

# Recession and Market Decline Impacts on Public Pension Plans

June 2020



The recent drop in equity markets, accompanied by an economic recession that began in March 2020, will impact both public pension plans and their sponsoring governments. The effects of the market decline and recession will vary among pension plans and their sponsors, and will be affected largely by pension funds' future investment performance and the recession's actual effect on state and local government revenue collections.

Past similar market and economic events may provide insight regarding the possible impact recent events could have on public pensions. Since 2000, there have been two periods of an overlapping market decline and economic recession, and we are currently experiencing the third such event. In the first event, the market decline began in early 2000 and lasted until early 2002, and overlapped an economic recession that began and ended in 2001. The second instance was the market decline that began in late 2007 and lasted until mid-2009,

overlapping the so-called Great Recession that lasted from early 2008 to early 2010. Each of these market and economic events and their effects is unique, but they may provide clues as to what effect more recent developments could have on public pension plans and their sponsoring governments.

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Although investment returns and employer contributions can (and often do) have a primary effect on the funding condition and cost of a public pension plan, other factors

also can have an impact. These factors include changes to a plan's benefit structure, financing arrangement, and actuarial methods and assumptions. Over the past 20 years, all of these factors—investment returns, adequacy of employer contributions, changes to plan benefits and financing arrangements, and changes to actuarial methods and assumptions—affected public pension plans. This review will briefly address each of these factors.

## Effects on unfunded actuarial liabilities and employer contributions

Although public pension plan funding levels and costs are influenced by multiple factors, an investment market decline and an economic recession typically have a greater and more direct impact on unfunded actuarial liabilities and employer contribution efforts. Predictably, each of the overlapping market declines and economic recessions since 2000 resulted in an increase in public pension plans' unfunded actuarial liabilities and a reduction in the number of employers making their full actuarially recommended contribution.

A higher unfunded actuarial liability increases the cost of the plan, as the liability is an obligation that must be eliminated. The cost of a pension plan also rises when an employer fails to make their actuarially recommended contribution, because additional contributions are needed to make up for the foregone contributions and projected investment earnings those contributions would have generated.

The economic recession of 2001 was relatively mild in terms of the decline in revenues for states and local government, and revenues recovered to their pre-recession level by FY 2006. By contrast, the investment market decline of 2000 to 2002 was unusually long and steep: the drop lasted 31 months (long by historical standards), during which the S&P 500 declined by 49 percent. Most public pension funds experienced negative investment returns for two consecutive years and returns below their assumed level for three consecutive years. This investment experience caused pension plans' unfunded actuarial liabilities to grow steadily for several years, as the effects of the investment losses were phased into plan's actuarial value of assets.

Figure A: Change from prior year in combined public pension unfunded actuarial liabilities

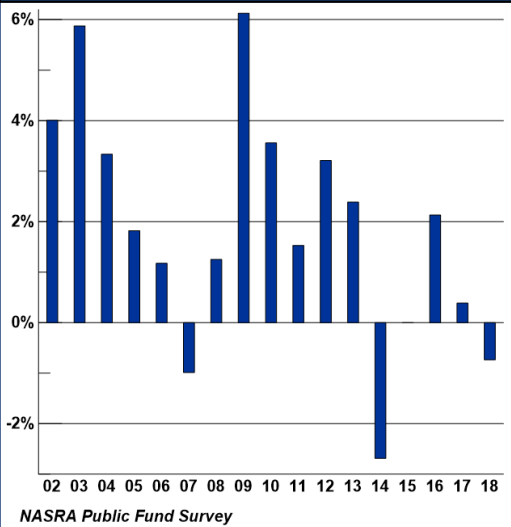


Figure A plots the change in combined public pension plan unfunded actuarial liabilities beginning in FY 02. Chiefly as a result of the investment market decline that began in 2000, unfunded liabilities began growing in FY 02. Because most public pension plans phase in, or smooth, investment gains and losses over several years, the effects of the market decline took several years to be fully realized in the form of increased unfunded liabilities.

After stabilizing briefly in FY 07, after most investment losses from the 2000-02 decline were incorporated into plans' actuarial value of assets, the sharp investment losses experienced in 2008 and 2009 caused unfunded actuarial liabilities to again grow for another several years. As with the period following the 2000-02 market decline, the increase in the combined unfunded actuarial liability resulting from the market decline lasted approximately five years, before leveling off in FY 14.

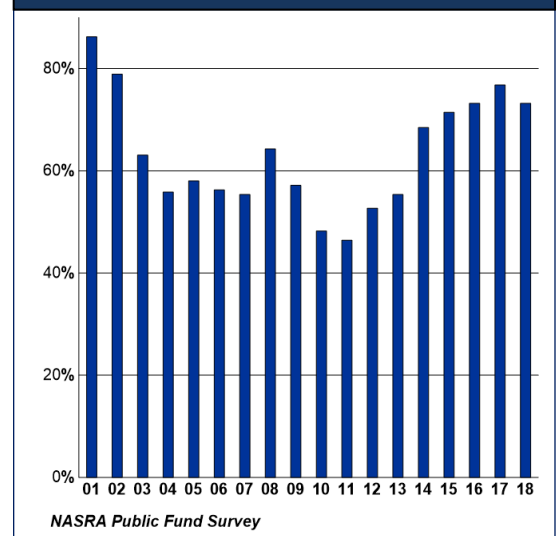
### *What to expect from public pension funds' recent investment performance*

Although global equity markets entered a bear market in late March 2020, by early June, they had recovered much of their losses. For public pension plans with a fiscal year that ends June 30 (which is a majority of plans), even though the year's returns may not reach plans' assumed levels, projected investment returns are far better compared to the prior two overlapping market and recession events. Avoiding these investment losses means public pension plans will not experience the dramatic increase in unfunded actuarial liabilities as they did following the previous market declines, and plan costs will not increase significantly due to investment losses.

Figure B plots the sharp and extended decline—from 86 percent in FY 01 to 55 percent in FY 07—in the percentage of plans receiving their full recommended contribution in the years following the last two economic recessions and market declines. After increasing in FY 08, once unfunded actuarial liabilities (and plan costs) stopped growing and state and local government revenues had recovered, the percentage of employers making their full contribution again began to drop, chiefly for two reasons: first, the 2007-09 recession reduced combined state and local government revenues by more than 10 percent. Second, the 2008-09 market decline reduced public pension fund assets by more than 20 percent. The result of the market drop and recession was higher required pension costs and lower public sector revenues. Similar to the previous market decline and recession, the percentage of plans receiving less than their full contribution remained below its prior peak for several years before beginning to recover in 2014.

Notably, Figure B also illustrates that, for years following FY 13, once investment losses were fully recognized and state and local governments recovered all or much of their revenue losses, the percentage of plans receiving their full recommended contributions increased steadily and consistently. This improved contribution experience occurred even while the required cost of pensions grew as a result of both sub-par investment returns and due to widespread use among public pension plans of more conservative actuarial assumptions and methods.

Figure B: Percentage of plans receiving their full actuarially recommended contribution<sup>1</sup>



<sup>1</sup> Includes plans receiving more than 95 percent of their actuarially recommended contribution

### *What to expect as a result of the economic recession*

Early information regarding the economic recession that began in March 2020 suggests that states and local governments will experience significant revenue declines. Depending on the degree to which these projections materialize, the ability of some states and cities to pay their full recommended actuarial contribution may be challenged, resulting in an increase in the percentage of plans that receive less than the actuarially recommended amount. Insufficient contributions increase a plan's unfunded actuarial liability and increase its cost.

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## **Other Factors Affecting Public Pension Plans**

In addition to investment returns and insufficient employer contributions, other factors that greatly affect public pensions include changes to a plan's benefit structure, its financing arrangement (i.e., how benefits are paid for), and a plan's actuarial methods and assumptions.

Public pension plans in recent years have been adjusting their actuarial methods and assumptions, which are used to value the condition and required cost of the plan. Since the Great Recession, nearly every public pension plan in the nation reduced its investment return assumption, which is the single-most consequential of all actuarial assumptions used to measure a public pension plan. A lower investment return assumption increases the plan's unfunded actuarial liability and its cost.

Many public pension plans also made other changes, such as updating their mortality assumptions, which project how long retired members will live; reducing amortization periods, i.e., the time over which unfunded liabilities are paid off; and adjusting other actuarial assumptions to ensure the plan's experience is in alignment with its expectations for future demographic and economic outcomes.

Also, many public pension plan sponsors enacted changes to plan benefit levels and financing arrangements.<sup>2</sup> In general, changes to benefit levels focused on two objectives: to reduce plan costs, and to shift a greater share of the risk of the plan from employers to employees.<sup>3</sup>

### *What to expect in terms of other changes*

Public pension plans can be expected to continue to reduce investment return assumptions and to examine their funding amortization periods. Many public pension plan sponsors may continue to consider implementing changes to pension plan designs, such as lower benefit levels, shifting more risk to employees, and increasing employees' required contributions.

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## **Conclusion**

Volatile investment markets and economic recessions can have an effect on public pension plans. The magnitude, timing, and duration of the actual effect depend on multiple factors, including the extent of the market decline and the depth of the recession. Because every public pension plan is unique, the effect of the recent period of market volatility and the recession currently underway also will be unique for each pension plan. As a result, each plan and plan sponsor will need to determine what response to these events, if any, is most appropriate.

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<sup>2</sup> NASRA, "Significant Reforms to State Retirement Systems," <http://www.nasra.org/reforms>

<sup>3</sup> NASRA, "In-Depth: Risk-Sharing in Public Retirement Plans," <http://www.nasra.org/sharedriskpaper>