



### Funding Concepts of Defined Benefit

The employer contribution rate is made of up two parts:

- Employer Normal Cost – Present value of benefits allocated to the current plan year less any employee contribution
- Amortization Payment of Unfunded Accrued Liability – Payment to reduce any shortfall between liability for past service and assets

$$\text{Employer Normal Cost} + \text{Amortization Payment of Unfunded Accrued Liability} = \text{Employer Contribution}$$

Defined Benefit Funding Equation

# A Deeper Dive Into Actuarial Concepts



# *Funding Concepts of Defined Benefit*

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**Employer Normal Cost**



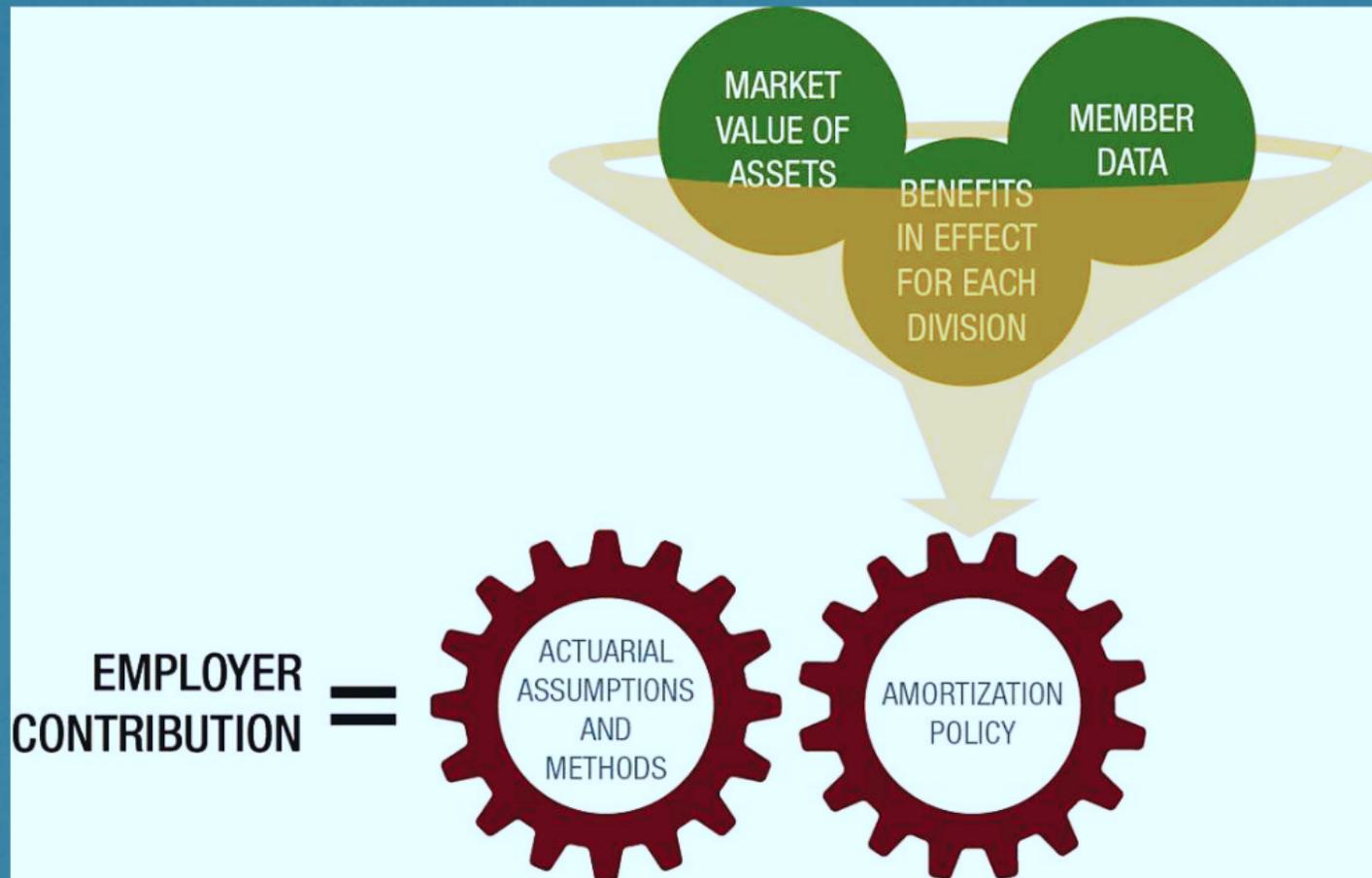
**Amortization Payment  
of the Unfunded Actuarial  
Accrued Liability**



**Employer Contribution**

**Defined Benefit Funding Equation**

# How the Employer Rate is Calculated



Actuarial Assumptions and Methods  
established by the MERS Retirement Board

# Let's Dive In....

## MERS Amortization Policy

Type	Period
Open Divisions	25 years, moving to 20 years in 2018
Closed Divisions	Amortization will decrease per the closed division amortization policy
Divisions Over 100% Funded	10 years

## Assumptions and Methods

Asset Method	Fractional Cost
Asset Method	Market Value Depreciation Method
Asset Method	Cost
Asset Method	Cost Method
Asset Method	Market Value
Asset Method	Market Value Depreciation Method
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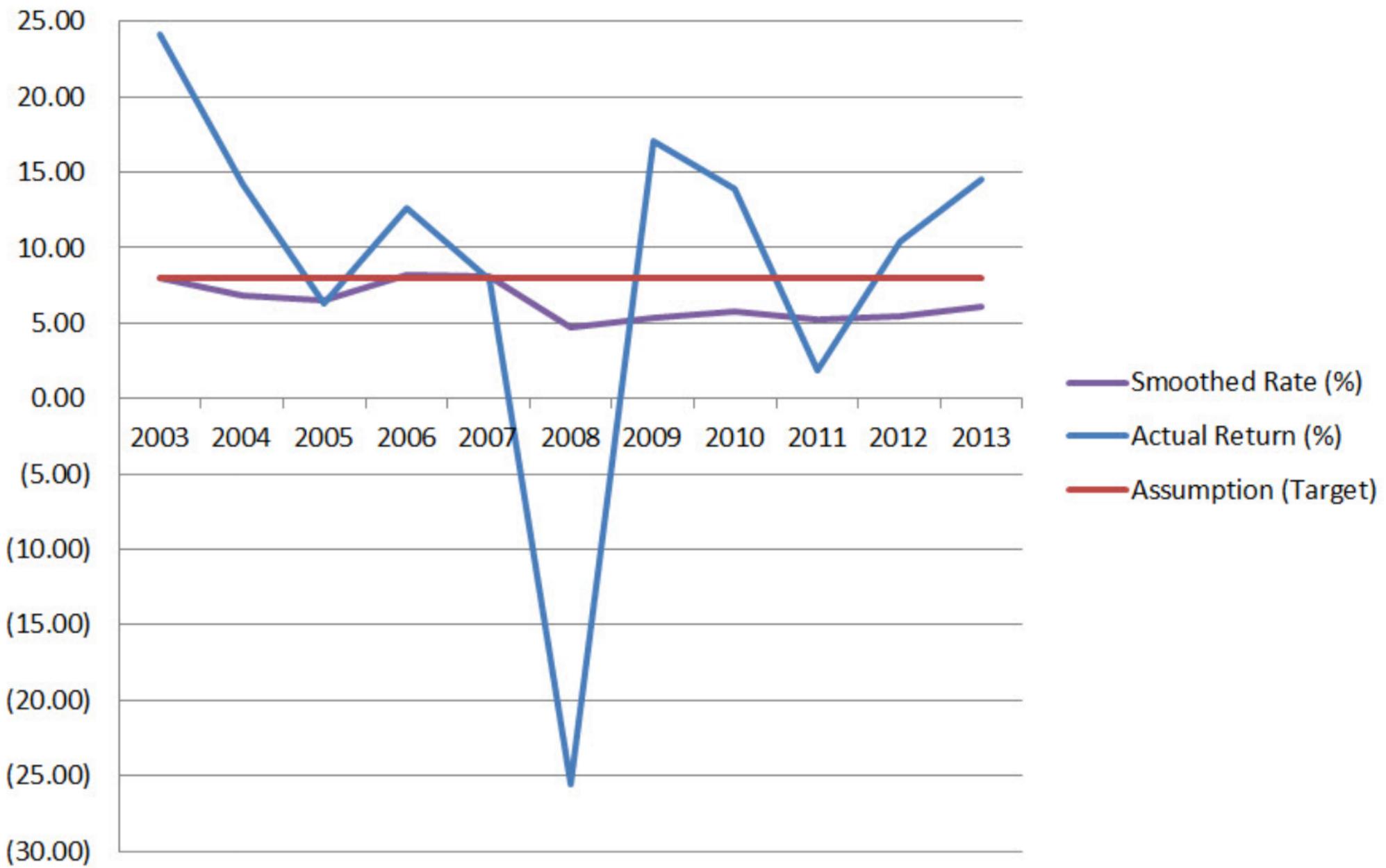
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# Assumptions and Methods

Actuarial Method	Entry age normal
Asset Method	10-year smoothing of investment gains/losses
Interest Rate	8%
Base Payroll Growth	1.0%, trending to 4.5%
Mortality Table	1994 GAM Table (unisex rates)
Withdrawal Rate	Service based table (scaling factor for some)
Retirement Rate	Based on income replacement ratios
Merit/ Longevity Pay Increases	Age based
Disability Rate	Age based table

# Smoothing

- Smoothing is the process of leveling out the fluctuations of the market
- MERS has a 10 year smoothing policy
- Investment earnings and losses are spread over the course of 10 years



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# MERS Annual Actuarial Valuation

## Executive Summary

Sample, City of (9999)

### Funded Ratio and Required Employer Contributions

The MERS Defined Benefit Plan is an agent multiple-employer plan, meaning that assets are pooled for investment purposes but separate trusts are maintained for each individual employer. Each municipality is responsible for their own plan liabilities; MERS does not borrow from one municipality's account to pay for another.

The funded ratio of a plan is the percentage of the dollar value of the accrued benefits that is covered by the actuarial value of assets.

#### Your Funded Ratio:

	12/31/2013	12/31/2012
Funded Ratio	74.0%	75.0%

Michigan Law requires that pension plans be pre-funded, meaning money is set aside now to pay for future benefits. Pension plans are usually funded by employer and employee contributions, and investment income.

As a result of the plan's funding policy, the funded ratio is expected to approach 100% over time. How quickly a plan attains the 100% goal depends on many factors such as:

- The current funded ratio,
- The future experience of the plan, and
- The amortization period.

It is more important to look at the trend in the funded ratio over a period of time than a particular point in time.

Your minimum required employer contributions are shown below. Employee contributions, if any, are shown in Table 2, and are in addition to the required employer contribution below.

Valuation Date:	Percentage of Payroll		Monthly \$ Based on Valuation Payroll	
	12/31/2013	12/31/2012	12/31/2013	12/31/2012
Fiscal Year Beginning:	January 1, 2015	January 1, 2014	January 1, 2015	January 1, 2014
<b>Division</b>				
A - Division 1	52.63%	52.63%	\$21,017	\$21,017
B - Division 2	0.74%	0.74%	76	76
C - Division 3	- %	- %	13,284	13,284
D - Division 4	- %	- %	0	0
E - Division 5	- %	- %	8,693	8,693
<b>Municipality Total</b>			<b>\$43,070</b>	<b>\$43,070</b>

You may contribute more than the minimum required contributions, as these additional contributions will earn investment income, and later you may have to contribute less than otherwise. MERS strongly encourages employers to contribute more than the minimum contribution shown above.

Assuming that experience of the plan meets actuarial assumptions:

- To accelerate to a 100% funding ratio in 10 years, estimated monthly contributions for the entire employer would be \$xxxx, instead of \$43,070.
- To accelerate to a 100% funding ratio in 20 years, estimated monthly contributions for the entire employer would be \$xxxx, instead of \$43,070.

If you are interested in making additional contributions, please contact MERS and they can assist you with evaluation of options.

The screenshot shows the MERS website interface. At the top, there is a navigation bar with tabs for EMPLOYEE, RETIREE, EMPLOYER, and MERS. Below this, there is a search bar and a breadcrumb trail: Home > Employer > Work Scenarios > Annual Actuarial Valuations (AAV). The main content area is titled 'Annual Actuarial Valuations' and contains the following text:

**Annual Actuarial Valuations**

The annual actuarial valuation (AAV) is an important tool to help you budget for your municipality's retirement benefits, with information specific to your municipality's retirement plan. As a multiple-employer plan, MERS establishes a separate trust for each municipality. Each entity is responsible for the employer contributions needed to provide benefits for its employees and former employees. To see a consolidated report of all MERS plans, please click here.

The annual actuarial valuation is a report provided to you as a snapshot of your MERS Defined Benefit Plan as of December 31 each year. The report provides insight to your plan's liabilities, funding levels, contributions for both the employer and employee, and important GASB information. The information in the report will provide you contribution rates for your following fiscal year.

**When To Expect Your Report**

You can expect your report to arrive by June 30 for the previous calendar year. For instance, you can expect the 2013 report to arrive by June 30, 2014. This report will contain contribution rate information for the 2015 fiscal year. MERS will be offering some Morning Break with MERS webinars in June and July to provide municipalities with more information on the valuations, as well as an opportunity to ask questions and have interactive discussion with a MERS Regional Manager. Click here for webinar registration as they become available.

The sidebar on the left, titled 'Employer Navigation', includes the following links:

- Work Scenarios >
- New Hire >
- Terminations & Retirements >
- Rehires & Transfers >
- Annual Actuarial Valuations (AAV) >
- Changing to the MERS Defined Contribution Plan >
- Unfunded Liability >
- GASB 68 >
- Resources >
- Programs >
- Quick Links >



Employer Navigation

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Annual Actuarial Valuations (A

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## Employer Navigation

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## MERS Experience Study

- MERS Retirement Board reviews assumptions every five years
- Currently reviewing experience from 2009 - 2013
- Actuary to report to MERS Retirement Board first quarter of 2015

## MERS Experience Study Process

- Assumptions compared to actual experience during preceding 5 years
- Changes recommended based on this comparison and experience with other public retirement systems
- Full weight not given to actual 5 year experience
  - Avoids setting assumptions based on temporary conditions

## MERS Retirement Board and Experience Study

- As fiduciary of the system, MERS has an obligation to ensure adequate funding for the benefits promised
- State law requires minimum funding towards pension plans
- Actuary discusses preliminary Study results with MERS staff
- Recommendations presented to Board early in 2015
- Board adopts any assumption changes in advance of 12/31/14 valuation cycle

## Assumption Changes Will Affect:

- Contribution Rate
  - Change in UAL (amortized)
  - Change in normal cost
- Funded Status
  - Change in liability fully reflected
- Accounting disclosures
  - Fully reflected in Total Pension Liability
  - Amortized change in liability added to Pension Expense, remainder deferred
  - Change in Service Cost reflected in Expense

# Example of Recommendations That Resulted In Changed Assumptions

## Rate of Disability

- Covers the probability a member will leave active service due to injury while not entitled to age and service benefits
- 2004 – 2008 actual number of disabled members (MERS-wide): 291
- Then-current disability assumption assumed 251 disabilities during that time
- Board approved recommended assumption change to increase rates of disability slightly
- Incremental change

Funding Concepts of  
Deferred Benefits  
The funding concept for a plan is based on  
the present value of the benefits to be paid  
under the plan. The funding concept is based  
on the actuarial value of the plan's liabilities.  
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Let's Dive In....

# A Deeper Dive Into Actuarial Concepts

MERS Amortization Policy

Year	Rate
2015	4.00%
2016	4.25%
2017	4.50%
2018	4.75%
2019	5.00%
2020	5.25%
2021	5.50%
2022	5.75%
2023	6.00%
2024	6.25%
2025	6.50%

Assumptions and Methods

Assumption	Method
Interest Rate	4.00%
Salary Growth	3.00%
Cost of Living	2.00%
Retirement Age	65
Life Expectancy	80
Discount Rate	4.00%
Amortization Period	30

