

# Permanent life insurance has always been an exceptional estate planning tool, but as **Wayne Miller** and **Sally Murdock** report, it has additional merits as an alternative asset class, specifically for those who wish to improve the return or reduce the risk of the fixed-income portion of their investment portfolio

**B**uy low, sell high. Don't put all your eggs in one basket. Timing is everything. These and other investment catchphrases have been quoted regularly over the past 30 years. But today's "new normal" includes two new challenges for investors wishing to increase the return on their portfolios: the current low interest rate environment and more frequent market stressors.

Interest rates have remained low for a decade and there's no sign of them increasing any time soon. In fact, long-term Government of Canada bond rates have been steadily declining for 30 years. Even more disconcerting is uncertainty around "unforeseen" economic crises, many of which are global. We've experienced 11 such crises in the past 30 years. The question isn't *if* we'll see another one, but *when*. And this reality is wreaking havoc on our confidence levels and appetite for risk and volatility. A desire for greater return now seems to come with even greater uncertainty, and many are wondering if there's an alternative.

## Modern Portfolio Theory

Modern Portfolio Theory (MPT) tells us that "a proper evaluation of an investment requires us to leverage investment theories and tools. One such theory is that a prudent investment portfolio is one that balances risk and return." Yet up until Harry Markowitz's groundbreaking development of MPT, this balance was struck through trial and error and a heavy dose of intuition. MPT quantifies this risk-return balance. It clearly demonstrates the benefit of investment portfolio diversification and allows for this benefit to be captured and expressed during the portfolio construction process.

According to MPT, the *expected return* of an investment portfolio is the weighted average of the expected returns of the constituent assets. However, portfolio risk is a function of the risk of each individual asset class and also the likelihood that asset returns will move together — their correlation. The relationship between portfolio risk and correlation allows us to reduce overall portfolio risk by holding combinations of assets whose returns are not expected to move in sync. We can use this correlation benefit and optimize the expected portfolio return for any given level of risk — or similarly minimize portfolio risk for a required expected return — using MPT. The resulting set of portfolios, when plotted in risk-return space, is called the efficient frontier (EF).

The question we now wish to answer is: **Does the MPT framework show any benefit from including permanent life insurance as an asset in our theoretical portfolio?** Asked another way: Would reallocating some fixed income assets into permanent life insurance improve the efficiency of an investment portfolio?

## The merits of universal life insurance as an asset class

Most life insurance products in Canada come with premiums and a face amount that are guaranteed for life. As a result, one can calculate an internal rate of return (IRR) on the premiums. And because proceeds upon death are tax-free to the estate or beneficiary, the IRR is a tax-free rate. The only variable is the age of death.

### Example

In the case of a minimum-funded universal life (UL) policy, the death benefit is level for life. The sooner one dies, the greater the implicit IRR and vice versa. A non-smoking, healthy-risk male aged 50\*, for example, will find the annual cost of \$1 million of UL to be \$13,296. Guaranteed after-tax IRRs for such a policy are shown in the table below:

AGE AT DEATH	AFTER-TAX IRR
70	11.4%
75	7.7%
80	5.4%
85	3.9%
90	2.9%

\* Values are from SunUniversal Life, April 2012.

If the man in our example dies at his life expectancy of age 85, the \$1 million death benefit will have been equivalent to the premiums earning an after-tax compounded return of 3.9 per cent. This is an attractive rate of return given today's low interest rates. But is this a good investment? In addition to the unfortunate criteria that death is required, this policy lacks at least one necessary trait to be considered a good investment — there's no liquidity. If premium payments stop or the policy is cancelled, the policy owner receives no cash value.

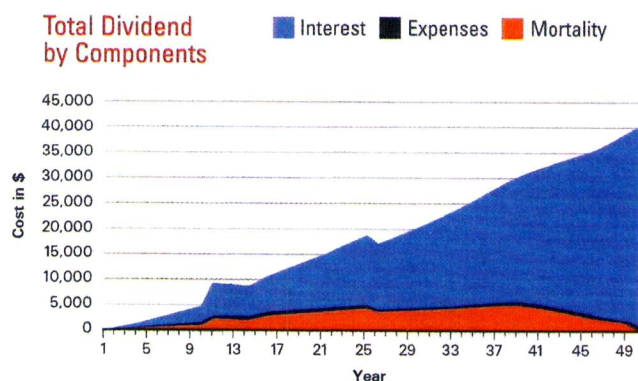
## INSURANCE

### An overview of participating whole life insurance

Numerous assumptions, predictions and factors go into the pricing of permanent life insurance. Three of these are significant in determining the premium: expenses; mortality rates; and investment returns. If the life insurance company assumes low investment returns, poor mortality and high expenses, the premiums it charges will be higher than if it had made more favourable assumptions.

Par is priced using conservative assumptions. For example, long-term investment returns may be set at 2.5 per cent and mortality claims experience may be based on that of 40 years ago. The resulting premium is generally high but the insurance company has equally high expectations that future pricing conservatism will not be required. This generally leads to annual mortality, expense and investment gains that are returned to the policy owner in the form of annual policy owner dividends.

While life insurance policy dividends come primarily from three sources, they tend to be dominated by investment returns. The graph below depicts sample dividends by source for an individual aged 50 at policy issue\*.



\* Values are for a Sun Par Protector policy, life pay PUA MNS 50 at current dividend scale with premiums payable for life.

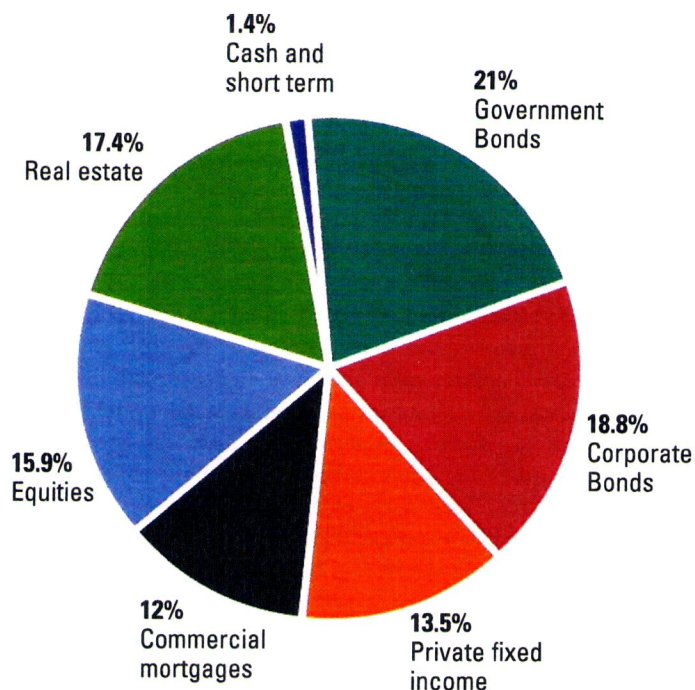
### The par account and its unique investment qualities

The par account is a separate pool of assets specific to the insurance company's participating life insurance line of business. All premiums for participating life insurance are deposited into this account; all claims, expenses, taxes and policy-owner dividends are paid from it. Some Canadian par accounts exceed \$10 billion and have existed for well over 100 years.

A typical distribution of assets for a par account is a mix of longer-term asset types. Because the liabilities associated with these accounts are long-term in nature, the investments are managed in similar fashion. Also, because one goal is to

minimize volatility, the accounts tend to have a large percentage invested in fixed-income assets.

Participating accounts in Canada are diversified and each has its own characteristics. The following pie chart demonstrates the distribution of assets in the Sun Life Participating Account. This is a little less typical due to the larger percentage of assets in private fixed income and real estate.



The proportion of the par account invested in each of these separate asset classes can vary. It is a function of available investment opportunities, the overall market environment, and the company's investment guidelines. As an example, during times of market stress the proportion of the portfolio invested in liquid instruments (most notably government bonds) may increase. However, any fluctuation in asset mix will be marginal — plus or minus three to five per cent per asset class — and the overall portfolio composition remains stable through time. The asset mix is designed to fulfil the par account investment objectives to provide death benefits to the insured and annual policy owner dividends. The par account is itself a product of the Modern Portfolio Theory — working to find the optimal balance of risk and return given the natural constraints imposed by the investment objectives.

It is also important to note that this stable asset mix has the added benefit of lower investment expenses. A stable asset mix also means that investment expenses tend to be more predictable. Expenses associated with the administration of the par account can vary and insurers that invest in more complex asset types like real estate and private fixed income may have higher expenses. Overall these expenses are in the range of five to 10 basis points.

Par account performance tends to be relatively stable. Historical returns over the past 25 years of the Sun Life Participating Account, as represented by the dividend scale interest rate, are shown compared to other investments in the following chart.

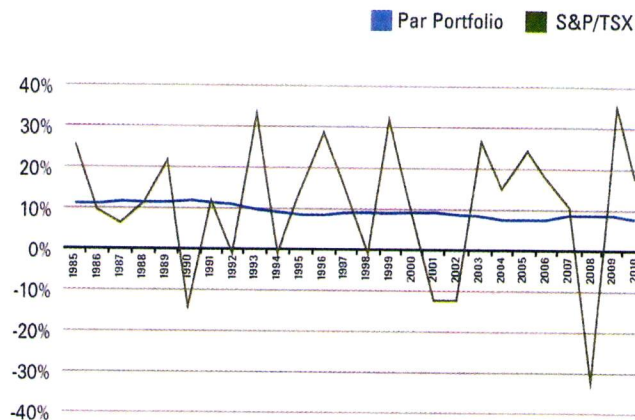
	PAR DIVIDEND SCALE INTEREST RATE*	S&P/TSX TOTAL RETURN	GOVERNMENT OF CANADA 10-YEAR BONDS
<b>Maximum</b>	11.5%	35.1%	11.0%
<b>Average</b>	9.2%	9.0%	6.8%
<b>Minimum</b>	7.4%	-33.0%	3.9%
<b>Standard Deviation</b>	1.3%	16.2%	2.3%

\* The returns are based on the Sun Life Participating Account (open and closed accounts). The dividend scale interest rate used in determining the investment component of policyholder dividends is based on the smoothed returns on assets backing the participating account liabilities. Government of Canada bonds are nominal yields to maturity taken for Statistics Canada, CANSIM series V122487. S&P/TSX composite index returns include the reinvestment of dividends and as taken from the Canadian Institute of Actuaries Report on Canadian Economic Statistics, published April 2011.

The only thing that might be surprising from this chart is the relationship between the dividend scale interest rate's average return and its volatility as measured by the standard deviation of return. The average return is comparable to that of equities but has less volatility than that of long-term Government of Canada bonds. An additional factor to consider when looking at this comparison is that the death benefit and the costs associated with the death benefit provided are not reflected in the dividend scale interest rate.

This atypical relationship between risk and return requires an explanation. To set the dividend scale interest rate, insurers may choose to use the pre-2007 accounting rules. All financial reporting for the par account, however, is based on the 2007 accounting rules, which means insurers must report on a mark-to-market basis versus the move-to-market basis used pre-2007. By utilizing the move-to-market approach in setting the dividend scale interest rate, insurers can pass through gains and losses over time when setting the dividend interest rate, allowing for "smoothed" returns. Using a move-to-market approach may result in the following: equity gains and losses may be amortized at 15 to 20 per cent per year; unrealized bond gains and losses may typically not be recognized at all; and realized bond gains and losses may be amortized over the remaining term to maturity.

The net effect of this smoothing effect is illustrated in the next chart in a comparison of the par account dividend scale interest rate returns and Canadian equity market returns over the past 25 years.



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## A high-net-worth case study

Now that we've discussed the two types of permanent life insurance in some detail, we can begin the evaluation of it as an effective asset class. We'll examine a typical case study of a high-net-worth investor, Dr. Know, a 50-year-old oncologist earning \$450,000 annually. We'll assume his children are no longer financial dependants.

Dr. Know's non-registered investment portfolio has a current value of \$1 million — 60 per cent in equities and 40 per cent in real estate. Given his long-term goals and current financial situation, the time has come to re-evaluate his investment portfolio. Dr. Know is particularly concerned about the lack of investment diversity as he has exposure to only two asset classes. Also, as he is later in his career and heading toward his retirement years, he believes he should reduce his risk.

Dr. Know has committed to adding \$50,000 annually to his non-registered portfolio and plans to continue this until at least age 65. Rather than liquidate and reallocate some of his current portfolio into fixed lower-risk investments, he will direct all future contributions towards them. He will choose between bonds and permanent life insurance, keeping in mind his goals are to:

- maximize the value of his estate when he dies;
- minimize the tax burden associated with his non-registered investments;
- maintain significant liquidity within his investment portfolio; and
- improve his portfolio risk/return profile.

The question then becomes: Which asset class best allows Dr. Know to reach his investment goals?

# INSURANCE

## ANALYSIS

The analysis that follows compares and contrasts a fixed-income portfolio with that of the two permanent life insurance options. The starting point will be the fixed-income portfolio. Long-term interest rates are currently at historical lows. We'll assume that long-term Government of Canada bond yield rates forever remain at the level they were on April 1, 2012 (2.75 per cent). Also, we assume incremental yields on corporate bonds are in line with their historical average. Dr. Know is considering a 65/35 per cent split between corporate and federal bonds; he is in the top marginal tax bracket of 46 per cent. This portfolio therefore will yield an after-tax rate of return of two per cent.

The first insurance alternative is a participating whole life policy\*. The face amount that is supported by \$50,000 annual premiums is \$1,145,643. Premiums are contractually guaranteed to be payable for 20 years. Because the case scenario calls for only 15 deposits/premiums, the premiums due from years 16 to 20 are assumed to be funded by the annual policy owner dividends. All other dividends will be reinvested to buy additional insurance. To make the comparison as fair as possible, a dividend interest rate of 5.15 per cent is used. The 5.15 per cent represents what a dividend scale interest rate could ultimately be if the interest rate environment was the same as that described for the fixed income portfolio, and if real estate and equities perform at historical levels.

The second insurance alternative is a universal life insurance policy\*\*, specifically one with the same initial face amount as the first alternative and funded with 15 annual premium deposits of \$50,000 each. The investment-side account will be invested in guaranteed interest accounts earning 2.5 per cent.

The chart below illustrates the tax-free death benefits (in thousands) to the estate and corresponding internal rate of return (IRR) for the two insurance alternatives.

AGE	PARTICIPATING WHOLE LIFE		UNIVERSAL LIFE	
	ESTATE BENEFIT	IRR	ESTATE BENEFIT	IRR
65	\$1,783	10.2%	\$1,848	10.6%
75	\$1,783	4.2%	\$1,942	5.3%
85	\$1,783	3.3%	\$2,068	3.6%

\* Specifically a Sun Par Accumulator policy. \*\* Specifically a SunUniversal Life policy.

The two alternatives show similar results at life expectancy. In comparison, the IRR for the fixed-income portfolio will always be the after-tax rate of return, i.e., two per cent.

The next step is to look at the relative cash surrender values (in thousands) of the two permanent insurance alternatives. These are shown in the next chart. The par policy offers greater cash surrender values at all durations, particularly the later ones.

	PARTICIPATING WHOLE LIFE	UNIVERSAL LIFE
55	\$213	\$155
65	\$803	\$702
75	\$1,094	\$797
85	\$1,543	\$923

A desire for liquidity may not be limited to later ages. Many people, especially low-risk investors, will have an interest in shorter-term liquidity. The liquidity in the first five years is illustrated in the next chart. The percentages in the chart are the ratio of the cash value at that duration to the premiums paid to that point in time. Once again, the par policy is superior to the UL. Both, however, are less than the fixed-income portfolio, which can be cashed in for 100 per cent of its value under this interest rate scenario.

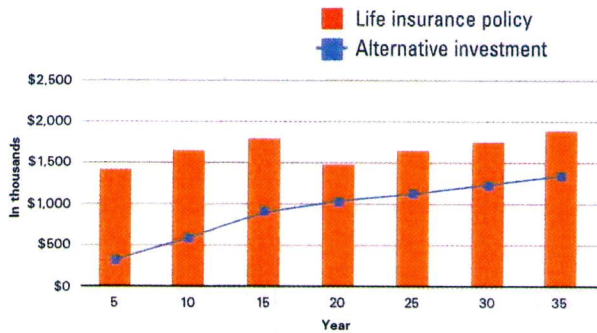
POLICY YEAR	PARTICIPATING WHOLE LIFE	UNIVERSAL LIFE
1	52%	40%
2	63%	45%
3	71%	47%
4	80%	56%
5	85%	62%

Based on this objective analysis for Dr. Know, the par alternative is the better permanent life insurance solution to compare to the fixed-income investment.

We now turn our attention to how the par policy compares to the fixed-income investment. As noted in the introduction, Dr. Know will assess his alternatives by looking at three factors: benefits to his estate; interim benefits to him, for example, liquidity; and relative level of risk.

## Estate benefit

One would expect that permanent insurance would provide a greater benefit to the estate than the alternate fixed-income investment. The graph below confirms this. At each horizon, the benefit to the estate upon death is greater for par than for the non-registered investment. And given there is a 100 per cent chance that Dr. Know will one day die, this is an important consideration.

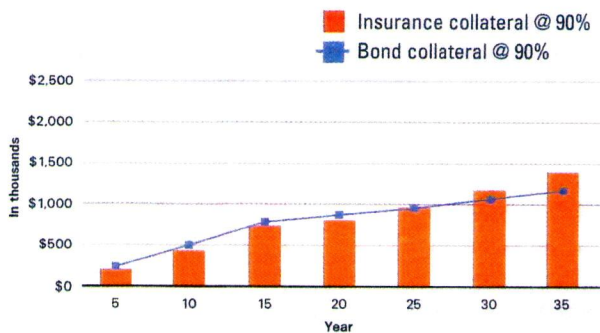


## Liquidity

Dr. Know is fairly affluent and not likely to rely much on his non-registered portfolio for living expenses in his retirement years. He is, however, interested in liquidity for two reasons: as a last resort should his fortunes change; and as an asset he can leverage should he wish to invest in another asset or business.

In terms of liquidity, the par policy has three options:

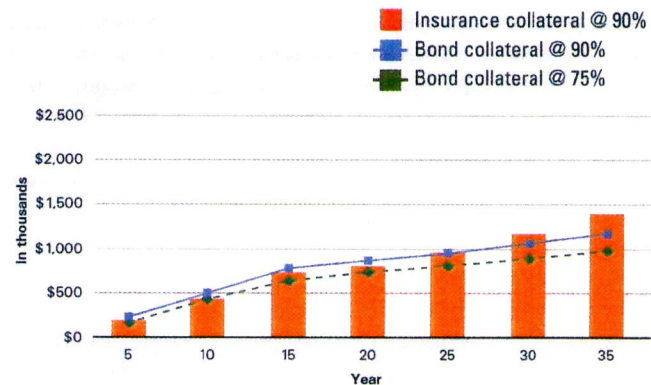
1. Dr. Know could surrender (cancel) the policy and collect the cash surrender value. At some point, however, particularly after the first 10 years, there will be an associated gain. This gain is taxable as income, so the after-tax cash surrender value would need to be compared to the fixed-income portfolio. In practice, however, such policies are seldom surrendered.
2. Insurers offer policy loans against the cash value, but these are treated similar to surrenders from a tax perspective.
3. The most likely solution to meet a need for access to the cash value is to use the cash value as collateral for a third-party loan.



For the same reasons, Dr. Know is unlikely to ever cash in the full value of the fixed-income portfolio. And also for the same reasons, he may wish to leverage its value. Lenders will likewise lend up to 90 per cent of the value of the fixed-income portfolio. Liquidity defined in this way is comparable between the two alternatives, as is shown in the first chart on the left.


The interest on third-party loans can be capitalized and the outstanding loan would be repaid at death from the tax-free death benefit. Because policy owner dividends can never be negative, banks may lend up to 90 per cent of the policy's cash value.

But because the value of the fixed income portfolio will drop when interest rates go up, it would be prudent to borrow less than the full 90 per cent of the fixed income portfolio. Otherwise, in the event the market value of the portfolio drops below that of the loan, the lender will make a margin call and require some of the loan to be repaid. For this reason, a more conservative approach would be to cap the investment loan at 75 per cent. This revised definition of liquidity shows a marked advantage to the life insurance policy, as is shown below.



The analysis in this study leads us to the conclusion that permanent life insurance, specifically participating whole life, is in fact an attractive alternative asset class when compared against fixed-income investments. The three findings were: the benefits to the estate were greatly enhanced; investment liquidity was comparable; and the efficient frontier, due to the low standard deviation of returns, was expanded by incorporating insurance.

As a final note, we should add that the results will vary somewhat based upon both the actual permanent life insurance product used and the age at which the strategy is being considered. With respect to the latter, the results would be more favourable at younger ages and less so at ages over 60.

Keep in mind that this approach isn't for every client. This analysis is geared toward not only high-net-worth investors who are in a unique position to capitalize on the benefits provided through permanent life insurance, but also investors who are already using this strategy. 

WAYNE MILLER is regional vice-president, Central Region & National Accounts, for Sun Life Financial Canada, and can be reached at [Wayne.Miller@sunlife.com](mailto:Wayne.Miller@sunlife.com). Sally Murdock is director, portfolio management, at Sun Life Financial Canada, and can be reached at [Sally.Murdock@sunlife.com](mailto:Sally.Murdock@sunlife.com).