

By Stephen Lippman & Gregory D. Singer

Cash Balance Plans

They can quickly build retirement portfolios—but require vigilance and the right asset allocation. Our analysis considers the ideal stock/bond proportions

Investing for retirement can be problematic for professionals in partnerships or other types of closely held firms. Yes, that includes lawyers in law firms.

These individuals tend to spend their early careers focused on building their business. By the time they're ready to start saving money for retirement, standard retirement savings vehicles such as 401(k) plans can shelter only a small portion of their income. The rest is subject to taxes, often in the highest brackets.

Cash balance plans can help. A type of defined benefit retirement plan,¹ cash balance plans have much higher annual contribution limits than 401(k)s—nearly 10 times higher for older individuals—enabling participants to build substantial tax-deferred accounts. If individuals earn enough to take advantage of these contributions, they can accumulate secure retirement portfolios more quickly than with traditional retirement plans. For this reason, the plans tend to be most popular with firms of relatively highly paid professionals, which include not only law and accounting firms, but also medical and dental practices. But any type of business may find them attractive.

To get the most out of cash balance plans, firms need to make well-informed decisions about their plans' terms and investment strategies, which can have a big impact on a plan's relative success. Too often, firms make

decisions without a full analysis of their ramifications.

We conducted an analysis of investment strategies for cash balance plans for partnerships and other closely held firms, modeling probable outcomes of key decisions made by the plan sponsors, showing their potential effect on the plans and their participants. Our forecasting uses a Monte Carlo model that simulates 10,000 plausible future paths of returns for various asset classes and inflation.²

This analysis arrives at some surprising conclusions regarding optimal investment planning choices. We found that cash balance plans at partnerships and closely held firms have much higher sensitivity to short-term market volatility than other retirement plans. Therefore, they must perform a balancing act between the pursuit of long-term growth and the need to keep volatility at manageable levels.³

Allure

The chief attraction of cash balance plans is their greater potential for building tax-deferred wealth than other, traditional retirement plans. By sheltering income from taxes when it's earned and allowing the invested assets to compound without taxes, these plans allow participants' wealth to grow at a faster rate. If income taxes rise in the near future, as many expect, this tax-deferral feature may become even more attractive.⁴

The advantage of cash balance plans begins with their large annual contribution limits. The limits are generous, relative to 401(k)s and profit-sharing plans. The maximum annual contribution to a cash balance plan for a 50-year-old is \$103,000. For the same person, the maximum contribution is \$22,000⁵ with a 401(k)



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and \$32,500 with a profit-sharing plan. But note that a participant enrolled in all three plans can make a total one-year contribution of about \$158,000.⁶

Therefore, someone who is 50 years old today and participates in all three retirement plans could defer \$3.6 million in inflation-adjusted dollars by age 65.⁷ And that's before investment growth potential. (See "Sock Away Savings," this page.)

For Partnerships

A cash balance plan sponsor funds the plan annually in two ways:

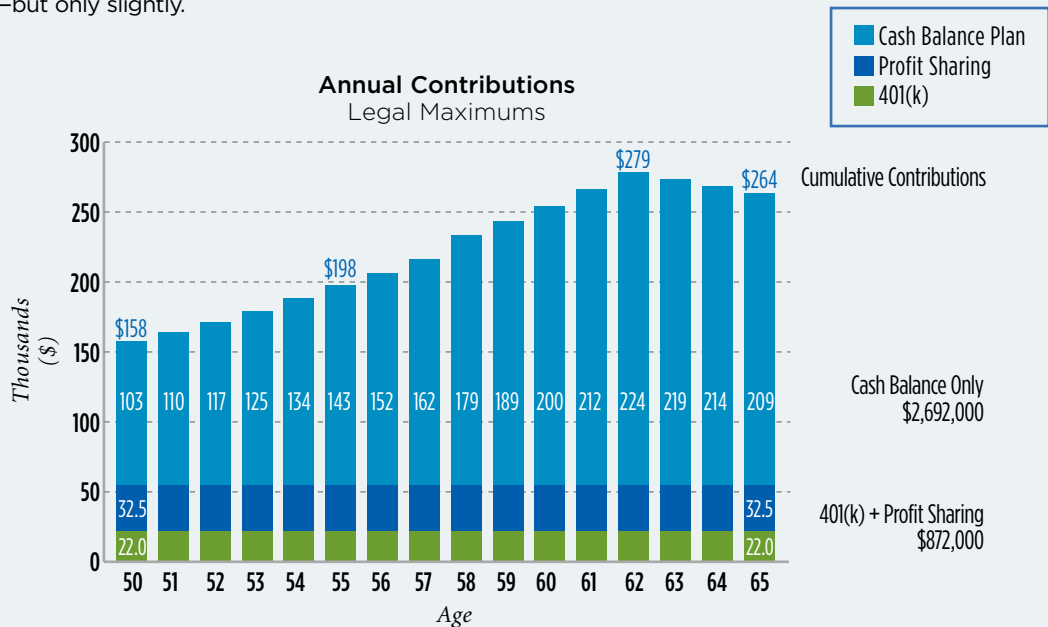
- (1) a **pay credit**—either a percentage of each participant's pay or a preset dollar amount, and
- (2) an **annual interest credit**.

The interest credit is the rate of return the plan sponsor has promised to pay participants (or a tier of participants) on their account balances for the year. While the rate of return will be the same for all participants covered by that rate, the actual dollar value of the credit will depend on the size of each participant's account. Interest crediting rates can be either a fixed rate or a variable rate linked to an index, subject to guidance from

Sock Away Savings

Cash balance plans allow considerably larger contributions for tax-deferred retirement savings than 401(k)s or profit-sharing plans

401(k) contribution and profit-sharing limits don't change above age 50, but cash balance limits increase as a person gets older, peaking at age 62. In that year, a participant in all three plans could enjoy about \$279,000 in tax-deferred contributions. The contribution limits in cash balance plans do decline after age 62—but only slightly.



Note: Defined benefit plans are subject to maximum annual and lifetime benefits (Internal Revenue Code Section 415), which, for the sake of simplicity, are not included in our analysis. The current lifetime benefit limit is about \$2.3 million, but it is tied to inflation and adjusted annually. Many cash balance plan sponsors structure their plans to avoid running into the benefit limits. But these types of strategies should be implemented only by qualified actuaries and ERISA legal advisors. Plans may create tiered levels of contributions, less than the maximum allowed, for different groups of participants in the same plan.

— Internal Revenue Service and AllianceBernstein

the Internal Revenue Service. So, for example, the pay credit might be 5 percent of each participant's pay, and the interest crediting rate might be a rate linked to the 30-year Treasury bond.

The plan sponsor determines how to invest the plan's assets. Ideally, the investment return covers the annual interest credit. The investment return may even cover all or part of the next year's pay credit. If, however, the plan's investment return does not meet the interest crediting rate in any given year, the plan sponsor has to make up the difference. The plan sponsor can take up to seven years to make up a shortfall, a length of time set in the terms of the plan and known as the amortization period.⁸

At a closely held firm like a partnership, the partners and the plan sponsor are closely aligned. While the plan sponsor is legally responsible for making the annual contributions, the partners are the ultimate source of the

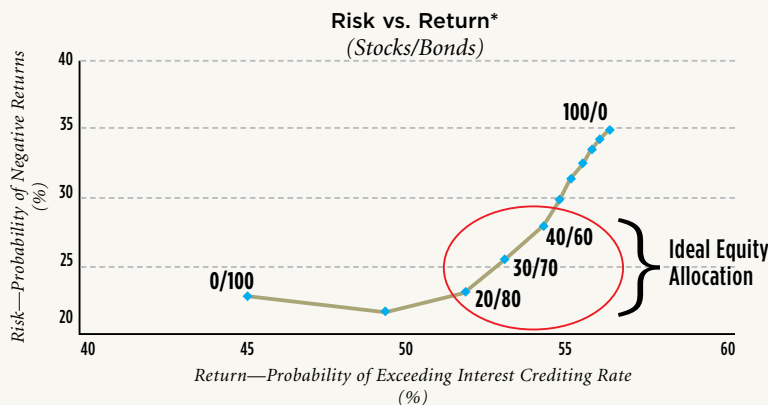
contributions, and their contributions have the net effect of reducing their annual income. Because the annual interest credit will grow with the size of the account, the amount of income reduction can be substantial.⁹ This may be a good thing if the participants want to reduce their income for tax reasons, but can be a bad thing if the income reduction is more than participants expected or can afford.

This dynamic is the key difference between cash balance plans at closely held firms and those at large corporations. While a large corporation typically welcomes excess growth in its cash balance plan to lower the cost of future contributions and minimize potential shortfalls, closely held firms want returns as close as possible to a certain target rate each year. The closer the plan comes to that goal, the more participants can take full advantage of the plan's benefits: lowering their annual taxable income while building a tax-deferred retirement account.

The Sweet Spot

Adding stocks to the mix of stocks and bonds can increase the probability of a surplus but at some point increases the probability of negative returns

The sweet spot for a cash balance plan with an interest crediting rate of 6.8 percent is likely to be between 20 percent and 40 percent stocks. With more than that, the plan could face significant shortfalls in any given year.



*Based on different asset allocations (stocks/bonds) and using the Internal Revenue Service segment rate of 6.8 percent.

Note: The range of outcomes is based on Bernstein's long-term forecasts for the applicable capital markets. Data are rounded to the nearest whole number and do not represent any past performance and are not a promise of actual future results or a range of future results.

— AllianceBernstein

Investment Challenge

One might ask: "Why not choose an easy-to-hit interest crediting rate and invest in bonds to match it?" This is a common question when professionals consider cash balance plans, but this approach creates several problems.

First, in today's economic environment, how can you find a "safe" investment that will reliably pay more than a pittance in real (after-inflation) interest?

Second, a bond's return over any given time period may differ significantly from its yield. As an extreme example, as of Dec. 31, 2008, the yield on a 30-year Treasury bond was 2.69 percent. Yet, for the first six months of 2009 that bond had a total return of negative 23.3 percent.¹⁰

Third, if the goal is retirement security, you may wish to shoot for a higher crediting rate than any perfectly safe investment could offer. A measurable amount of shortfall risk is worth considering for the extra return potential it offers over time.

There are three key decisions that will have tremendous impact on the experience of plan participants:

- **Asset allocation**—Decisions about asset allocation have the greatest impact on how close a plan’s investment returns come to the interest crediting rate. Note that this is really an ongoing series of decisions, because a plan’s assets can be reallocated at any time. For example, if a plan has achieved its annual interest crediting goal in midyear, it might want to reduce risk in its investment portfolio to aim at locking in the performance.
- **The interest crediting rate**—The higher the rate is, the more a plan can grow for the benefit of participants. But if investment returns don’t meet the rate, a plan may have large shortfalls to make up. Also, the interest crediting rate is set in a cash balance plan’s terms and can be changed only by amending the plan.¹¹
- **Handling shortfalls**—The first line of defense for handling shortfalls may be participants’ 401(k) or

profit-sharing contributions. These contributions are voluntary. Suspending them for a year or two can help partners free up monies to fund cash balance plan contributions, which are mandatory. The impact of shortfalls also can be eased by extending the amortization period, up to seven years. But if a participant leaves the plan, any shortfalls tied to the departed participant’s account must be made up by the plan itself. (Remember, this is a defined benefit plan, which means the plan has defined the benefit to the participants, regardless of unforeseen events.) In a partnership, this scenario effectively means the remaining partners have to make up the shortfalls relating to the departed partner’s account. Amortization periods also are defined when the plan is created.¹²

Each of these three decisions involves trade-offs between conflicting priorities. The biggest trade-off is

After One Year

The range of second-year contributions will vary dramatically based on the asset allocation chosen

Weak returns are represented by the 90th percentile of performance in 10,000 probable scenarios. Strong returns are represented by the 10th percentile of performance.

		Asset Allocations (Stocks/Bonds)					
		0/100	20/80	40/60	60/40	80/20	100/0
Weak Returns	Target	\$117,000	117,000	117,000	117,000	117,000	117,000
	Actual	\$129,000	131,000	135,000	141,000	146,000	152,000
Shortfall		\$(12,000)	(14,000)	(18,000)	(24,000)	(29,000)	(35,000)

		Asset Allocations (Stocks/Bonds)					
		0/100	20/80	40/60	60/40	80/20	100/0
Strong Returns	Target	\$117,000	117,000	117,000	117,000	117,000	117,000
	Actual	\$108,000	100,000	87,000	75,000	61,000	46,000
Surplus		\$9,000	17,000	30,000	42,000	56,000	71,000

Note: The range of outcomes is based on Bernstein’s long-term forecasts for the applicable capital markets. Data are rounded to the nearest whole number and do not represent any past performance and are not a promise of actual future results or a range of future results.

— AllianceBernstein

After Five Years

As the plan grows, the potential shortfall or surplus in any given year becomes much larger—and it’s clear that a 100 percent bond allocation is not necessarily the safest choice

Here, we also see the phenomenon of a “funding holiday”—or, how very strong investment returns can cover the next year’s entire contribution.*

		Asset Allocations (Stocks/Bonds)					
		0/100	20/80	40/60	60/40	80/20	100/0
Weak Returns	Target	\$157,000	157,000	157,000	157,000	157,000	157,000
	Actual	\$221,000	218,000	226,000	241,000	259,000	276,000
Shortfall		\$(64,000)	(61,000)	(69,000)	(84,000)	(102,000)	(119,000)

		Asset Allocations (Stocks/Bonds)					
		0/100	20/80	40/60	60/40	80/20	100/0
Strong Returns	Target	\$157,000	157,000	157,000	157,000	157,000	157,000
	Actual	\$109,000	91,000	59,000	23,000	0	0
Surplus		\$48,000	66,000	98,000	134,000	157,000	157,000

*In practice, surpluses may be subject to amortization in the same way that shortfalls may be, depending on the plan’s terms. The actual mathematics of year-to-year contributions will be highly specific to the plan’s terms.

Note: The range of outcomes is based on Bernstein’s long-term forecasts for the applicable capital markets. Data are rounded to the nearest whole number and do not represent any past performance and are not a promise of actual future results or a range of future results.

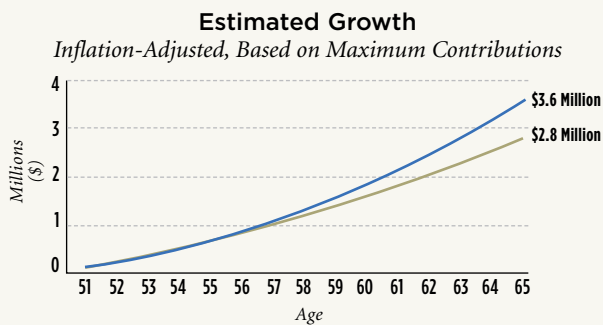
— AllianceBernstein

Greater Wealth Potential

The higher the interest crediting rate, the greater the likelihood of long-term wealth creation. But the probability of annual shortfalls also increases

Assumptions:

- IRS third segment rate: 6.8 percent (common for retirement plans)
- 30-year Treasury rate: 3.56 percent (common for retirement plans)
- Average annual inflation rate: 2.3 percent



Note: Internal Revenue Code Section 415 maximum benefit limits are not accounted for in this analysis.

— Internal Revenue Service, U.S. Treasury, and AllianceBernstein

between growth potential and the risk of shortfalls. In other words, if a plan chooses a high interest crediting rate, it will accumulate more wealth for its participants over time—but it will almost surely have bigger shortfalls when its investments fall short of the target. The more it invests in equities, the more likely it will be to reach the target, but given the volatility of equities, the risk of shortfalls increases as well.

Also, participants of different ages may have different preferences for the plan's investments. Because the size of potential shortfalls grows as account sizes grow, older participants tend to prefer terms that minimize shortfalls—in other words, a lower interest crediting rate and a more conservative asset allocation—whereas younger participants tend to prefer a structure that aims for maximum investment growth.

By subjecting each of these trade-offs to rigorous financial modeling, partnerships with cash balance plans can make better-informed decisions.

Asset Allocation

To measure the effect of various asset allocations on performance, let's analyze the hypothetical case of one

participant—Rich—who saw his cash balance plan contribute \$110,000 to his notional account in the first year and expects it to contribute \$117,000 in the second year. For this example, we use the IRS third segment rate of 6.8 percent.

What asset allocation is most likely to hit a 6.8 percent return without undershooting or overshooting too much? To find the answer, we ran an analysis based on the probability of one-year returns for asset allocations ranging from 100 percent bonds to 100 percent stocks, measuring the risk of negative returns versus the return potential.

We find that some exposure to equities is necessary to improve the chances of reaching 6.8 percent. But, not surprisingly, increasing the allocation to equities also increases the possibility of negative returns—because of stock market volatility. The sweet spot is an allocation of somewhere between 20 percent stocks and 40 percent stocks. If there are any more stocks in the mix, the possibility of negative returns rises without enough return potential to compensate for that risk. (See "The Sweet Spot," p. x.)

Given the asset allocation, what is the likely range of actual one-year returns, and how will they impact the amount needed for the following year's contributions? We can model the range of returns to find out.

What we find, for example, is that with a portfolio comprising 40 percent stocks and 60 percent bonds, Rich faces a one-in-10 chance that after one year the plan will owe \$135,000 to his account—the expected \$117,000 second-year pay credit plus a shortfall of \$18,000. We also find that the greater the allocation to equities, the greater the probability of a surplus—as well as the likelihood of shortfalls. (See "After One Year," p. x.)

One might conclude that a 100 percent bond portfolio is the best choice: It comes closest to meeting the desired interest crediting rate with the smallest potential shortfall. But remember that this represents only one year of returns. Over time, Rich's account will grow, as will his annual contributions, and his potential shortfalls. (See "After Five Years," p. x.)

Five years into the plan, the expected annual contribution to Rich's account is \$157,000, and the potential for shortfalls has grown. A 100 percent bond portfolio is no longer the most attractive choice. With a potential shortfall of \$64,000, its downside is greater than that of a 20/80 portfolio, and close to that of a 40/60 portfolio, but its potential surplus is much smaller.

In other words, asset allocation can have a dramatic effect on cash balance plan participants, and should

be reviewed regularly. A number of factors may cause a plan sponsor to consider changing the asset allocation, such as plan performance or changes in the circumstances of plan participants. Unsurprisingly, most plan sponsors work closely with an investment manager, often through an investment committee, to determine and review asset allocation.

Interest Crediting Rate

Given the potential for shortfalls, a plan might consider a lower interest crediting rate. What would the numbers look like if the plan chose the yield on 30-year Treasury bonds, which was 3.56 percent at the time of our analysis?

Clearly, it won't be able to accumulate the same amount of wealth. Our calculations show that over a 15-year period, given typical markets and a 3.56 percent target rate, the account of a participant in this plan can be expected to grow, adjusted for inflation, to \$2.8 million, compared with \$3.6 million if the rate were 6.8 percent.¹³ However, the trade-off of lower potential shortfalls still might be attractive. (See "Greater Wealth Potential," p. x.)

With a lower crediting rate, the asset allocation decision becomes simpler. A small allocation to equities—10 percent—is much better than no equities at all. But an allocation to equities that is any greater actually increases the risk of negative returns without improving the odds of meeting the target rate. So, a 10 percent stock / 90 percent bond mix is the optimal asset allocation for this interest crediting rate (at least at the time this analysis was done). Incidentally, a low target rate does not necessarily call for an all-bond portfolio. (See "A Different Sweet Spot," p. x.)

Handling Shortfalls

The third key decision—dealing with shortfalls by adjusting the amortization period—can be difficult, because at most firms any choice has a distinct downside. If the period is the shortest possible, one year, the pain of shortfalls can't be mitigated by stretching them over time. If the period is longer, a partner's departure may mean an extra cost for other partners. But in certain cases the decision is easy. For example, if a one-person firm creates a cash balance plan, a seven-year period is probably the best choice, because there is no evident downside. Conversely, many firms choose the one-year

period without further analysis, because they simply don't want to consider burdening partners with other partners' shortfalls.¹⁴

For most firms, though, it's worth considering the choice between, say, a one-year and three-year period. (See "Falling Short," p.x.)

Analyze Often

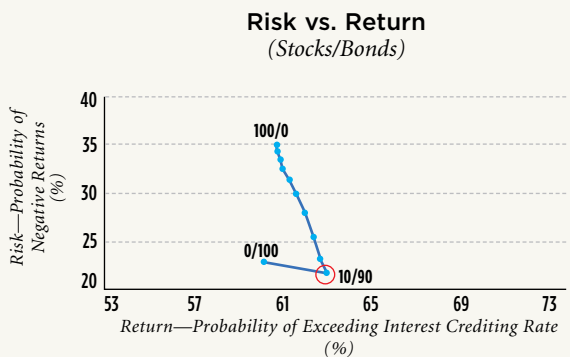
Analyzing a plan's investment goals and strategy should be, at a minimum, an annual exercise. Plan sponsors can change their asset allocation at any time, so midyear corrections are easy to make. While the interest crediting rate can be changed only through plan amendments, some plans may find that as their account balances grow, it makes sense to transition to lower target rates and more conservative asset allocations. These decisions depend on the demographics and other characteristics of the plan participants.

But, of course, cash balance plans should not be considered in a vacuum. Individual participants are sure to have other investment accounts—taxable and/or tax-deferred—and the asset allocation decisions in each should be considered as part of the whole. For instance,

A Different Sweet Spot

A lower interest crediting rate such as 3.56 percent suggests a lower allocation to equities—but not 100 percent bonds

Even bonds sometimes have negative performance, so a small allocation to equities can improve the portfolio's overall chance of success.



Note: The range of outcomes is based on Bernstein's long-term forecasts for the applicable capital markets. Data are rounded to the nearest whole number and do not represent any past performance and are not a promise of actual future results or a range of future results.

— AllianceBernstein

Falling Short

As years go by, longer amortization periods can create mounting debt

An amortization period, while appealing in the short term, can put additional plan assets at the mercy of investment returns. In this case, we assume very poor investment returns over five years.

Assumptions: 40 percent stocks / 60 percent bonds
 6.8 percent interest crediting rate
 Expected contribution in Year 6 is \$157,000

	Fifth-Year Potential Shortfalls	Outstanding Debt
One-Year Amortization	\$69,000	\$0
Three-Year Amortization	\$32,000	\$81,000

— AllianceBernstein

if an individual's firm has a cash balance plan with a low crediting rate and a very conservative asset allocation, it might make sense for that person to invest more aggressively in his or her 401(k) and taxable accounts. **A customized analysis for an individual, similar to the kind done for the cash balance plan, can provide the foundation for making well-informed decisions.**

—Bernstein Global Wealth Management, a unit of AllianceBernstein L.P., does not offer tax, legal, or accounting advice. In considering this material, you should discuss your individual circumstances with professionals in those areas before making any decisions.

Endnotes

1. Cash balance plans have certain features that resemble defined contribution plans, so they are often referred to as "hybrid plans." But, legally, they are a type of defined benefit plan, subject to the applicable requirements of the Internal Revenue Code. A cash balance plan also will be subject to the requirements of the Employee Retirement Income Security Act (ERISA) if it covers employees (and not solely partners).
2. This is Bernstein Global Wealth Management's proprietary Wealth Forecasting SystemSM (WFS). Our analysis uses a Monte Carlo model that simulates 10,000 plausible future paths of returns for each asset class, inflation and certain tax rates. It also produces a probability distribution of outcomes. But the model

does not randomly draw from a set of historical returns to produce estimates for the future. Instead, our forecasts (a) are based on the building blocks of asset returns, such as inflation, yields, yield spreads, stock earnings, and price multiples; (b) incorporate the linkages that exist among the returns of various asset classes; (c) take into account current market conditions at the beginning of an analysis; and (d) factor in a reasonable degree of randomness and unpredictability.

3. The research in this study focuses on the investment planning implications of cash balance plans and should not be considered advice for creating a plan. The rules and regulations regarding defined benefit plans are extensive and can be complex. Also, there are many ways to structure cash balance plans; our analysis is based on the simplest structure. This publication is not intended to provide actuarial, tax, or legal advice. Anyone considering a cash balance plan should consult with experienced actuarial, tax, and legal advisors.
4. It is possible that income taxes could rise to such an extent that a person taking income distributions in the future would be taxed at a higher rate, thus negating the benefits of tax-deferred investing.
5. This includes an elective deferral limit for 2009 of \$16,500 and a catch-up deferral limit for 2009 of \$5,500 for those who are age 50 or older. These limits are adjusted annually for cost-of-living increases by the Internal Revenue Service.
6. The maximum contribution in any year may be capped by the assumed rate of return on underlying plan assets.
7. Subject to maximum benefit limits (IRC Section 415). These limits are adjusted annually for cost-of-living increases by the IRS.
8. The actual amount the plan is obligated to pay may vary according to funding rules and plan terms.
9. There are different methods for a closely held firm to fund its cash balance contributions. But, generally, the participants in the plan will see their annual income (whether salary, draw, or percent of profits) reduced to fund the plan. It's important to keep in mind that cash balance plans are defined benefit—not defined contribution—plans, meaning that participants don't have discretion over the amount of contributions from year to year.
10. Thirty-year Treasury bonds are represented by the Barclays Capital U.S. Treasury Bellwethers Index, as reported by FactSet.
11. A plan sponsor considering amending a plan should always consult with an ERISA attorney—and in many cases an actuary. While plan amendments are allowed, certain amendments may trigger participant notice requirements or may run afoul of IRC or ERISA rules.
12. Some plan sponsors have devised various methods to deal with the problem of shortfalls, such as by allowing "in-service distributions" after age 62 or "roll-overs" to another retirement plan, which have the effect of reducing a partner's account balance, and thereby, his or her potential shortfalls. All the analysis in this study assumes the simplest example in which no such special considerations apply. In practice, surpluses may be subject to amortization in the same way that shortfalls may be, depending on the plan's terms. The actual mathematics of year-to-year contributions will be highly specific to the plan's terms.
13. Not taking into account potential IRC Section 415 maximum benefit limits.
14. Plan sponsors have used a variety of methods for limiting the impact of shortfalls.