

# Life insurance as an asset class

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# Executive summary

## LIFE INSURANCE AS AN ASSET CLASS

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This research paper examines the merits of permanent life insurance as an alternative asset class. Though known more for its estate planning benefits than as an investment tool, permanent life insurance is attracting attention among investors looking to improve the return or reduce the risk of the fixed-income portion of their investment portfolio.

The authors build their case around Harry Markowitz's Modern Portfolio Theory (MPT) and its cornerstone, the efficient frontier (EF) concept.

MPT quantifies the idea that a prudent investment portfolio balances risk and return. The theory also demonstrates the benefits of portfolio diversification and allows for this benefit to be captured and expressed during the portfolio construction process.

The EF concept is basically a set of optimal portfolios that offers the highest expected return for a defined level of risk or the lowest risk for a given level of expected return.

After a closer examination of the two primary kinds of permanent life insurance – universal life and participating whole life – the authors then apply MPT to a typical client scenario, in this case a high-net-worth individual concerned about a lack of investment diversity and looking to reduce risk in a non-registered portfolio.

The theoretical portfolio is similar to what investment professionals frequently recommend: the highest weighting in equities and fixed income, some strategic allocations to real estate, and alternative assets with a cash component for liquidity and safety.

The in-depth analysis that follows compares the fixed-income portfolio with that of the two permanent life insurance alternatives. The authors go to great lengths to create a set of financial assumptions – e.g. Government of Canada and corporate bond yield rates – that will make their analysis as objective as possible.

The goal in comparing the fixed-income and insurance options is to show which will be the optimal one to help maximize the value of the investor's estate, minimize non-registered investment taxes, maintain and facilitate portfolio liquidity, and improve his portfolio risk/return profile.

To set up the analysis, the authors compare the advantages and disadvantages of each life insurance product with respect to which might work best in an investment portfolio. At this point they introduce the case study and proceed with their analysis.

Using charts and graphs to help build their case, the authors first compare participating life and universal life in the three key areas that relate to the investor's goals: estate benefits, cash surrender values and portfolio liquidity. The ultimate goal is to determine whether paying insurance premiums or investing in fixed-income assets is the best solution for the investor to realize their investment goals.

The insurance comparison reveals that participating life is the better permanent life insurance solution. The authors then compare this finding to the fixed-income investment, again with their investment goals in mind.

After estate benefit, liquidity and investment risk analyses, the authors conclude that permanent life insurance, particularly participating whole life, is an attractive alternative asset class when compared against fixed-income investments. Benefits to the estate are greatly enhanced, liquidity is comparable and the efficient frontier is expanded by incorporating insurance.

The authors' findings reinforce what they state early on in the research paper: that 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.

In particular, it's primarily how insurers smooth the returns within participating life insurance that makes it advantageous as an asset class on its own.

In comparing par to bonds, returns are comparable due to its attractive portfolio mix; liquidity is better because there are no market adjustments; and there's less volatility because of smoothing techniques. These help to keep the dividend scale interest rate more stable over time, allowing the investor to take advantage of good timing. Finally, par offers greater estate benefits because of the tax efficiency of life insurance.

While the research paper concludes that permanent life insurance is an attractive asset class when compared to fixed-income investments, the authors are careful to point out that it's not an approach for everyone.

The authors also note that the results may differ depending on the permanent life insurance product used and the investor's age when the strategy is considered. The results would be more favorable at younger ages and less so at ages over 60.

# Buy low, sell high. Don't put all your eggs in one basket. Timing is everything.

These and other investment catchphrases have been quoted – and proved – 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. 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.*

If you type "insurance as an asset class" in your favorite internet search engine, you may be surprised how many results you get. The concept is attracting attention, specifically for those wishing to improve the return or reduce the risk of the fixed-income portion of their investment portfolio. Permanent life insurance has always been an exceptional estate planning tool, but in this article, we will evaluate the additional merits of permanent life insurance as an alternative asset class. We'll do this by describing a typical client profile and looking at how it performs in three areas:

- benefits to the estate,
- interim benefits (i.e. liquidity), and
- relative level of risk.

We don't recommend this approach for everyone. 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 utilizing this strategy.

# An introduction to Modern Portfolio Theory

*“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.”*

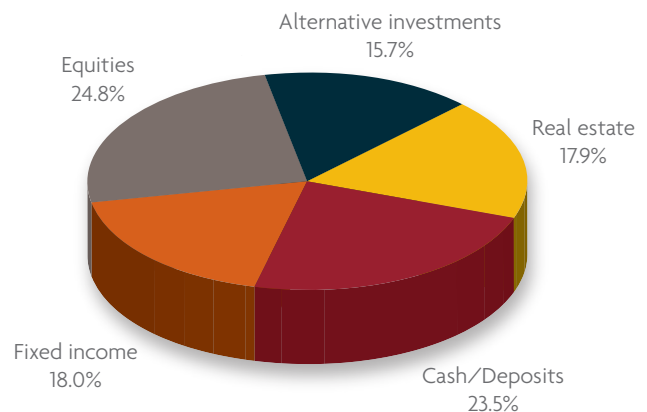
Yet up until Harry Markowitz’s groundbreaking development of Modern Portfolio Theory (MPT), this balance was struck through trial and error and a heavy dose of intuition. MPT quantifies this risk-return balance. It clearly demonstrates the benefit of investment portfolio diversification and allows for 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 utilize 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)**.

We wish to apply this theoretical construct to the investment portfolio of a high-net-worth individual (HNWI). Initially, this portfolio will contain:

- equities (common stocks),
- fixed income (bonds and mortgages),
- cash/deposits,
- real estate,<sup>1</sup> and
- alternative investments.<sup>2</sup>

We will construct the portfolio so that it will be similar in composition to that which is frequently seen and recommended by investment professionals: the highest weighting in equities and fixed income, some strategic allocations to real estate, and alternative assets with a cash component for liquidity and safety. The current “average mix” for a high-net-worth individual is as follows:<sup>3</sup>



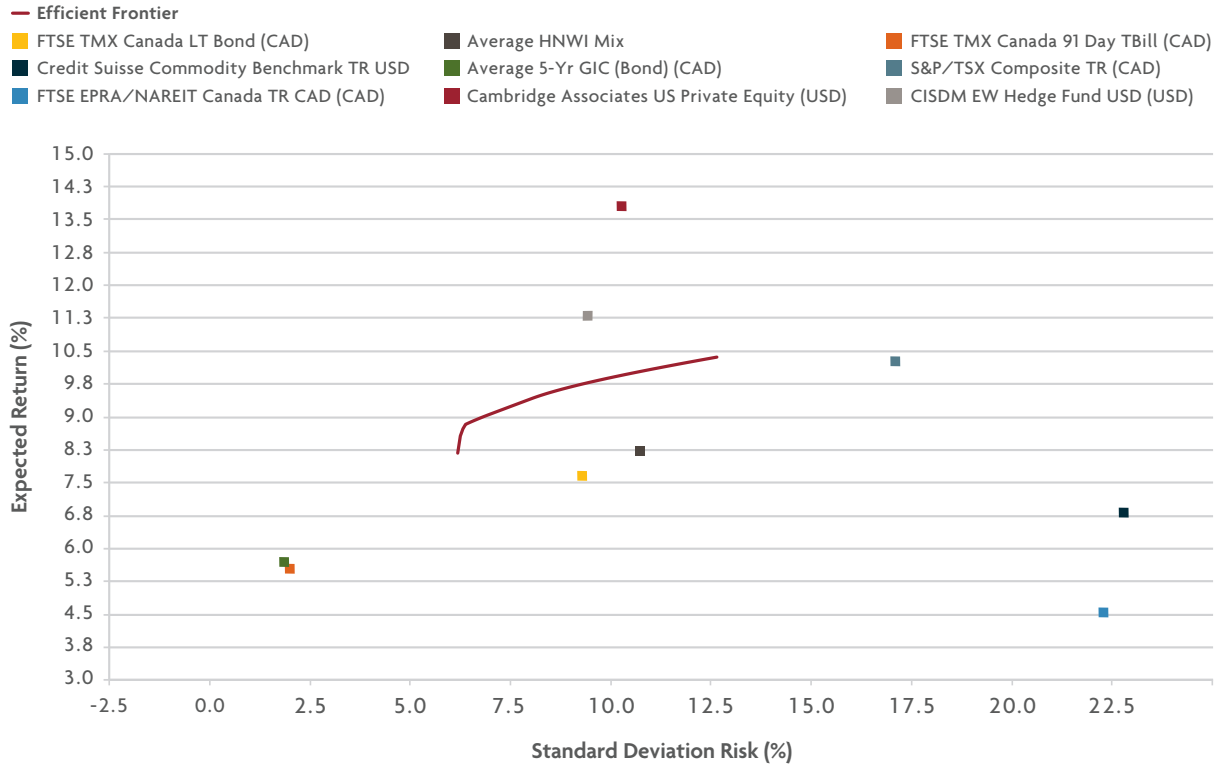
<sup>1</sup> Comprises commercial real estate, real estate investment trusts (REITs), residential real estate (excluding primary residence), undeveloped property, farmland and other.

<sup>2</sup> Includes structured products, hedge funds, derivatives, foreign currency, commodities, private equity, venture capital.

<sup>3</sup> Capgemini World Wealth Report, 2016.

However, using MPT we can optimize portfolio weights and build an EF. We do impose some necessary constraints during the optimization process. These constraints ensure that we are most heavily invested in bonds and equities,

that alternative assets represent a small minority of portfolio holdings and that there is always a minimum percentage invested in cash. The EF produced using MPT on such a portfolio is as follows:<sup>4</sup>



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?* In other words, would reallocating some fixed income assets into permanent life insurance improve the efficiency of an investment portfolio?

4 See Appendix for detailed information on data, including data source.

# An introduction to permanent life insurance

*Life insurance can be categorized into insurance that addresses one's "needs" and insurance that addresses one's "wants."*

**TERM INSURANCE** IS GENERALLY THE MOST APPROPRIATE FOR ADDRESSING THE NEED FOR PROTECTION AGAINST THE FINANCIAL CONSEQUENCES OF AN EARLY DEMISE OF THE INCOME PRODUCING HUMAN CAPITAL, I.E. THE INSURED. TERM INSURANCE IS AFFORDABLE, AND IF THE INSURABLE PERSON QUALIFIES FOR IT, THERE'S NO REASON NOT TO OWN ENOUGH TERM INSURANCE FOR PROPER PROTECTION AGAINST AN EARLY DEATH.

**PERMANENT INSURANCE** CAN ALSO BE USED TO MEET ONE'S NEEDS. BUT IT'S MORE LIKELY TO BE USED FOR ADDRESSING ONE'S WANTS.

Permanent insurance protects the value of one's financial capital later in life when one relies less on human capital and more on investments for generating income.

While there are various types of permanent life insurance, two primary types are used for the needs listed above: universal life (UL) and participating (par) whole life. Both products enjoy many tax-preferred benefits, including the death benefit being paid tax free to the beneficiary. Both products also come with annual performance reporting disclosure and embedded guarantees.

UL is an unbundled product, thus the distinction between an insurance component and a tax-preferred investment account. The owner can choose to pay only the cost for the insurance protection or, within limits, make additional premium deposits to the investment accounts. These additional deposits can be used to pre-fund future insurance costs or increase the value of the death benefit.

UL provides more flexibility in terms of the amount and timing of premium deposits. It also provides considerably more investment options. One can choose from investment accounts that offer guarantees to those that offer interest based on the returns of a mutual fund or index. On the negative side, UL may have higher investment fees and performance volatility than participating whole life.

*"Want" statements addressed by permanent life insurance include:*

- I want to preserve the value of my estate when I die,
- I want an equitable distribution of my estate when I die,
- I want to enjoy additional tax benefits from my financial plan,
- I want an effective means to sell my business before I die, and
- I want to improve the risk/return ratio in my investment portfolio.

**PAR IS A BUNDLED PRODUCT.**

THE INITIAL COST IS HIGHER THAN UL BUT THIS INCREASED PREMIUM COMES WITH GUARANTEED CASH VALUES AND THE POTENTIAL TO EARN ANNUAL POLICY OWNER DIVIDENDS. LIKE THE ADDITIONAL PAYMENTS ON UL, PARTICIPATING POLICY DIVIDENDS CAN BE USED TO FUND PREMIUMS OR INCREASE THE VALUE OF THE DEATH BENEFIT.

Par has its own advantages and disadvantages. The primary disadvantage is the lack of investment choice. There is only one investment portfolio. Ironically, however, this is also the source of par’s advantages, particularly when viewed as an asset class. We’ll discuss these important nuances later.

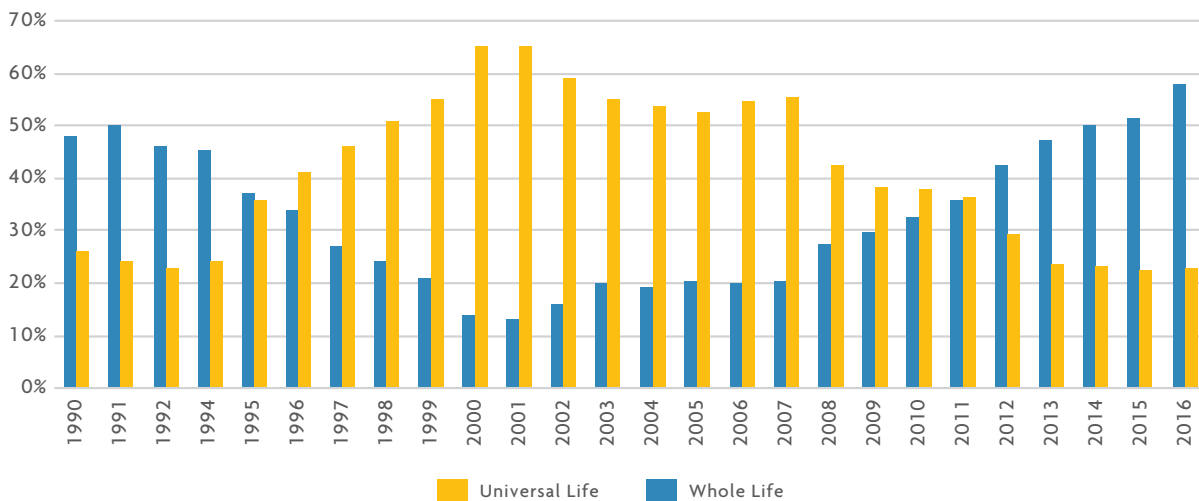
Par has been sold in Canada for about 150 years. UL came about in the early 1980s as a means to capitalize on high interest rates that prevailed at that time. Further design flexibility, on both the insurance and investment sides, was then incorporated and fueled an increase in popularity that grew steadily for 30 years. If we look at

the past 25 years or so, we can see below<sup>5</sup> the relative popularity of these two permanent insurance products.

UL was clearly the more popular product through the late 1990s. But since then, due in part to declining interest rates and volatile equity markets, whole life (mainly par) has made a striking comeback. We are now in an environment where both products are equally popular, albeit par has the momentum.

Finally, a discussion of life insurance should point out some basic yet important criteria:

- **The life insured must be insurable.** Extra premiums can be charged for those with health or risk impairments but for some, the impairments can deem the individual ineligible for life insurance.
- **There must be an insurance need.** Insurability covers financial health as well as physical health. The owner must provide details of the financial need for the insurance and also show the ability to pay the premiums. As such, each person has a maximum amount of insurance for which they can qualify.
- **Liquidity cannot be paramount.** While most permanent insurance policies provide a cash value if the owner wishes to cancel the policy, the amount is often less than the premiums “invested.” If liquidity is required, particularly in the near term, permanent life insurance may not be ideal.



5 Source: LIMRA. Table shows the percentage of new premium sold in Canada by product type, 2016.



# The merits of universal life insurance as an asset class

Many life insurance products in Canada come with premiums and a face amount that may be 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 named beneficiary, the IRR is a tax-free rate. The only variable is the age of death.

## EXAMPLE

In the case of a minimum-funded 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 male aged 50, for example,<sup>6</sup> will find the annual cost of \$1 million of UL to be \$13,654. Guaranteed after-tax IRRs for such a policy are shown in the table below:

AGE AT DEATH	AFTER-TAX IRR
70	11.26%
75	7.56%
80	5.32%
85	3.84%
90	2.81%

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 3.84%. 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.

Quite often, however, these policies are pre-funded. The policy owner will pay considerably more up front than the annual cost of the insurance for a limited period, such as five or 10 years. This approach takes advantage of the tax-preferred investment account of the UL policy, and in turn provides some liquidity. But if this is being considered as an alternative to a low-risk bond portfolio, this account will be invested in guaranteed interest accounts. The highest guaranteed minimum return of such accounts is approximately 1.5%, IRRs on this basis will be a blend of this 1.5% return and the IRRs shown in graph. In other words, the IRRs will be lower.

Higher IRRs may be possible with a UL policy but they would require the investment account to be earning interest based on higher-risk assets. But because the objective is to maintain or reduce the risk of a fixed-income investment, the UL approach may not be an appropriate solution.

<sup>6</sup> Values are from SunUniversalLife II, level COI using 2% premium tax and 3% interest rate, March 2017.

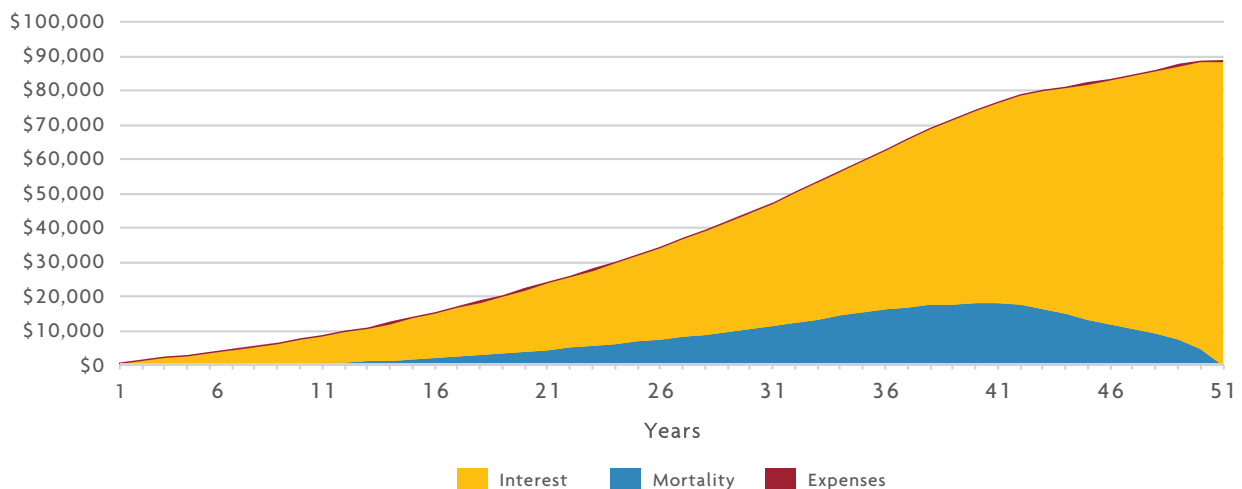
# An overview of participating whole life insurance

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% 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.<sup>7</sup>

## TOTAL DIVIDENDS BY COMPONENTS



<sup>7</sup> Values are for a Sun Par Protector II policy, life pay paid-up additions MNS 50 at current dividend scale with premiums payable for life, March 2017.

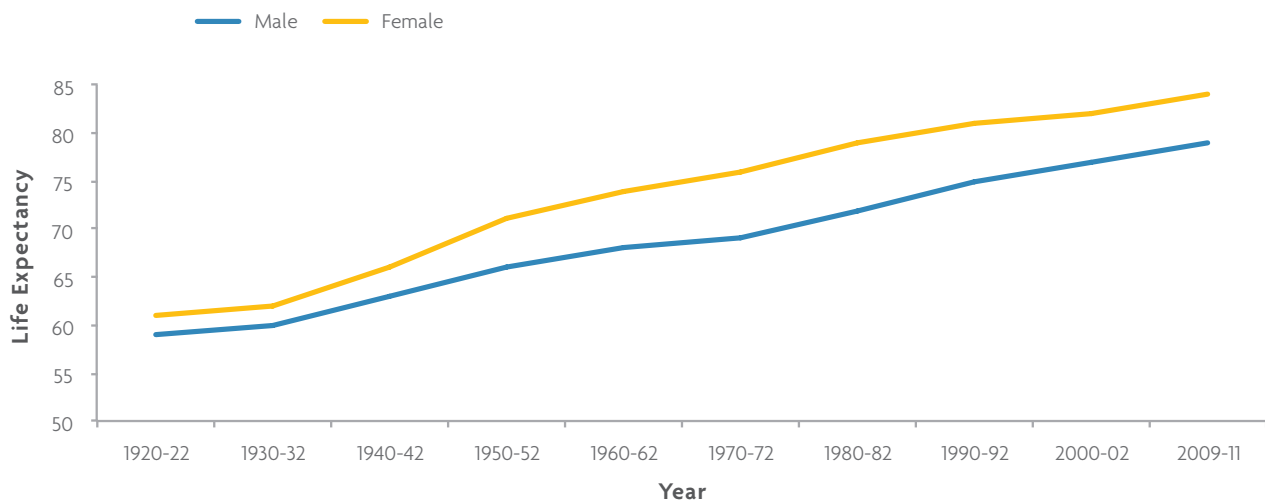
## MORTALITY EXPERIENCE AND TRENDS

Life expectancies have increased steadily due to the success of modern medicine. Rarely have we seen any reversal of this trend, even for a short period. Mortality gains therefore have been fairly consistent. What isn't predictable is what will happen to this trend in the future.

**MORTALITY GAINS** COME FROM THE DIFFERENCE BETWEEN CURRENT EXPERIENCE AND ASSUMPTIONS USED IN PRICING THE PRODUCT.

The Total Dividends by Components graph assumes that this difference remains constant into the future. In other words, it assumes there will be no further improvement in mortality and life expectancies. If there is, this component of policy owner dividends will increase. However, if life expectancies begin to shorten in the future, mortality gains and dividends will decrease.

## LIFE EXPECTANCY



Source: Statistics Canada; life expectancy at birth, 2011

## PARTICIPATING POLICY OWNER DIVIDENDS VS. SHAREHOLDER DIVIDENDS

The proportion of gains that are returned to policy owners can be significant. Section 461 of the *Insurance Companies Act (S.C. 1991, c.47)* sets out in law the maximum payments from the par account that can be distributed to company shareholders. The percentages below refer to the maximum percentage of par account income distributed to policy owners that can be paid to shareholders.

Par policy owner dividends from a stock company are based solely on the insurer's par business. In contrast, only shareholder dividends, net income and share price are related to the performance of the company overall. This includes the insurer's other businesses such as group benefits, group pensions, wealth management, etc., within Canada and globally. As such, there is no direct relationship between par policy owner dividends and company shareholder dividends.

SIZE OF PAR ACCOUNT (IN \$ MILLIONS)	MAXIMUM PERCENTAGE OF PAR ACCOUNT INCOME PAID TO SHAREHOLDERS
250	10.00%
500	8.80%
1,000	6.90%
5,000	3.40%
10,000	2.90%
16,000	2.78%

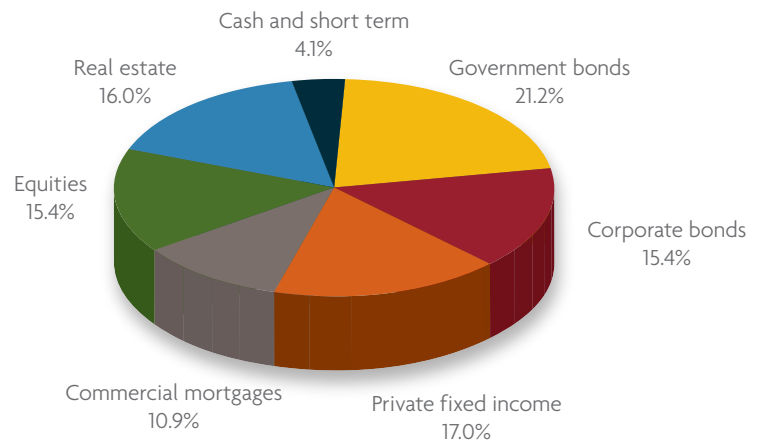
## THE PAR ACCOUNT AND ITS UNIQUE INVESTMENT QUALITIES

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 \$20 billion and have existed for well over 140 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.



## EACH OF THE ASSETS CLASSES WITHIN THE ASSET MIX PLAYS A ROLE IN THE STRUCTURE OF THE PAR ACCOUNT:

ASSET CLASS	PURPOSE
Cash	Allows for the timely payment of death benefits and strategic investment in other asset classes when attractive market opportunities are present.
Government bonds	Acts to provide liquidity and the portfolio “safety net.”
Private fixed income	Privately negotiated debt investments that generate stable investment returns and return a premium to similar risk public bonds. This superior return is due to the complexity and implicit illiquidity of the asset class.
Corporate bonds	Public bonds provide enhanced returns vs. government bonds and more liquidity than private debt.
Mortgages	A diversifying source of investment returns with the advantage of a physical claim on real estate assets.
Real estate	Stable cash flows with the added benefit of inflation protection.
Equities	The greatest opportunity for investment “upside” along with inflation protection.

The investment guidelines for each asset class within the participating account are set to ensure that the long-term objectives, liabilities, liquidity requirements and interest rate risks are satisfied. Any changes to the investment guidelines are typically approved by the company's board of directors.

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 3-5% per asset class, and the overall portfolio composition remains stable through time. The asset mix is designed to fulfill 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 15 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 below compared to other investments.

	PAR DIVIDEND SCALE INTEREST RATE*	S&P/TSX TOTAL RETURN	GOVERNMENT OF CANADA 10-YEAR BONDS
MAXIMUM	10.40%	35.05%	8.77%
AVERAGE	7.90%	8.60%	5.00%
MINIMUM	6.25%	-33.00%	1.80%
STANDARD DEVIATION	0.90%	16.30%	2.00%

\* The dividend interest rate is based on the Sun Life Participating Account (open and closed accounts). The dividend scale interest rate used in determining the investment component of policy owner 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.

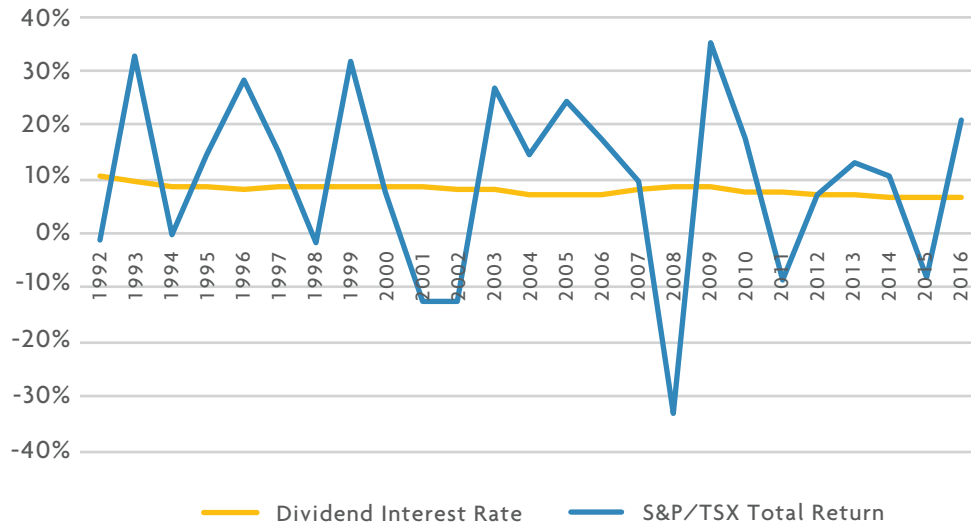
The only thing that might be surprising from this chart is the relationship between the dividend scale interest rate's average return and its volatility as measured by the standard deviation of return. The average return is slightly lower than that of equities, the volatility is less than that of long-term 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 needs 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 vs. 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 - 20% 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.

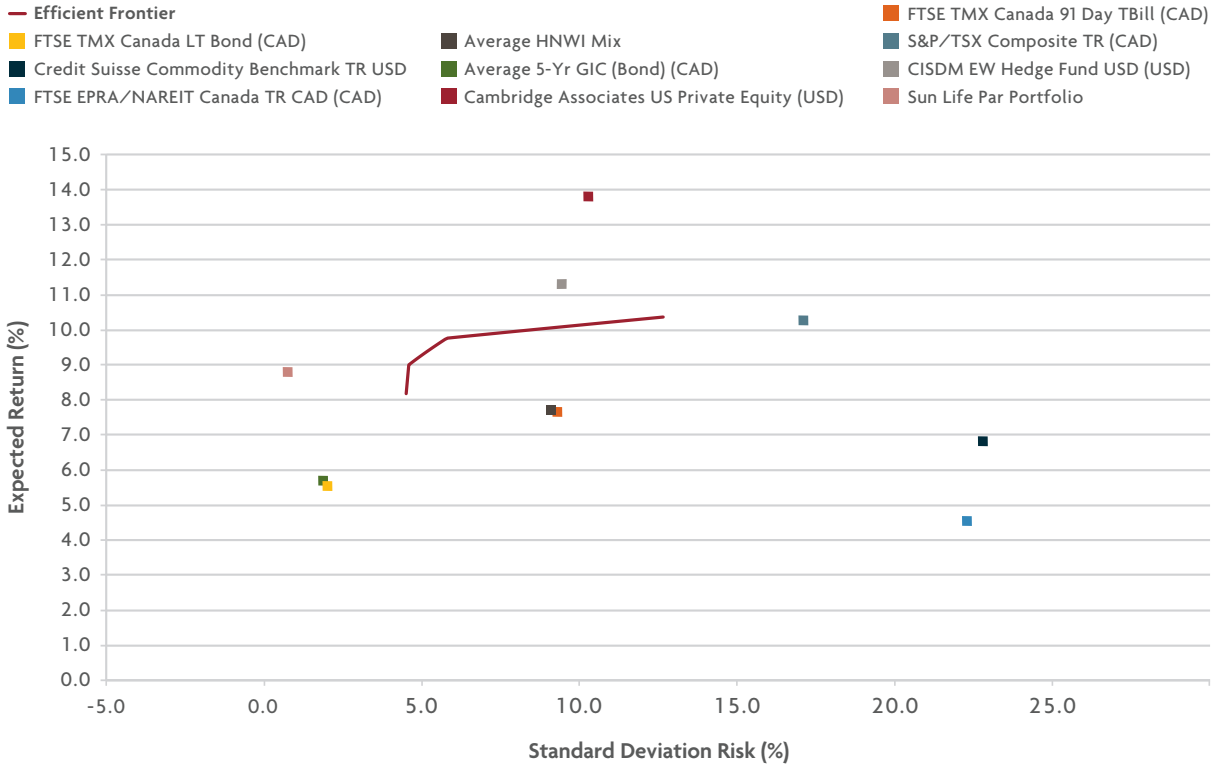
The net effect of this smoothing effect is illustrated below in a comparison of the par account dividend scale interest rate returns and Canadian equity market returns over the past 25 years:



\* The dividend interest rate is based on the Sun Life Participating Account (open and closed accounts). The dividend scale interest rate used in determining the investment component of policy owner 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.

The return represented by the dividend scale interest rate with its smoothing technique does not include the insurance premiums and benefits provided. It is one component in determining the performance of

participating life insurance policies. Other factors include mortality, expenses, taxes and lapses. The following chart demonstrates where you would find it, to the left of the efficient frontier.





# 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 (HNWI), Dr. Wise, a 50-year-old oncologist earning \$450,000 annually. We'll assume his children are no longer financial dependants.

Dr. Wise's non-registered investment portfolio has a current value of \$1 million – 60% in equities and 40% in real estate. Given his long-term goals and current financial situation, the time has come to re-evaluate his investment portfolio. Dr. Wise 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.

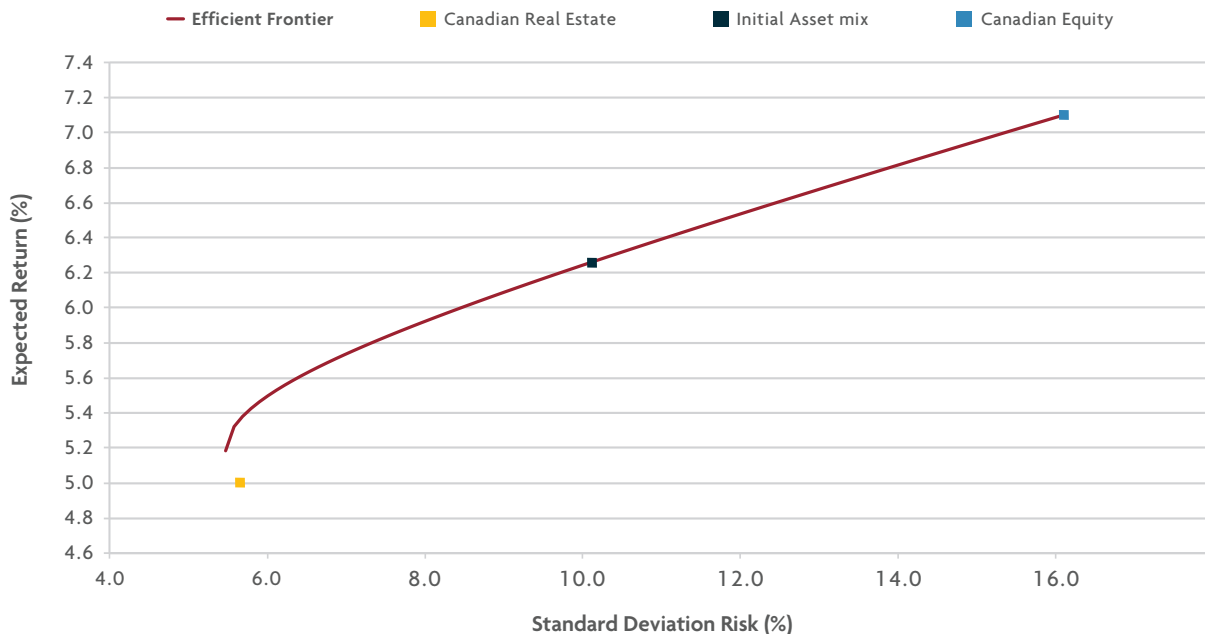
Below is the current efficient frontier associated with Dr. Wise's two-asset portfolio, along with his current portfolio position.<sup>8</sup>

Dr. Wise 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.

## DR. WISE'S INITIAL EFFICIENT FRONTIER



<sup>8</sup> Here we assume (1) Equity returns of 7.1%/year (after tax) from dividends of 2.5%/year, capital appreciation of 7.5%/year and a marginal tax rate of 54%. (2) Real estate returns of 5%/year (after tax) assuming annual capital appreciation of 6.5% and a marginal tax rate of 54%. Risk is measured as an expected standard deviation of annual returns – 16.6%/year for equities and 7.2%/year for real estate. Correlations are based on historical annual correlation of annual returns on a 10-year total return history, with time series from Morningstar and Sun Life Financial.

*The question then becomes:  
which asset class best  
allows Dr. Wise to reach  
his investment goals?*

## THE 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 March 1, 2017 (2.4%). Also, we assume incremental yields on corporate bonds are in line with their historical average. Dr. Wise is considering a 65%/35% split between corporate and federal bonds; he is in the top marginal tax bracket of 54%. This portfolio therefore will yield an after-tax rate of return of 1.5%.

The first insurance alternative is a participating whole life policy.<sup>9</sup> The face amount that is supported by \$50,000 annual premiums is \$1,112,082. Because the case scenario calls for only 15 annual deposits/premiums, the premiums due after year 15 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 4.75% is used. The 4.75% 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 performs at historical levels while equities return an average of 8%.

The second insurance alternative is a universal life insurance policy.<sup>10</sup> 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 a portfolio with similar characteristics to the participating account, earning 2.5%.

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	\$1,896	10.92%	\$1,733	9.91%
75	\$1,713	4.59%	\$1,738	4.67%
85	\$1,714	2.97%	\$1,744	3.03%

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., 1.5%.

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.

AGE	PARTICIPATING WHOLE LIFE	UNIVERSAL LIFE
55	\$221	\$182
65	\$843	\$621
75	\$1,072	\$626
85	\$1,335	\$632

<sup>9</sup> Specifically a Sun Par Accumulator II Life Pay policy. The annual premium includes a \$15,000 annual Plus premium benefit, March 2017

<sup>10</sup> Specifically a SunUniversalLife II Level COI policy with insurance amount plus policy fund death benefit option using a 3% premium tax, March 2017.

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 this 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% of its value under this interest rate scenario.

POLICY YEAR	PARTICIPATING WHOLE LIFE	UNIVERSAL LIFE
1	60%	40%
2	71%	63%
3	84%	71%
4	86%	72%
5	88%	73%

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

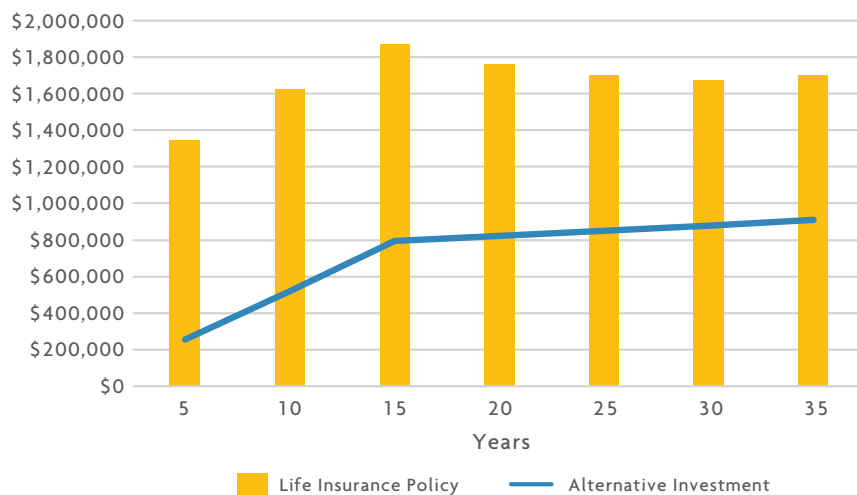
We now turn our attention to how the par policy compares to the fixed-income investment. As noted in the introduction, Dr. Wise will assess his alternatives by looking at three factors:

- benefits to his estate,
- interim benefits to him; for example, liquidity, and
- relative level of risk.

## ESTATE BENEFIT ANALYSIS

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 taxable investment. And given there is a 100% chance that Dr. Wise will eventually die, this is an important consideration.

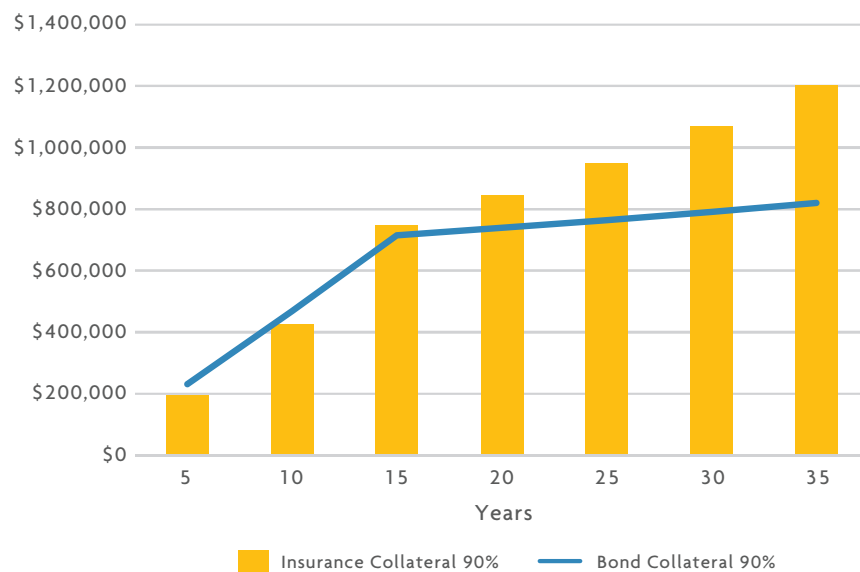


## LIQUIDITY ANALYSIS

Dr. Wise 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. Wise could surrender (cancel) the policy and collect the cash surrender value. At some point, however, particularly after the first 10 years, there
2. Insurers offer policy loans against the cash value, but there may be tax consequences;
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.<sup>11</sup>

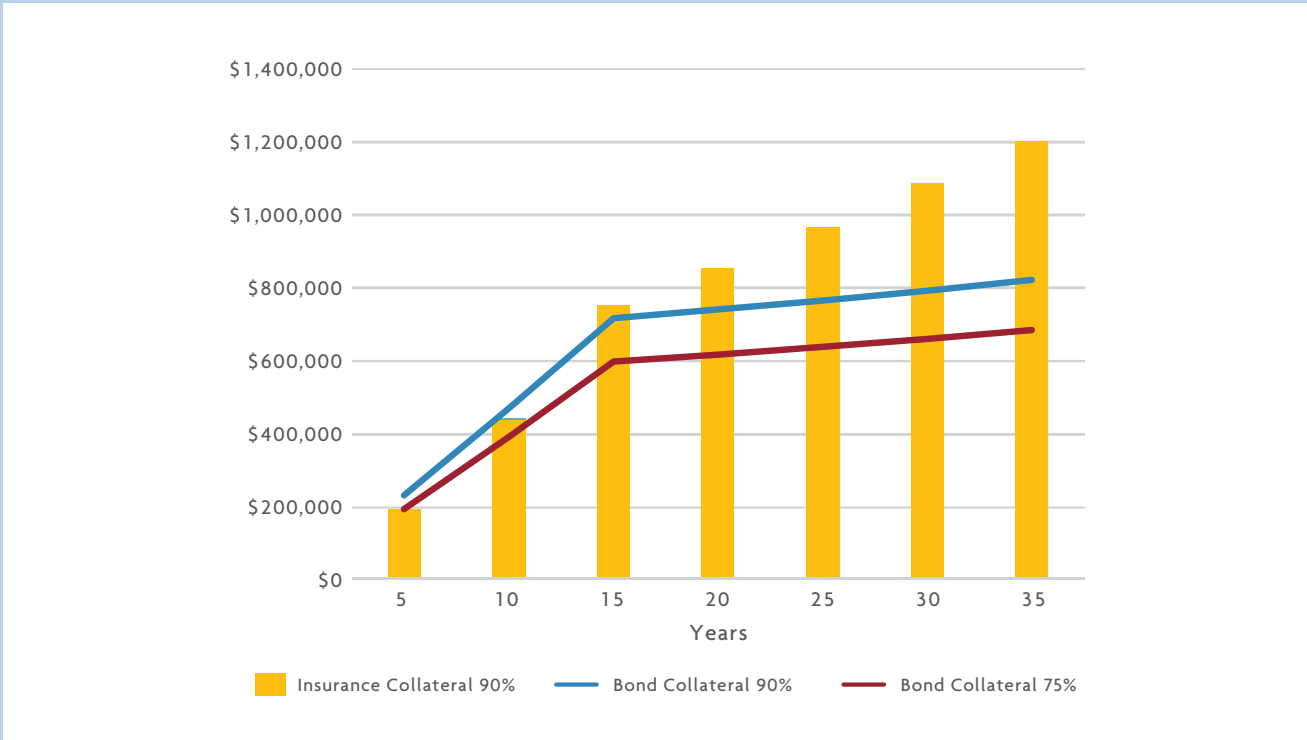


<sup>11</sup> Borrower needs to qualify based on the financial institution's lending criteria and should consult with their tax and legal professionals.

Dr. Wise is unlikely to ever cash in the full value of the fixed-income portfolio, yet he may wish to leverage its value. Lenders may be willing to lend up to 90% of the value of the fixed-income portfolio. Liquidity defined in this way is comparable between the two alternatives with the alternative fixed-income investment performing better in the later years, as is shown on page 20.

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% 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, or additional collateral. For this reason, a more conservative approach would be to cap the investment loan at 75%. This revised definition of liquidity shows a marked advantage to the life insurance policy, as is shown below.

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 be willing to lend up to 90% of the policy's cash value.



## IMPACT ON INVESTMENT RISK AND VOLATILITY

Finally, we will look at Dr. Wise's possible future portfolio asset mixes and their relative risk/return profiles. Here we make the same assumption as before: for the next 15 years Dr. Wise's future non-registered portfolio investments are used for either the alternate investment or to pay his insurance premiums. We also assume that he has not divested any of his initial equity or real estate holdings and that these experience an average annual after-tax rate of return at 7.1% and 5.0% respectively (in line with historical averages for these asset classes).

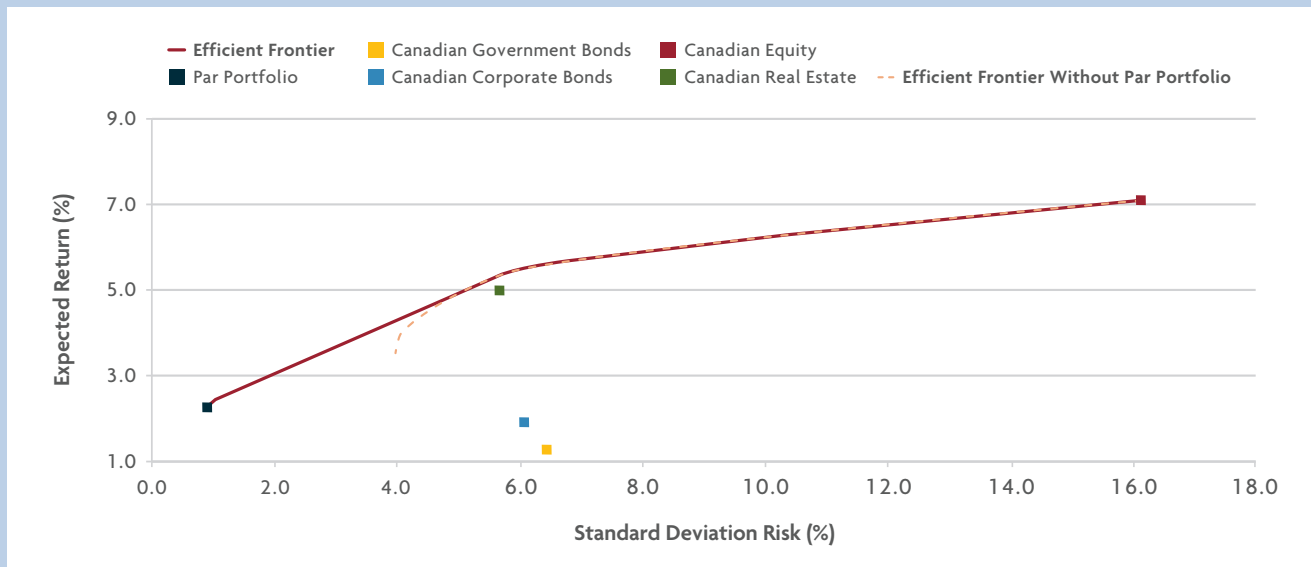
Now let us take a snapshot of Dr. Wise's possible efficient frontiers 20 years later, when he may be looking to his non-registered portfolio as a source of liquidity. Based on the comparison of the death benefits above, we have shown that insurance is the better option in that case. However, Dr. Wise is concerned with the benefit provided by insurance during his lifetime. Using a consistent par dividend scale interest rate of 4.75%, we can calculate an average annual rate of return of 2.27% for the liquid value of the insurance contract from years 20 to 35.<sup>12</sup> Also, for consistency, we assume we have a 1.5% after-tax rate of return on the alternative investment.

We measure risk using the annualized standard deviation of historical returns. Asset correlations are based on the pair-wise correlation of these historical returns.

Using a Modern Portfolio Theory framework, we can compare two possible investment portfolios, based on their efficient frontiers, if Dr. Wise:

- includes the alternate fixed income portfolio to his original mix, and
- purchases a participating life insurance policy.

The efficient frontier including par insurance, shown in red below, is clearly superior to that with the alternative investment. It has expected returns similar to that without par for basically all risk levels.<sup>13</sup>



The inclusion of par as an asset class allows us to expand the efficient frontier; the risk profile of the portfolio is improved by the addition of the lower-risk, weakly correlated asset class. We assume only a marginal improvement on the return provided by the insurance

vs. the after-tax return of the alternate asset after the insurance policy is fully paid up. However, the addition of the fixed income portfolio does little to improve the efficient frontier as it does not offer the same risk reduction or benefits diversification.

<sup>12</sup> Which represents ages 70 to 85 – Dr. Wise's current life expectancy.

<sup>13</sup> The assumptions for Canadian real estate and Canadian equity risk and returns are consistent with those presented in Page 17. For the alternative investment, we assume a portfolio of 65% Canadian corporate bonds yielding 4.2% before tax, 35% government bonds yielding 2.8% before tax and a marginal tax rate of 54%. We also assume a risk consistent with the annual standard deviation of returns over a 30 year history, with data from the DEX Index for Canadian bonds. Correlations are annualized, pairwise correlations on 10 to 30 years of return history with data from Morningstar, DEX and Sun Life Financial.

## CORPORATE CONSIDERATIONS

Dr. Wise lives in a province where his holding company is permitted to own shares of his professional corporation. Within his private corporation, he can set up a holding company for income over and above what he needs for business purposes. Working with a tax advisor, the holding company receives the income as tax-free dividends from his operating company. This has its advantages, but also comes with its share of challenges:

- Investment growth on these assets is taxed each year.
- Any dividend distribution to Dr. Wise is also taxable.
- Upon his death, he will be deemed to have disposed of the shares in his holding company for fair market value. Half of the gains in the value of those shares will be treated as income on his final tax return.

For this particular case study, Dr. Wise can address each of these challenges if the life insurance policy is owned by his corporation, and funded by the assets within it.

Many factors determine if corporate ownership of a life insurance policy is an appropriate option. Topping the list is choosing an ownership option that properly reflects the insurance need. When suitably structured, corporate ownership may offer Dr. Wise several benefits.

A Canadian controlled private corporation (CCPC) is generally eligible for the small business tax deduction, and may pay tax at a lower rate than the insured shareholder. If so, the corporation won't need to earn as much money as Dr. Wise to pay the premiums, compared to if he owned the policy personally.

A life insurance policy's cash value grows within the policy on a tax-preferred basis, within limits set out by the Income Tax Act and Regulations. Transferring funds from taxable investments to a tax-exempt life insurance policy can help reduce overall taxable income within a corporation, resulting in additional tax savings.

For corporate beneficiaries of a life insurance policy death benefit, the capital dividend account (CDA) provides a tax-efficient method of moving money out of the corporation to the estate or new shareholders. The tax-free death benefit is first paid to the corporate beneficiary. The death benefit, less the policy's adjusted cost basis, can be credited to the corporation's CDA. This credit can then be used to pay a tax-free capital dividend out of the corporation. Any portion of the death benefit that exceeds the CDA credit can be paid out of the corporation as a taxable dividend.

These factors will often allow strategies using corporate-owned life insurance to outperform an alternate taxable investment, in particular when the policy is held until the death of the life insured.

# Consequences of smoothing investment returns

In addition to reducing the volatility of returns, the move-to-market basis used for setting the dividend scale interest rate has one notable consequence – it changes more slowly than the rest of the marketplace.

*The low interest rates of the past couple of decades have slowly been incorporated into the dividend scale interest rate, bringing it down more slowly over this same period.*

The analysis section was done on the basis that dividend scale interest rate returns were determined during the current interest rate environment. As such, it didn't account for the fact that actual dividend scale interest rates are approximately 150 basis points higher than the

4.75% used in the projections. Should the investment assumptions used in the analysis materialize, the dividend scale interest rate may drop slowly to 4.75% over the long term. As a result, the estate and liquidity benefits of the par policy would be better than those shown.

The reverse environment can also happen. In fact, in the early-1980s, current new money interest rates were in the 20% range. Par portfolio returns, and therefore the dividend scale interest rates, were benefiting from this as new investments were made. But the pre-2007 accounting rules kept the dividend scale interest rates well below those of fixed-income investments for almost a decade due to the move-to-market approach.

Over the long term, the consequences of this lag in performance diminish. But one can't deny that today is a better time to be getting in than the early 1980s.



# Conclusion and final remarks

The analysis in this study has led 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.

# Appendix 1

	HISTORICAL ANNUAL RETURN (%)	HISTORICAL ANNUAL STANDARD DEVIATION OF RETURN (%)	START DATE	FREQUENCY OF DATA	SOURCE
FTSE TMX Canada 91 Day Tbill	5.5	2.0	February, 1953	Monthly	Morningstar
FTSE TMX Long Term Bond Index	7.7	9.3	January, 1948	Monthly	Morningstar
Average 5-Year GIC	5.7	1.9	January, 1982	Monthly	Morningstar
S&P/TSX Composite Total Return	10.3	17.1	February, 1956	Monthly	Morningstar
Cambridge Associates US Private Equity	13.8	10.3	June, 1986	Quarterly	Morningstar
Credit Suisse Commodity Benchmark TR	6.8	22.8	February, 1998	Monthly	Morningstar
CISDM EW Hedge Fund USD (USD)	11.3	9.4	February, 1990	Monthly	Morningstar
FTSE EPRA/NAREIT Canada TR	4.5	22.3	January, 1990	Monthly	Morningstar
DEX Government Bond Index	7.7	7.5	December, 1999	Monthly	Morningstar
IPD Canadian Property Index	12.0	5.7	March, 2000	Quarterly	MSCI Indices.

Values as of March, 2017.

# About the authors

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Wayne Miller is Associate Vice-President, Strategic Business Development, Sun Life Financial Canada. His mission is to provide all advisors with insight about insurance product mechanics and advisor practice development. Wayne joined Sun Life Financial in 1990 in the individual pricing area. He has since held a number of positions of increasing responsibility in the areas of product pricing, marketing and distribution.

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Wayne Miller graduated from the University of Waterloo in 1986 with an Honours Bachelor of Mathematics degree, majoring in actuarial science. That same year, he attained the Associate of the Society of Actuaries (ASA) designation.

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