

Public Fund Survey

**SUMMARY OF FINDINGS FOR FY 2015
2016**

DECEMBER

ABOUT THE PUBLIC FUND SURVEY

The Public Fund Survey is an online compendium of key characteristics of most of the nation's largest public retirement systems. The Survey is sponsored by the National Association of State Retirement Administrators.

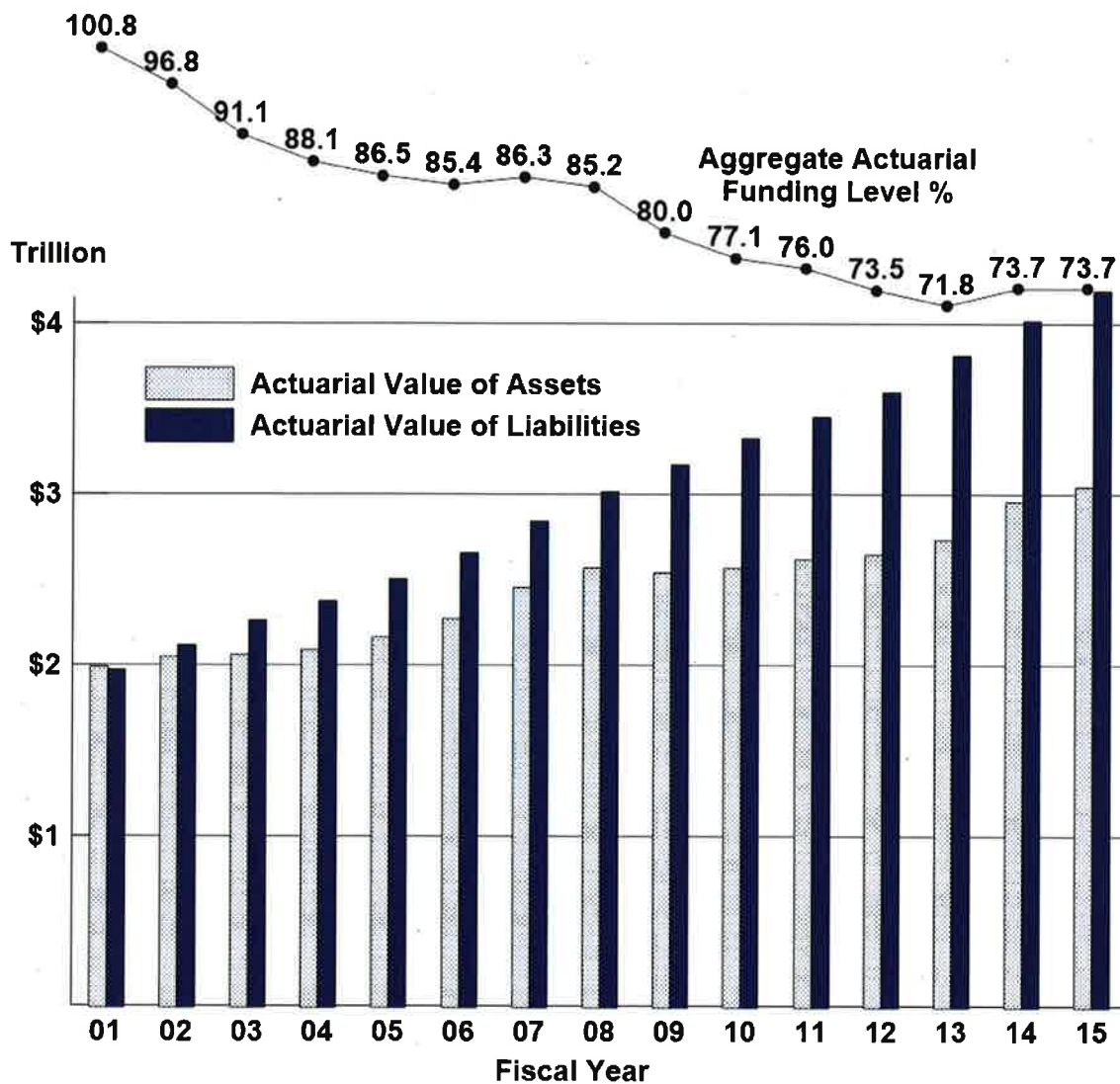
Beginning with fiscal year 2001, the Survey contains data on public retirement systems that provide pension and other benefits for 12.7 million active (working) members and 8.8 million annuitants (those receiving a regular benefit, including retirees, disability recipients and surviving beneficiaries). At the end of fiscal year 2015, systems in the Survey held assets of \$3.20 trillion. The membership and assets of systems included in the Survey comprise approximately 85 percent of the entire state and local government retirement system community. Since FY 13, survey data has been compiled primarily by the Center for Retirement Research at Boston College.

The primary source of Survey data is public retirement system annual financial reports. Data also is culled from actuarial valuations, benefits guides, system websites, and input from system representatives. This report, focusing on FY 15, uses graphs to describe changes in selected elements of the survey.

SUMMARY OF FINDINGS

Figure A plots the aggregate actuarial funding level among plans in the Survey since its inception in FY 2001. The funding level in FY 15 was 73.7 percent, unchanged from the prior year. The aggregate actuarial value of assets grew by 2.9 percent, from \$2.96 trillion to \$3.05 trillion. Liabilities grow primarily as active plan participants accrue retirement benefit service credits. Liabilities grew from \$4.02 trillion to \$4.13 trillion, or 2.8 percent. The actuarial value of assets reflects the phasing-in, or smoothing, of investment gains and losses. Most plans have completed recognition of the sharp investment losses incurred in 2008-09, losses that are being offset by asset gains since the market decline.

Figure A



The latest individual funding levels of the 124 plans in the Survey are depicted in Figure B. The size of each circle in the chart is roughly proportionate to the size of each plan's actuarial liabilities—larger bubbles reflect larger plans and smaller bubbles reflect smaller plans. The median funding level is 74.7 percent, and the range is 21.9 percent to 127.2 percent. (Subsequent to the latest reporting period, the plan with a funding level of 21.9 percent reduced its investment return assumption, which caused the funding level to decline to 17.0 percent. The funding level of this plan will be updated in the FY 16 Summary of Findings).

Figure B

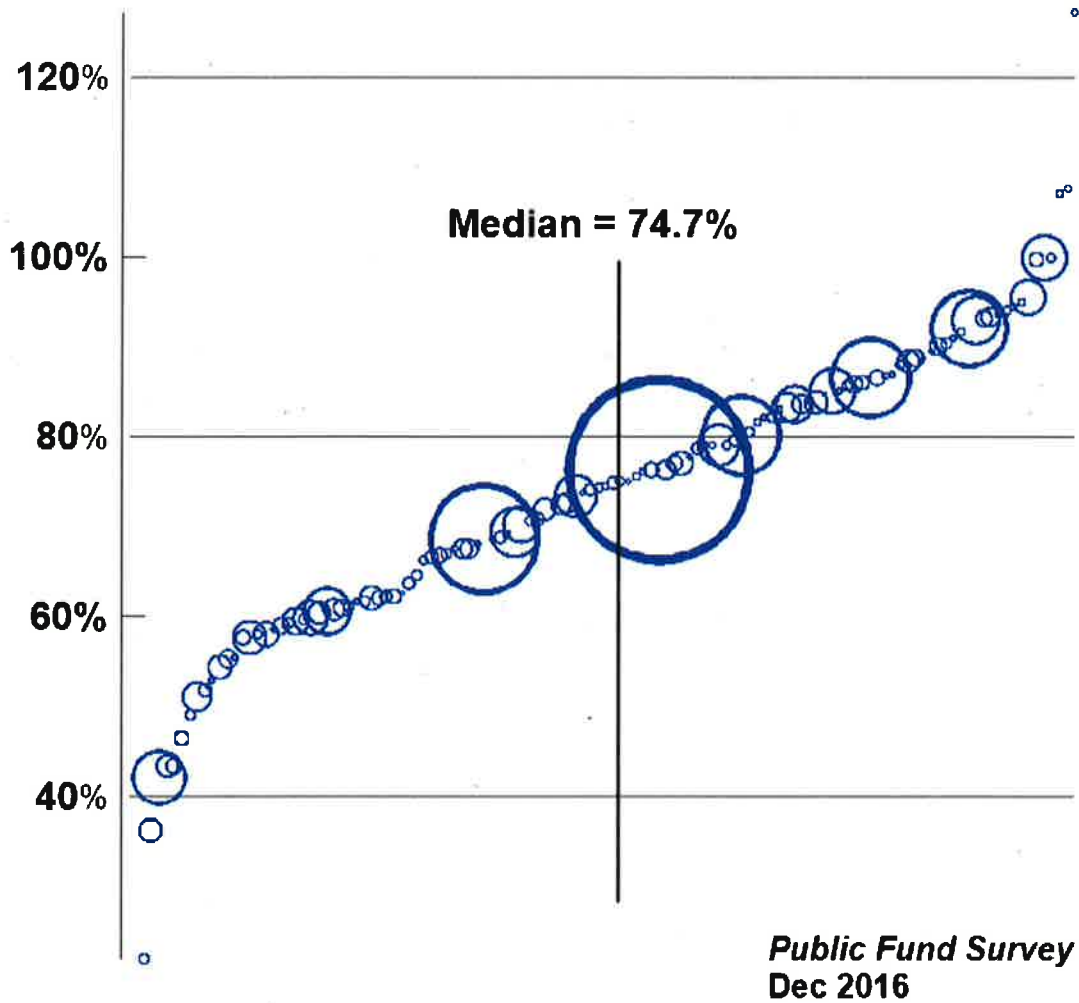
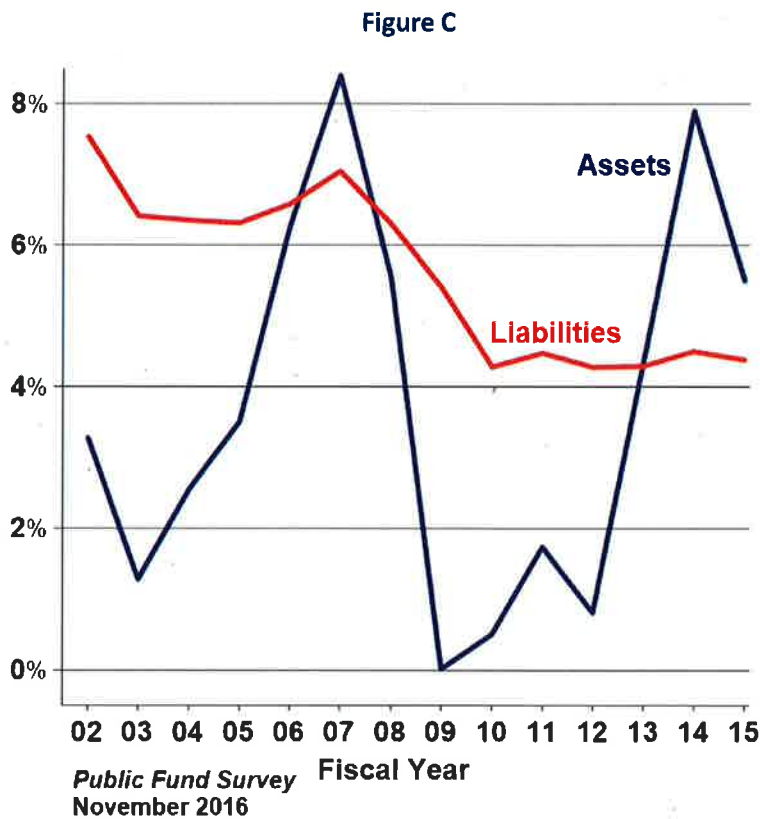


Figure C plots the median annual change among plans in the Survey in the actuarial value of assets and liabilities since FY 01. For a pension plan's funding level to improve, its actuarial value of assets must grow faster than its liabilities. For the sixth consecutive year, at a median rate at or below 4.5 percent, liability growth remains notably lower than historical rates. This lower rate of growth in liabilities is due to several factors, chiefly low salary growth, declining or stagnant employment levels among states and local governments, and the many reforms (reductions) in pension benefits enacted in recent years. Rates of liability growth would be lower were it not for many plans reducing their investment return assumptions in recent years (see Figure M), an action that increases a plan's liabilities.

The tepid asset growth from FY 09 to FY 13 reflects the phased recognition (also known as actuarial smoothing of assets) of the sharp market declines experienced in 2008 and early 2009. These losses now have been fully recognized by most plans in the survey. The stronger growth in FY 14 and FY 15 reflects continued improvement in actuarial value of asset levels as market gains since March 2009 are recognized (see Figure L).

Presenting the annual change in assets and liabilities based on median (midpoint) data, rather than aggregate (total), reduces the effects of very large plans and plans with extreme or exceptional results. This method of presentation enables readers to focus on the experience of a typical plan instead of results that could be skewed by the experience of one or a few outliers.



The Survey measures two types of retirement system members: Actives and Annuitants. Actives are those who currently are working and earning retirement service credits; most actives also make contributions toward the cost of their pension benefit. Annuitants are those who receive a regular benefit from a public retirement system; these are predominantly retired members, but also include those who receive a disability benefit, and survivors of retired members or disabilitants.

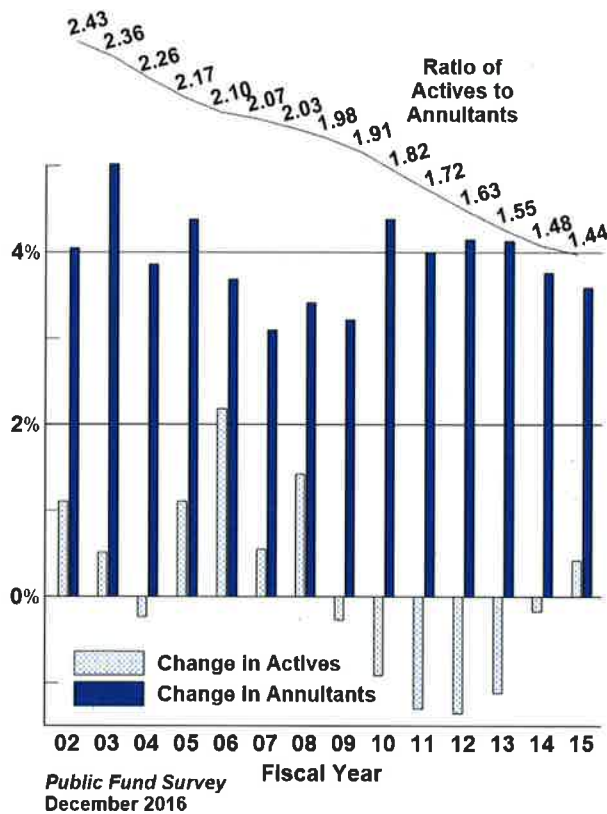
As shown in Figure D, the median rate of increase in annuitants among systems in the Survey continued a pattern of annual growth of around four percent. After six consecutive years of decline, the number of active members grew in FY 15. This pattern is consistent with US Census Bureau reports showing the a reversal of a trend of reduction in the number of persons employed by state and local government, a trend Census data shows began in August 2008, with marginal gains reported since FY 13.

The difference between the continued increase in annuitants and a declining number of active members is driving a sustained reduction in the overall ratio of actives to annuitants. In FY 15, this ratio dropped to 1.44.

A low or declining ratio of actives to annuitants is not necessarily problematic for a public pension plan, because the typical public pension funding model features accumulation, during plan participants' working years, of assets needed to fund retirement benefits.

When combined with an unfunded liability, however, a low or declining ratio of actives to annuitants can cause fiscal distress for a pension plan sponsor. An unfunded liability represents a shortfall in accumulated assets, and results in an increase to the cost of the plan above the normal cost, which is the cost of benefits earned each year. A lower ratio of actives to annuitants results in costs to amortize a plan's unfunded liability over a relatively smaller payroll base, which increases the cost of the plan as a percentage of employee payroll. Thus, although a declining active-annuitant ratio does not, by itself, pose an actuarial or financial problem, when combined with a poorly-funded plan, a low or declining ratio of actives to annuitants can result in relatively high required pension costs.

Figure D



On a market value basis, as of FY 15, systems in the Survey held a combined \$3.20 trillion in assets. Figure E, which plots the fiscal year-end value of public pension funds in the Survey, reflects the result of market volatility in recent years, including the strong asset gains since 2009.

Figure E

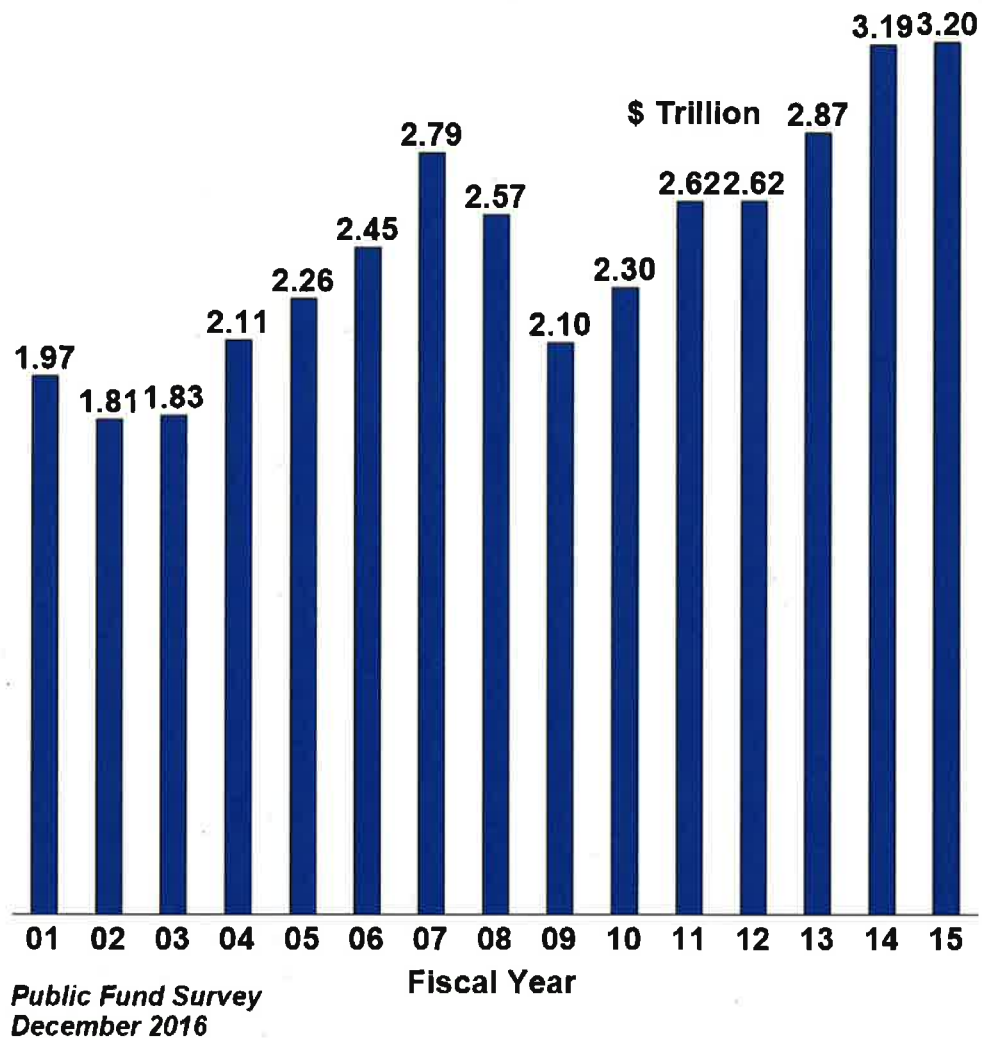


Figure F plots the combined revenues and expenditures of the systems in the Public Fund Survey. The green line reflects investment gains and losses, which vacillate as investment markets fluctuate. Blue bars indicate contributions, from employees and employers, and red bars show benefit payments. Because most plans pay out more each year in benefits than they receive in contributions, contributions are used to pay current benefits (see Figure H), and investment earnings accrue to pension trust funds. Pension trust funds are established for the sole purpose of paying benefits and funding administrative costs. The benefits paid by public retirement systems are paid from trust funds, not from state and local government operating budgets or general funds.

Growth in levels of contributions and benefits is mostly stable and predictable over time. Investment earnings, which comprise over 60 percent of public pension revenues over the past thirty years, vacillate, often appreciably, depending on market performance.

Figure F

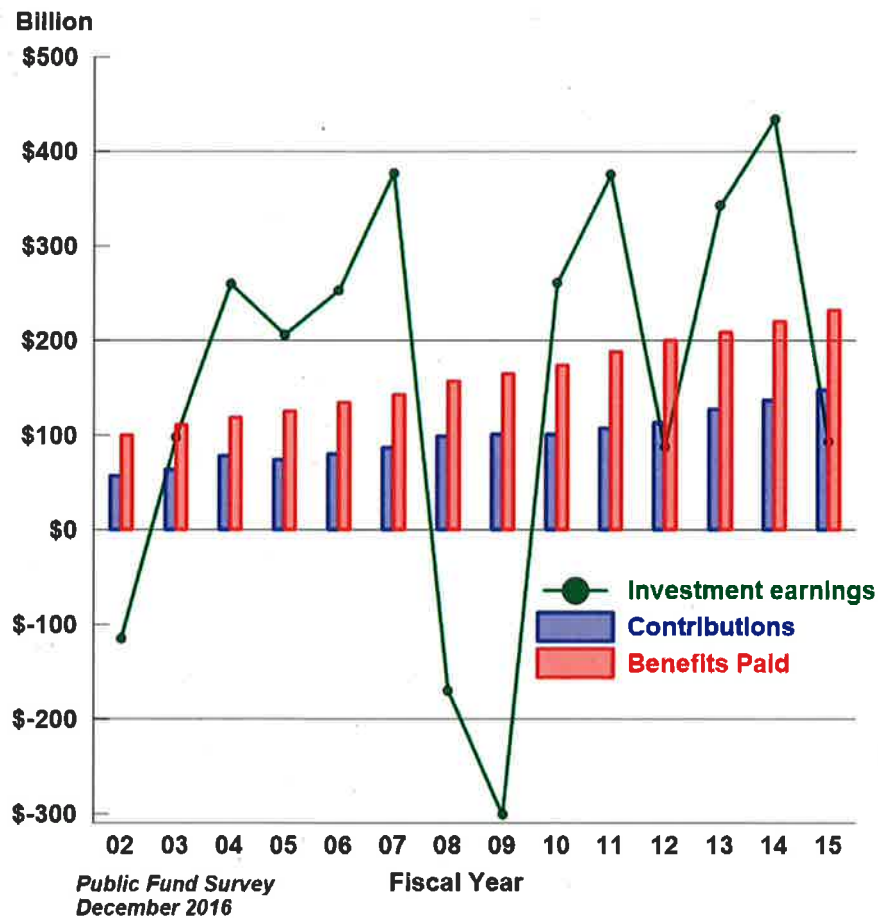


Figure G plots the distribution of annual changes in payroll from FY 02 to FY 15, among plans in the survey for which this data is available. (The chart excludes plans in the Survey that are closed to new hires. Closed plans have no new, active members joining, and the number of annuitants grows each year as active members retire).

As the chart shows, the median change in payroll was either negative or in decline from FY 09 to FY 12 (although plans' individual experience covered a wide range). Negative or declining payroll reflects one or both of two basic factors: stagnant or declining employment levels, and modest salary growth among employees of state and local government. Information provided by the U.S. Bureau of Labor Statistics indicates that annual growth in wages and salaries for employees of state and local government has remained around one percent since mid-2009. Higher wage growth beginning in FY 14, and continuing in FY 15, is consistent with BLS data indicating that wage growth for public workers has increased since FY 13.

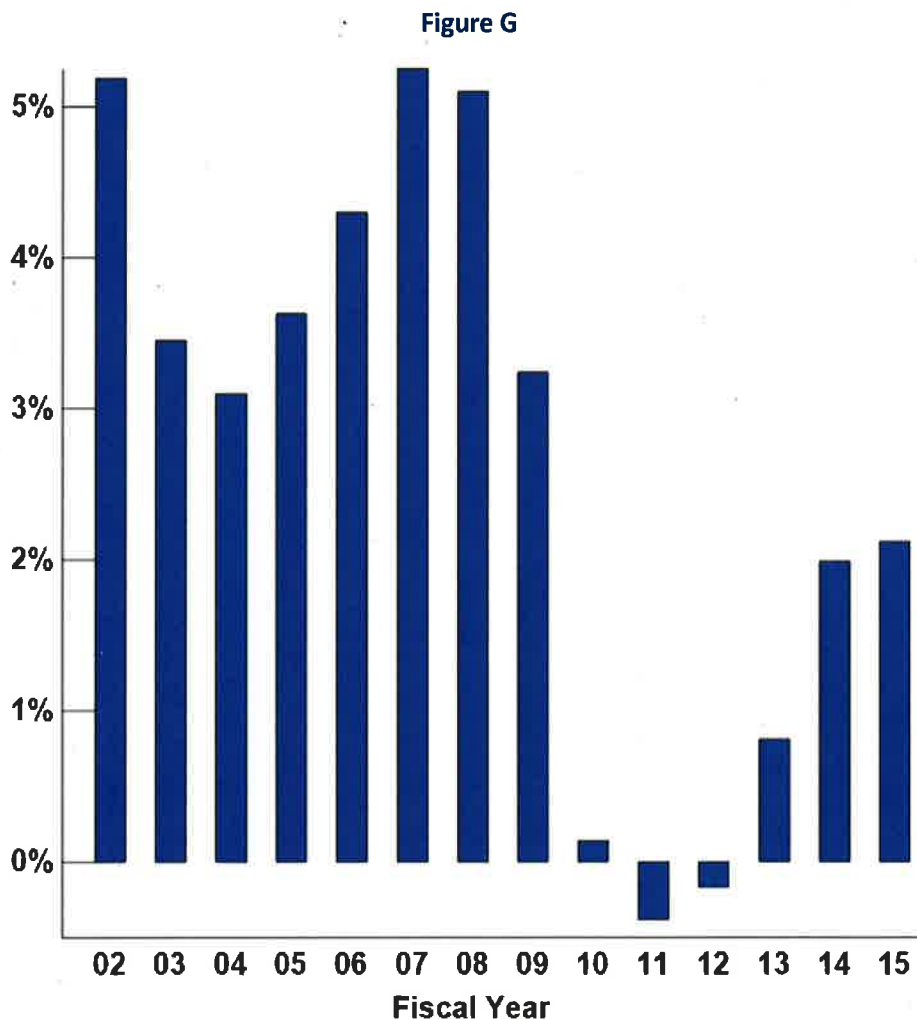


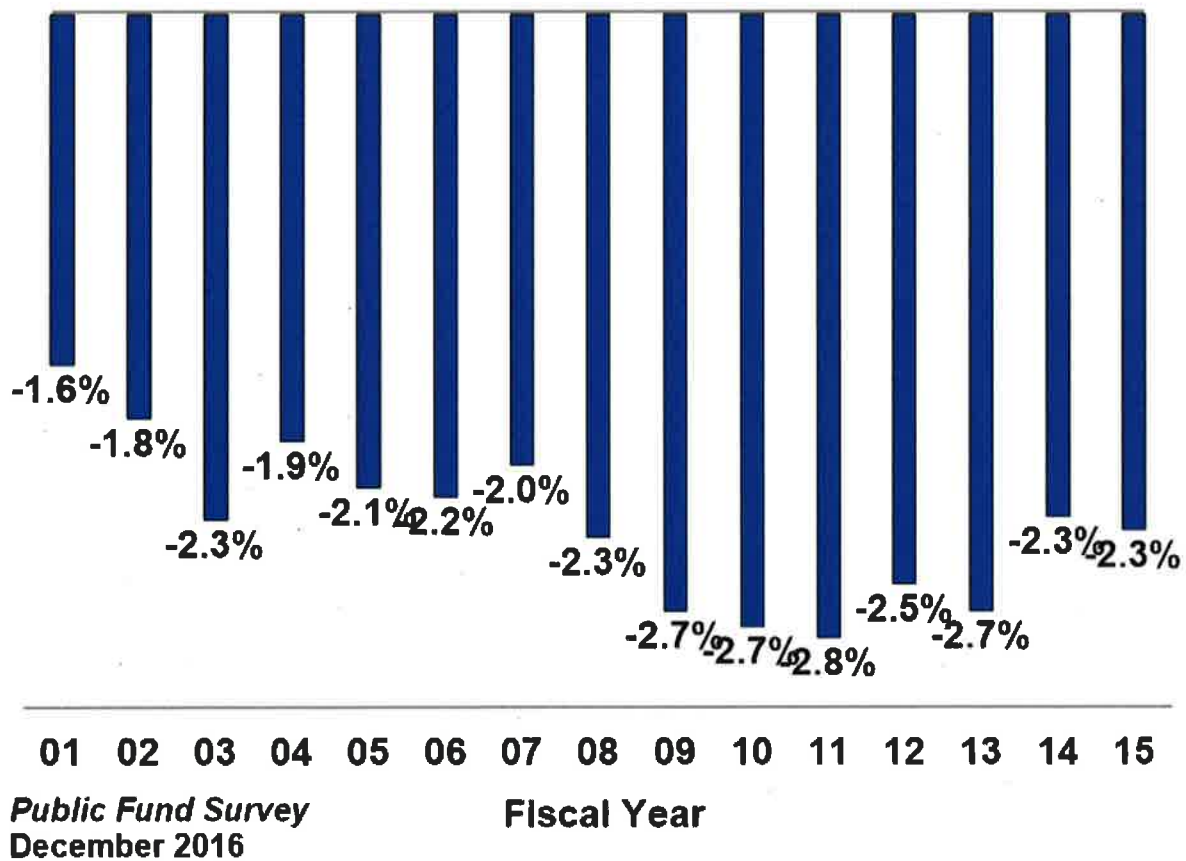
Figure H plots median external cash flow as a percentage of assets since FY 01. External cash flow is the difference between a system's revenue from contributions, and payouts for benefits and administrative expenses. Cash flow

excludes investment gains and losses. Dividing a system's cash flow into the value of the system's assets produces the measure of cash flow as a percentage of assets. A growing number of annuitants, combined with a low or negative rate of growth in active members, will result in a reduction in a retirement system's external cash flow. Conversely, a growing asset base will offset a rate of negative cash flow.

Nearly all systems in the survey have an external cash flow that is negative, meaning they pay out each year more than they collect in contributions. A negative cash flow is not, by itself, an indication of financial or actuarial distress. A lower (more negative) cash flow may require the system's assets to be managed more conservatively, with a larger allocation to more liquid assets in order to meet current benefit payroll requirements.

The median external cash flow in FY 15 is relatively unchanged from FY 14. At 2.6 percent, the aggregate external cash flow is lower than the median, which reflects the experience of some larger plans with external cash flow levels that are below the median.

Figure H



Figures I and J reflect changes in median employee and employer contribution rates. Figure I includes active members who also participate in Social Security; Figure J includes those participants who do not participate in Social Security. These contribution rates apply to general employees and public school teachers; the rates do not reflect those for public safety workers and other narrow employee groups, such as legislators, judges, etc.

Approximately 30 percent of employees of state and local government do not participate in Social Security, including approximately 40 percent of all public school teachers, and most to substantially all state and local government workers in Alaska, Colorado, Louisiana, Maine, Massachusetts, Nevada, and Ohio.

Nearly every state has made changes to its pension plan(s) since 2009; the most common change has been an increase in required employee contribution rates. This trend is reflected in Figure I, which shows the median employee rate for employees with Social Security increasing to 6.0 percent in FY 14, and the median employee rate for employees without Social Security increasing to 8.1 percent in FY 15, after long periods at 5.0 and 8.0 percent, respectively. Contribution rates among both sets of employers—in and out of Social Security—have increased considerably since inception of the survey. FY 02 was at or near the all-time low point for employer contribution rates, following the strong investment gains experienced in the 1980s and 1990s.

Figure I

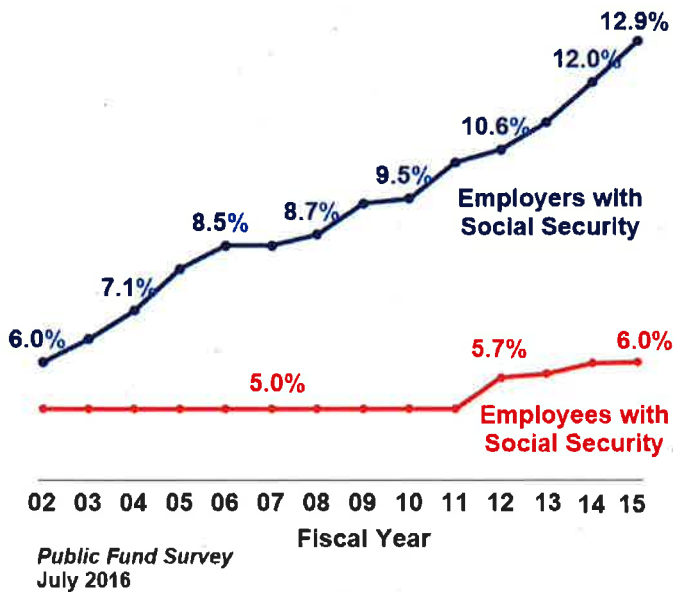


Figure J

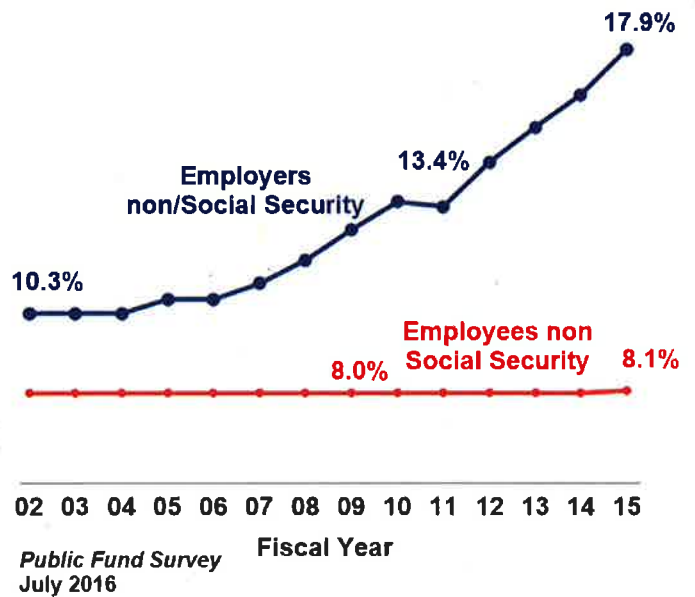
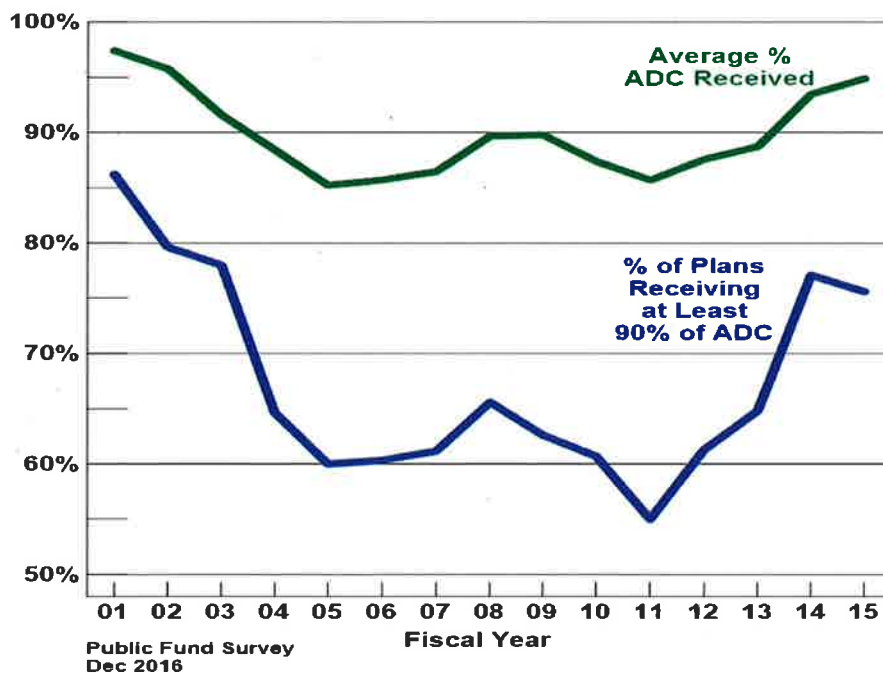


Figure K illustrates the changes over time in two measures pertaining to required pension contributions. Governmental Accounting Standards Board Statements 25 and 27 defined the Annual Required Contribution (ARC) and prescribed its reporting by public pension plans and their sponsoring employers. Effective in FY 2014, public pension plans no longer are required by GASB to calculate and report an ARC. New GASB statements (67 and 68) require that, when an "actuarially determined contribution," or ADC, is calculated, information about the ADC should be presented in the financial report of the retirement system and its sponsoring employer(s) (except in cases of agent plans). Per the new statements, an ADC is "a target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted."

Figure K shows the average ARC/ADC received by all plans in the Survey; and the percentage of plans that received at least 90 percent of their ARC/ADC. The investment market losses of 2008-09 increased public pensions' unfunded liabilities, resulting in higher costs to amortize those liabilities. Meanwhile, the Great Recession decimated state and local government revenues, impairing, at least temporarily, employers' ability to pay the higher costs.

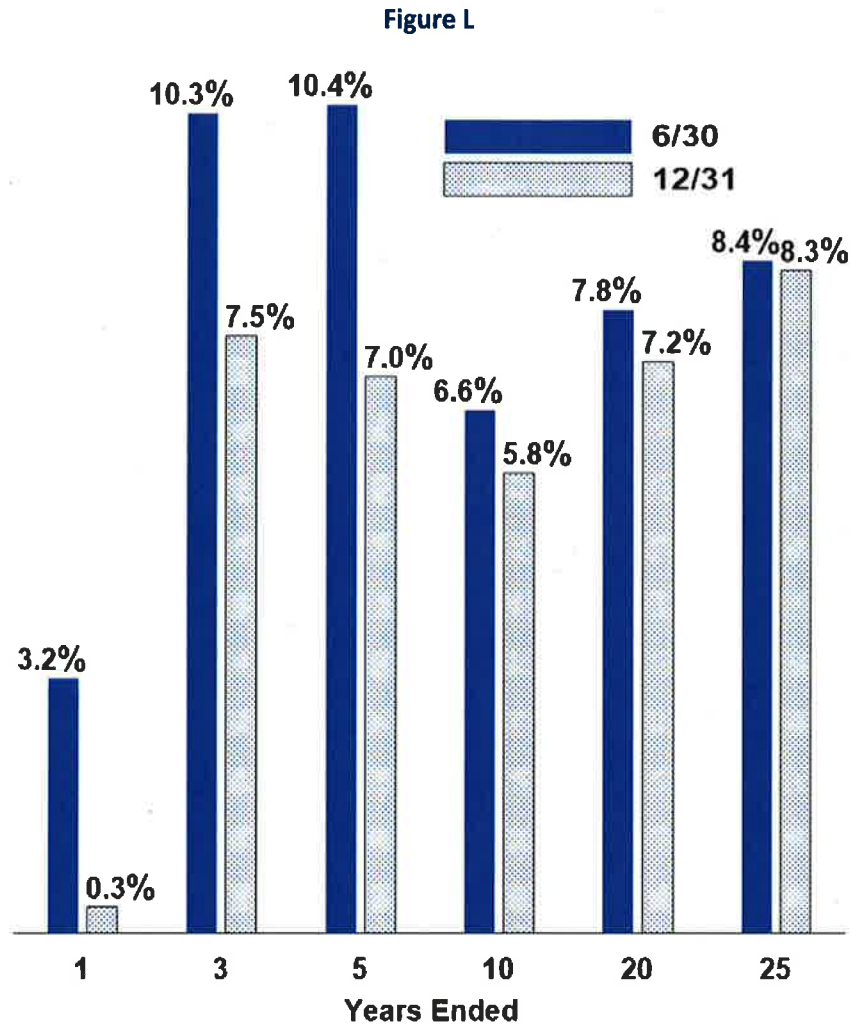
Moreover, implementing higher contributions, both from employees and employers, takes time. The effect of factors that change contribution rates, such as investment losses, must first be measured through an actuarial valuation; then, in the case of most statewide plans, a legislature or other governing body must approve new rates. This cycle, from actuarial event to approval and implementation of higher contribution rates, can take several years. Figure K indicates that efforts to fund public pensions are improving after a period of declining ARC/ADC effort during and after the Great Recession. The average ARC/ADC received in FY 15 was approximately 95 percent, and over 75 percent of plans received more than 90 percent of their ARC/ADC, representing a continued restoration of funding discipline beginning in FY 12.

Figure K



As shown in Figure L, the median investment return for plans with a FY-end date of June 30, 2015 (the FY-end date used by approximately three-fourths of the funds in the survey), was 3.2 percent; the return for plans whose fiscal year-end coincides with the calendar year (used by most other plans) was 0.3 percent.

Returns for many of the periods shown have dropped below the assumed investment returns used by most public pension plans, a result largely of sub-par returns over the 10-year period ended 6/30/15 and 12/31/15, and the dropping off of relatively strong returns at the beginning of the measurement periods. Returns for the 25-year periods ended in FY 15 remain above plans' long-term return assumption.



Of all actuarial assumptions, a public pension plan's investment return assumption has the greatest effect on the projected long-term cost of the plan. This is because over time, a majority of revenues of a typical public pension fund come from investment earnings. Even a small change in a plan's investment return assumption can impose a disproportionate impact on a plan's funding level and cost.

For most of the Public Fund Survey's measurement period, the median investment return assumption used by public

pension plans was 8.0 percent. Since 2009, a majority of plans have reduced their assumed investment return, resulting in a reduction to the median return assumption to 7.5 percent. Figure M compares the distribution of investment return assumptions for each fiscal year since the inception of the Survey through FY 15. This chart illustrates the steady reduction in assumed rates of return, particularly since 2009.

Figure M

Change in Distribution of Public Pension Investment Return Assumptions, FY 01 to FY15

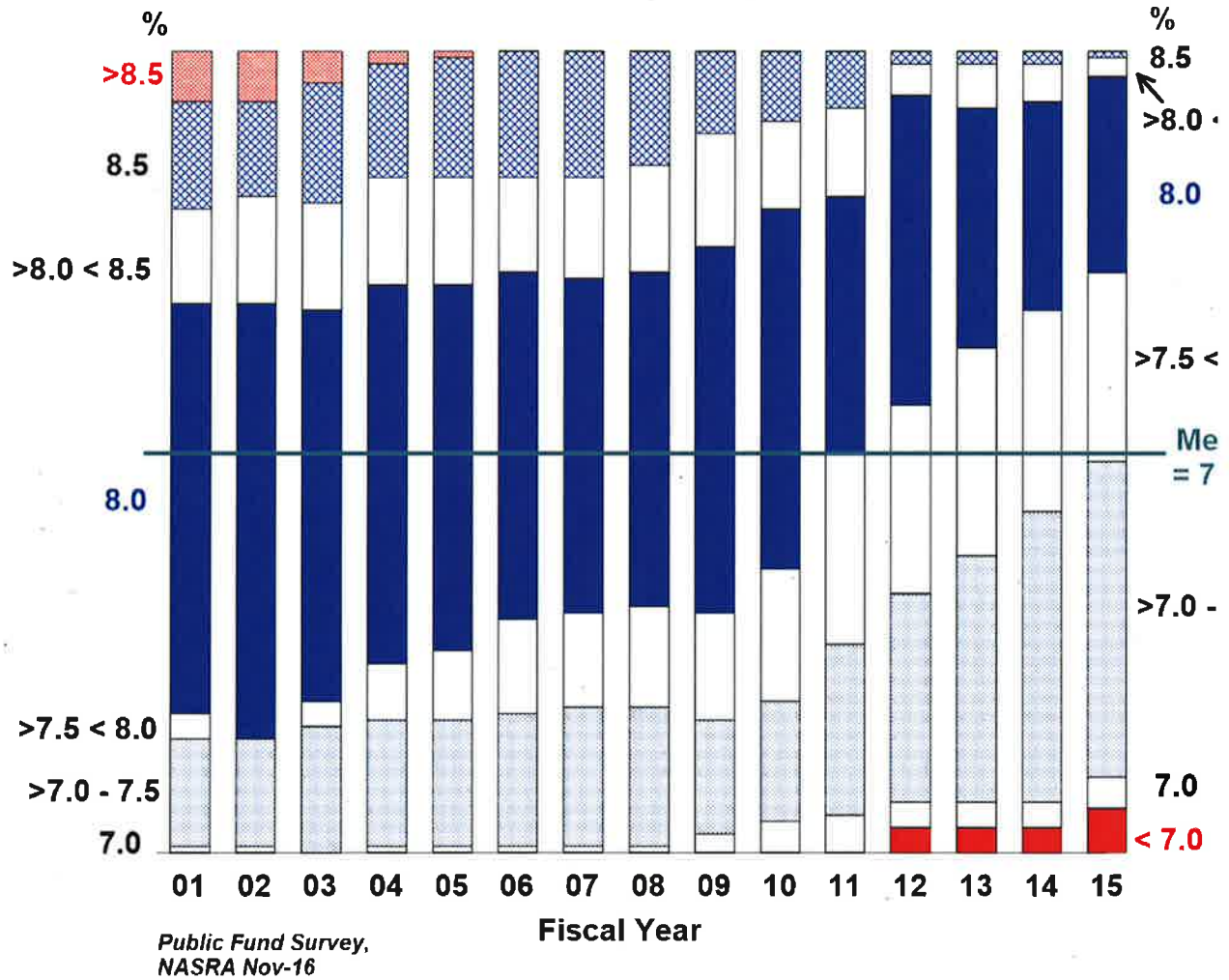


Figure N plots the average asset allocation of 96 funds in the Public Fund Survey since its inception. The average allocation to equities remains approximately 50 percent, while Fixed Income remains just below 23 percent, its lowest allocation ever. Real Estate remains approximately 6 percent, while allocations to Alternatives, which is composed primarily of private equity and hedge funds, increased to nearly 18 percent.

Figure N

