most needed.

In correspondence, the Massachusetts Organization of State Engineers and Scientists (MOSES) urged the Commission to add an Option that would provide a constant benefit over the lives of the retiree and beneficiary.³⁴ Many states offer such an alternative, and it could be developed to be actuarially equivalent to the existing options so as to not increase costs. The Commission might want to consider this option and perhaps its role as the default.

At present a married member’s form choosing one of the options must be signed by the member’s spouse. If the married member files an unsigned form, the retirement board must send the spouse notification within 15 days. After a maximum 45 days, an unacknowledged Option form goes into effect. Thus, a spouse not signing a form does not limit the member’s choice. While some states have only notification rules, as is effectively the case in Massachusetts, some others require a spousal notarized signature for a single life option and some mandate some joint life protection (see Table 7). Protecting the spouses of public employees in Massachusetts is particularly important in that many may have little or no protection under Social Security, which provides both spousal and widow’s benefits.

³³ The designated beneficiary cannot be changed once the member’s retirement become effective.

³⁴ Letter to Chairwoman Munnell from Joe Dorant, President of Massachusetts Organization of State Engineers and Scientists (MOSES), and Chris Breshahan, Chairman of MOSES Ad-hoc Committee on Pension reform.

Table 7. *Post-Retirement Survivor Benefits and Rights among the Largest State Plans*

Survival benefit type	Total plans	Plans in States	
		with Social Security	without Social Security
Mandatory joint-and-survivor	3	3	0
Default joint-and-survivor requiring spousal consent to opt-out	20	14	6
Spousal consent necessary for all benefit payment options	8	7	1
Spousal notification necessary for all benefit payment options	7	3	4
No specific provisions	70	55	15

Source: Center for Retirement Research at Boston College survey of various annual reports and benefit handbooks.

G. Vesting, Withdrawals, Deferred Benefits, and Buy-backs

For workers employed for only part of their careers in public employment, a good retirement system should make a reasonable contribution to retirement income. Massachusetts' 10-year vesting requirement means that many workers leave public service with little more than their own contributions.³⁵ In addition, crediting service on a pro-rata basis, as Massachusetts does, means that part-time workers may not be vested for 20 years. The current vesting provisions raise three questions: (i) Is ten years the appropriate vesting period?; (ii) If a long vesting is appropriate, what should workers who leave before vesting receive when they leave?; and (iii) How should vesting be determined for part-time workers? The tradeoff, of course, is that for any given level of expenditure, the more money that goes to workers who leave early, the less is available for those staying longer and collecting benefits. The Commonwealth may want to attract individuals who may not turn into long-service employees.

The vesting requirement in Massachusetts is longer than the 5-year cliff vesting required for private sector defined benefit plans under ERISA and for federal employees under the new Federal Employee Retirement System FERS (see Table 8). Moreover, in the private sector, part-time workers with at least 1,000 hours of work in a given year are provided a full year of credit toward vesting and, therefore, would vest in five years as well. A 10-year vesting period is also on the high end of vesting for major state and local plans (See Figure 4). Thus, more rapid vesting and crediting 1,000 hours of employment as one year of service may merit consideration.³⁶

³⁵ Employees who leave public service with less than five years of service receive a refund of their contributions with no interest. Those who stay between five and ten years receive 50 percent of the interest credited on their contributions, with an interest rate based on the rate paid on savings accounts. An employee who is removed or discharged will receive interest regardless of years of service.

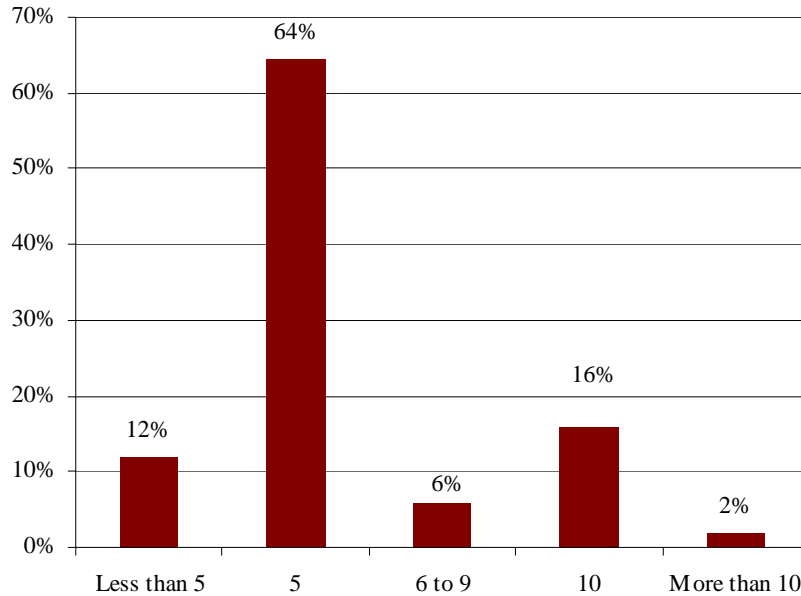
³⁶ A shortening of the vesting period, while of no consequence with lifetime averaging for benefit calculation would have the potential for some anomalies with a ten-year averaging period and a vesting

Table 8. *ERISA and FERS Vesting Rules*

	Cliff Vesting	Graduated Vesting
ERISA	5	3(20%) - 7(100%)
FERS	5	

Sources: U.S. Department of Labor (2006); U.S. Office of Personnel Management (1998).

Figure 4. *State Pension Plans by Vesting Period*



Note: Based on 101 of largest state pension plans.

Source: Center for Retirement Research at Boston College survey of various annual reports and benefit handbooks.

Whether or not Massachusetts decides to retain a 10-year vesting period, some thought should be given to what workers who leave early receive or could receive on a deferred basis when they reach full retirement age. This issue is particularly important since these workers are not accumulating any credits under Social Security while they work for the Commonwealth. Employees who leave public service with less than five years of service receive a refund of their contributions with no interest. Those who stay between five and ten years receive interest based on the rates paid on individual savings accounts at a sample of at least ten financial institutions. Comparisons with the private sector defined benefit plans are not possible since they are not contributory. Under the old federal Civil Service Retirement System, where workers are not covered by Social Security, regular contributions covering between one and five years of service earn interest at 3 percent, and since 1985 voluntary contributions beyond the normal required deduction earn interest based on the average yield on new investments purchased by the Fund during the

period less than ten years. While rules could be designed to address this issue, it would be a further complication of the benefit rules.

previous year. Under the new Federal Employees Retirement System, where workers are covered by Social Security and may not make voluntary contributions beyond the normal deduction, employees who leave with at least one year of service receive their contributions plus interest – again based on the average yield on new investments purchased by the Fund.

In the Massachusetts system, those who are vested (at least 10 years of service) but not yet eligible for a benefit (less than 20 years service and under age 55) may withdraw their contributions with full interest (set at a rate typical for a savings account) or receive a deferred benefit. The size of the benefit rate depends on the age at which the member claims his retirement benefit. The average earnings to which the benefit rate is applied are not adjusted for inflation between termination and the start of benefits. As a result, the real value of the future benefit declines as prices increase. This decline in value, due to lack of indexing, is widely seen as inhibiting labor mobility for those covered by a defined benefit pension. If workers do leave and opt for the deferred benefit, they have a great incentive to return to covered employment when nearing benefit eligibility age, since after three years of service they can apply their previous service credits to an updated average earnings basis.

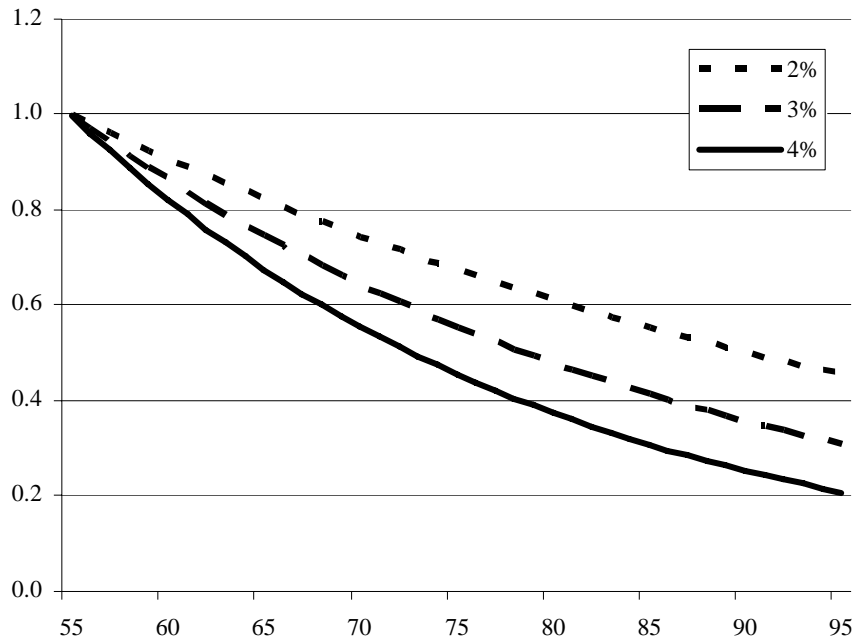
For those who take their money out of the system, “creditable service” bills allow members of the retirement system to “buy back” years of service if they return later. Those who buy back creditable service generally pay the amount into the system that would have been deducted at the time of their employment plus “buy-back interest.” The interest is half the actuarially assumed interest rate, which varies by system in Massachusetts. For former employees, who have withdrawn their money from the retirement system and return to state service, some buy-back provision makes sense, but the appropriate rate of interest merits consideration. For employees whose previous service was not with the state, bills have given groups or individuals creditable service for time in the Peace Corps, out-of-state teaching, or other activities. Some of these bills are to reward or encourage certain activities, while others may be part of recruiting particular classes of workers; all of them increase the demands on the retirement funds. Additionally, varying rules apply to employee eligibility for certain types of service “buy back” that lack clear justification. For example, school superintendents are able to purchase out-of-state credit, but not town managers.

6. Cost-of-living Adjustments

Even moderate levels of inflation will erode the purchasing power of retirement benefits over time. As shown in Figure 5, without any COLA, 3-percent inflation will cut the purchasing power value of a benefit received at age 55 in half by age 80. In recognition of this problem, Social Security adjusts benefits fully for inflation after retirement. Social Security, however, is not intended to provide an adequate retirement income, but merely to serve as a foundation for pensions and other saving. Outside Social Security, the level of inflation protection varies. Under FERS, federal government employees

receive essentially CPI minus 1 percent;³⁷ most state and local plans provide some inflation adjustment; while indexing in the private sector is virtually non-existent.³⁸ Workers with 401(k) plans can purchase inflation-protected annuities, but generally individuals do not purchase any type of annuity – much less those with inflation protection.

Figure 5. *Purchasing Power of \$1 Received at Age 55, by Age and Inflation*



Source: Illustration.

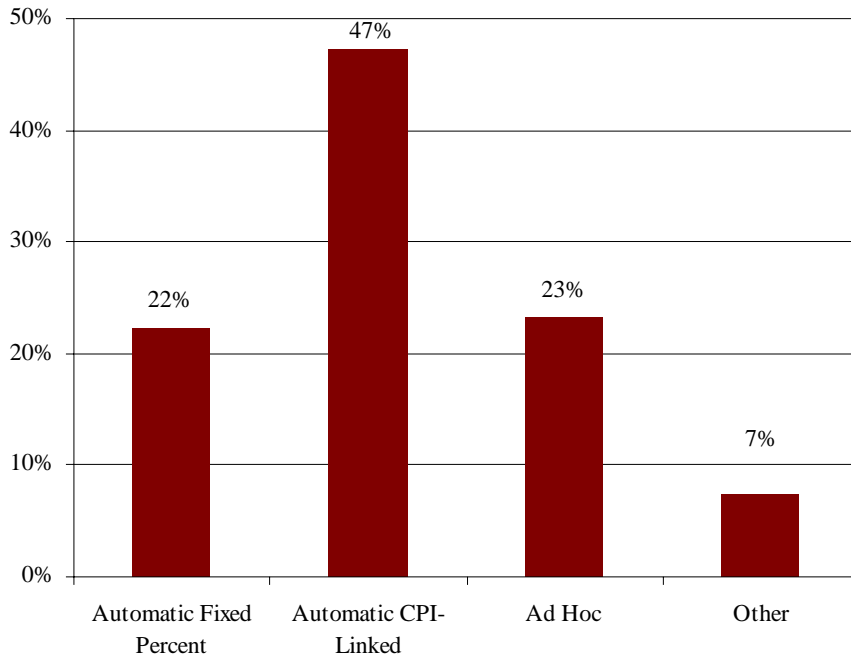
A history of COLA adjustments for the Massachusetts system is presented in Appendix Table A1. Since legislation in 1997, subject to annual vote of the general court, Massachusetts provides a COLA of 3 percent per year on the first \$12,000 of benefits. That is, the maximum increase is \$360. This arrangement raises four questions: (i) Should the adjustment be automatic rather than subject to an annual vote?; (ii) Should the inflation adjustment be able to exceed 3 percent?; (iii) Should the adjustment be applied to a higher dollar limit?; and (iv) Should the limit amount be indexed in some way to reflect either the increase in prices or the growth of wages?

The current COLA in Massachusetts would fall into the “ad hoc” category in Figure 6, since it has to be approved each year by the legislature. Most state systems, in contrast, make the adjustment automatically.

³⁷ The new federal system provides the actual increase in the CPI for inflation up to 2 percent; 2 percent for inflation between 2 and 3 percent, and CPI minus 1 percent for inflation in excess of 3 percent. Under the old CSRS, participants receive a full COLA.

³⁸ When inflation was very high in the late 70’s some firms made ad hoc benefit increases.

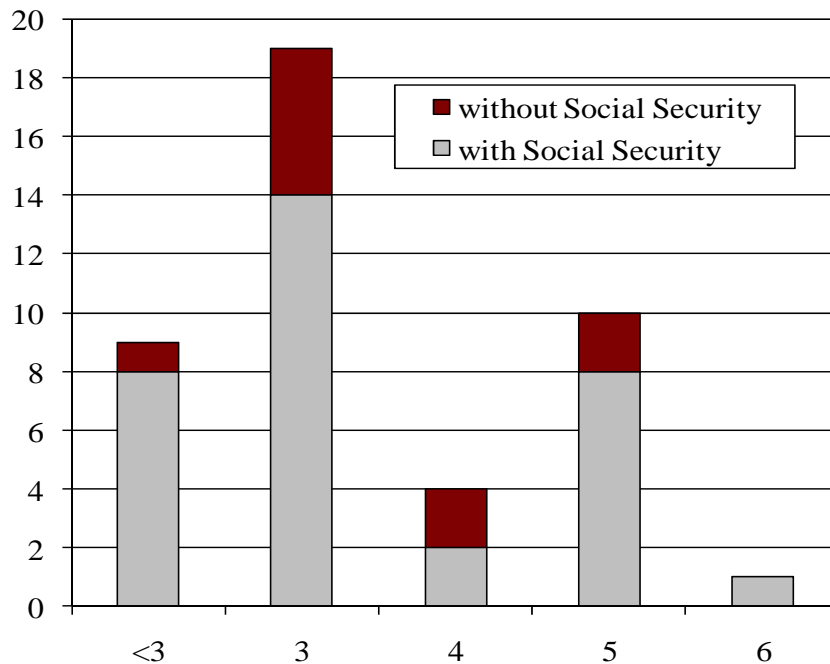
Figure 6. *Distribution of the Largest State Plans, by Type of Cost-of-Living Adjustment*



Source: Center for Retirement Research at Boston College survey of various annual reports and benefit handbooks.

The second issue is the 3-percent cap. If inflation should become a serious problem, the 3-percent cap would mean that even retirees with benefits below \$12,000 would see their purchasing power eroded. Several states have a 5-percent cap, but interestingly these are not the states without Social Security coverage (see Figure 7 and Appendix Tables A3-A4)

Figure 7. *Limitations on Maximum COLA Percentage among the Largest State Plans*



Source: The Center for Retirement Research at Boston College *State and Local Public Pension Survey*; Survey of various annual reports and benefit handbooks. See Appendix Tables A3 and A4.

As the provisions now stand, the COLA is targeted towards those with the lowest benefits, but those with benefits above \$12,000 see the value of their benefits erode over time. The legislative history suggests that the intent was to provide indexing up to the amount of the average benefit. The \$12,000 cap is well below the current average benefit in the State Retirement System of \$24,075.³⁹ The question is whether the \$12,000 should be increased, and, if so, by how much and when. Only two other states limit the base to which the COLA is applied: Michigan pays a maximum COLA of \$300 and New York applies the COLA to only the first \$18,000 of benefits. A second question is whether the increases in the base should be subject to legislation as under current rules, or automatic or at the discretion of the retirement boards with the approval of their governing body.⁴⁰

Relaxing the constraints on the COLA, however, will raise the cost of the program. For current employees, one possibility is to offer the option of a lower initial benefit in exchange for more extensive indexing. For new employees, a more generous COLA could be included along with a package of offsetting benefit reductions or higher contributions.

³⁹ Commonwealth of Massachusetts, State Retirement System, *Actuarial Valuation Report, January 1, 2009*.

⁴⁰ One member of the Commission suggests that, while increases may be desirable, many boards are struggling to recover from the market decline and could not afford to raise the base immediately. He suggests that any adjustments should be left to the discretion of the local retirement boards and at the State level, any increase would be determined by the Legislature with the approval of the Governor. Letter from Ralph White dated June 17, 2009.

7. Disability

Poor health can interfere with the ability to work at an existing job or make it difficult to perform. Many employers, including the Commonwealth, provide paid sick days to accommodate short-term worker health problems and the early stage of what may turn out to be a longer problem. Additional programs providing benefits when not working are workers' compensation, 111F benefits, and disability benefits.⁴¹

The Commonwealth distinguishes between disability by reason of a non-job related condition (ordinary disability) and as a result of injury or hazard while in the performance of duties (accidental disability).⁴² By and large, the former has a minimum years-of-service condition of 10 years for eligibility, while the latter does not have any minimum. This difference is common across states (see Table 9).

Table 9. *Distribution of the Largest State Plans by Vesting Period for Long-Term Disability Benefits*

Vesting period (years)	Off-the-job disability	On-the-job disability
0	11	55
1-4	14	8
5	51	29
8-9	4	3
10	24	9
10+	1	1

Source: Center for Retirement Research at Boston College survey of various annual reports and benefit handbooks.

With ordinary disability, the benefit equals the retirement benefit, calculated as if the member was age 55. If over 55, the superannuation benefit will be received if larger.⁴³ With accidental disability, the benefit is 72 percent of salary,⁴⁴ plus an annuity based upon accumulated member contributions with interest. There is a limit of 100 percent of pay (reduced to 75 percent for post 1/1/1988 hires). Additional payments are available for those with young⁴⁵ or disabled children and for veterans. In other states, the basis for disability benefits is shown in Table 10.

⁴¹ Since Massachusetts public employees are not covered under Social Security, only recent hires still meeting the coverage conditions would be eligible for Social Security Disability Insurance benefits.

⁴² There is no distinction between injuries while holding a job with higher risk of disability and those with jobs without such a distinction.

⁴³ If the member is a veteran, the benefit is 50 percent of the final rate of salary during the previous 12 months, plus an annuity based upon accumulated member contributions with interest.

⁴⁴ In this case, salary refers to the greater of the annual rate of regular compensation on the date of injury or the average annual rate of regular compensation for the 12-month period for which the member last received regular compensation.

⁴⁵ Under 18 years of age or under 22 years of age and a full-time student.

The disability system in the Commonwealth has been the subject of considerable press attention, without careful distinction among different programs providing benefits. The flow chart shown in Appendix C needs to be completed in order to understand what portion of those who become sick end up on disability benefits each year.

Table 10. *Salary Base for On-the-Job Long-Term Disability Benefits among the Largest State Plans*

Salary base	Number of plans	
	On-the-job disability	Off-the-job disability
Earnings at disablement	18	10
1-2 years	8	8
Three years		
Consecutive	23	26
Non-consecutive	8	8
No specific rule	25	29
Five years		
Consecutive	12	12
Non-consecutive	1	0
No specific rule	5	6
Other ^a	4	5

^a "Other" includes one plan with 3.5 consecutive year salary base, two plans with four consecutive years, one plan with four years with no specific rules on consecutive years, and one plan that provides a flat benefit.

Source: Center for Retirement Research at Boston College survey of various annual reports and benefit handbooks.

Due to time constraints, the Commission did not investigate disability retirement benefits provided under Chapter 32 or the broader system of disability determination and benefits that includes Workers Compensation and the benefits provided under Section 111F. For future groups evaluating the determination of disability, a flow chart similar to that provided in Appendix C might serve as a useful starting point.

8. Retiree Health Insurance

In Massachusetts, the state provides retiree health insurance for members of the State System; at the local level, health insurance is generally made available through the municipality for employees and retirees, including teachers. The contribution to retiree health insurance varies depending on each municipality's health insurance provisions. Along with pensions, health insurance is one of the largest liabilities that cities and towns face. Unlike pensions, most communities do not pre-fund their health insurance costs.

In most cases, employees are eligible for retirement benefits after 20 years of service, or at least ten years of service and having reached the age of 55. That means an individual with 10 years of creditable service can leave state employment before retirement, return at age 55 when eligible to draw retirement allowance and qualify for the state, city, or town's full contribution towards retiree health insurance.⁴⁶

Under the Commonwealth's retiree health insurance, retirees not eligible for Medicare, or too young for Medicare, receive benefits as though they were active employees. Retirees eligible for Medicare must enroll in that program, so that the state becomes the second payer. The State does not reimburse retirees for Medicare Part B premiums. As a result, the per-person cost to the State of retiree health insurance for those 65 and over is modest.

A general issue arises as to whether all retirees from a given public employer should receive the same level of benefits regardless of how many years of service they have or how many hours per week they have worked. Many other states have delinked retirement and health benefits by either pro-rating the contribution that they make towards retiree health benefits based on years of service and/or having different vesting rules for cash benefits and retiree health insurance benefits (See Appendix B). Massachusetts may want to consider following a similar path. For example, some states pay 25 percent of the subsidy for people with 5 years of service and 100 percent of subsidy for people with 20 years of service, with an increasing percentage between the two points.⁴⁷

The Commission also received testimony regarding special issues faced by localities.⁴⁸ These issues include i) the vagueness of Chapter 32B, which does not contain a definition for the word retiree, or a definite vesting requirement; ii) the non-uniformity of benefits and contributions across localities; and iii) the lack of portability, which means that benefits are based on the plan and paid only by the city or town from which the employee retires.⁴⁹ Cities and towns may want to consider some standardization, at least perhaps to service requirements and some form of sharing of costs, as is done for pensions.

⁴⁶ Some jurisdictions such as Wellesley have created rules that require that an employee be eligible for and receiving health insurance benefits at the time of retirement and actually retire in order to get benefits. In those jurisdictions, an employee cannot leave service, return, and be provided with health insurance.

⁴⁷ Without changes to current law, prorating the state's contribution could create hardship for some low-paid public employees. CommCare provides health insurance for low-income workers who lack employer-based insurance. Currently, any level of employer insurance disqualifies persons for coverage under CommCare. Under current rules, retired public employees not eligible for CommCare because of coverage under the public employee health insurance, at least receive full retiree health insurance benefits from the public employee insurance program on the same terms as active workers. Pro-rated insurance may result in people who get no coverage under CommCare and minimal public employee health insurance benefits through the State.

⁴⁸ Kevin Feeley, Jr. of Collins, Loughran & Peloquin, P.C.

⁴⁹ In response, the town of Wellesley has drafted a regulation that requires employees to satisfy the following criteria in order to be eligible to receive health insurance benefits: i) the employee must retire directly from the community; ii) have a minimum 10 years of creditable service; and iii) enroll in Part B Medicare if eligible.

In addition to their comments of pension funding, the 2009 PERAC Actuarial Advisory Committee recommends that state and local employers should draw upon their past experiences at pre-funding their pension benefits and coordinate the funding of retiree health insurance and pension benefits.

Appendix A. Summary of Anti-Spiking Provisions and COLA Benefits
in Largest State Plans

Table A.1a *State-Administered Plans with Percentage Anti-Spiking Provisions*

Plan name	Limit on annual increases for final average salary	Years in final average salary
Georgia ERS	5%	2
Arkansas Teachers	10	3
Colorado Municipal	8	3
Colorado School	8	3
Colorado State	8	3
Connecticut SERS ^a	14	3
Connecticut Teachers ^a	14	3
Iowa PERS	10	3
Louisiana SERS ^b	15	5
Louisiana Teachers	10	3
Maine Local	5	3
Maine State and Teacher	5	3
Maryland PERS ^c	20	3
Maryland Teachers ^c	20	3
Missouri PEERS	20	3
Missouri Teachers	10	3
Nebraska Schools	7	3
New York State Teachers ^d	20 (Tier 1); 9.5 (Tier 2); 4.9 (Tiers 3 and 4)	3
New York State & Local ERS ^e	4.9	3
New York State & Local Police and Fire	20	3
South Dakota PERS ^f	5	3
Utah Noncontributory ^g	10	3
Vermont Teachers	10	3
Illinois Universities	20	4
Kansas PERS	15 (current plan); 7 (new hires)	3
Mississippi PERS	8	4
Texas Teachers ^h	10	5

^a Cap is limited to 130 percent of the average of the previous 2 years' salaries.

^b No increases during their last four years of employment can increase the Average Compensation by more than 15 percent.

^c With the exception of salary increases due to promotions, any increase in salary exceeding 20 percent is excluded from the calculation of the average final compensation unless approved by the Board of Trustees.

^d Tier 2 annual salary increases limited to 120 percent of the average of the previous 2 years' salaries; Tier 3 annual salary increases limited to 110 percent increase of the average of the previous 2 years' salaries.

^e Annual salary increases limited to 110 percent increase of the average of the previous 2 years' salaries.

^f Applies to compensation received in the last four calendar quarters, as it relates to the amount earned in the highest calendar quarter prior to the last four calendar quarters considered. Compensation earned in the last quarter may also not exceed the amount earned in the highest previous calendar quarter by 25, 15, and 5 percent respectively.

^g Set in addition to a cost-of-living adjustment equal to the decrease in the purchasing power of the dollar during the previous year, as measured by a US Bureau of Labor Statistics Consumer Price Index average.

^h Or \$10,000, whichever is greater.

Table A1b. *State-Administered Plans with Non-Percentage Anti-Spiking Provisions*

Plan name	Years in final average salary
Washington PERS Plan 1	2
Washington Teachers Plan 1	2
Montana Teachers	3
North Dakota Teachers	3
Ohio PERS	3
Ohio School Employees	3
Ohio Teachers	3
Oregon PERS	3
Pennsylvania School Employees	3
Virginia Retirement System	3
Wisconsin Retirement System	3
Wyoming Public Employees	3
Idaho PERS	3.5
California Teachers ^a	3
Illinois SERS	4
Illinois Teachers	4
Florida RS	5
Kentucky Teachers ^b	5

^a Employees of the California Teachers plan use a 1-year averaging period if they have at least 25 years of service.

^b Employees of the Kentucky Teachers plan use a 3-year averaging period if they are at least 55 years old with at least 27 years of service.

Table A2. *Massachusetts COLA History*

Year	Allowed percentage	Retirement benefit base
1971	6.0%	\$6,000
1972	4.3%	\$6,000
1973	3.3%	\$6,000
1974	6.2%	\$6,000
1975	11.0%	\$6,000
1976	5.0%	\$6,000
1977	5.0%	\$6,000
1978	6.5%	\$6,000
1979	5.0%	\$6,000
1980	6.0%	\$6,000
1981	3.0%	\$7,000
1982	3.0%	\$7,000
1983	3.0%	\$7,000
1984	4.0%	\$7,000
1985	4.0%	\$8,000
1986	4.0%	\$9,000
1987	3.0%	\$9,000
1988	4.0%	\$9,000
1989	NO COLA	
1990	NO COLA	
1991	NO COLA	
1992	5.0%	\$9,000
1993	NO COLA	
1994	3.0%	\$9,000
1995	NO COLA	
1996	3.0%	\$9,000
1997	NO COLA	
1998	2.1%	\$12,000
1999	3.0%	\$12,000
2000	3.0%	\$12,000
2001	3.0%	\$12,000
2002	3.0%	\$12,000
2003	3.0%	\$12,000
2004	3.0%	\$12,000
2005	3.0%	\$12,000
2006	3.0%	\$12,000
2007	3.0%	\$12,000

Source: Massachusetts Teachers' Retirement System (2009).

Table A3. *Distribution of the Largest State Plans, by Type of COLA Benefit*

Cost-of-living adjustment	Number of plans		
	Total	Uncapped	Capped
<i>With Social Security coverage</i>			
Automatic fixed percentage adjustment	14	13	1 ^a
Automatic CPI-linked adjustment ^b	39	6	33
Full CPI	29	1	28
Partial CPI	10	5	5
Ad-Hoc legislative or board approved adjustment	22	22	0
Based on investments or funding status	7	5	2
<i>Without Social Security coverage</i>			
Automatic fixed percentage adjustment	10	10	0
Automatic CPI-linked adjustment	12	2	10
Full CPI	11	1	10
Partial CPI	1	1	0
Ad-Hoc legislative or board approved adjustment	3	1	2
Based on investments or funding Status	1	1	0

^a Michigan SERS caps COLA at \$300 annually.

^b Includes Connecticut Teachers, whose plan COLA is based on the Social Security cost of living, which is derived from the CPI-W, and Tennessee Political Subdivisions, where the employer chooses whether or not to offer a CPI-Linked COLA with a maximum of 3 percent.

Table A4. *Limitations on Maximum COLA among the Largest State Plans.*

COLA type	Number of plans	With Social Security	Without Social Security
Automatic ^a	1	1	0
CPI-linked	43	33	10
Capped below 3% ^b	9	8	1
Capped at 3% ^c	19	14	5
Capped at 4%	4	2	2
Capped at 5% ^d	10	8	2
Capped at 6%	1	1	0
Ad Hoc	2	0	2
Based on investments or funding status ^e	2	2	0

^a Michigan SERS caps COLA at \$300 annually.

^b Louisiana SERS allows up to 1 percent in additional COLA benefits dependent on investment returns.

^c New York State ERS, TRS, and Police and Fire COLA benefit is capped at 3 percent and applied only to the first \$18,000 of annual pension benefits. Colorado PERS, Teachers, and Local provide COLA at 3.5 percent.

^d Connecticut Teachers lowers the cap depending on investment performance. If investment returns are under 8.5 percent, the cap is lowered to 1 percent and if investment returns are under 11.5 percent, the cap is lowered to 3 percent.

^e Capped at 4 percent.

Appendix B. Summary of Retiree Health Insurance in Other States

Table B1. *State Plans with “De-Linked” Vesting for Retirement and Health Benefits*

Plan name	Service retirement	Retiree health insurance
Alaska PERS	5	10
Kentucky County	5	10
Kentucky ERS	5	10
Kentucky Teachers	5	10
Minnesota PERF	3	5*
Minnesota State Employees	3	5*
Minnesota Teachers	3	5*
New Jersey PERS	10	25*
New Jersey Police & Fire	10	25*
New Jersey Teachers	10	25*
New York State Teachers	5	10
NY State & Local ERS	5	10
NY State & Local Police & Fire	5	10
Ohio PERS	5	10
Ohio School Employees	5	10
Ohio Teachers	5	15
Oklahoma Teachers	5	8
Pennsylvania State ERS	5	15
Texas ERS	5	10
Texas LECOS	5	10
Texas Municipal	5	10
Texas Teachers	5	10
Tennessee State and Teachers	5	10

*Employee must retire immediately upon termination to be eligible for retiree health insurance benefits.
Source: Various annual reports and benefit handbooks.

Table B2. *States that Currently Pro-Rate Retiree Health Insurance Premiums Based on Credited Service*

Alabama	Louisiana	North Dakota
Arizona	Maine	Ohio
California	Maryland	Oregon
Colorado	Missouri	Rhode Island
Delaware	Nebraska	South Carolina
Hawaii	Nevada	Tennessee
Illinois	New Mexico	West Virginia
Kentucky	North Carolina	Virginia

Sources: Retiree Health Plans: A National Assessment (2008); and various annual reports and benefit handbooks.

Table B2a. *States that Pro-Rate the Health Insurance Premium as a Percentage of the Total Premium*

State	Maximum subsidy		Pro-rate formula
	Years of service	Percent of premium	
Alabama	25	100	2 percent reduction per year of service below 25 years
California ^a	20	100	5 percent reduction per year of service below 20 years
Delaware	20	100	25 percent reduction for every 5 years of service below 20 years
Illinois	20	100	5 percent reduction per year of service below 20 years
Louisiana	20	75	18-19 percent reduction for every 5 years of service below 20 years
Maine ^b	10	100	10 percent reduction per year of service below 10 years
Maryland ^b	16	100	0.5208 percent reduction per month of service below 16 years
Nebraska ^c	28	100	90 percent for 20-27 years of service, 70 percent for those with 16-19 years of service, and 50 percent for those with 10-15 years of service
New Mexico	20	100	6.25 percent reduction per year of service below 20 years
North Carolina	20	100	50 percent reduction per year of service below 20 years
Ohio	30	100	5 percent reduction per year of service below 30 years
Rhode Island	28	100	The state pays 80 percent of the premium for those with at least 20 years of service and provides no subsidy for those with less than 20 years service.
South Carolina ^d	25	100 ^e	The state contributes 100 percent of employer portion of premium for retirees with 25+ years of service, 50 percent for 15-25 years, and no contribution for 5-15 years.

^aCalifornia requires that the employee retire within 120 days of termination in order to be eligible for retiree health insurance.

^bRequires that the employee retire immediately after termination in order to be eligible for retiree health insurance.

^cFor those who retire at age 65 or older. For those who retire between age 60 and 65, 100 percent of the premium is paid for 35 years of service, 90 percent for 28-34 years of service, 70 percent for 16-27 years of service, and 50 percent for 10-15 years of service.

^dThe state only subsidizes the employer portion of the health insurance premium. Retirees must always pay the full amount of the employee portion of the premium. Retirees pay a decreasing portion of the employer premium as they accumulate years of service.

Sources: Retiree Health Plans: A National Assessment (2008), and various annual reports and benefit handbooks.

Table B2b. *States That Pro-Rate Health Insurance Premium as a Dollar Amount*

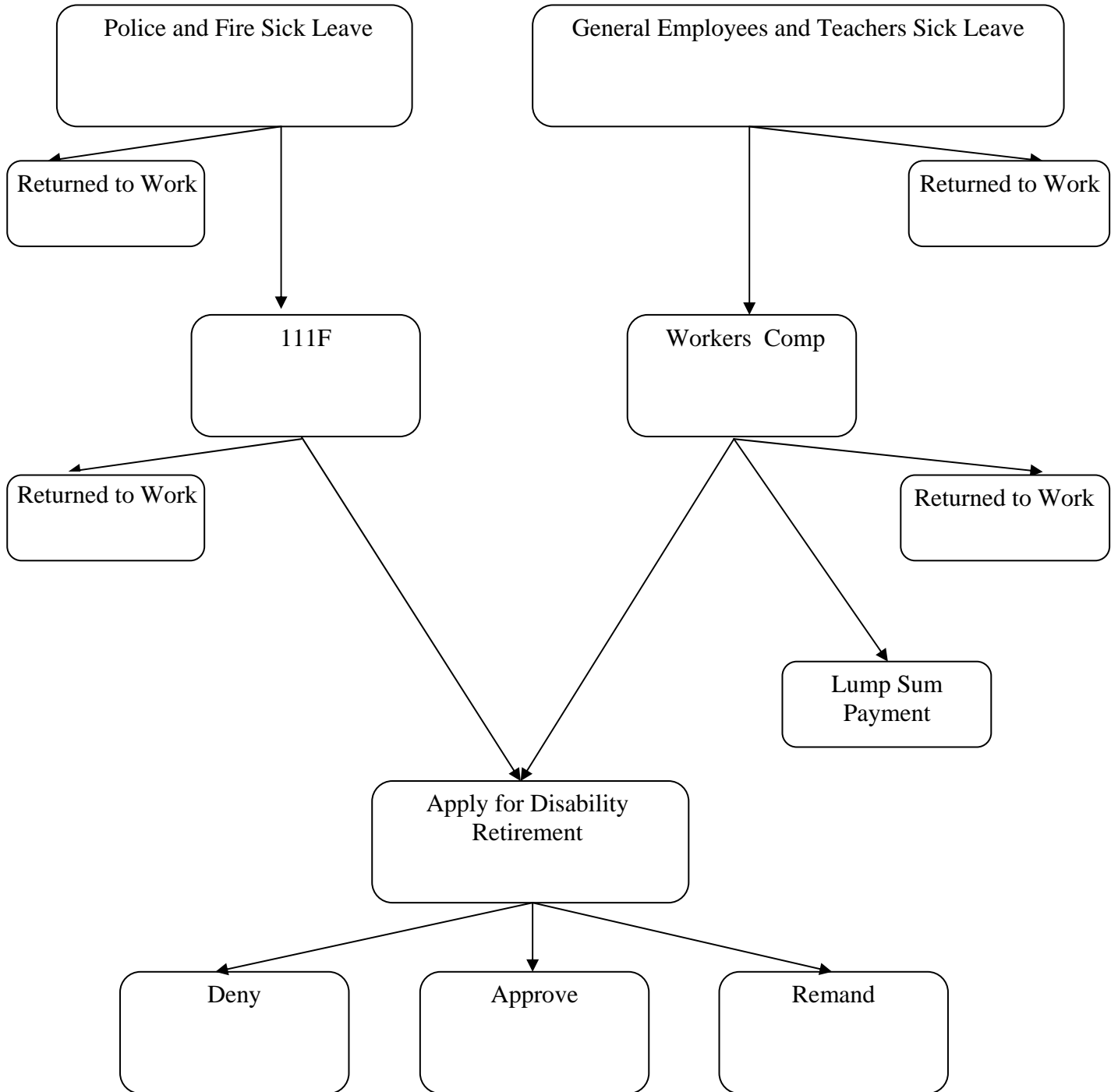
State	Maximum Subsidy		Pro-rate formula
	Years of service	Dollar amount	
Arizona ^a	10	\$150	\$15 reduction per year of service below 10 years
Colorado ^b	20	\$230	5 percent reduction per year of service below 20 years
Hawaii	25	\$445.54	25 percent reduction 15-25 years of service and 50 percent reduction for 10-15 years of service
Kentucky	N/A	N/A	\$15 (\$10) per year of service for Hazardous (Non-Hazardous)
Nevada	20	\$191 to \$477	\$27 subsidy reduction per year of service below 20 years
North Dakota	N/A	N/A	\$4.50 per year of service
Oregon	30	\$253	\$25-\$26 subsidy reduction per 5 years of service below 30 years
Tennessee	30	Retiree pays \$96 - \$102 premium	\$143-\$152 for 20-29 years of service, and \$191-\$203 for less than 20 years of service
Virginia	N/A	N/A	\$4.00 per year of service

^aFor non-Medicare-eligible retirees. For Medicare eligible retirees, a maximum subsidy of \$100 is allowed for those with at least 10 years service with a \$10 subsidy reduction per year of service below 10 years.

^bFor non-Medicare-eligible retirees. For Medicare eligible retirees, a maximum subsidy of \$115 is allowed for those with at least 20 years service with a 5 percent subsidy reduction per year of service below 20 years.

Sources: Retiree Health Plans: A National Assessment (2008), and various annual reports and benefit handbooks.

Appendix C. Process for Injured Employee, beginning with Sick Leave up until Disability Retirement



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