

# Evaluating the Costs and Benefits of Your Defined Benefit Plan

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As an employer, you should periodically review your compensation and benefits programs. Since a well designed compensation and benefits program will attract, retain and motivate a quality workforce, you want to make sure the program is performing as expected and is as efficient as possible.

The evaluation of your compensation and benefits programs can be fairly complicated. This is especially true when evaluating retirement benefits. It is difficult to compare two retirement programs that provide benefits to employees in different ways. Defined benefit plans determine benefits payable at retirement while defined contribution plans determine contributions to be made to employees' accounts while they are employed.

Even though defined benefit plans provide a predictable level of retirement benefit, their cost is anything but predictable. Many employers are analyzing the cost and benefits of their defined benefit plan. The press has reported that many large companies have decided to freeze or terminate their defined benefit plans. How do employers come to that decision? Is it the right time for you to make that decision? If so many large employers are taking that step, is it right for you?

These are difficult questions to answer. CUNA Mutual employs a staff of experienced consultants and actuaries to assist you in this analysis. This article will give you some detailed information about some of the things you should consider when evaluating your retirement program and some of the options you have if a change is needed. The contents are summarized in the table of contents.

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“Even though defined benefit plans provide a predictable level of retirement benefit, their cost is anything but predictable.”

## Identifying current goals and objectives of your retirement program

The first step to determine the effectiveness of your retirement program is to summarize the goals and objectives you want to meet by answering questions such as: Why was the plan established? Have the goals or objectives of the employer changed since the plan was established? What will your budget support? Do the goals and objectives fit a defined benefit or a defined contribution plan design?

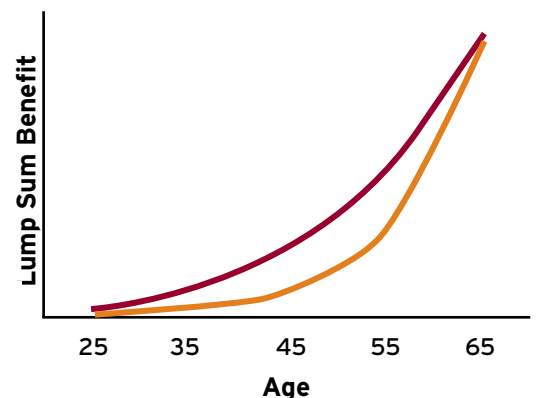
Chances are that if you have a defined benefit plan, it was established by executives who have long since retired. Most employers' defined benefit plans are several years old. The most common reason why employers set up defined benefit plans years ago was to reward employees for long service and dedication by providing them a continuation of income after they retire. Defined benefit plans are the most efficient way to do that.

A defined benefit plan is usually set up to pay a monthly benefit equal to a defined percentage of an employees' final average monthly compensation when they retire at a specified normal retirement age. For example, a plan may pay an employee a monthly benefit equal to 50% of what they were earning before they retired as long as they work until age 65. The benefit may be prorated or reduced if the employee does not work until age 65.

A defined contribution plan (e.g. a 401(k) plan) accumulates contributions along with investment earnings which can be used by employees during retirement to replace their lost income. A defined contribution plan can not guarantee that employees will be able to replace a certain level of income during retirement. This guarantee is not possible because of the unpredictability of an employee's investment earnings and how long the employee will live.

In general, young employees will have the potential to earn a much larger retirement benefit under a defined contribution plan than an older employee. Why? Because they have more years in which to save

— Defined Contribution  
— Defined Benefit



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and experience market returns. An older employee will generally do better under a defined benefit plan because the accrual pattern in a defined benefit plan is weighted more toward the later years in an employee's career. The chart (page 4) shows the accrual pattern of a defined benefit plan over an employee's career compared to a defined contribution plan which is designed to provide a comparable benefit at retirement.

Understanding how benefits accrue in each type of plan is important in the review and decision-making process. This understanding will help you predict which employees will be hurt by any change in your defined benefit program.

It is also important to understand why the defined benefit plan may be the most efficient way to meet the objectives of your retirement program. Consider who the retirement program is for - employees who retire. Young employees are not likely to remain with an employer until retirement.

Some do, but most don't. A defined benefit plan minimizes the amount of retirement dollars spent on those employees who leave employment very early in their careers.

Employees hired later in their career and long-term employees have a much better chance of continuing their employment to their retirement age. It makes sense to invest as much of the retirement program dollars on older employees to aid in the recruitment and retention of those types of employees.

What about the younger employees? In most cases, younger employees prefer other types of compensation and benefit packages. Retirement is usually rated very low in young employees' decision to come to an employer or stay with an employer. Their immediate interest and concerns surround compensation, health insurance, time off, etc.

As efficient as defined benefit programs may seem, they are susceptible to unpredictable cost increases. If the employer has the plan set up to benefit its most valuable employees, the plan is efficient. But if the cost increases become unbearable, the plan will no longer be efficient.

An employee in a defined benefit plan knows what to expect for a benefit at retirement because the "benefit is defined." However, the employer does not know what the cost is to provide that benefit. The benefit is predictable - the cost is unpredictable. The opposite is true for a defined contribution plan. A defined contribution plan provides the employer with predictable costs, but the benefit provided for the employee is unpredictable.

## Understanding the cost of defined benefit plans

You may determine that the benefits provided by your plan meet your needs, but at what cost? After you have determined what benefits you would like to provide through your retirement program, you will need to analyze the cost. To do so, you must understand how the cost of a defined benefit plan is determined and why it is susceptible to large fluctuations.

The cost of the defined benefit plan is determined by the “Net Periodic Pension Cost (NPPC)” and not the actual employer contribution to the plan. The NPPC is determined by 4 main components: the cost of new benefit accruals (the service cost); plus interest growth on past benefit accruals that have not been paid out; less expected earnings on the assets in the plan; plus or minus the amortization of gains and losses. In short, it is the increase in the plan’s liabilities less the increase in the plan’s assets.

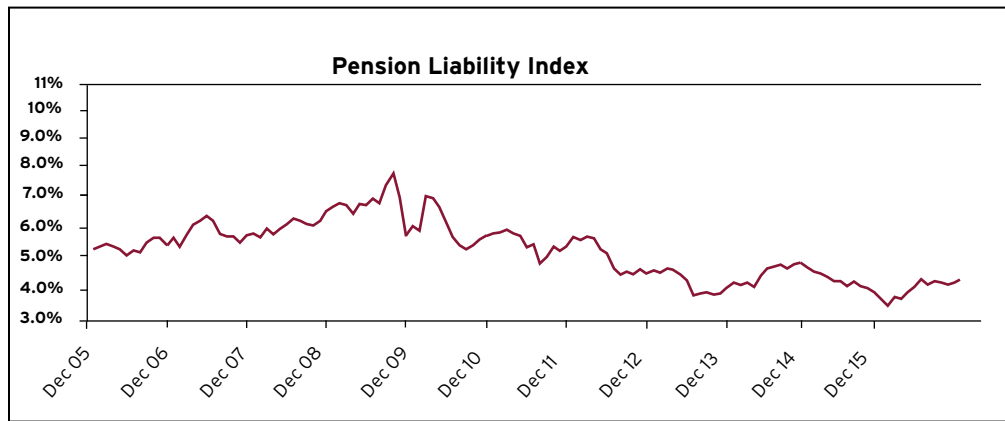
How the cost of a defined benefit plan is determined	
Service Cost	<i>the cost of new benefit accruals</i>
<i>plus</i> Interest Cost	<i>interest growth on past benefit accruals</i>
<i>less</i> Expected Return on Assets	<i>expected earnings on investments</i>
<i>plus</i> Amortization of Losses or (Gains)	<i>amortization of changes to assets or liabilities not yet expensed</i>

The liabilities in the plan are determined by discounting benefit obligations that have been earned but are payable in the future using the defined (required) discount rate. When the amount of the future benefit obligations increase unexpectedly, liabilities will increase unexpectedly and the cost of the plan will go up. Future benefit obligations may increase unexpectedly if there are higher than expected salary increases or if you hire an older, higher paid employee.

The opposite can also happen. Future benefit obligations can be decreased either by plan amendment or favorable plan experience. Maybe the amount by which salaries were expected to grow did not materialize or employees who we expected to continue working left employment before earning additional benefits.

In addition, when the discount rate used to determine the present value of future benefit obligations decreases, the present value becomes larger and the cost of the plan increases. Discount rates are based on fixed investments like US treasuries or government and corporate bonds. Discount rates can also increase. A larger discounting of future benefit obligations will lower the liability and reduce (or at least slow the growth of) the cost of the plan.

The reason why many large employers have decided to freeze their defined benefit plan is because the cost of the plan has increased to unbearable levels. Their plans have become underfunded and they are fearful that costs will continue to rise and that they will fall further behind. The increase that most plans have experienced over the past several years has been caused predominantly by a steady and prolonged decrease in discount rates. The chart below shows the decrease in discount rates that has occurred since 2005.



The liability for a sample plan using a 6% discount rate is \$7.4 million. If the plan was revalued using an 8% discount rate, the liability would drop to \$4.7 million. The cost reduction would be enormous.

While it is difficult to predict by how much costs will decrease, the fact that costs can go down just as quickly as they went up should be kept in mind when evaluating the costs versus benefits of your defined benefit plan.

## Managing retirement costs

If you determine that the unpredictability of costs in a defined benefit plan is too much to bear, what options do you have? To answer that question we have to go back to how the cost

of the plan is determined. Recall that the first component of “Net Periodic Pension Cost” is the cost of benefit accruals. To reduce this component of NPPC, you will have to reduce or eliminate the benefit accruals provided by the plan.

Another component of NPPC is the expected earnings on the assets you have invested in the plan. This is subtracted from the NPPC so you will want to increase this component to reduce costs. To do so, you can either increase the assets invested in the plan or change the plan’s investment policy to help ensure a greater rate of investment income.

The remaining components of NPPC are the interest growth on past accruals and amortization of gains and losses.

The liability used to determine pension costs is based on projected salaries and current service. Although you cannot take away benefits that have been earned based on current service and current pay, a prospective reduction in benefits will reduce the total liability of the plan. The liability is reduced because you will no longer be expected to pay benefits at the current benefit rate for future salaries.

How to reduce the cost of a defined benefit plan	
Service Cost	<i>Eliminated or reduced new benefit accruals</i>
<i>plus</i> Interest Cost	<i>Reduced liability</i>
<i>less</i> Expected Return on Assets	<i>Increased rate of return or increased total amount of assets invested</i>
<i>plus</i> Amortization of Losses or (Gains)	<i>Reduced liability</i>

### Terminating the plan

You might think that the option that will create the greatest and most immediate reduction in your costs is to terminate the defined benefit plan. It is true that terminating the plan will eliminate all costs of the plan going forward, but you will likely incur enormous short-term costs if you terminate the plan under current economic conditions.

When you terminate a defined benefit plan, all liabilities are settled and benefits are paid from plan assets. The Net Periodic Pension Cost will be eliminated. However, before you can do that, you have to recognize all of the pent-up gains and losses that have yet to be accumulated because of decreasing interest rates which can be substantial.



In addition, you have to settle all liabilities by paying out lump sums or purchasing annuities for all existing plan participants. Lump sums and annuity purchase rates are determined using an interest rate that is even more conservative than those used to determine the pension expense. The result is that a plan termination will likely increase the liability to a level even higher than has already been expensed for. This additional loss will have to be recognized immediately upon the payment of the plan termination benefits.

To determine the cost of terminating a defined benefit plan, add the amount in the Other Comprehensive Income (OCI) account to the amount in the Net Pension Asset Account (or deduct the amount in the Net Pension Liability Account) and add the additional cash payment needed to pay all benefits (or deduct the refund of excess assets).

Cost of terminating a defined benefit plan
Unrecognized Losses (Gains) in Other Comprehensive Income Account
<i>plus</i>
Net Pension Asset (Liability)
<i>plus</i>
Additional cash contributions needed to pay out all benefits (refunds of excess assets)

## Freezing the plan

Instead of terminating the plan, many plan sponsors have opted to freeze their defined benefit plan. There are many different ways to freeze a plan. Each will have a different impact on costs and the benefits for current employees.

**Freezing all future accruals** - This method will completely eliminate all future benefit accruals. A plan can remain frozen as long as the plan remains underfunded on a plan termination basis. If the plan becomes overfunded, it will only satisfy the participation rules if at least 50% of employees (or 40% of nonexcludable employees) have benefited from the plan in the past. Once the plan becomes fully funded on a plan termination basis, it will likely have to be terminated.

This method will create the most significant and most immediate cost savings. The cost of future accruals will be eliminated entirely and the interest growth on past liabilities will also decrease. There will also be a reduction in the amortization of prior losses. The total liability

of the plan will be reduced significantly because future pay increases will no longer have an impact on the plan's benefit obligations.

Freezing all future accruals	
Service Cost	<i>Eliminated</i>
<i>plus</i> Interest Cost	<i>Reduced because liability drops from Projected Benefit Obligation (PBO) to Accumulated Benefit Obligation (ABO)</i>
<i>less</i> Expected Return on Assets	<i>No change</i>
<i>plus</i> Amortization of Losses or (Gains)	<i>Reduced because of gains resulting from liability dropping from PBO to ABO</i>

**Freezing out new participants** - Many large plan sponsors have frozen their defined benefit plan only to their new employees. Existing employees continue to earn benefits under the defined benefit formula. New employees are often eligible for a new defined contribution plan like a profit sharing contribution or an enhanced 401(k) match.

As long as the plan continues to benefit 50% of employees (or 40% of all non-excludable employees, if lesser), the plan can remain frozen. The dilemma for small employers is that the plan will likely fail this test within a few years after it is frozen due to employee turnover. With foresight, the plan can be amended to exclude highly compensated employees before it fails this test. Otherwise, it must be terminated.

This method will not generate much cost savings in the near term. The cost of new employees is generally very small compared to the older employees who are more likely to remain employed until retirement.

Freezing out new participants	
Service Cost	<i>No immediate change but it will eventually decrease</i>
<i>plus</i> Interest Cost	<i>No immediate change but it will eventually decrease</i>
<i>less</i> Expected Return on Assets	<i>No change</i>
<i>plus</i> Amortization of Losses or (Gains)	<i>No change</i>

**Freezing compensation but allowing future service accruals** - You can amend the plan to base future benefits only on pay earned prior to a specific date. The date must be after the date that the plan amendment notification is given to the plan participants. This plan will automatically exclude new participants since only pay prior to the amendment date will be recognized. Future benefits will still continue to be based on service earned through the employee's termination date.

The same issues apply with regard to meeting participation and nondiscrimination tests.

This method will help reduce pension expense immediately since you will not have to project future pay in determining service costs. The calculation of liabilities under current accounting rules includes an adjustment for future pay increases.

Freezing compensation but allowing future service accruals	
Service Cost	<i>May increase slightly</i>
<i>plus</i> Interest Cost	<i>Reduced because liability drops from PBO to ABO</i>
<i>less</i> Expected Return on Assets	<i>No change</i>
<i>plus</i> Amortization of Losses or (Gains)	<i>Reduced because of gains resulting from liability dropping from PBO to ABO</i>

**Freezing benefit service but allowing compensation adjustments** - You can amend the plan to base future benefits only on service earned prior to a specific date. The date must be after the date that the plan amendment notification is given to the plan participants. New employees will automatically be excluded from the plan since only service prior to the amendment date will qualify for benefits. Future benefits will still continue to be based on employee's average earnings through the employee's termination date.

The same issues apply, as above, with regard to meeting participation and nondiscrimination tests.

This method will help reduce benefit costs more quickly than merely freezing out new participants. It will help preserve benefits for long-term employees who have already completed most, or all, of the service requirement in the plan.

Freezing benefit service but allowing compensation adjustments	
Service Cost	<i>No immediate change but it will eventually decrease</i>
<i>plus</i> Interest Cost	<i>No immediate change but it will eventually decrease</i>
<i>less</i> Expected Return on Assets	<i>No change</i>
<i>plus</i> Amortization of Losses or (Gains)	<i>No change</i>

### Converting to a cash balance design

You can add a cash balance provision to your defined benefit plan for new employees while maintaining defined benefit accruals for current employees. A cash balance provision creates a hypothetical account that accumulates much like a defined contribution plan would. A percent of pay is added to the account each year and the account is credited with interest. The cash balance feature is a defined benefit plan provision, even though it looks like a defined contribution plan.

There are no concerns about meeting participation requirements since all eligible employees will continue to benefit under the defined benefit plan. The plan will still need to meet certain nondiscrimination requirements, but passing those tests is usually easy in a plan with cash balance provisions.

This method will not generate any near-term cost savings. In fact, because young employees may earn greater benefits under the cash balance provisions, near-term costs may actually go up. Eventually costs will decrease and become more stable as employees benefiting under the defined benefit provisions begin to retire.

Cash balance conversion	
Service Cost	<i>May experience short term increases but it will eventually decrease and stabilize</i>
<i>plus</i> Interest Cost	<i>May experience short term increases but it will eventually decrease and stabilize</i>
<i>less</i> Expected Return on Assets	<i>No change</i>
<i>plus</i> Amortization of Losses or (Gains)	<i>No change</i>

## Reducing benefits

You can also just simply amend the plan's benefit formula to reduce future benefit obligations and regain control of the costs. Some plans were designed with very generous benefit formulas that could be supported when interest rates were higher and costs were lower. Take a second look at the level of benefits that are being provided to make sure that they are appropriate.

A common rule of thumb is that your employees should be able to replace about 70% to 85% of their income when they retire. Social Security will replace between 15% and 40% of their income depending on how highly paid they are (15% for highly paid employees and 40% for lower paid employees). If you added a 401(k) plan, it too will replace some of your employees' income at retirement.

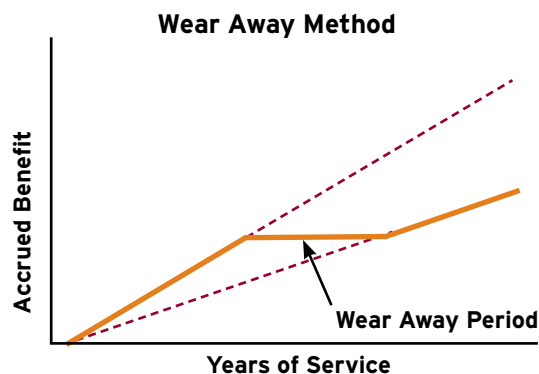
There are two ways to amend a plan's formula - with and without wear away. Under a wear away method, benefits are frozen at the time of the amendment until the new formula catches up. The period of time during which an employee's benefit remains frozen is called the "wear away period."

Employees who have the most past service will have the longest wear away periods. In some cases they may not earn any additional benefits before retirement.

If a plan amendment is designed without the wear away method, the benefit is broken into two pieces - one for service prior to the amendment and one for service after the amendment - and the two pieces are added together. This plan design can become difficult to explain to employees and difficult to administer.

By reducing benefits, you will be reducing the future cost of the plan. The amount of cost savings you experience will depend on

how severe the reduction is and whether or not you use the wear away method. Amending the plan with the wear away method will have more significant short term cost savings than amending the plan without it, but the impact to employees, especially long term employees, will be greater.



Reducing benefit formula	
Service Cost	<i>Reduced with the amount depending on the severity of the benefit reduction</i>
<i>plus</i> Interest Cost	<i>Reduced because liability drops</i>
<i>less</i> Expected Return on Assets	<i>No change</i>
<i>plus</i> Amortization of Losses or (Gains)	<i>Reduced because of gains resulting from liability dropping</i>

### Prefunding

Investing in the plan is another option to control defined benefit plan costs. Remember one component of Net Periodic Pension Cost is the expected investment return. The greater the plan assets, the greater the expected return will be. If the expected return increases, the Net Periodic Pension Cost decreases.

This method is referred to as prefunding because you are prefunding future benefits that have not been earned yet. Prefunding works well for tax-exempt employers who do not have a maximum limit on plan contributions they can make. It would also work well for employers who have a lot of cash assets and very little opportunity to invest those cash assets effectively if there was not a maximum deductible contribution limit. Since credit unions meet both of those requirements, credit unions have the best opportunity to utilize the prefunding approach. Any plans to make excess contributions to the pension plan to reduce pension expense should be carefully reviewed with the help of a qualified expert.

Under current accounting rules, the difference between plan assets and plan liabilities is a net asset or liability of the employer. Increasing the assets in the plan will either increase the net asset you have in the pension plan or decrease the net liability. In other words, when you make a contribution to the pension plan you are not affecting pension expense, just moving assets.

Prefunding to control defined benefit costs can help avoid making the tough decisions to reduce or eliminate benefits for some employees.

Prefunding	
Service Cost	<i>No change</i>
<i>plus</i> Interest Cost	<i>No change</i>
<i>less</i> Expected Return on Assets	<i>Will decrease depending on the amount of prefunding</i>
<i>plus</i> Amortization of Losses or (Gains)	<i>No change</i>

Taxable organizations, including state-chartered credit unions with Unrelated Business Taxable Income, may be subject to excise tax on nondeductible contributions. They may also be subject to an excise tax of up to 50% on any unused pension assets they receive back after formally terminating the pension plan. Any plans to make excess contributions to the pension plan to reduce pension expense should be carefully reviewed with the help of a qualified expert.

### Liability driven investing

Liability Driven Investing (LDI) is an investment strategy that aims to reduce the volatility of the defined benefit plan's surplus and consequently reduce the volatility and unpredictability of the pension expense.

The two biggest causes of volatility in pension expense are equity risk and interest rate risk. A typical LDI portfolio will differ from a traditional portfolio in two ways to reduce these risks: by reducing the equity allocation, which in turn reduces the equity risk; and by increasing the fixed income allocation and/or the fixed income duration, which in turn reduces the interest rate risk.

Interest rate risk is an important concept in defined benefit plan risk, so it deserves some extra attention. Defined benefit plan liabilities are sensitive to discount rates. As rates decrease, defined benefit plan liabilities increase. As rates increase, defined benefit plan liabilities decrease. Defined benefit plan fixed-income assets, such as bonds, react to interest rates similarly.

However, traditional defined benefit plan fixed-income assets have a duration that is much lower than plan liabilities. Duration is a measure of the sensitivity of fixed-income assets and liabilities to interest rate changes. The higher the duration, the larger the change in value due to interest rate changes.

Traditional defined benefit asset allocations typically use fixed-income investments with intermediate duration while defined benefit plan liabilities are long in duration. Because there is a mismatch in durations, the same interest rate change will impact the plan's liabilities and fixed-income assets by different amounts. This increases interest rate risk and pension expense volatility.

LDI portfolios invest in long duration fixed-income assets with durations similar to the defined benefit plan's liabilities. By matching the durations of the assets and liabilities, the interest rate risk is reduced.

The lower equity and higher long duration fixed-income allocations of an LDI strategy will reduce the equity risk and interest rate risk, and consequently reduce the volatility of pension expense. Investment and actuary experts will need to work together to coordinate your assets and liabilities, to ensure successful implementation of an LDI strategy.

Liability driven investing	
Service Cost	<i>No change</i>
<i>plus</i> Interest Cost	<i>No change</i>
<i>less</i> Expected Return on Assets	<i>No change or decrease</i>
<i>plus</i> Amortization of Losses or (Gains)	<i>Becomes more consistent</i>



## In Summary

Your employees are counting on you to help them earn a comfortable retirement. A defined benefit plan delivers just that - a safe, predictable source of retirement income. You can manage the cost of the pension plan by making adjustments to the plan's assets or liabilities. Changes to the plan liabilities will result only from changes in the benefits paid under the plan. Changes to the plan benefits will impact each employee in different ways.

Some of the options you have are summarized in the table below. To discuss these options or any other options you have with regard to your retirement program, please contact your CUNA Mutual Group Sales Executive.

<i>Impact of changes made to your defined benefit plan</i>		
	<b>Impact on employees</b>	<b>Impact on costs</b>
<b>Terminate</b>	<i>Employees will be cashed out putting their retirement benefits at risk. Older employees will forego significant accruals that usually occur later in their career.</i>	<i>Pension expense will be eliminated entirely. However there may be significant short term expenses involved with paying out all benefits.</i>
<b>Freeze all benefits</b>	<i>Older employees will forego significant accruals that usually occur later in their career.</i>	<i>Pension expense will drop significantly and may be eliminated entirely. In some cases, pension income may be the result.</i>
<b>Freeze only service or pay</b>	<i>Older employees will forego some accruals that usually occur later in their career.</i>	<i>Pension expense will drop immediately and continue to decrease each year.</i>
<b>Freeze benefits for new employees only</b>	<i>Current employees are not affected.</i>	<i>Current employees are not affected.</i>
<b>Cash balance</b>	<i>Grandfathered employees are not affected. New, young employees may see greater accruals under the cash balance provisions.</i>	<i>May see a short term increase in costs. Eventually costs will go down or become more stable.</i>
<b>Reducing benefit formula</b>	<i>All employees will be affected.</i>	<i>Pension expense will drop depending on size of benefit reduction.</i>
<b>Prefunding</b>	<i>None</i>	<i>Depending on available cash assets, pension expense can be managed to meet your budget.</i>
<b>Liability driven investing</b>	<i>None</i>	<i>Pension expense will be less volatile.</i>

### **About the authors:**

**Ken Newhouse** is the director of Enrolled Actuary Services at CUNA Mutual Retirement Solutions. His primary responsibility involves the certification of annual valuation work performed for defined benefit plans, sponsored by credit unions. Newhouse also oversees the processing of benefit calculations and payouts for defined benefit plans.

Prior to joining CUNA Mutual Group in 1994, Newhouse worked for Milliman and Robertson, an actuarial consulting firm. He has more than 26 years of experience as an employee benefits actuary and has worked with many types of retirement programs.

Newhouse earned a bachelor's degree in mathematics from the University of Wisconsin-Milwaukee.

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**Shannon Eidson**, FSA, CFA, is principal-investment consulting for CUNA Mutual Fiduciary Consultants. In this role, he is responsible for consulting directly with key clients to develop and implement customized investment strategies and is a primary architect for the design of sophisticated multi-asset class model portfolios. Additionally, he serves as a member of the Investment Committee that performs research and due diligence on the potential investments offered.

Eidson joined CUNA Mutual Group in 2014. Prior to this, he was a senior vice president and senior pension risk strategist in the Outsourced Chief Investment Officer practice of Northern Trust in Chicago. In this role, Eidson consulted with hundreds of plan sponsors to define and mitigate the investment risk in their defined benefit pension plans. He also writes white papers, presents webinars and speaks at conferences. Prior to Northern Trust, Eidson spent 11 years with Hewitt Associates as a pension consulting actuary.

Eidson earned his bachelor's degree in Mathematics from Washington University in St. Louis, Missouri. He earned his master's degree in Actuarial Science from Ball State University in Muncie, Indiana. He is a Fellow in the Society of Actuaries, an enrolled actuary and a CFA charterholder, a member of the CFA Institute and the CFA Society of Madison.

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