Connecticut's Municipal Employee Retirement System

Policy Briefing - April 5, 2019

Introduction

As a supplement to the Connecticut School Finance Project's January 2018 report, *Factors Contributing to Health of State Employee Pension Funds*, this policy briefing analyzes the health of Connecticut's Municipal Employee Retirement System (MERS), examines the factors contributing to the system's relatively healthy current funding level, and discusses the features of the system that differentiate it from other public pension systems, such as Connecticut's State Employees Retirement System (SERS).

As with all public pension systems, there are a number of factors that can contribute to the health of the system, which are discussed in detail in *Factors Contributing to Health of State Employee Pension Funds*. In summary, the primary factors that contribute to pension health are:

- Whether adequate contributions are made, historically and currently, to avoid increasing a system's Unfunded Accrued Actuarial Liability (UAAL);
- Whether assumed rates of return are set at a level that accurately reflects actual market performance and inflation;
- The type of amortization table;
- Whether cost-of-living adjustments (COLAs) and early retirement incentive programs (ERIPs) have been made while properly accounting for the increased cost of benefits; and
- Whether contractual agreements to reduce contributions, or to increase benefits, have been balanced through increased contributions.

This policy briefing discusses to what extent the aforementioned factors have influenced the health of the MERS, in addition to the features that distinguish the pension system from other state-managed pension plans.

Municipal Participation in, and Separation from, the MERS

The MERS is a pension plan managed by the State of Connecticut, under the oversight of the Connecticut State Employees Retirement Commission, the assets of which are invested by the state treasurer. Municipalities[1] may elect to include a number of different types of municipal employees, including board of education employees that are not covered under Connecticut's Teachers' Retirement System, other municipal employees, and police and fire personnel.[1] Municipalities may choose to join the MERS through a resolution adopted by the municipality's legislative body accepting participation, or through a collective bargaining agreement[2] with an employee organization that has been designated the exclusive representative of employees in an appropriate unit.[3] Each method of electing to participate is subject to approval by the Connecticut State Employees Retirement Commission and is contingent on an

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[1] Certain other special purpose governments, such as departments of housing, water authorities, and public health districts are also eligible to participate in the MERS.
Conn. Gen. Statutes ch. 113, § 7-425.

assessment of the actuarial valuation of the assets and unfunded liabilities the municipality brings with it when entering the MERS.[4] The Connecticut State Employees Retirement Commission then furnishes to the municipality an estimate of the probable cost to the municipality to join the system.[5] As is discussed in the section below on contributions, the unfunded liabilities a municipality has when entering the system impacts its total annual contribution to the MERS,[6] leading to variations in effective contribution rates between municipalities.[7]

Municipalities may exit the MERS on the condition the withdrawal from the system does not relieve the municipality from liabilities arising from retirement benefits already granted or that are currently vested to each department's members.[8] This means vested employees must receive a benefit of equal or greater value from the municipality if the municipality withdraws from the MERS. It does not mean that vested employees are required to remain in the system. However, there has yet to be an instance where a municipality has withdrawn from the system and removed previously vested employees, because it is unlikely the cost of providing the same pension benefit to vested employees in an independent retirement system, including the required payment for future liabilities, would be lower than the cost of that benefit in the MERS.[9]

If a municipality exits the MERS, it will receive the balance of its assets, after the actuarial value of all current and future payments for employees already vested in the system.[10] Employees not vested would receive a refund of their contributions, plus interest. This calculation could result in the municipality being owed a refund from the MERS, or the municipality owing additional funds to the MERS to cover liabilities. The municipality is responsible for actuarial fees incurred to make the calculation of liabilities.[11]

Below is the procedure to exit the MERS as outlined by the state comptroller's office.

1. The municipality provides the MERS with a list of the employees in the department it is intending to withdraw from the system.
2. The Connecticut State Employees Retirement Commission, through the MERS, will provide the municipality an estimate of the probable cost of its withdrawal. Any deficit must be paid in full by the municipality before formal acceptance of withdrawal.
3. The municipal legislative body must pass a resolution stating its intent to leave the system. This resolution must contain language acknowledging employees who are withdrawn are being offered a retirement plan of equal value.
4. The municipality must provide a certified copy of the resolution to the Connecticut State Employees Retirement Commission formally seeking a withdrawal from the MERS. The Commission has 90 days to approve the withdrawal.
5. Refunds on behalf of non-vested employees are made to the municipality on behalf of the employee between 2-4 months of the date of the withdrawal.[12]

The Connecticut State Employees Retirement Commission maintains a municipality must adhere to these steps, even when withdrawing only future employees from the system, and issued a declaratory ruling when the Town of Thompson withdrew future employees from the MERS and placed them in a defined contribution plan after a binding arbitration agreement with the local collective bargaining unit determined the action was acceptable. In the ruling, the Commission concluded there was no statutory authority for the Town of Thompson to select to withdraw certain employees in a given department from the MERS, without following the exit procedures listed above. The Commission highlighted that the MERS is a cost-sharing plan to stabilize risks, and early exits from the system, without paying actuarially determined future liabilities incurred through the removal of active employees from the system, can increase the volatility of future funding levels and as well as the overall UAAL of the system through the loss of contributions and investment income on those contributions.[13] The Town of Thompson disputes this conclusion and litigation regarding the case is pending.[14]

Benefits Structure of the MERS

The MERS is divided into four benefit plans: General Employees with Social Security, General Employees without Social Security, Police Officers and Firefighters with Social Security, and Police Officers and Firefighters without Social Security. Each of the sub-plans have different employee contribution rates and benefit structures, and therefore are valued independently, which leads to different employer contribution rates for each segment.[15] Municipalities have the authority to designate which town departments are entered into the MERS, and the decision about which may be made through a collective bargaining process. However, membership is mandatory for those employees the municipality elects to enter into the system.[16]

Normal retirement benefits are determined based on the average of the three highest paid years of service (called final average pay (FAP)); the member’s service credit, which is the total amount of all qualified periods of work before retirement; and a benefit multiplier. FAP includes annual salary or wages, overtime compensation, temporary workers’ compensation payments, and the value of any food, lodging, fuel, or laundry provided by the employer. FAP excludes fees or allowances for expenses, and any lump sum payments for accrued sick or vacation time.[17]

For members eligible for Social Security, the benefit multiplier is 1.5 percent of the member’s average final compensation, multiplied by their years of service, up to a breakpoint ($69,200 in 2014), at which point a multiplier of two percent is applied to additional wages. For members who are not eligible for Social Security, the multiplier of two percent is applied to the entire average final compensation. This benefit amount is provided to the employee as a monthly annuity.[18] The higher multiplier for members who are ineligible for Social Security is intended to account for the lack of another source of retirement income.[19]

An example benefit calculation is as follows:

Final Average Pay (FAP) x Benefit Multiplier x Years of Service
$50,000 x 2% x 25 = $25,000 annual benefit

In 2016, the average MERS monthly benefit was $1,709, or $20,508 per year. In the same year, the average annual benefit for retirees, members collecting service-connected disability benefits, and survivors and beneficiaries in the General Employees with Social Security plan, was approximately $15,117. The same group of recipients received: an average annual benefit of approximately $20,835 in the General Employees without Social Security plan; an average annual benefit of approximately $37,032 in the Police Officers and Firefighters with Social Security plan; and an average annual benefit of approximately $47,771 in the Police Officers and Firefighters without Social Security plan.[20]

Members may elect to reduce their monthly allowance, to a maximum reduction of 50 percent, in order to benefit survivors and beneficiaries after the member's death,[21] and these options may create discrepancies between monthly and annual benefit amounts among members within plans. While many state-managed retirement plans do not obviously distinguish between employee types, for those plans explicitly for police and fire employees, the national average annual benefit was approximately $45,000 per year, making the MERS annual benefit for these employee types within the average range.[22] It is more difficult to ascertain the average benefit for municipal workers who are not teachers, police officers, or firefighters because many pension plans labeled as "municipal" do not distinguish between employee types.

Cost-of-Living Adjustments, Early Retirement Incentive Programs, and Other Postemployment Benefits

COLA benefits for the MERS are set by the General Assembly and codified in state statute.[23] Each member of the MERS is eligible for a COLA that is annually compounded. COLAs vary depending on the age of the member and the member's retirement date. Members who retired before 2002 are eligible for an annual 3.25 percent COLA if they are 65 years of age and older, and 2.50 percent increase if they are under 65 years of age. All members who retired in 2002 or after are eligible for annual COLAs of 2.50 percent.[24]

The MERS does not apply ad-hoc ERIPs, however, any MERS member may take prorated early retirement benefits after five years of continuous service, regardless of age.[25] The MERS does not provide medical, life, or dental insurance to retirees.[26]

Recent Efforts to Reform the MERS Benefit Structure

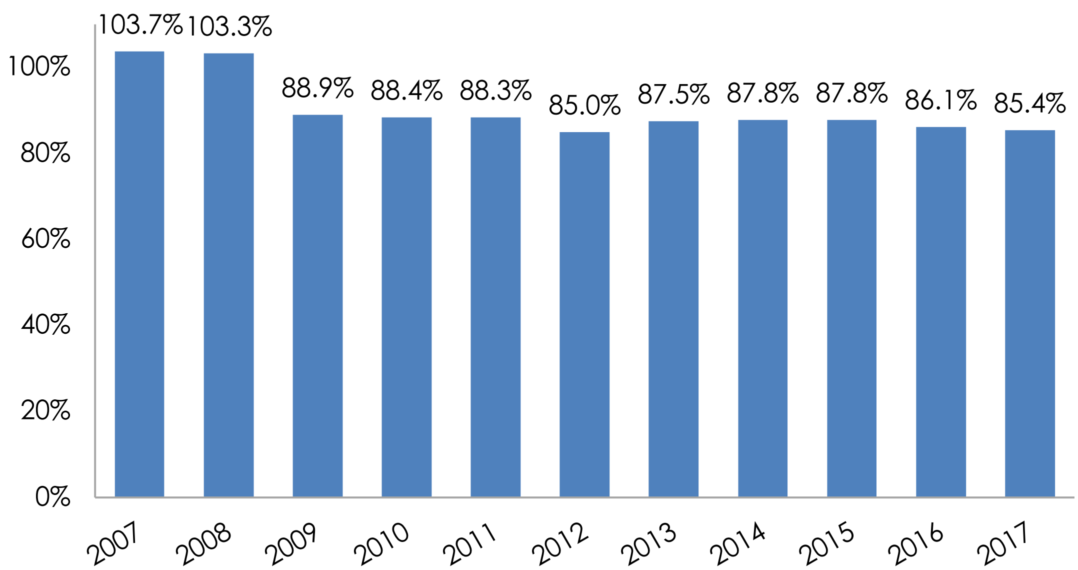
The Connecticut Conference of Municipalities (CCM), an advocacy and technical assistance organization representing cities and towns in Connecticut, has advocated for certain changes to the MERS benefits structure. The organization notes that MERS' benefits have not been updated for a period of decades and has pushed for the State to implement a new benefits tier for prospective employees. CCM recommends basing this new tier on Tier III of the SERS. One of the primary focuses of CCM is to allow municipalities to require increased employee contributions to the MERS,[27] but if a new benefits tier were created, it would likely include additional changes to the benefits structure.

Analysis of Factors Contributing to the Health of the MERS

In fiscal year 2016, the year of the last available biennial actuarial valuation, the MERS had a funded ratio of 86.1 percent.[28] The funded ratio has decreased slightly, from 87.8 percent in 2014,[29] and is expected to decline to 85.4 percent for FY 2017.[30] It is optimal for all pension systems to become 100 percent funded, meaning the system holds enough funds to cover both its normal costs and future obligations.[31] However, systems with funded ratios over 80 percent are generally considered healthy.[32] Since 2014, the funded ratio for the MERS has been slightly above the national average for plans of similar type and Social Security coverage, when weighted by size.[33]

Figure 1[34]

MERS' Funded Ratios Since FY 2007



However, a recent experience investigation makes recommendations to change some of the actuarial assumptions currently being used in the valuation for the MERS. If all the recommended changes were adopted, one of the results would be a reduction in the funded ratio for the MERS to 74.7 percent as of June 30, 2016.[35]

Actuarial Method of Valuation

The MERS uses an actuarial funding method called the Early Age Normal (EAN) valuation method,[2] where the normal contribution rate is calculated for each employee as a percent of payroll that would be sufficient to fully fund the member's future retirement benefits. Normal contribution calculations are intended to remain level over the employee's working life. Under EAN, normal contribution rates are inclusive of both the employer and employee contributions.[36] Additionally, EAN requires separate treatment of actuarial gains and losses, which are amortized on a 30-year, level-dollar basis. As noted in the annual actuarial valuation, under EAN, changes in UAAL (and therefore the associated employer contribution) are highly dependent on investment gains or losses. Therefore, the actuarial methodology for the MERS uses a smoothed asset valuation, which is intended to reduce volatility in contribution rates.[37]

Contributions

Municipalities are responsible for the entire employer contribution to the MERS, meaning that although the Connecticut State Employees Retirement Commission oversees the plan,[38] and the state treasurer is responsible for managing its assets,[39] the State of Connecticut does not make contributions to the MERS. The funding objective of the actuarial methodology is to maintain contribution rates that are stable as a percent of payroll.[40] In 2017, the total Actuarially Determined Employer Contribution (ADEC) rates were 12.15 percent for General Employees without Social Security, 16.93 percent for Police Officers and Firefighters without Social Security, 11.74 percent for General Employees with Social Security, and 17.12 percent for Police Officers and Firefighters with Social Security.[41]

However, because a municipality's contribution is actually made up of three parts: a normal cost contribution, an amortization payment for the net UAAL, and a prior service amortization payment for legacy costs the municipality brings into the system, the actual contributions made to the system vary considerably.[42] The employer contribution rates only include the normal cost and UAAL portions of the municipal contributions, the prior service payments are calculated and amortized separately. The majority of towns' employee groups do not currently have a legacy cost payment, but those that do range from $88 for Ansonia Housing Authority employees to $57.1 million for members of the Bridgeport Police Department.

Employees make an annual contribution to the MERS of five percent of their compensation, if ineligible for Social Security. Employees eligible for Social Security contribute 2.25 percent of compensation up to the Social Security taxable wage base, and five percent of compensation over that base.[43]

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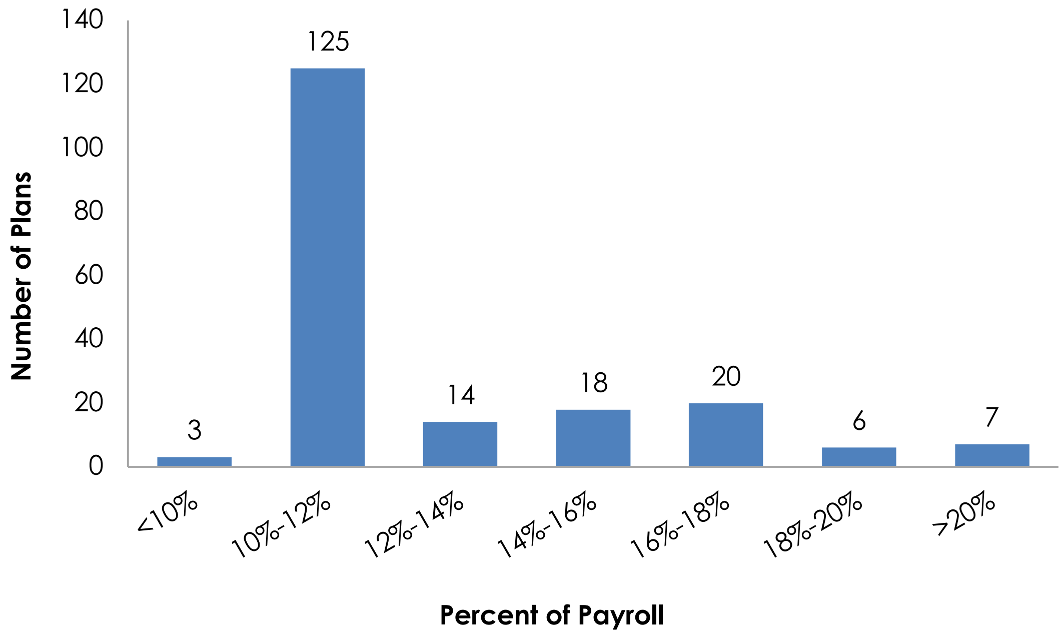
[2] The Governmental Accounting Standards Board (GASB) Statements 74 and 75 require the individual entry age cost method, rather than a unit credit normal cost percentage of pay valuation wherein the normal cost for each employee increases dramatically as the member approaches retirement, be used in reporting valuations for public pension plans beginning in FY 2017.
Caparoso, M. (2016). GASB 74/75: Calculation specifics on individual entry age normal. *PERiScope*. Minneapolis, MN: Milliman, Inc. Retrieved from http://us.milliman.com/uploadedFiles/insight/Periodicals/peri/pdfs/GASB-7475-Calculation-specifics-individual%20entry-age-normal.pdf.

Figure 2[44]

Distribution of Actual Employer Contributions, Including Legacy Cost Payments



Investment Assumptions

Assumed rates of return are intended to align with the long-term investment experience of a pension system, understanding that in some years returns may be higher than in others. The MERS currently uses an assumed rate of return of eight percent.[45,3]

However, in the *Experience Investigation for the Five-Year Period Ending June 30, 2017*, which was performed by Cavanaugh Macdonald Consulting, LLC and released in September 2018, the plan's actuaries recommend lowering the assumed rate of return to seven percent, which includes a decrease of the inflation rate from three percent to 2.5 percent, and a decrease in the anticipated annual investment return to 4.5 percent. The actuaries note the expected investment rate of return of 4.5 percent is similar to projected long-term investment return assumptions recommended by the state treasurer's investment consultant, Meketa Investment Group. The experience study also recommended reducing wage growth from 3.5 percent to three percent to reflect actual trends in salary increases, as well as a number of updated demographic assumptions, including updated mortality tables, which indicate longer retirement durations.[46]

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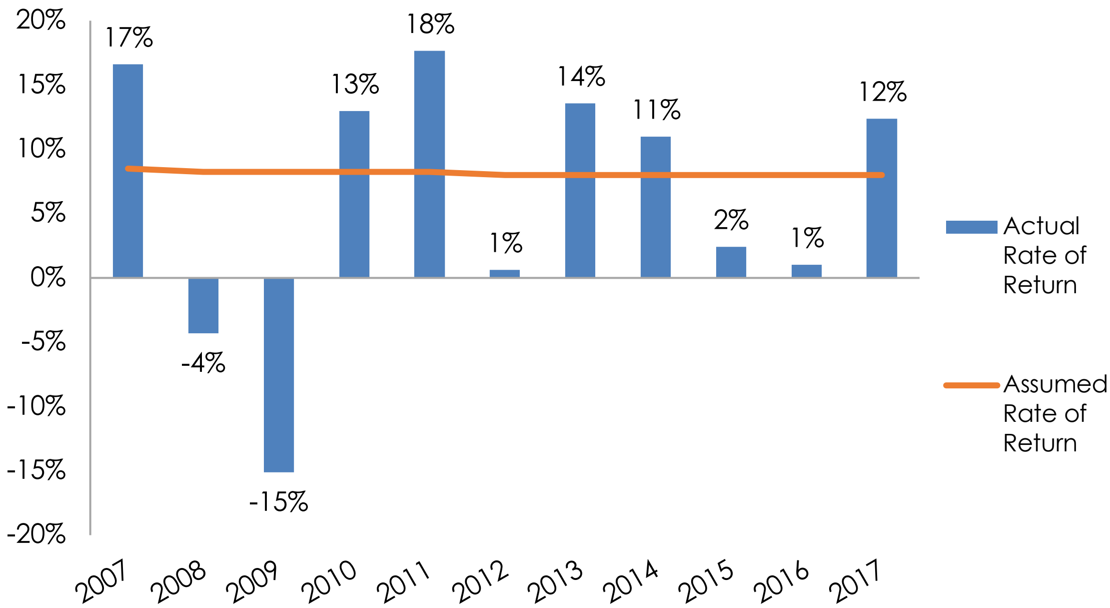
[3] The assumed rate of return reflects both the anticipated annual investment return and the annualized, projected rate of inflation. The sum of these two percentages equals the discount rate for the plan. Garrett, J.J., & Koebel, E.J. (2018). *Connecticut Municipal Employees' Retirement System: Experience Investigation for the Five-Year Period Ending June 30, 2017.* Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/reports/11142018%20CMERS%20Experience%20Investigation%20Report%202017.pdf.

Figure 3[47]

MERS Assumed Rates of Return vs. Investment Rates of Return



If all the demographic and economic assumptions are updated to reflect the recommendations of the actuary, the funded ratio for the MERS is projected to decrease to 74.7 percent, and actuarially determined contribution rates would increase an average of approximately 8 percentage points. See table below for details.

Figure 4[48]

Projected Impact of Recommended Changes to the MERS Actuarial Assumptions

	June 30, 2016 Valuation	W/ Changes to Demographic Assumptions Only	W/ Changes to Demographic and Economic Assumptions
UAAL	$394,841,000	$460,011,000	$826,241,000
Discount Rate	8.00%	8.00%	7.00%
Amortization Period	23 years	23 years	23 years
Funding Ratio	86.1%	84.2%	74.7%
ADEC General with SS	11.74%	12.22%	18.31%
ADEC General without SS	12.15%	12.93%	22.13%
ADEC Police & Fire with SS	17.13%	16.09%	24.32%
ADEC Police & Fire without SS	16.93%	15.42%	25.44%

Endnotes

[1] Conn. Gen. Statutes ch. 113, § 7-427.
[2] State of Connecticut, Office of the State Comptroller. (n.d.). Connecticut Municipal Employees Retirement System: How to Join. Retrieved from https://www.osc.ct.gov/rbsd/cmers/municipal/cmersjoin.htm.
[3] Conn. Gen. Statutes ch. 113, § 7-474.
[4] State of Connecticut, Office of the State Comptroller. (n.d.). Connecticut Municipal Employees Retirement System: How to Join. Retrieved from https://www.osc.ct.gov/rbsd/cmers/municipal/cmersjoin.htm.
[5] Conn. Gen. Statutes ch. 113, § 7-427.
[6] Blum, Shapiro & Company, P.C. (2017). *Town of Weston, Connecticut, Financial Statements: June 30, 2017*. West Hartford, CT: Author. Retrieved from http://www.westonct.gov/media/file/Audit2017.pdf.
[7] CohnReznick LLP. (2016). *State of Connecticut Municipal Employees Retirement System: Schedules of Employer Allocations and Pension Amounts by Employer, Year Ended June 30, 2015.* Hartford, CT: Author. Retrieved from https://www.osc.ct.gov/rbsd/cmers/plandoc/StofCTMERS063015AuditRpt.pdf.
[8] Conn. Gen. Statutes ch. 113, § 7-444.
[9] Harrington, J. (2019, March 26). Personal communication with Director of Retirement Services, State of Connecticut, Office of the State Comptroller.
[10] Conn. Gen. Statutes ch. 113, § 7-444.
[11] State of Connecticut, Office of the State Comptroller. (n.d.). Connecticut Municipal Employees Retirement System: Procedures for Withdrawal from CMERS. Retrieved from https://www.osc.ct.gov/rbsd/cmers/municipal/withdrawal.htm.
[12] Ibid.
[13] State of Connecticut, Office of the State Comptroller, Connecticut State Employees Retirement Commission. (2017). *Decision and Declaratory Ruling in the Matter of: Town of Thompson and other CMERS-participating municipalities.* Hartford, CT: Author. Retrieved from https://www.osc.ct.gov/rbsd/cmers/plandoc/SERCThompsonDeclaratoryRuling.pdf.
[14] Mongeau, M. (2019, March 27). Personal communication with Executive Assistant & Personnel-Labor Relations Analyst, Town of Thompson.
[15] Garrett, J.J., & Koebel, E.J. (2018). *Connecticut Municipal Employees Retirement System: Roll Forward Actuarial Valuation Report Prepared as of June 30, 2017*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/reports/01-17-2018CTMERS2017RollForwardValuationReport.pdf.
[16] Garrett, J.J., & Koebel, E.J. (2017). *Connecticut Municipal Employees Retirement System: Report of the Actuary on the Valuation Prepared as of June 30, 2016*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/cmers/plandoc/11917CTMERS2016ValRptFin.pdf.
[17] State of Connecticut, Office of the State Comptroller, Retirement Services Division. (n.d.). General Information About the CMERS System and Benefits. Retrieved from https://www.osc.ct.gov/rbsd/cmers/membretire/general.htm.
[18] Garrett, J.J., & Koebel, E.J. (2017). *Connecticut Municipal Employees Retirement System: Report of the Actuary on the Valuation Prepared as of June 30, 2016*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/cmers/plandoc/11917CTMERS2016ValRptFin.pdf.
[19] Phillips, B. (2014, January 30). Explanation of the New Breakpoint Agreement. *CSEA/SEIU Local 2001*. Retrieved from http://seiu2001.org/2014/01/30/explanation-of-the-new-breakpoint-agreement/.
[20] Garrett, J.J., & Koebel, E.J. (2017). *Connecticut Municipal Employees Retirement System: Report of the Actuary on the Valuation Prepared as of June 30, 2016*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/cmers/plandoc/11917CTMERS2016ValRptFin.pdf.
[21] Ibid.
[22] Author's calculation based on data from: Public Plans Data. (n.d.). Interactive Data Browser. Retrieved from https://publicplansdata.org/public-plans-database/browse-data/.

[23] Conn. Gen. Statutes ch. 113, § 7-439b.1
[24] Garrett, J.J., & Koebel, E.J. (2017). *Connecticut Municipal Employees Retirement System: Report of the Actuary on the Valuation Prepared as of June 30, 2016*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/cmers/plandoc/11917CTMERS2016ValRptFin.pdf.
[25] State of Connecticut, Office of the State Comptroller. (n.d.). Connecticut Municipal Employees Retirement System. Retrieved from https://www.osc.ct.gov/rbsd/cmers/munisummary.htm.
[26] State of Connecticut, Office of the State Comptroller. (n.d.). Connecticut Municipal Employees Retirement System: Frequently Asked Questions – Active Member. Retrieved from https://www.osc.ct.gov/rbsd/cmers/membretire/activefaq.htm#Pre.
[27] Connecticut Conference of Municipalities. (2017). *This Report is Different.* New Haven, CT: Author. Retrieved from https://www.ccm-ct.org/sites/default/files/files//ThisReportIsDifferent012317.pdf.
[28] Garrett, J.J., & Koebel, E.J. (2018). *Connecticut Municipal Employees Retirement System: Roll Forward Actuarial Valuation Report Prepared as of June 30, 2017*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/reports/01-17-2018CTMERS2017RollForwardValuationReport.pdf.
[29] Public Plans Data. (n.d.). Quick Facts. Available from http://publicplansdata.org/quick-facts/.
[30] Garrett, J.J., & Koebel, E.J. (2018). *Connecticut Municipal Employees Retirement System: Roll Forward Actuarial Valuation Report Prepared as of June 30, 2017*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/reports/01-17-2018CTMERS2017RollForwardValuationReport.pdf.
[31] American Academy of Actuaries. (2012). *Issue Brief: The 80% Pension Funding Standard Myth.* Washington, DC: Author. Retrieved from https://www.actuary.org/files/80_Percent_Funding_IB_071912.pdf.
[32] U.S. Gov't Accountability Off., GAO-07-1156, State and Local Government Retiree Benefits: Current Status of Benefit Structures, Protections, and Fiscal Outlook for Funding Future Costs (2007).
[33] Public Plans Data. (n.d.). Quick Facts. Available from http://publicplansdata.org/quick-facts/.
[34] Figure based on data and information from various actuarial valuations for the MERS. These actuarial valuations are available at https://www.osc.ct.gov/rbsd/reports/index.html.
[35] Garrett, J.J., & Koebel, E.J. (2018). *Connecticut Municipal Employees' Retirement System: Experience Investigation for the Five-Year Period Ending June 30, 2017.* Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/reports/11142018%20CMERS%20Experience%20Investigation%20Report%202017.pdf.
[36] Garrett, J.J., & Koebel, E.J. (2017). *Connecticut Municipal Employees Retirement System: Report of the Actuary on the Valuation Prepared as of June 30, 2016*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/cmers/plandoc/11917CTMERS2016ValRptFin.pdf.
[37] Ibid.
[38] Conn. Gen. Statutes ch. 113, § 7-427.
[39] Nappier, D.L. (2017). *Investment Policy Statement for the State of Connecticut Retirement Plans and Trust Funds*. Hartford, CT: State of Connecticut, Office of the State Treasurer. Retrieved from https://www.ott.ct.gov/pensiondocs/IPStatement.pdf.
[40] Garrett, J.J., & Koebel, E.J. (2018). *Connecticut Municipal Employees Retirement System: Roll Forward Actuarial Valuation Report Prepared as of June 30, 2017*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/reports/01-17-2018CTMERS2017RollForwardValuationReport.pdf.
[41] State of Connecticut, Office of the State Comptroller. (n.d.). *CMERS Municipal Contribution Rates*. Retrieved from https://www.osc.ct.gov/rbsd/cmers/plandoc/MunicipalContributionRateChart.pdf.
[42] Garrett, J.J., & Koebel, E.J. (2017). *Connecticut Municipal Employees Retirement System: Report of the Actuary on the Valuation Prepared as of June 30, 2016*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/cmers/plandoc/11917CTMERS2016ValRptFin.pdf.
[43] Ibid.

[44] Figure based on data and information from various actuarial valuations for the MERS. These actuarial valuations are available at https://www.osc.ct.gov/rbsd/reports/index.html.
[45] Garrett, J.J., & Koebel, E.J. (2018). *Connecticut Municipal Employees Retirement System: Roll Forward Actuarial Valuation Report Prepared as of June 30, 2017*. Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/reports/01-17-2018CTMERS2017RollForwardValuationReport.pdf.
[46] Garrett, J.J., & Koebel, E.J. (2018). *Connecticut Municipal Employees' Retirement System: Experience Investigation for the Five-Year Period Ending June 30, 2017.* Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/reports/11142018%20CMERS%20Experience%20Investigation%20Report%202017.pdf.
[47] Figure based on data and information from various actuarial valuations for the MERS. These actuarial valuations are available at https://www.osc.ct.gov/rbsd/reports/index.html.
[48] Garrett, J.J., & Koebel, E.J. (2018). *Connecticut Municipal Employees' Retirement System: Experience Investigation for the Five-Year Period Ending June 30, 2017.* Kennesaw, GA: Cavanaugh Macdonald Consulting, LLC. Retrieved from https://www.osc.ct.gov/rbsd/reports/11142018%20CMERS%20Experience%20Investigation%20Report%202017.pdf.