RESEARCH REPORT

Integrating Whole Life Insurance Into Retirement Income Planning

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Introduction

Can more efficient retirement income solutions be obtained through careful efforts to combine investment portfolios, income annuities, and whole life insurance into a retirement income plan? With risk pooling and the ability to better manage longevity and sequence of returns risk, the answer is yes.

A basic investment portfolio allocates assets between stocks and bonds. Stocks are volatile investments which focus on growth, and bonds are generally used to diversify and reduce overall portfolio volatility. The benefits from investment strategies are liquidity and upside growth potential. But investments alone do not necessarily create an efficient retirement plan. By efficiency, we mean that there may be an alternative way to structure retirement assets during working years, to be able to support a higher level of retirement spending as well as an equal or greater amount of legacy assets at the end of retirement. Investments provide access to only one of two economic powers available to households – the potential for market returns.

The second economic power is actuarial science, or risk pooling, which allows individuals to plan based on population averages rather than worry about being an outlier facing an extremely expensive retirement through a combination of long life and poor market returns. Actuarial science principles can contribute to better retirement outcomes. These principles allow personal retirement planning to be treated more like a defined-benefit pension plan, which pools financial market risks between different cohorts and pool longevity risk between different individuals within the same cohort. By including actuarial science principles, longevity-protected spending can be determined in advance through these pooling mechanisms. In contrast, those relying on their own devices to manage market

Actuarial science principles can contribute to better retirement outcomes. These principles allow personal retirement planning to be treated more like a defined-benefit pension plan, which pools financial market risks between different cohorts and pool longevity risk between different individuals within the same cohort.

and longevity risks must behave conservatively regarding market return assumptions and the planning horizon, lest they run out of assets. And even with conservative spending assumptions, investment portfolios lack guarantees and remain vulnerable to depletion.

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To compare with investments, we can think of the combination of whole life insurance and income annuities as "actuarial bonds" with an average maturity equal to life expectancy. These financial products, which invest primarily in a fixed income portfolio, can better hedge a retiree's personal financial goals. By combining them, the overall planning horizon can essentially be fixed at something close to life expectancy, as whole life insurance provides a higher implied return when the realized lifetime is short, and income annuities provide a higher return when the realized lifetime is long. This is a more effective way to use fixed income assets than as a portfolio volatility reduction tool.

As for specific options to incorporate whole life insurance into retirement income, we will consider two possibilities: the **Covered Asset** strategy and the **Volatility Buffer**. For the **Covered Asset** strategy, a permanent death benefit supported through whole life insurance can be integrated into a retirement income plan by helping the retiree to justify the decision to buy an income annuity and to overcome the behavioral hurdles related to using annuities. The death benefit allows the retiree to purchase a life-only single life annuity that offers the highest payout rate since it accepts the greatest risk for an early death. The death benefit hedges the risk of loss on the annuity due to an early death and replaces the asset for the household.

The key idea is that the retiree can feel comfortable buying an income annuity because of the understanding that the life insurance death benefit will return the amount spent on the annuity premium to the household at the time of death when annuity payments cease. As opposed to obtaining a form of life insurance for the household through the annuity by adding cash refund provisions or a joint life option, this integrated approach with a separate life insurance policy creates greater flexibility for the household by reducing the required annuity premiums needed to meet a spending goal.

A second option is that the cash value of whole life insurance may serve as a **Volatility Buffer** to help manage sequence risk in retirement. Because the insurance company is better positioned to use asset-liability matching to hold assets to maturity, cash value for individual policyholders does not experience downside risk for capital losses in the face of rising interest rates. It is guaranteed to grow and can provide a temporary resource to supplement retirement spending rather than being forced to sell portfolio assets at a loss during poor market environments or when the portfolio is in a more precarious position with a higher distribution rate needed to manage a spending goal from a declining asset base. Indeed, in 2022 households were reminded about downside risk when both stocks and bonds experienced double-digit losses.

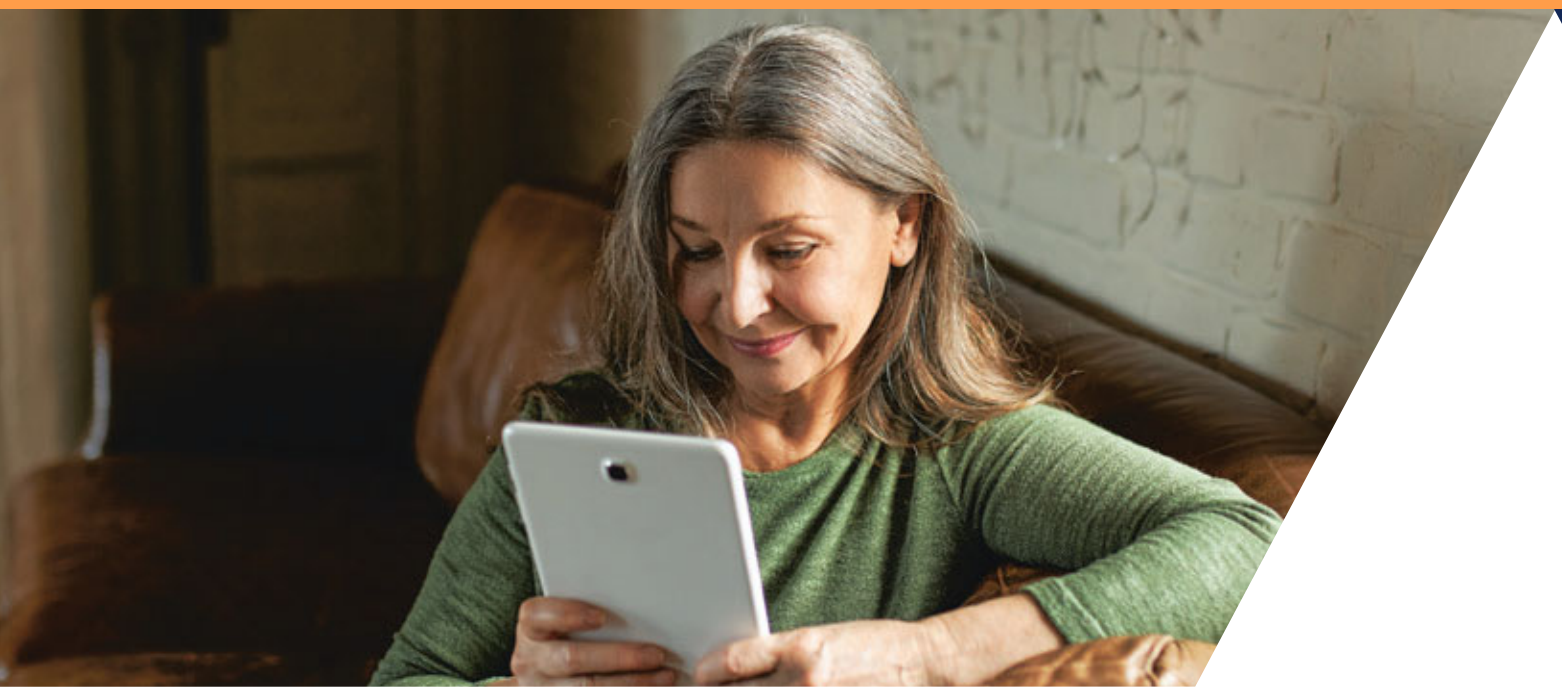
With this management of volatility and reduction of the sequence of returns risk triggered by needing to sell assets at a loss to meet spending goals, the **Volatility Buffer** has the potential to sustain an increased standard of living from a given asset base than strategies that rely primarily on

an investment portfolio. We consider using cash value to support retirement spending in order to preserve the portfolio whenever remaining portfolio assets fall below their initial level at the start of retirement. This alternative does not specifically incorporate an income annuity into the retirement plan, though it could also be used along with an annuity.

We examine these options through case studies for both 35-year-old and 50-year-old couples. The baseline for comparison with each of these options is to use a term life policy to meet life insurance needs during the working years, and to then draw retirement income with systematic withdrawals from an investment portfolio. This is the "buy term and invest the difference" strategy or investments-only strategy that is traditionally used by investment managers. It is the one economic power strategy. We compare it against options that include roles for whole life insurance and possibly income annuities.

By tracking the course of income and legacy wealth through age 100 for each scenario, we find that the inclusion of whole life insurance into the financial plan can allow for greater income and legacy throughout retirement when using the **Covered Asset** strategy or when implementing the **Volatility Buffer**. Our simulations show that the risk pooling features of the income annuity and life insurance are essentially a more significant factor in boosting retirement income than is the greater upside potential offered through increased reliance on investments. We also show that the **Volatility Buffer** does provide an effective way to help manage sequence of returns risk. Incorporating whole life insurance, even though it requires larger premiums than term life insurance, supports a higher income level while also supporting a larger legacy. We can indeed conclude that an integrated approach is a more efficient retirement income strategy.

Background on Life Insurance



The traditional purpose of life insurance is to provide a death benefit to help support surviving family members or a family business in the event of the policyholder's untimely death. Human capital is the present value of all the wages we can expect to earn during the remainder of our working years. For those with families or other fixed obligations that depend on receiving that human capital in the form of those future wages, the life insurance death benefit can serve as a replacement for lost wages in the event of an early death during the working years.

In this context, the amount of life insurance one seeks to hold is the amount that dependents would need to sustain their lifestyle or meet their obligations in the absence of the policyholder being able to contribute to the family through wages or other caretaking. But life insurance can also play other roles as part of a lifetime retirement income plan. Here we investigate life insurance from the broader retirement income perspective.

For this basic human capital replacement framework, one generally does not associate a need for life insurance after retirement begins. The value of human capital approaches zero as the working years end. The household subsequently funds lifestyle using assets accumulated during the working years.

Term life insurance can serve the role of human capital replacement quite well. With term life insurance, one purchases a contract to receive a death benefit should death occur within a certain number of years or by a certain age. The term could be chosen to end once family needs or other financial obligations no longer depend on the future earnings of the worker. A mantra of "buy term and invest the difference" developed in the investing world as the way to approach the life insurance decision. Because the death benefit is temporary with term life insurance, and it also does not accumulate any cash value, term-life premiums will be smaller than with other forms of life insurance, at least during the level pay period covered by the term policy. For a given pool of funds, this affords a greater remaining amount to be invested after life insurance obligations are met. An analogy can be drawn to leasing the death benefit during the time it is needed, and then canceling the lease once this need has ended.

But for lifetime financial planning, is it best to pay the smallest amount possible for life insurance in order to invest as much as possible in the financial markets to rely on one economic power during retirement? This research tests the concept of "buy term and invest the difference" by investigating whether there are better ways to approach life insurance from the context of comprehensive lifetime financial and retirement income planning. The focus is specifically about whether whole life insurance should be considered by the household as part of a longer-term retirement strategy that can be set into motion during the accumulation phase in order to provide access to both economic powers (investment returns and actuarial science) in retirement.

Whole life insurance receives its name because it provides the owner with a death benefit for the whole lifetime. It is a form of permanent life insurance.

Even though term insurance premiums are lower, this type of life insurance may not always provide the best value in the context of financial planning outcomes related to getting the most spending power and legacy from the available asset base. We focus particularly on whole life insurance as alternative to term insurance. We compare retirement income strategies with and without whole life insurance to determine how it may fit into a retirement income plan as an alternative to "buy term and invest the difference" approaches to financial planning.

Whole life insurance receives its name because it provides the owner with a death benefit for the whole lifetime. It is a form of permanent life insurance. Whole life also extends beyond providing just a death benefit because it includes a cash value accumulation component. Whole life insurance may be viewed as a fixed-income investment vehicle that incorporates a permanent death benefit as well. A whole life policy provides a tax-free death benefit and tax-deferred growth for its cash value. When structured properly, there are also ways to access the cash value on a tax-free basis. Whole life policies include provisions that guarantee the amount and duration of premium payments. The policy endows at the point that the cash value has grown to equal the death benefit. Whole life policies are typically designed to endow at either age 100 or age 121.

With whole life insurance, there is as a policy cash value that provides a portion and eventually the entire death benefit. This cash value is a reserve that builds over the years because through the annual premiums the owner essentially overpays during early years vis-á-vis the actual mortality cost. The cash value represents the amount that the policy holder could receive by surrendering the policy before death. This is a feature not provided with term life insurance. The cash value represents an asset for the policyholder and the cost to the insurance company of providing the full death benefit is not the full amount of the death benefit. Rather, it is the difference between the death benefit and the cash value. Nonetheless, the full amount of the death benefit is provided to the beneficiary at the policyholder's death. This aspect helps to reduce the costs of insurance implicit inside the whole life policy over time relative to a term policy.

Case Study: A 35-Year-Old Couple

Steve and Susie are a married 35-year-old couple with two children. Steve is seeking an additional amount of life insurance death benefit to help protect his family in the event of an early death, and is considering whether to choose permanent life insurance to help manage retirement income as well. Steve plans to retire at age 65. He presently is ready to start contributing to his 401(k) plan. It will be invested with an equity glide path strategy matching a typical target date fund. The asset allocation glidepath is 80% stocks for ages 35-44, 65% stocks for ages 45-54, 50% stocks for ages 55-64, 40% stocks for ages 65-74, and 30% stocks for ages 75 and older. He would like to plan for retirement at 65, and he believes it will be possible to set aside the full employee contribution amount of $22,500 per year from his salary for his life insurance and 401(k) contributions, which grows with inflation. His contribution also increases with the catch-up contribution of $7,500 in today's dollars after age 50, and he will take advantage of saving 150% of this amount at ages 60-63 as now allowed with SECURE Act 2.0. Steve expects to be in the 25% marginal tax bracket in his pre-retirement and post-retirement years.

In all scenarios, we assume that Steve is directing at least enough to the 401(k) to satisfy the conditions for the highest possible company match, though we do not specifically model any company match when simulating retirement income. An employer match would increase income proportionately for all our scenarios. More generally, Steve and Susie may also have other resources in retirement which we are not analyzing. We are modeling the relevant features about how to best make the investment and insurance decisions for the $22,500 annual set aside to meet life insurance needs and to obtain the most desirable retirement outcomes from this portion of their household resources. These assets are earmarked to generate retirement income, with a secondary objective of preserving funds for legacy once sustainable spending is maximized.

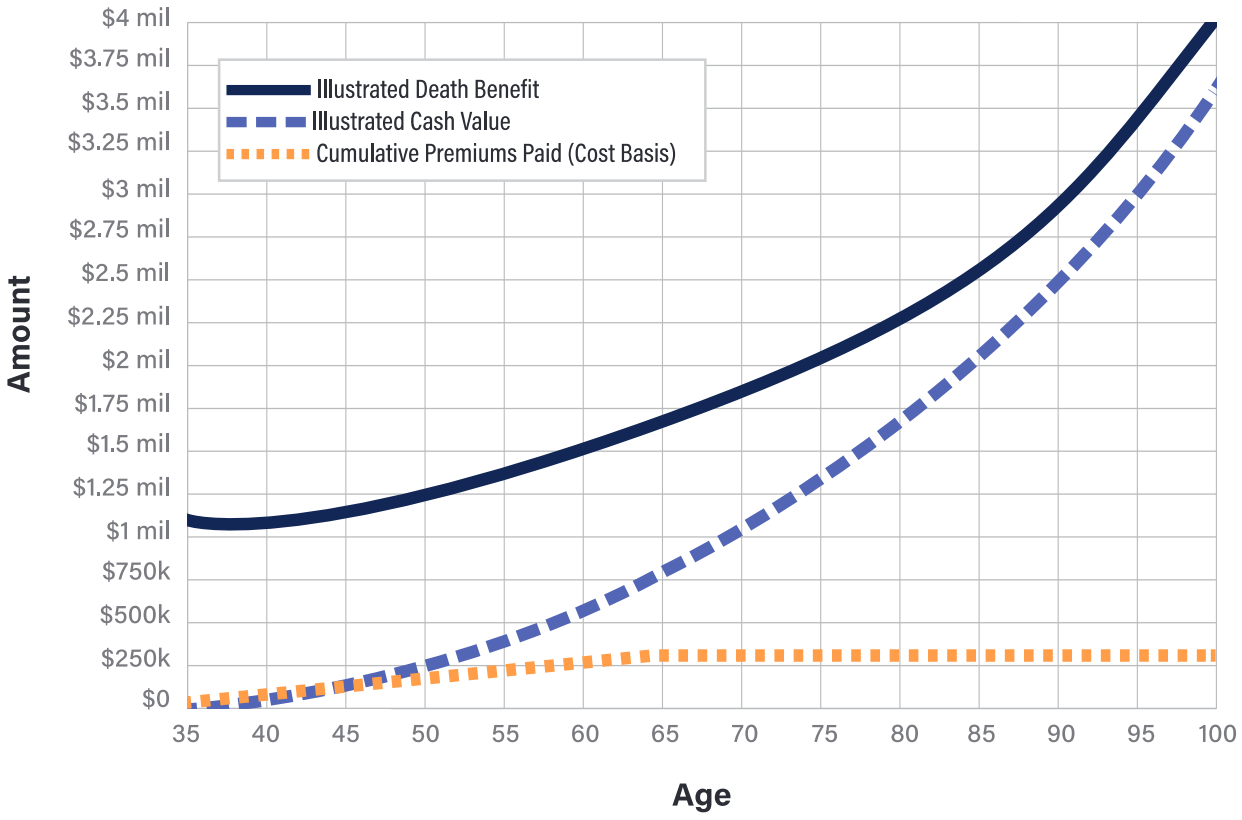
Steve must decide whether to purchase a term life insurance policy to provide his family with financial protection against the loss of his income, or to purchase a whole life insurance policy which can provide the same protection against his premature death, as well as being integrated into his retirement income strategy. From the savings he can set aside for his insurance and retirement

planning needs, he will pay for life insurance premiums and the taxes to cover those premiums (at a 25% marginal tax rate), and the remainder will go into his tax-deferred 401(k).

The term life policy he considers is a 30-year level term policy with a $1.03 million death benefit (equivalent to $1.37 million on a pre-tax basis) and an annual premium of $807. The death benefit amount is chosen as the average of the illustrated whole life death benefit we will soon describe at ages 35 and 65. This is based on an illustration run by a major life insurance carrier in March 2023 for a 35-year-old male with preferred plus health status. Taxes on the pre-tax income required to cover this premium are $269. After paying the term life premium and taxes, he would contribute the remaining $21,425 to his 401(k). Because his insurance premiums are fixed and his savings will grow, the 401(k) contributions will grow to represent an increasing portion of his available pool of funds for investments and insurance over time.

The whole life policy Steve considers carries an initial death benefit of $808,000 (or $1.078 million on a pre-tax basis). The whole life insurance annual premium is $10,340. This premium is also based on an illustration run in March 2023 from the same carrier for a 35-year-old male with preferred plus health status. It carries premiums through age 100, but the policy is structured to fund the premiums from cash value dividends starting at age 65, such that out-of-pocket premiums are paid only for the 30 years before retiring. It is a participating policy that pays dividends. The illustrated values for the death benefit and cash values are shown in Figure 1 on a pre-tax basis. The amount of the death benefit was chosen to calibrate to a one-to-one match with the value of investment assets at retirement in the median simulation with the life insurance value considered on a pre-tax basis.

FIGURE 1:
Whole Life Insurance Policy Illustration Values (Pre-Tax) for a 35-Year-Old Male



Unlike term insurance, the death benefit has the potential to grow over time. Taxes to cover the whole life premium are $3,447, and so with a whole life policy Steve can contribute $8,713 in the first year to his 401(k). Total 401(k) contributions will increase over time as the savings increase with inflation and the catch-up contribution kicks in after age 50, while the whole life premium remains fixed in nominal dollars.

... a life insurance policy can be arranged so that funds can be borrowed from the cash value without being taxed ...

This analysis is performed using 10,000 Monte Carlo simulations for stock and bond returns. Returns and volatilities for these asset classes are taken from BlackRock's capital market assumptions for 30 years (the longest time horizon they offer) provided in February 2023. Stocks reflect an allocation of 60% to large-capitalization U.S. stock index (S&P 500®) and 40% to large-capitalization international stocks. Bonds reflect the U.S. government bond index. We assume the asset classes are not correlated. Inflation is fixed at 2% annually. Table 1 provides the stock and bond assumptions.

TABLE 1:
Capital Market Assumptions

	Arithmetic Means	Geometric Means	Standard Deviations
World Large Cap Equity	9.5%	8%	17.1%
U.S. Government Bonds	3.2%	3.1%	5.0%

Source: BlackRock Investment Institute, February 2023. Data as of December 31, 2022. Return expectations over 30 years for gross total nominal returns.

Strategies are simulated using annual data with any fees deducted at the end of each year. Annual advisory fees are assumed at 1% of the portfolio balance for stocks and bonds, as well as a 0.4% fund expense ratio, which Morningstar reports as the average asset-weighted expense ratio in 2021 for all U.S. open-end mutual funds and exchange-traded funds.

Taxes are calculated using a 25% marginal tax rate for ordinary income. As investments are held in tax-deferred accounts, there is no further tax drag to worry about. At retirement, Steve completes a rollover of his 401(k) to a traditional IRA. This is not a taxable event. Investors earn the market returns net of fees and portfolio distributions for retirement spending and legacy are taxed as income. Life insurance premiums are paid with post-tax funds. But no taxes are due on the death benefit, making it a post-tax number. As well, a life insurance policy can be arranged so that funds can be borrowed from the cash value without being taxed, which does reduce the death benefit on a one-for-one basis for any dollars removed. So that dollars in the 401(k) can be compared on an equal basis to death benefit and cash value numbers in the life insurance, all financial numbers in retirement are presented in pre-tax terms. This requires inflating the life insurance numbers to account for their lack of an embedded income tax liability.

To better understand the impacts of investment volatility on the upside and downside, Monte Carlo simulations are used to create a distribution of outcomes. The tables of results report the 10th percentile, median, and 90th percentile from this distribution. We can interpret the 10th percentile outcome as a bad luck case with poor investment returns. It is possible that retirement outcomes could be even worse, but generally Steve and Susan could expect better retirement outcomes than seen at the 10th percentile. The median reflects more typical outcomes. It is the midpoint of the distribution, with a 50% chance for worse outcomes and a 50% chance for better outcomes. These are reasonable outcomes for Steve and Susan to expect. The 90th percentile is a good luck outcome in which investments perform very well, supporting greater spending and larger account balances.

Note that these results are presented in terms of nominal dollars to avoid reader confusion about why inflation-adjusted dollars are less than nominal dollars. This decision does not impact any comparisons for the relative outcomes between scenarios. However, readers should understand that the purchasing power of a given amount of income or wealth will be less in the future. For today's 35-year-old, the real purchasing power of money will be about 55% of what it is today at age 65, and about 28% of today at age 100, assuming average inflation.

Regarding asset allocation, an important methodological point to discuss is how we treat actuarial bonds like whole life insurance and income annuities. With a whole life policy, the cash value is a liquid asset contained outside the financial portfolio. It behaves like fixed income, though it is not exposed to interest rate risk (i.e., the accessible cash value does not decline when interest rates rise). Cash value is not precisely the same as holding bonds in an investment portfolio, as there is not a practical way to rebalance the portfolio between stocks and policy cash value. Nonetheless, during the pre-retirement period Steve will incorporate the cash value into his asset allocation decisions to maintain the overall proportion between stocks and "bonds" for household assets. If the target date fund calls for a 50% stock allocation, then the actual stock allocation Steve uses will be 50% of the sum of the financial portfolio balance and the pre-tax value of life insurance cash value, divided by the portfolio balance. Though this could conceivably call for a stock allocation of greater than 100% when the cash value is large relative to the financial portfolio, we constrain the maximum possible stock allocation for the financial portfolio to not exceed 100%.

Table 2 provides the results for the two different life insurance approaches during the accumulation period between ages 35 and 65. The top summarizes how they allocate their savings between insurance and Steve's 401(k) for the scenarios as we have already described. Next, we observe the distribution of 401(k) assets at age 65. Scenario 1 is to buy term insurance and invest the difference in a target date fund. In pre-tax terms at retirement, the wealth accumulation ranges from $1.53 million

at the 10th percentile to $3.73 million at the 90th percentile, with a median outcome of $2.3 million. Scenario 2 presents 401(k) assets when whole life insurance is used. Because higher premiums mean less is contributed to the 401(k) plan, lower accumulations can be expected at retirement. At the median, the 401(k) balance is 27% less when whole life insurance is used. It is 37% less at the 10th percentile and 22% less at the 90th percentile. The differences are not uniform due to the asset allocation effects in which the cash value, though not held within the 401(k), is treated as a fixed-income asset. This results in a higher stock allocation in the 401(k) when whole life insurance is used.

The story changes if we add the accumulated cash value to investigate the overall assets. On a pre-tax basis with a 25% assumed tax rate, the illustrated cash value at the retirement date is $809,000. Term insurance does not provide a cash value. At the median, the combination of cash value with investments is 8% larger. There are three basic reasons for this outcome: cash value insurance provides tax advantages, whole life insurance has lower insurance costs than term life insurance because the life insurance company only needs to protect the difference between the death benefit and the cash value, and the insurance company's general account can invest for higher fixed income returns than a household investor by seeking greater credit risk through diversification, less liquid assets, longer maturity bonds, and access to institutional prices on trades.

TABLE 2:
The Accumulation Phase, Ages 35 to 65

	One Economic Power™ Approach Investments + Term Life	Two Economic Powers® Approach Investments + Whole Life	
Term-Life Premiums	$807	$0	
Whole-Life Premiums	$0	$10,340	
Taxes Paid	$269	$3,447	
Age 35 Remaining Contribution to 401(k)	$21,425	$8,713	
All Subsequent Values are Provided on a Pre-Tax Basis (Assuming a 25% tax rate)			
Distribution of 401(k) Assets at Age 65			% change
10th Percentile	$1,532,357	$960,989	-37%
Median	$2,300,800	$1,669,476	-27%
90th Percentile	$3,727,946	$2,912,196	-22%
Life Insurance Values at Age 65			
Cash Value	$0	$808,803	
Death Benefit	$0	$1,667,118	
Distribution of 401(k) Assets + Whole Life Cash Value at Age 65			
10th Percentile	$1,532,357	$1,769,792	15%
Median	$2,300,800	$2,478,279	8%
90th Percentile	$3,727,946	$3,720,999	0%

Note: Investment and Insurance values at age 65 are provided on a pre-tax basis assuming a 25% marginal tax rate.

We now investigate two ways that this couple considers incorporating whole life insurance into their lifetime financial plan: (1) as a behavioral justification for also including an income annuity in the retirement plan, and (2) as a **Volatility Buffer** to help manage sequence of returns risk for their investments. In the following analyses, the baseline Scenario 1 is the "buy term and invest the difference" case, and it is compared with each of these options that includes permanent life insurance.

Covered Asset Strategy

Table 3 (see page 14) provides results for the "**Covered Asset**" strategy, in which the life insurance death benefit provides the psychological support needed to purchase a life-only income annuity as part of an integrated plan combining investments, whole life insurance, and income annuities. Life-only single life income annuities are positioned to take the most advantage of risk pooling and mortality credits to support the highest level of protected income from a given asset base.

Scenario 1 uses the "buy term and invest the difference" strategy. The couple spends from their investment assets in retirement using a withdrawal rate estimated to support a 90% chance of sustainability through age 100. Term insurance is used for pre-retirement human capital protection, and its smaller premium allows for a greater amount to be contributed to the tax-deferred investment account for systematic distributions in retirement. It is the one economic power strategy.

Scenario 2 uses two economic powers by integrating investments with a whole life insurance policy and an income annuity. Upon reaching age 65, Steve and Susan will consider whether a single-premium immediate annuity (SPIA) might be a worthwhile addition to their retirement income plan. Income annuities offer a variety of options regarding whether income starts immediately or is deferred, whether income covers a single life or joint lives, whether there is a certain payment for a set number of years, whether any cost-of-living adjustments will be made to benefits, and whether cash or installment refund provisions are included in the event of an early death. To simplify our analysis, we consider two basic possibilities based on asset values: Steve buys a single life-only immediate annuity at 65 on his life, or Steve and Susan buy a joint life and 100% survivor annuity for them both. Both income annuities include a 2% annual cost-of-living adjustment that matches the assumed inflation rate, so that the annuity income adjusts to keep the purchasing power consistent throughout retirement. In both cases the annuities are purchased with qualified retirement funds after Steve has stopped working and completes a rollover from his 401(k) to a traditional IRA.

A male life-only income annuity offers the highest payout rate (the most income) because the buyer offers the most "mortality credits" to the risk pool. Those dying earlier provide more funds to those who live longer. Generally, it is difficult to predict what annuity rates will be in the future. Because the Monte Carlo simulations stem from the current level of interest rates, we assume that the interest

rate environment will be similar at the time of annuitization. We do not make a further adjustment to reflect potential longevity improvements in the ensuing years before the annuity is purchased. In March 2023, we obtained life-only annuity payout rates for 65 year olds from the same major carrier. The single-male option with a 2% COLA was paying 6.14%, while a joint-life option with 2% COLA was paying 5.09%. The single-life income annuity provides 21% more income for a given premium relative to the joint-life income annuity, since the payments are not expected to be received for as long.

The single-life income annuity provides more income for a given premium relative to the joint-life income annuity, since the payments are not expected to be received for as long.

With the accumulated investment assets, all retirement income in Scenario 1 will be generated with a systematic withdrawal strategy. Steve seeks annual spending adjustments that match the 2% overall inflation rate. The couple uses the highest withdrawal rate possible that keeps investments above $0 by age 100 with a 90% probability. This means accepting a 90% chance that the spending level can be sustained throughout retirement in inflation-adjusted terms. In Scenario 1, spending from these assets falls to $0 once the portfolio balance depletes. This assumption favors investments, as the annuity protections provided in Scenario 2 could certainly be expected to provide a much greater than 90% success rate.

Next, in Scenario 2 Steve uses a whole life insurance policy rather than term life insurance. Because of the higher premium, he invests less in his 401(k) plan. Steve purchases a single-life income annuity at retirement in an amount up to the amount of the life insurance death benefit. The life insurance death benefit amount is calibrated so its pre-tax value matches the expected investment account value at the median simulation at age 65 for the given capital market assumptions and overall savings available. But achieving this one-to-one ratio will be rare in practice. It only happens at the median. When the ratio is one-to-one, a single life SPIA is purchased using the entire investment balance, and this premium is covered precisely by the value of the death benefit. When the death benefit is larger than the investment account balance, such as at the 10th percentile, cash value is borrowed to purchase additional income annuity so that the annuity premium paid is fully covered by the

remaining net death benefit after repaying the loan balance. He can opt for single-life instead of joint-life, because the death benefit from his whole life insurance policy will replace the annuitized assets upon his death. If desired, Susan could then use part of the death benefit to buy another single-life income annuity.

As well, whenever investments are worth more than the life insurance death benefit, such as in the 90th percentile of the distribution, the surplus investments are used to purchase a joint-life and 100% survivorship annuity. The single life SPIA is used when it can be covered by the death benefit, and the joint-life SPIA is used for the surplus to ensure that this additional income is provided for the joint lifetime of the couple. The legacy value for assets in this scenario is simply what remains with the life insurance death benefit after repaying any loan balance. This approach maximizes retirement spending for the household through risk pooling, as we assume this asset base is intended for spending and other assets are available for liquidity to cover spending shocks.

TABLE 3:
The Distribution Phase, 35-Year-Old Case Study
Whole Life Insurance Combined With Investments and Income Annuities

	SCENARIO 1 One Economic Power™ Approach Investments + Term Life (Baseline)	SCENARIO 2 Two Economic Powers® Approach Investments + SPIA + Whole Life (Covered Assets)	
			% Change From Baseline
Sustainable Spending Rate From Investment Assets (With 90% Success) at Age 65			
	2.86%	n/a	
Distribution of Annuity Income at Age 65			
10th Percentile	$0	$80,683	
Median	$0	$102,481	
90th Percentile	$0	$165,735	
Distribution of Systematic Withdrawal Income at Age 65			
10th Percentile	$43,826	$0	
Median	$65,803	$0	
90th Percentile	$106,620	$0	
Distribution of Total Income at Age 65			
10th Percentile	$43,826	$80,683	84%
Median	$65,803	$102,481	56%
90th Percentile	$106,620	$165,735	55%
Distribution of Legacy Wealth at Age 100			
10th Percentile	$0	$1,371,871	++
Median	$2,088,089	$3,968,553	90%
90th Percentile	$6,438,219	$3,968,553	-38%

Note: Monetary values are provided on a pre-tax basis assuming a 25% tax rate.

Table 3 outlines the retirement outcomes for Steve and Susan. Scenario 1 presents the strategy for buying term insurance and investing the difference in a target date fund. With the capital market expectations and asset allocation decisions, the sustainable spending rate that supports a 90% chance that assets remain at age 100 is 2.86%. This spending rate supports a pre-tax inflation-adjusted retirement income ranging from $43,826 at the 10th percentile to $106,620 at the 90th percentile, with a median of $65,803.

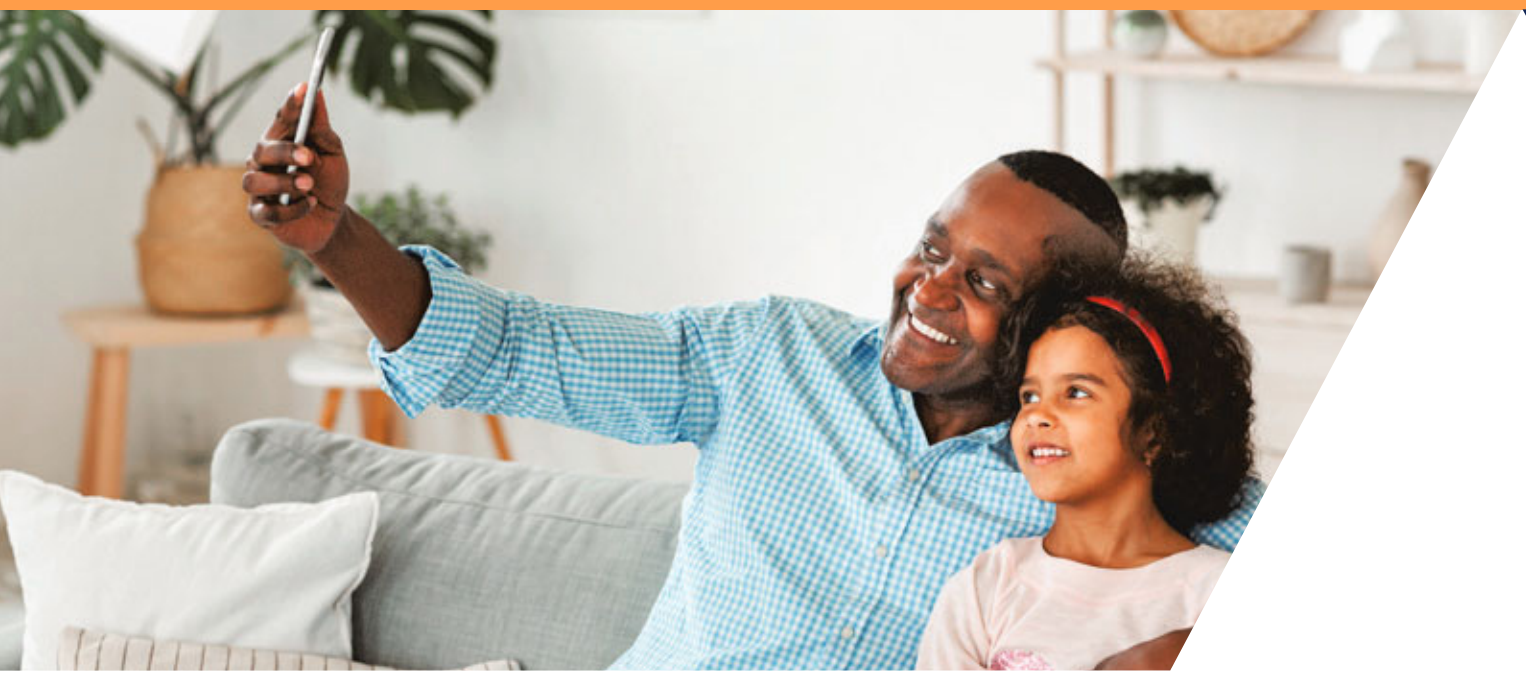
As for legacy wealth at age 100, it ranges from $0 at the 10th percentile to $6.44 million at the 90th percentile, with a median amount of $2.09 million. Legacy wealth consists of the pre-tax value of any remaining financial assets in the investment portfolio, as there is no life insurance after retirement in this scenario.

Scenario 2 integrates investments with whole life insurance and income annuities. Maximizing income with annuities offering a 2% COLA allows for more retirement spending across the distribution of outcomes. Total retirement income at age 65 ranges from $80,683 to $165,735, with a median of $102,481. Compared to Scenario 1, retirement income is 84% larger at the 10th percentile, 56% larger at the median, and 55% larger at the 90th percentile.

As for legacy wealth at age 100, Scenario 3 maintains the whole life death benefit. At the 10th percentile, a significant portion of the available cash value had been borrowed to generate more retirement income, but there is still a net death benefit of $1.37 million after repaying the policy loan at age 100. At the median and 90th percentile, the legacy is supported by the full death benefit, which is $3.97 million on a pre-tax basis. This legacy value is 90% larger at the median. It is 38% less at the 90th percentile, though this has less meaning considering that the **Covered Asset** strategy was able to support 55% more lifetime spending through age 100.

At the median, the **Covered Asset** approach provides 56% more lifetime spending and 90% more legacy compared to using only investments. This is the meaning of greater efficiency. A more integrated approach using actuarial science and mortality credits alongside investments is better positioned to outperform the upside growth potential of an investments-only strategy.

Adding Whole Life Insurance Cash Value as a Volatility Buffer in Retirement



The next potential use for whole life insurance in lifetime financial planning is using the cash value with the **Volatility Buffer** strategy to help manage the sequence of returns risk for investment portfolio distributions. Buffer assets, such as the cash value of whole life insurance, provide an alternative means to help manage sequence risk. They are held outside the financial portfolio. They can be drawn to avoid selling portfolio assets at a loss. Returns on these assets should not be correlated with the financial portfolio, since the purpose of these buffer assets is to temporarily support spending when the portfolio is otherwise down. The cash value of permanent life insurance meets this requirement as it is contractually protected from declining in value.

Table 4 (see page 18) provides this comparison. In the new Scenario 2, investments are combined with whole life insurance and the cash value is available to be used as a **Volatility Buffer** to help support the portfolio and maximize retirement spending. Policy loans are taken with the cash value serving as collateral to avoid taxes on these distributions. A loan interest rate of 5% is used to grow the loan balance. We assume that the whole life policy uses non-direct recognition, which means that there is no adjustment to the growth for the cash value that has been used as collateral for loans. Legacy values at age 100 reflect any remaining investment assets along with the pre-tax value of remaining net life insurance death benefit after offsetting the loan balance due.

One must be careful that the loan balance with its accumulating interest does not exceed the limit of the available cash value and thereby trigger income taxes on all life insurance policy gains. The maximum amount that can be taken from the cash value in any year is the amount that would not grow with interest to exceed the cash value by age 100 (with an additional $5,000 buffer of protection so that the net cash value does not fall entirely to $0). This process ensures that the loan balance growth stays below the cash value, protecting the policy from "blowing up" and generating a so-called "phantom tax." In practice, this outcome can be avoided by monitoring the policy and paying down the loan balance if it is approaching too closely to the total cash value limit.

The cash value of whole life insurance can be used as a buffer asset to help manage the sequence of returns risk exacerbated by taking distributions from a volatile investment portfolio. Maintaining

fixed distributions from investments in retirement increases exposure to sequence risk by requiring a higher withdrawal rate from remaining assets when their value declines. Temporarily drawing from the cash value of life insurance has the potential to mitigate this aspect of sequence risk for an investment portfolio by reducing the need to take portfolio withdrawals at inopportune times. By reducing exposure to sequence risk, this may preserve greater overall legacy wealth. Whether or not this strategy will work becomes an empirical question to be tested.

Though use of the Volatility Buffer reduces the net death benefit, the investment portfolio may ultimately grow by more than the reduction to the death benefit, potentially leaving a larger net legacy.

In this simulation, the decision rule is to use the cash value as a source of retirement spending in any year that the remaining investment portfolio balance has fallen below its initial retirement date level in nominal terms, if there is still sufficient remaining cash value. There are a few more details to consider. Again, the amount of life insurance held is calibrated at age 35 to match the median value of investments on a pre-tax basis at retirement. In cases where investments do not perform well enough, this could create a large cash value that could cover many years of expenses, which is not necessarily an efficient use of retirement assets. In cases where more than six years of spending is available through the cash value, we borrow the excess from this amount, up to 75% of the total available cash value that can be borrowed to maintain the policy, to be invested in the portfolio to support additional spending. In simulations where markets performed very well in the pre-retirement period, the full available cash value supports less than six years of **Volatility Buffer**, but all available cash value will then be used for this purpose. As well, because the cash value enjoys principal protection and increases risk capacity, we assume that investments will be placed in 100% stocks to provide greater upside exposure. Also, because the choice to use the **Volatility Buffer** rather than the **Covered Asset** strategy implies greater risk tolerance on the part of the couple, we assume the targeted success rate for either scenario is now 80% instead of 90%.

The **Volatility Buffer** can protect legacy. Though use of the **Volatility Buffer** reduces the net death benefit, the investment portfolio may ultimately grow by more than the reduction to the death benefit, potentially leaving a larger net legacy. This happy outcome can result from the peculiarities of sequence risk and the ability to avoid selling portfolio assets at a loss. The cash value provides a stable income source not impacted by market volatility. Life insurance also receives tax benefits and the distribution from the cash values can be less since taxes are not paid on the proceeds.

In Table 4 (see page 18), Scenario 1 is the investments-only strategy or "buy term and invest the difference" that uses one economic power. Scenario 2 switches from term life insurance to whole life insurance and makes the cash value available as a **Volatility Buffer**.

With the capital market expectations and asset allocation decisions, the sustainable spending rate that supports an 80% chance that assets remain at age 100 is 3.18%. This spending rate supports a pre-tax inflation-adjusted retirement income ranging from $48,729 at the 10th percentile to $118,549 at the 90th percentile, with a median of $73,166. As for legacy wealth at age 100 generated by remaining investment assets, it ranges from $0 at the 10th percentile to $5.44 million at the 90th percentile, with a median amount of $1.4 million. It is important to note that while we display the 10th percentile

result to be consistent with the previous analysis, the change in the targeted success rate means that legacy wealth will be $0 for the bottom 20% of outcomes, rather than just the bottom 10% of outcomes.

Because the cash value provides an additional base of assets to replace some portfolio distributions, the initial withdrawal rate for investments increases to 4.64% in Scenario 2 while still maintaining an 80% chance that investment assets remain at age 100. This withdrawal rate is 46% larger while still maintaining the same downside risk for investments. It is higher because distributions are not always taken from the investment portfolio.

Investments at retirement can generally be expected to be lower because of the higher whole life premiums, but this still allows inflation-adjusted spending in retirement to increase from anywhere between 14% and 23% across the distribution of outcomes. The median increase in retirement lifestyle is 19%. Meanwhile, legacy assets are also better supported in Scenario 2 with the synergies created by the **Volatility Buffer** in managing sequence risk for the investment portfolio. At the median, legacy assets are 319% larger at age 100 after also supporting a 19% larger lifestyle. Across the distribution of outcomes, whole life insurance used as a cash value **Volatility Buffer** can beat "buy term and invest the difference" for a lifetime financial plan initiated by the 35-year-old couple. It provides another viable option for retirement planning that places more emphasis on preserving legacy relative to maximizing spending.

TABLE 4:
The Distribution Phase, 35-Year-Old Case Study
Whole Life Insurance as a Volatility Buffer

	SCENARIO 1 One Economic Power™ Approach Investments + Term Life (Baseline)	SCENARIO 2 Two Economic Powers® Approach Investments + Whole Life (Volatility Buffer)	
			% Change From Baseline
Sustainable Spending Rate From Investment Assets (With 80% Success) at Age 65			
	3.18%	4.64%	46%
Distribution of Total Income at Age 65			
10th Percentile	$48,729	$60,180	23%
Median	$73,166	$87,393	19%
90th Percentile	$118,549	$135,126	14%
Distribution of Legacy Wealth at Age 100			
10th Percentile	$0	$233,133	++
Median	$1,400,850	$5,867,350	319%
90th Percentile	$5,443,320	$30,790,312	466%

Note: Monetary values are provided on a pre-tax basis assuming a 25% tax rate.

The Implications for 50-Year-Olds

At 35, Steve and Susie were still far from retirement. How would these strategies work for James and Julie, a couple who is already 50 years old? We make the following modifications to answer this. James already has $100,000 in his 401(k) plan. He will save the same amount each year through age 65, and age 50 is when catch-up contributions begin. He also has a life insurance policy offering for a 50-year-old instead of a 35-year-old. Table 5 provides details about the accumulation phase. To calibrate the death benefit to the median value of investments at retirement, the whole life premium is $10,640, and the corresponding term life premium for a 15-year policy is $749. The remainder is invested.

TABLE 5:
The Accumulation Phase, Ages 50 to 65

	One Economic Power™ Approach Investments + Term Life	Two Economic Powers® Approach Investments + Whole Life	
Term Life Premiums	$749	$0	
Whole Life Premiums	$0	$10,640	
Taxes Paid	$250	$3,547	
Age 50 Remaining Contribution to 401(k)	$29,001	$15,813	
All Subsequent Values are Provided on a Pre-Tax Basis (Assuming a 25% Tax Rate)			
Distribution of 401(k) Assets at Age 65			% change
10th Percentile	$716,776	$493,437	-31%
Median	$950,475	$704,194	-26%
90th Percentile	$1,280,021	$1,000,455	-22%
Life Insurance Values at Age 65			
Cash Value	$0	$237,966	
Death Benefit	$0	$703,867	
Distribution of 401(k) Assets + Whole Life Cash Value at Age 65			
10th Percentile	$716,776	$731,403	2%
Median	$950,475	$942,160	-1%
90th Percentile	$1,280,021	$1,238,421	-3%

Note: Investment and Insurance values at age 65 are provided on a pre-tax basis assuming a 25% marginal tax rate.

Table 6 provides the basic details for James and Julie with the **Covered Asset** strategy. We can observe the similar trends as before, though with just 15 years the cash value has had less opportunity to grow by retirement. Though we do not describe all the numbers in this table, their interpretations are in line with how we interpreted Table 3. We find that 50 years old is not too late to start implementing these integrated planning techniques. At the median, the **Covered Asset** strategy supports 61% more lifetime spending and 15% greater legacy.

TABLE 6:
The Distribution Phase, 50-Year-Old Case Study
Whole Life Insurance Combined With Investments and Income Annuities

	SCENARIO 1 One Economic Power™ Approach Investments + Term Life (Baseline)	SCENARIO 2 Two Economic Powers® Approach Investments + SPIA + Whole Life (Covered Assets)	
			% Change From Baseline
Sustainable Spending Rate From Investment Assets (With 90% Success) at Age 65			
	2.82%	n/a	
Distribution of Annuity Income at Age 65			
10th Percentile	$0	$36,757	
Median	$0	$43,234	
90th Percentile	$0	$58,314	
Distribution of Systematic Withdrawal Income at Age 65			
10th Percentile	$20,213	$0	
Median	$26,804	$0	
90th Percentile	$36,097	$0	
Distribution of Total Income at Age 65			
10th Percentile	$20,213	$36,757	82%
Median	$26,804	$43,234	61%
90th Percentile	$36,097	$58,314	62%
Distribution of Legacy Wealth at Age 100			
10th Percentile	$0	$121,680	++
Median	$776,964	$895,504	15%
90th Percentile	$2,157,442	$895,504	-58%

Note: Monetary values are provided on a pre-tax basis assuming a 25% tax rate.

Likewise, Table 7 provides the results for the **Volatility Buffer.** Again, the results are qualitatively similar as before, with the **Volatility Buffer** providing the opportunity to sustain more spending and legacy than the investments-only strategy. At the median, there is 6% more lifetime spending and 351% more legacy.

TABLE 7:
The Distribution Phase, 50-Year-Old Case Study
Whole Life Insurance as a Volatility Buffer

	SCENARIO 1 One Economic Power™ Approach Investments + Term Life (Baseline)	SCENARIO 2 Two Economic Powers® Approach Investments + Whole Life (Volatility Buffer)	
			% Change From Baseline
Sustainable Spending Rate From Investment Assets (With 80% Success) at Age 65			
	3.12%	4.26%	37%
Distribution of Total Income at Age 65			
10th Percentile	$22,363	$24,045	8%
Median	$29,655	$31,575	6%
90th Percentile	$39,937	$42,619	7%
Distribution of Legacy Wealth at Age 100			
10th Percentile	$0	$57,651	++
Median	$515,640	$2,323,621	351%
90th Percentile	$1,814,253	$12,520,658	590%

Note: Monetary values are provided on a pre-tax basis assuming a 25% tax rate.

Conclusions

We find substantive evidence that an integrated approach with investments, whole life insurance, and income annuities can provide more efficient retirement outcomes than relying on investments alone. Because whole life insurance can play an important role in producing more efficient retirement outcomes, younger individuals planning for both retirement and life insurance needs may view whole life insurance in a new light as a powerful retirement income planning tool. The conventional wisdom of "buy term and invest the difference" is less effective than many realize when viewed in terms of the risk management needs of a retirement income plan. Whole life insurance provides flexibility to consider two strategies for retirement income: the **Covered Asset** strategy that also incorporates an income annuity, or the **Volatility Buffer** strategy in which the cash value is used to manage sequence risk for the investment portfolio.

Those with a spending emphasis may find that the **Covered Asset** strategy will maximize overall spending. The **Volatility Buffer** also provides a way to support more spending and legacy than the investments-only approach, but with a greater emphasis on legacy relative to spending. It is hard to overcome the overall power of the income annuity to generate retirement income more efficiently, but the **Volatility Buffer** provides a valuable way to improve lifetime financial outcomes relative to "buy term and invest the difference" for retirees who are not compelled to use an income annuity in their planning. The "buy term and invest the strategy" is the least effective in supporting retirement spending. Except for the higher end of the distribution of wealth outcomes, the "buy term and invest the strategy" is the least effective at supporting a legacy goal, and even then, the higher legacy is not comparable when accompanied by a lifetime of reduced spending.

Because the benefits of cash value life insurance are affected in subtle ways by their tax efficiency and resistance to sequence of return risk, there has not been a clear understanding of how the ownership of whole life insurance affects the retirement income planning problem. We explored a more integrated approach which includes investments and whole life insurance. By strategically combining these elements, the potential exists to develop more efficient retirement income strategies that support a higher income level and greater legacy wealth than investment-only strategies.

Wealth Building Cornerstones™
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Wealth Building Cornerstones™
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Wealth Building Cornerstones was developed through working with individuals and families. The objective of the system is to provide individuals and families with a simple, easy to understand, powerful process that maximizes the use of their money for wealth building and protection.

The system and financial professionals using the system bring real, measurable value to people's financial lives based on the economic realities of how financial tools are supposed to work together to create bigger results.

Whether working with Pre-Retirees or Retirees, WBC takes a "begin-with-the-purpose-in-mind" approach. This approach for Pre-Retirees and Retirees gives individuals and families the ability to cut through the hype, confusion, opinion-based rhetoric, and stereotypes of the financial world to make sound economic-based financial decisions.

Think of it like this, an engineer can't start designing a building without knowing what the end result of the project is supposed to look like; a surgeon can't go into surgery without knowing what the outcome of the surgery is supposed to be. This same concept also applies to the areas of personal finance.

For example, if you asked a typical Pre-Retiree on the street why they are saving money long term, many of them would say "for retirement." However, if you then said, "That's great, can you tell me how retirement income streams work?" hardly anyone would have a good answer. The issue here is that this is the real reason they are saving the money, and how retirement income streams work economically defines how to allocate savings efficiently in pre-retirement. As part of WBC we provide Pre-Retirees the opportunity to understand how retirement income streams work as the basis for efficient allocation of savings in pre-retirement. A "begin-with-the-purpose-in-mind" approach is imperative here and many people haven't had the opportunity to look at it from this perspective.

Watch our Planning for Retirement Income video by Dr. Wade Pfau.

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