Efficient Retirement Portfolios: Using Life Insurance to Meet Income and Bequest Goals in Retirement

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Competing Objectives in Retirement

- Retirees face significant financial risk and competing financial objectives
  - Income
  - Bequest
Partial Literature Review

- Using life annuities to manage income risk
  - Chen and Milevsky (2003); Milevsky et al. (2006)

- Using life insurance to maximize probability of reaching bequest goal
  - Milevsky et al. (2014, 2015)

- Portfolios with traditional investments, life annuities, and life insurance in terms of several metrics related to income and bequest or legacy
  - Pfau (2014)
Life Insurance can be a source of retirement income in addition to a source of protection – Life Insurance Retirement Plans (LIRPs)

Pre-Retirement Premiums

AND

Supplemental Retirement Income

Your Retirement years

Death Benefit

Beneficiaries

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Our Contribution

- We examine the potential of life insurance to meet both income and bequest needs in retirement
  - Life Insurance Retirement Plans (LIRPs)
- Among financial advisors, opinions about LIRPs are mixed
- We contrast retirement portfolios that include a LIRP with those that include only investment products
- We simulate market scenarios and demonstrate that inclusion of a LIRP can improve financial outcomes in retirement
NYL’s Custom Whole Life Product (CWL)

- CWL is a permanent life insurance product that pays dividends
- NYL’s CWL is the first whole life insurance product that lets policyholders select how long they pay premiums and is designed to maximize the cash value accumulation in the policy
- The cash value accumulation in a permanent life insurance policy grows tax-deferred
- Retirees generally have tax-free access to their policy cash value, and can use partial surrenders and policy loans to supplement their retirement income
Model Overview

- Project all possible combinations of traditional assets (stocks and bonds) and non-traditional assets (Custom Whole Life)
- Run Monte Carlo simulations through 250 market scenarios
- Calculate the income risk and legacy potential
- Compare the performance of the resulting portfolios
Projecting All Combinations of Traditional Asset Portfolio and CWL

- 16 retirement income withdrawal years
- 6 face amounts
- Total 96 possible CWL products
- 4 x 96 = 384 possible allocations for each age
- Calculate income risk and legacy potential for each of the 384 product combination
- We project three issue ages 35, 45 and 55
Measures of Portfolio Performance

- **Income Risk:** the probability of running out of money after retirement
  - The income risk metric incorporates investment risk, longevity risk, withdrawal rate risk, inflation risk and sequence of returns risk.
  - In 250 scenarios, how often were income sources depleted before the 75th percentile of longevity?

- **Legacy Potential:** the remaining asset upon death plus death benefits
  - In 250 scenarios, what was the traditional asset fund balance plus death benefit at the 50th percentile of longevity?

- **Efficient Portfolios**
  - Minimize income risk while maximizing legacy potential
Results

1. CWL can help improve retirement portfolio performance
2. CWL policy with larger face amounts can be more beneficial
3. Withdrawal strategies for CWL policy
4. CWL adds value at all issue ages. In our simulations, effect was most pronounced at age 45.
Value of CWL in retirement portfolios

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Larger Face Amount can be more Beneficial

age55 FA analysis

- Face amount 400k is better than other face amounts
Longer withdrawal years reduce income risk at a sacrifice of legacy potential
<table>
<thead>
<tr>
<th>Issue Age</th>
<th>Initial Asset</th>
<th>Face Amount</th>
<th>Premium Burden</th>
<th>Lowest Income Risk</th>
<th>Largest Legacy Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Without CWL</td>
<td>With CWL</td>
</tr>
<tr>
<td>35</td>
<td>50k</td>
<td>100k</td>
<td>67.63%</td>
<td>14.4%</td>
<td>13%</td>
</tr>
<tr>
<td>45</td>
<td>200k</td>
<td>200k</td>
<td>44.30%</td>
<td>11.6%</td>
<td>4.8%</td>
</tr>
<tr>
<td>55</td>
<td>500k</td>
<td>400k</td>
<td>41.21%</td>
<td>12%</td>
<td>6.8%</td>
</tr>
</tbody>
</table>

- CWL reduces income risk and increases legacy potential at all issue ages
- The effect is more pronounced at issue ages 45 and 55
Thank You!

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## Investment Strategy before Retirement

All results shown above are based on optimal investment strategies before retirement.

<table>
<thead>
<tr>
<th>Issue Age</th>
<th>Pre-Retirement Investment Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>Age 35 – 65: Aggressive</td>
</tr>
<tr>
<td>45</td>
<td>Age 45 – 55: Aggressive; Age 55 – 65: Moderate</td>
</tr>
<tr>
<td>55</td>
<td>Age 55 – 65: Balanced</td>
</tr>
</tbody>
</table>