

ASPEN PUBLISHERS

# JOURNAL of PENSION BENEFITS

ISSUES IN ADMINISTRATION, DESIGN, FUNDING, AND COMPLIANCE

Volume 15 • Number 3 • Spring 2008

## The Wealth Effect and the Savings Gap

BY DAVID M. BLANCHETT AND  
BRIAN C. BLANCHETT

*When determining how much to save for retirement, it is important to not only consider current income, but also future projected increases in compensation. The wealth effect is an economic principle which states that the more wealth you have, the more you spend. As incomes rise, so does your standard of living and consequently the standard of living you need to replace in retirement.*

*The wealth effect can have a tremendous impact on savings projections for retirement.*

*This is especially true for those individuals with high potential future increases in income, a long time period until retirement, and high compensation. A successful retirement often means saving more and spending less, and our planning must take into account this wealth effect and the potential savings gap it creates.*

---

David M. Blanchett, MSFS, CFP®, CLU, AIFA®, QPA, CFA, is an internal institutional 401(k) consultant at Unified Trust Company, NA, in Lexington, KY. Unified Trust Company is a nationally chartered trust company that specializes in the fiduciary management of retirement plans.

Brian C. Blanchett, CPA, CFP®, AIF®, is a senior associate with a big four accounting firm in New York, NY, where he specializes in the Investment Management & Real Estate sector of the Advisory practice.

### Introduction

The shift away from defined benefit plans by American employers is already well underway. As such, the burden of saving for retirement is being placed on the shoulders of individuals, most of whom are ill-prepared to determine how and how much to save for retirement. Those individuals who do income replacement projections, either on their own or with professional help, typically use current income when forecasting future retirement income replacement needs.

However, such an analysis is incomplete as it overlooks the likelihood of future increases in real income (above inflation) and the higher spending levels that result from such real increases.

### The Wealth Effect

The wealth effect is an economic principle which states that the more wealth you have, the more you spend. The wealth effect can occur through asset appreciation (*e.g.*, real estate or personal investments) and/or through increases in earnings. For most Americans, though, especially during the accumulation phase of their lifetimes, the wealth effect occurs primarily through increases in compensation. The wealth effect helps explain why people often do not feel wealthier as their compensation increases (except for a very short time). While increases in wealth affect people differently, most people quickly become accustomed to a new lifestyle of increased income and spending.

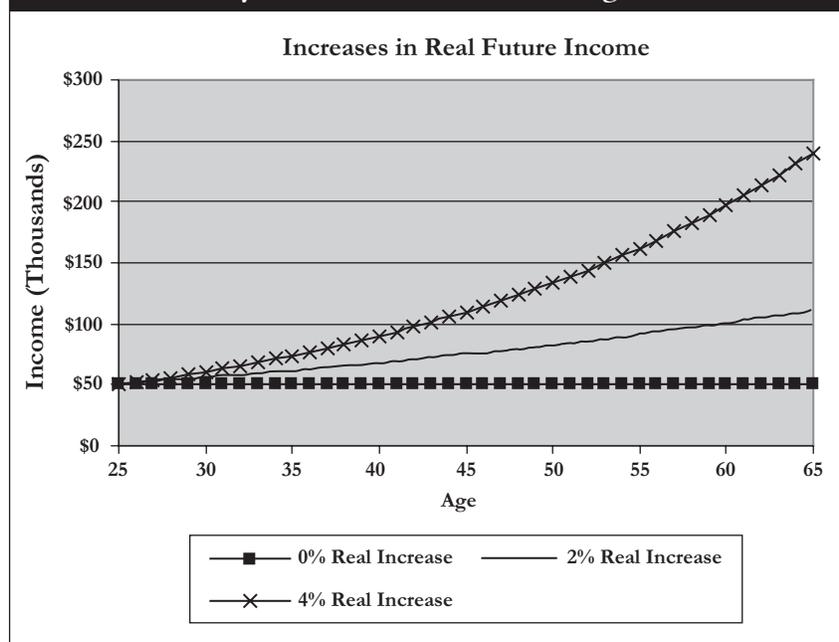
The wealth effect can have a tremendous impact on savings projections for retirement. This is especially true for those individuals with high potential future increases in income, a long time period until retirement, and high compensation. As real income increases, the previous amounts saved for retirement, which were based on lower levels of real income, will not be sufficient to replace the higher new level of spending during retirement.

There are a variety of strategies that can be used to save money for retirement. And while it is possible to increase savings along with increases in wealth, in order to determine a new adequate savings rate, this is something most investors would not be able to do without help from a financial planning professional. While the ability to access quality financial planning advice is mixed, the majority of Americans, even those with professional financial planning help available, do not readdress their “retirement health” on an annual basis. Therefore, the most optimal method to fill the savings gap caused by an increase in real future income is to save a consistent *percentage* of income throughout the accumulation years.

### Income Growth

Increases in compensation over the duration of a working lifetime are taken into consideration when determining a plan sponsor’s contribution to its defined benefit plan. Usually compensation (for benefit purposes) is determined based upon some average of the highest number of years of compensation. An actuary must determine (annually) what contribution should be made to fund the plan. In contrast, for defined contribution plans, each participant must do his own income growth projections and determine his own personal savings rate. If real increases in income are not considered, a significant retirement funding shortfall may

**Exhibit 1. Increases in Real Future Income Based upon a Variety of Real Increase Percentages**



develop. Even a slight increase in real income over a working lifetime can have a dramatic impact on final compensation. Exhibit 1 (below) includes a chart that shows the effect of three different constant increases in real income over a 40-year period (0%, 2%, and 4%).

As you can see from Exhibit 1, even a two percent increase in real income over a working lifetime can lead to a dramatic increase in real compensation over time. A two percent constant annual real increase over 40 years results in a final income multiple of 2.21 times original salary, while a four percent constant increase leads to an income multiple of 4.80 times original salary. The importance of these small differences (*e.g.*, two percent) is similar to the effect inflation has on retirement planning projections. If the inflation assumption for retirement income projections (*e.g.*, two percent) is lower than the actual inflation rate over the savings and spending periods (*e.g.*, four percent) a dramatic savings shortfall may result.

### Example: John Smith

Take, for example, John Smith. John Smith is 25 years old and earns \$50,000 a year. As a freshly minted law school graduate, he expects his real income will increase annually by three percent (above inflation) until he retires at age 65. In other words, John Smith believes, as most professionals do, that as he acquires more knowledge and gains more experience, his compensation will increase faster than inflation to reflect his increased value.

Assuming a five percent pre-retirement real rate of return, a three percent post-retirement real rate of return, a 25-year life expectancy in retirement, and ignoring the impact of taxes (both on earnings and retirement distributions, which should roughly offset each other), if John Smith saves 10 percent until age 65, he will only be able to replace 34.46 percent of his final year compensation. While 10 percent may appear to be an adequate funding rate for someone with 40 years until retirement, John's income increases from \$50,000 to \$163,102 at age 65. This is 3.26 times his current compensation of \$50,000.

If we assume that John Smith's income is *not going* to increase in real terms and will remain at \$50,000 and that he saves 10 percent a year until retirement, he should be able to replace 71.28 percent of his final year compensation (\$50,000). However, if we assume the original three percent annual increase in earnings, John would need to save 20.69 percent a year in order to replace 71.28 percent of his final year compensation. While these calculations do not include a

Social Security benefit (which will be addressed in the analysis portion of this paper) or the fact that certain expenses incurred pre-retirement are not incurred post-retirement (*e.g.*, Medicare tax, Social Security tax, and retirement plan contributions, which will also be addressed in the analysis portion of this paper), the three percent increase savings rate is *more than double* the zero percent, no growth figure.

### Quantifying the Appropriate Savings Rate... Filling the Gap

Unfortunately, there is a large portion of working Americans who will not be able to accumulate enough funds in order to retire comfortably. Many 50-somethings realize too late in life that the best years to begin saving (in your 20s or 30s) have already long passed them by. It's not that they will be unable to retire; it's just that in order for them to do so it will likely require dramatic changes in their pre-retirement lifestyle. This is why it is important to begin saving for retirement as soon as possible (*i.e.*, there's no time like the present!).

In order to understand the necessary savings rates for retirement success, an analysis was conducted. The analysis considered three different variables to determine the appropriate savings rate: current compensation, real increase in income, and time until retirement. The following assumptions were used for the analysis:

1. All savings are pre-tax (*e.g.*, a traditional 401(k)) and made by the employee.
2. All dollars are in today's dollars (real terms). This eliminates the effect of inflation on the analysis.
3. Taxes are not considered. While an individual's tax situation will certainly differ between the accumulation (working) period and the distribution (retirement) period, tax projections add a level of complexity beyond the primary purpose of this paper.
4. Life expectancy during retirement is 25 years. While this may seem unrealistic for a 65-year-old, it is much less so for a 60-year-old, especially when considering the joint life expectancy of a married couple.
5. The assumed pre-retirement annual real rate of return was five percent (approximate 8.5 percent nominal rate of return), which is the approximate historical return of a 60/40 portfolio (60 percent equity and 40 percent cash and bond). The post-retirement annual real rate of return was assumed

to be three percent (an approximate 6.5 percent nominal rate of return), which is the approximate historical return of a 30/70 portfolio.

6. The only additional form of retirement income considered in the analysis was a partial Social Security benefit. The Social Security benefit is calculated using the wages considered for each test period. If the test period was less than 35 years (the necessary time period for full Social Security benefits), the compensation at the beginning of the period is used for averaging purposes to create 35 years of earnings. For example, if the test period was 20 years, of the 35 years necessary to determine the average wages, 20 years would come from the test time period and 15 years would be the wages at the beginning of the test period.

Because all wages are calculated in real terms, the information necessary to calculate the Primary Insurance Benefit (PIA) is based entirely on 2006 Social Security Administration figures (*e.g.*, a taxable wage base of \$94,200 and bend points of \$656 and \$3,955). However, it is worth noting that using inflation is different than the actual method for indexing lifetime compensation, which is based on the national average wage index. Since 1951, the national average wage index has averaged 1.07 percent higher than inflation, where inflation is defined as the increase in the Urban Consumer Price Index (data obtained from the Bureau of Labor Statistics). Using inflation as opposed to the national average wage index (historically) would have resulted in a lower estimated Social Security benefit.

An additional 30 percent reduction was also applied to the Social Security benefit in order to reflect the fact that full retirement benefits for those workers born in 1960 or later begin at age 67 (and age 65 is the assumed retirement date for the analysis) and to reflect the fact that the long-term ability of Social Security to provide full benefits at the current levels is questionable. Also, since taxes are not considered in the analysis, the implicit assumption is that Social Security benefits would be taxable.

7. The replacement percentage of final year's income necessary for a successfully funded retirement is considered to be 70 percent. The 70 percent figure is a circular calculation that represents 70 percent of compensation after subtracting Medicare tax, Social Security tax, and the necessary retirement plan deferrals, because these are expenses that are

not incurred during retirement (and therefore do not need to be replaced). The 30 percent reduction also reflects lower clothing and transportation (*etc.*) expenses incurred by retirees.

For example, a participant earning \$50,000, with 35 years until retirement, and zero percent expected real increases in income will need to save 6.03 percent annually in order to generate \$30,211 of lifetime income during retirement. Although \$30,211 only represents 60.42 percent of final income (\$50,000), when you subtract Medicare tax (1.45 percent of final compensation, or \$725), Social Security tax (6.20 percent of final compensation, or \$3,100), and the annual deferral (6.03 percent of \$50,000, or \$3,016) from final compensation (\$50,000), the necessary income replacement figure is only \$43,159 (\$50,000 - \$725 - \$3,100 - \$3,016 = \$43,159). Seventy percent of \$43,159 is \$30,211.

8. Success is determined using linear approximation (*i.e.*, time value of money) and does not consider any type of simulation analysis (*e.g.*, Monte Carlo analysis). While the author does not recommend linear approximation for financial planning purposes, similar to introducing tax considerations, a Monte Carlo analysis adds a level of complexity beyond the primary purpose of this paper.

Three main scenarios were considered:

1. Varying compensation and real increases in income with 35 years until retirement.
2. Varying compensation and real increases in income with 25 years until retirement.
3. Varying compensation and time until retirement with a one percent lifetime increase in real income.

The necessary savings rates for each scenario were calculated using the Solver function in Microsoft Excel.

### 35 Years Until Retirement

The first test assumed a constant time period until retirement, 35 years. This would be an appropriate scenario for a 30-year-old who wishes to retire at age 65 (or a 25-year-old wishing to retire at age 60). The two variables considered in the analysis were current compensation and real increases in income. Exhibit 2 includes a table with both the necessary savings rates to achieve a 70 percent replacement ratio during retirement as well as the final year's compensation

<b>Exhibit 2. Necessary Savings Rates Based on Income and Real Increases in Future Income: 35 Years Until Retirement</b>							
		<b>Current Income</b>					
		<b>\$25,000</b>	<b>\$50,000</b>	<b>\$75,000</b>	<b>\$100,000</b>	<b>\$125,000</b>	<b>\$150,000</b>
<b>Real Increases in Future Income</b>	<b>0.0%</b>	4.87%	6.03%	7.01%	7.64%	8.39%	8.90%
	<b>0.5%</b>	6.09%	7.33%	8.23%	9.09%	9.79%	10.25%
	<b>1.0%</b>	7.37%	8.68%	9.65%	10.59%	11.24%	11.67%
	<b>1.5%</b>	8.71%	10.09%	11.24%	12.15%	12.74%	13.14%
	<b>2.0%</b>	10.09%	11.60%	12.90%	13.75%	14.30%	14.66%
	<b>2.5%</b>	11.52%	13.32%	14.61%	15.39%	15.89%	16.22%
	<b>3.0%</b>	13.00%	15.12%	16.34%	17.07%	17.52%	17.83%
<b>Final Year's Income at Age 65 (Retirement)</b>							
		<b>Current Income</b>					
		<b>\$25,000</b>	<b>\$50,000</b>	<b>\$75,000</b>	<b>\$100,000</b>	<b>\$125,000</b>	<b>\$150,000</b>
<b>Real Increases in Future Income</b>	<b>0.0%</b>	\$25,000	\$50,000	\$75,000	\$100,000	\$125,000	\$150,000
	<b>0.5%</b>	\$29,768	\$59,536	\$89,305	\$119,073	\$148,841	\$178,609
	<b>1.0%</b>	\$35,415	\$70,830	\$106,245	\$141,660	\$177,075	\$212,490
	<b>1.5%</b>	\$42,097	\$84,194	\$126,291	\$168,388	\$210,485	\$252,582
	<b>2.0%</b>	\$49,997	\$99,994	\$149,992	\$199,989	\$249,986	\$299,983
	<b>2.5%</b>	\$59,330	\$118,660	\$177,990	\$237,321	\$296,651	\$355,981
	<b>3.0%</b>	\$70,347	\$140,693	\$211,040	\$281,386	\$351,733	\$422,079

(based on current income and the real increase in future income, assuming a time period of 35 years). The final year compensation was included to help the reader understand the level of real growth in earnings that can take place over time.

As you can see from Exhibit 2, the higher the level of income, the higher the necessary savings rate, even for the same levels of real increases in income. This occurs because Social Security benefits are greatest for low income workers, and therefore replace a decreasing percentage of compensation at higher income levels. With 35 years until retirement, the savings rates, even for higher income individuals with high real increases in income, are far from unrealistic (17.83 percent for someone with compensation of \$150,000 and a three percent expected real increase). This highlights the importance of starting early when saving for retirement.

One important note of the analysis is that it may not be possible to defer the full savings rate necessary in a qualified plan due to 402(g) limits. For example, 17.83 percent of \$150,000 is \$26,745, which is above the 2008 402(g) limit of \$15,500. Therefore, an

individual with \$150,000 in income with 35 years to retirement and a three percent expected real increase in income would need to either have the employer make up the difference (via a profit-sharing contribution) or do so through outside savings.

Including a partial Social Security benefit (and netting out the final income effects of Social Security tax, Medicare tax, and the retirement plan deferral) changes the necessary savings rate for John Smith dramatically. Based upon John Smith's original scenario (40 years until retirement, \$50,000 in income, and a three percent real increase in earnings), he would need to save 20.31 percent annually to replace 70 percent of his final year's compensation. However, when you include a partial Social Security benefit and reduce the necessary replacement compensation by the Social Security tax, Medicare tax, and the retirement plan deferral, his necessary savings rate decreases to 13.40 percent (which is a decrease of 6.91 percent). While 13.40 percent is certainly less than 20.31 percent, it still represents a much higher savings rate than is common in young professionals.

Exhibit 3. Necessary Savings Rates Based on Income and Real Increases in Future Income: 25 Years Until Retirement							
		Current Income					
		\$25,000	\$50,000	\$75,000	\$100,000	\$125,000	\$150,000
Real Increases in Future Income	0.0%	8.30%	10.27%	11.93%	13.00%	14.29%	15.15%
	0.5%	9.76%	11.76%	13.31%	14.61%	15.81%	16.61%
	1.0%	11.23%	13.25%	14.74%	16.21%	17.34%	18.09%
	1.5%	12.71%	14.76%	16.38%	17.83%	18.88%	19.58%
	2.0%	14.20%	16.26%	18.06%	19.45%	20.43%	21.08%
	2.5%	15.68%	17.77%	19.75%	21.06%	21.97%	22.58%
	3.0%	17.17%	19.47%	21.44%	22.66%	23.52%	24.08%
Final Year's Income at Age 65 (Retirement)							
		Current Income					
		\$25,000	\$50,000	\$75,000	\$100,000	\$125,000	\$150,000
Real Increases in Future Income	0.0%	\$25,000	\$50,000	\$75,000	\$100,000	\$125,000	\$150,000
	0.5%	\$28,320	\$56,640	\$84,960	\$113,280	\$141,599	\$169,919
	1.0%	\$32,061	\$64,122	\$96,182	\$128,243	\$160,304	\$192,365
	1.5%	\$36,274	\$72,547	\$108,821	\$145,095	\$181,368	\$217,642
	2.0%	\$41,015	\$82,030	\$123,045	\$164,061	\$205,076	\$246,091
	2.5%	\$46,349	\$92,697	\$139,046	\$185,394	\$231,743	\$278,092
	3.0%	\$52,344	\$104,689	\$157,033	\$209,378	\$261,722	\$314,067

### 25 Years Until Retirement

A second analysis was conducted using the same assumptions as the first scenario, except it assumes 25 years until retirement instead of 35 years until retirement. This scenario would be appropriate for those individuals who are late in the game saving for retirement or wish to retire early, but still have a considerable amount of time to accumulate funds (*i.e.*, 25 years). Again, it is assumed there are no previous savings and that the only income during retirement is a partial Social Security benefit. The results are included in Exhibit 3.

As you can see from the table, delaying retirement savings 10 years results in higher savings rates. This should not surprise the reader. The average savings rate increased by 5.25 percent when the retirement savings time period was reduced from 35 to 25 years. Those individuals with higher real increases in income and higher levels of compensation saw the highest increases in savings rates. While certainly not impossible, it would likely be difficult for a family earning \$100,000 a year with a one percent expected real increase until retirement to start saving 16.21 percent. It is more

likely that such a family would end up working past age 65 or replacing a lower percentage of final compensation during retirement.

### One Percent Real Increase in Earnings

A third analysis was conducted in order to provide some insight as to how the necessary savings rates change based upon different income levels and time until retirement. In this scenario the real increase in income (*i.e.*, the increase in earnings above inflation) is held constant at one percent. Like the previous scenarios, the analysis does not consider any previous savings, and the only additional income during retirement is a partial Social Security benefit. The results are included in Exhibit 4.

Similar to the previous scenarios, those individuals with lower incomes require lower savings rates than higher income individuals, even with the same number of years until retirement. This is due to the fact Social Security replaces a proportionately higher percentage of income for lower compensation workers. Again, delaying the savings decision (even five years) results in an increase in the necessary savings

Exhibit 4. Necessary Savings Rates Based on Income and Years Until Retirement: One Percent Real Increase in Earnings							
		Current Income					
		\$25,000	\$50,000	\$75,000	\$100,000	\$125,000	\$150,000
Years Until Retirement	40	5.96%	7.06%	7.87%	8.64%	9.13%	9.46%
	35	7.37%	8.68%	9.65%	10.59%	11.24%	11.67%
	30	9.06%	10.69%	11.88%	13.06%	13.91%	14.48%
	25	11.23%	13.25%	14.74%	16.21%	17.34%	18.09%
	20	14.00%	16.56%	18.52%	20.32%	21.83%	22.84%
Final Year's Income at Age 65 (Retirement)							
		Current Income					
		\$25,000	\$50,000	\$75,000	\$100,000	\$125,000	\$150,000
Years Until Retirement	40	\$37,222	\$74,443	\$111,665	\$148,886	\$186,108	\$223,330
	35	\$35,415	\$70,830	\$106,245	\$141,660	\$177,075	\$212,490
	30	\$33,696	\$67,392	\$101,089	\$134,785	\$168,481	\$202,177
	25	\$32,061	\$64,122	\$96,182	\$128,243	\$160,304	\$192,365
	20	\$30,505	\$61,010	\$91,514	\$122,019	\$152,524	\$183,029

rates. Although it may be unlikely that someone with 25 years until retirement making \$50,000 (assuming a one percent real increase in income) may be able to save 13.25 percent of their compensation, if they wait five years, how are they then going to be able to afford a 16.56 percent deferral?

### Saving More Is the Only Realistic Solution

Real increases in income must be considered when determining an adequate retirement savings rate. If potential real increases in compensation are ignored, retirement savings will likely not be able to fully fund retirement. According to the seventh edition of Fidelity's *Building Futures*, the average 401(k) deferral percentage in 2005 was 6.9 percent (for Fidelity's nine million participants in its 12,000 corporate defined contribution plans), but the average participation rate was only 64.4 percent. This means the aggregate plan savings rate was only 4.4 percent.

If you consider a three percent employer match for those employees who are actually participating (the most common match in America is 50 percent on the first six percent of deferrals), the total savings rate for those participants would be 9.9 percent. However, based upon the aggregate savings rate (assuming the same match formula), the total savings rate is only 6.7 percent. Both of these savings rates (9.9 percent

and 6.7 percent) are adequate savings rates for only the lowest income participants, with the low expected real increases in income and long time periods until retirement.

### Filling the Gap...

A plan cannot be successful without high levels of participation. In the past there was little that could be done after-the-fact to get participants to save more. However, with the passage of the Pension Protection Act (PPA), the ability to implement a variety of meaningful changes to retirement plans now exists. For those advisors who previously had concerns about recommending automatic enrollment (possibly due to the issues surrounding the legality of wage garnishment without an affirmative election) or progressive savings, the Pension Protection Act eliminates any uncertainty surrounding these provisions.

Automatic enrollment is a 401(k) plan feature where participants are automatically enrolled in the plan (*e.g.*, at a five percent deferral rate), and progressive savings is a plan feature where the savings rate is increased each year, typically up to some maximum amount (*e.g.*, one percent a year up to a total deferral rate of 15 percent). These two features, when used together, represent a powerful combination to make saving for retirement as painless as possible. A re-enrollment, where all participants are re-enrolled

at the automatic enrollment deferral rate and with progressive savings, is a technique worth considering in order to capture those participants who may have opted out in the past.

The true measure of the success of a retirement plan is its ability to ensure retirement success for each eligible employee (not just those participating). While investment performance is certainly important (especially for employee interest), having 1,000 employees deferring \$5,000 and earning a five percent return is much more important than having 200 employees deferring \$2,500 and earning a six percent return. The higher the overall savings rate, the higher the probability participants are going to be able to retire successfully.

### Conclusion

When determining how much to save for retirement, it is important not only to consider current compensation, but also to consider future projected increases in earnings. Saving for retirement should be viewed in terms of income replacement and not simply accumulation. Americans live in a competitive consumption society, and as incomes rise, so does our standard of living and consequently the standard of living we need to replace in retirement. The more we earn, the more we spend. For most of us, therefore, a successful retirement means saving more *and* spending less, and our planning must take into account this wealth effect and the savings gap it creates. ■

Reprinted from *Journal of Pension Benefits*, Volume 15, Number 3, Spring 2008, pages 48–55,  
with permission from Aspen Publishers, a WoltersKluwer Company, New York, NY  
1-800-638-8437, [www.aspenpublishers.com](http://www.aspenpublishers.com).