



# DUE CARE BULLETIN

January 2010

## An Assessment of Whole Life Versus Universal Life

The debate regarding the benefits of Whole Life (WL) vs. Universal Life (UL) began when UL was introduced in the early 1980s. This debate—waged by loyal advocates for each respective product—has continued ever since. This M Due Care Bulletin will compare and contrast these two different life insurance products. The analysis begins with a review of the underlying risk transfer and product mechanics, continues with an examination of illustrated performance, and concludes with a summary of strengths and challenges for both products.

### **Additional analysis is provided in the appendices:**

- Appendix A provides a competitive comparison of WL and UL with guaranteed assumptions.
- Appendix B provides a competitive comparison of WL and UL with current assumptions, but no term blending for WL.
- Appendix C provides a summary of relative strengths and challenges for WL and UL.

### **This Bulletin makes the following key comparison points:**

- **Insurance Building Blocks (Mortality, Interest, Expense, and Persistency)**
  - ❑ The building blocks for each product are identical.
  - ❑ Therefore resulting policy performance will be similar if the experience fundamentals are identical (i.e., the different product mechanics don't necessarily drive better product performance).
- **Policy Contract and Mechanics**
  - ❑ WL and UL have different policy contracts and mechanics.
  - ❑ WL uses non guaranteed dividends to pass on current experience to policyholders, while UL uses current assumption credits and charges to reflect current experience.
  - ❑ UL product mechanics are transparent, while WL product mechanics are "black box". Transparency allows for a better understanding of policy performance and an ability to review/audit performance.
- **Premium Flexibility**
  - ❑ WL has limited premium flexibility which requires conservative funding levels that always endow the policy.
  - ❑ UL provides premium flexibility, including the ability to fund more conservatively like WL, but also the ability to fund at lower levels, such as targeting \$1 of cash value at age 120.
- **Coverage Flexibility**
  - ❑ WL requires lifetime coverage, and will not allow the contract to lapse if dividends are reduced or premiums are not paid. Either additional premiums are required or the death benefit is reduced in order to maintain coverage for life.

*Life insurance due care requires an understanding of the factors that impact policy performance and drive product selection.*

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## Whole Life vs. Universal Life (continued)

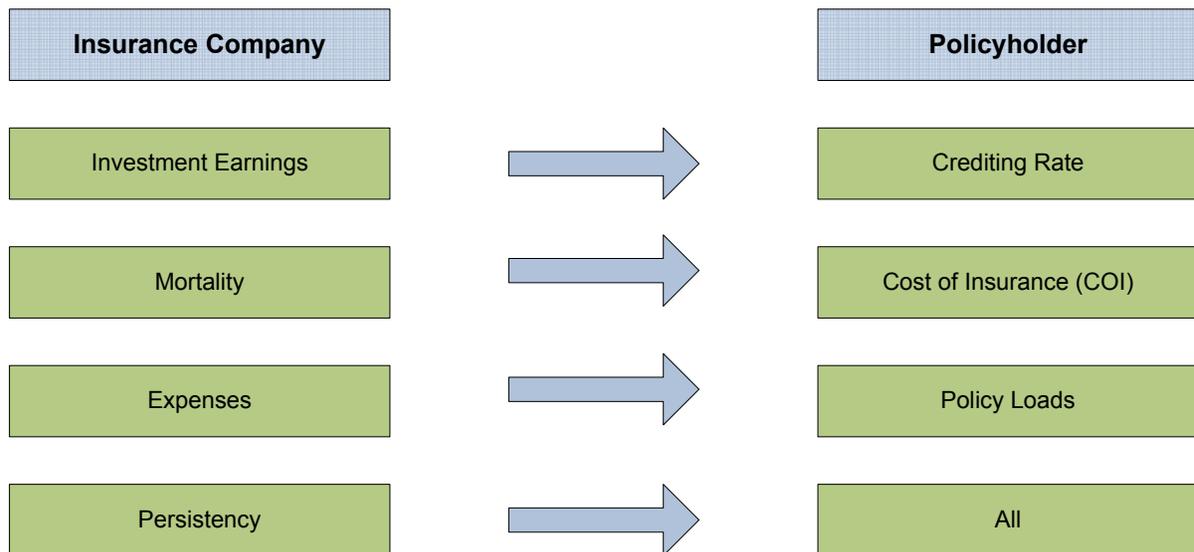
- ▣ The coverage period for UL is flexible. Funding for less than lifetime coverage is possible. If charges or interest credited are worsened, additional premiums or a reduced face amount are not required to maintain coverage for life. The UL contract simply allows the policy to lapse (i.e., coverage terminates) when the account value goes to zero.

In summary, the drivers of policy performance for WL and UL, and the actual performance results, are similar; however, UL provides greater flexibility in premium funding and coverage.

Note that a condensed version of this bulletin, “An Overview of WL vs. UL,” which provides a high-level comparison of UL and WL is also available. In addition, “Comparing WL and UL: Common Questions and Answers,” provides a summary of relative product similarities/differences, myths, and strengths/challenges.

### Insurance Building Blocks: Risk Transfer

Both UL and participating WL are subject to the same basic life insurance building blocks (i.e., transfer of risk): mortality (death) experience, interest/investment earnings, expense experience, and persistency experience. Both products provide actual performance that is based on the insurance company’s current experience for these building blocks. The insurance company passes on its experience to the policyholder through policy loads, insurance loads, and interest credited.



If the life insurance company has actual investment experience that is worse than product pricing due to credit losses, then the insurance company will pass on the decreased investment earnings to the policyholder by decreasing the crediting/dividend rate. However, both products also offer downside experience protection through guaranteed assumptions. Policy loads cannot exceed the guaranteed loads and interest credited cannot be less than the guaranteed minimum crediting rate. The guarantees are based on very conservative assumptions for mortality, expenses, and interest.

While the likelihood of actual experience being worse than the guarantees is very low, it can happen. Some policies issued in the 1980s when current and guaranteed interest rates were very high, now have crediting rates equal to the guaranteed minimum due to decreasing interest rates over the past 25+ years, which drove down insurance company investment earnings.

The combination of company experience with resulting credits and charges to the policyholder drives current (non-guaranteed) product performance. For UL, the risk transfer for each element is specified and transparent to the policyholder; for WL, risk transfer for each element is accomplished through dividends, the “black box” concept, which will be discussed more thoroughly in the following **Product Mechanics** section.

## Whole Life vs. Universal Life (continued)

To reiterate, both participating WL and UL are priced with the same basic building blocks of risk transfer, where current performance is not guaranteed and can be changed based on the insurance company's emerging experience, but with downside experience protections via guarantees.

### Product Mechanics

**Universal Life:** The product mechanics for UL are transparent to the policyholder. The cash accumulation account (account value) is equal to:

$$\text{Beginning Balance} + \text{Premium Paid} + \text{Interest Credit} - \text{Expense Loads} - \text{Insurance Load}$$

The policy contract and illustration contain the details of how interest is credited and policy loads are deducted for both current and guaranteed assumptions. As long as the cash accumulation balance is positive, the death benefit coverage remains intact. If non-guaranteed policy assumptions worsen due to poor emerging experience, then additional premiums may be required to keep the account value positive and maintain the death benefit coverage. Likewise, if current assumptions are improved—such as from better mortality experience—then fewer premiums may be needed to maintain coverage. Illustration projections will show performance based on current and guaranteed assumptions. UL may also include term blending, which improves product performance with an offsetting lower commission.

Another prominent aspect of UL is the flexibility of premium payments and coverage. There is no required premium schedule—it is up to the policyholder to determine premium funding levels, taking into consideration the projected account value and whether to include cushion for downside experience protection. If cash is not readily available, a policyholder may choose to skip a premium payment and is not forced to pay catch up premiums or reduce coverage. If funding is too low to maintain coverage for life, then the policy simply lapses when the account value runs out. It is important to note that premiums are capped according to Definition of Life Insurance Testing and there may be a required minimum premium.

**Participating Whole Life:** the same underlying fundamentals of UL—interest credited and loads deducted, based on current experience—also apply to WL. However, the mechanics for WL are not transparent, hence the use of the term “black box.”

The product mechanics for WL are different than UL. UL starts with current assumptions based on current experience; the assumptions (interest credited and policy loads) can be changed (but no worse than the guaranteed assumptions) as emerging experience changes. WL starts with guaranteed assumptions, and then may provide credits in the form of dividends based on emerging experience that is better than the guarantees.

WL is founded on guaranteed values—as long as the guaranteed premium is paid (typically up to age 100) the policy coverage and account values will be guaranteed for life. However, WL includes participating non-guaranteed dividends, which may credit additional value to the policy based on emerging experience that is better than guaranteed experience. Dividends can be paid in cash, or used to reduce premium funding or buy additional coverage. Excess dividends not paid in cash or used to offset premiums will purchase “paid up additions” (PUA). PUAs have their own separate cash values and death benefits.

$$\begin{aligned} \text{Total Cash Value} &= \text{Guaranteed CV} + \text{Non-Guaranteed PUA CV} \\ \text{Total Death Benefit} &= \text{Guaranteed DB} + \text{Non-Guaranteed PUA DB} \end{aligned}$$

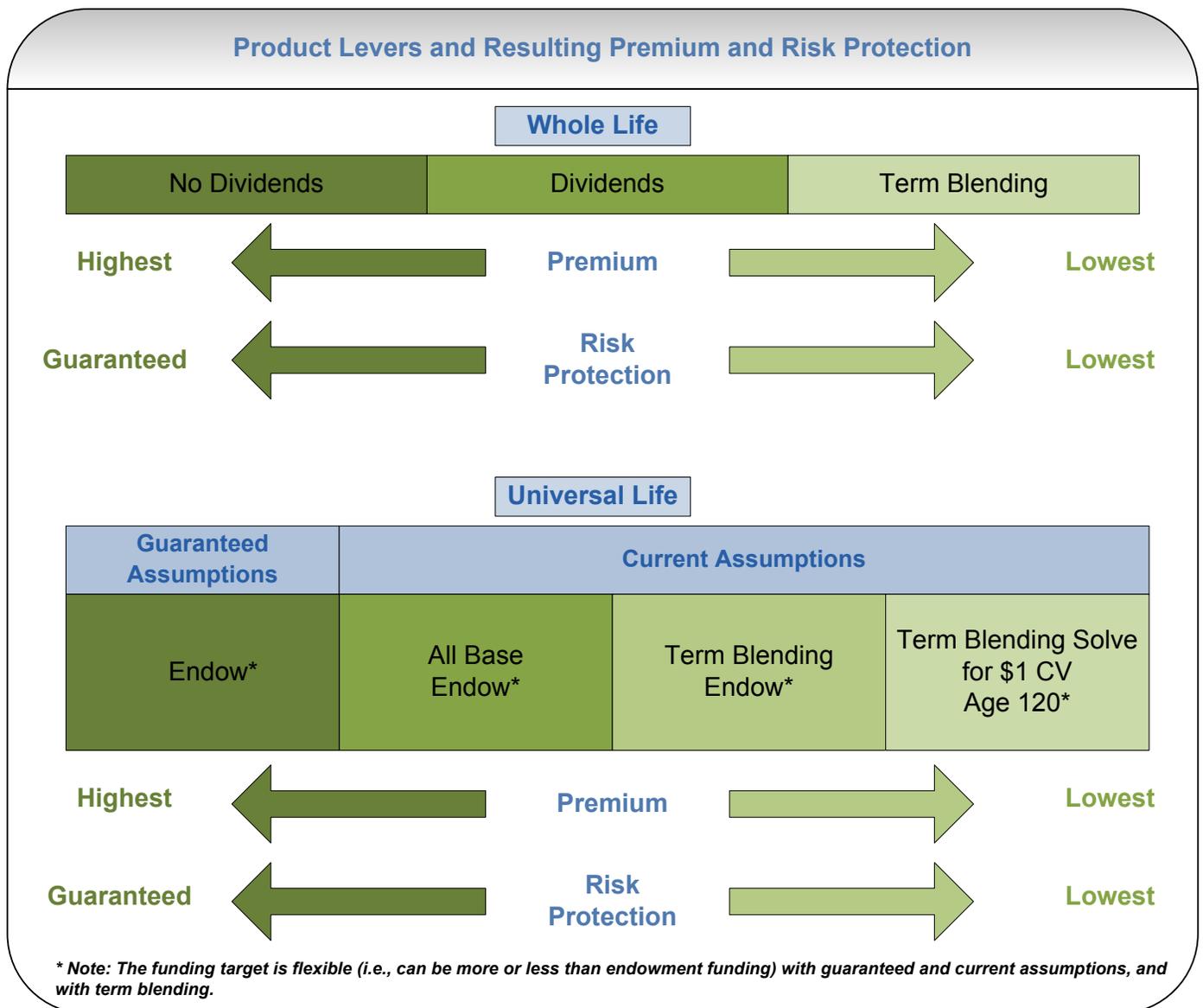
Therefore, WL with PUAs will provide an increasing death benefit due to the additional death benefits provided by PUAs.

With regard to the “Black box” concept, let's assume with UL a percentage of premium load of 5% will be disclosed and deducted from the policy account value. In contrast, none of the loads or credits for WL are disclosed (instead,

## Whole Life vs. Universal Life (continued)

they are deducted/credited to the policy in a “black box” not visible to policyholders). WL will disclose a dividend interest rate, but usually it is not the actual interest rate credited to the policy. A dividend interest rate is based on interest earnings, but may also depend on expense, mortality, and persistency experience. It is possible that even if interest earnings are reduced, the offsetting better mortality experience will maintain the dividend interest rate. How the dividend interest rate relates to the actual dividends credited to the policy is not transparent to the policyholder. WL typically also includes non-guaranteed term blending, which is purchased with dividends. Term blending can be used to reduce premium funding, though it also reduces commissions. Decreasing term can be used to provide a level death benefit in all years (the term coverage decreases as additional PUAs buy death benefit).

Unlike UL, WL requires a minimum funding level for a specified coverage amount. That minimum funding level will typically endow the policy before age 120 based on the current dividend scale. There is no flexibility to fund at a lower level—such as target \$1 of cash value at age 120. WL policies will not lapse. If premiums are not paid, then the death benefit is automatically reduced in order to provide coverage for life (or Extended Term if available). Note that WL contracts may include either Extended Term and/or Reduced Paid Up when the policyholder wants to stop premium payments. Extended Term is an elected option to maintain the original death benefit for a defined number of years as solved for on a guaranteed basis. Future dividends can increase the term of guaranteed coverage. Reduced Paid Up is an elected option to provide coverage for life on a reduced death benefit as solved for on a guaranteed basis. Future dividends can increase the guaranteed amount of coverage.



## Whole Life vs. Universal Life (continued)

### Illustrated Performance Comparisons

#### Scenario Specifications:

- Male, Age 55, Best Nonsmoker Class
- \$2 million Death Benefit
- Match 10 Year Present Value of Commissions with Term Blending
- Products: Whole Life and Universal Life products from the same non-M carrier, and an M proprietary UL product.

Both UL and WL can be structured in many different ways—guaranteed assumptions, current assumptions (i.e., dividends for WL), and term blending. However, insurance is typically sold with performance comparisons using current assumptions and term blending; this will be the focus of this analysis.

Appendix A provides a competitive comparison for WL and UL with guaranteed assumptions.

Appendix B provides a competitive comparison for WL and UL with current assumptions, but no term blending for WL.

**Current Assumption Performance with Term Blending:** As shown in Appendix B, WL with dividends (PUAs) at all base (i.e., no term blending) provides an increasing death benefit due to PUAs purchasing additional coverage. But WL can be structured to be more like UL by including term blending. By adding decreasing term, a level death benefit (like a UL product) can be achieved. Term blending also achieves significantly lower premium outlays, albeit by lower commission levels.

Term blending may also be provided in a UL product, with the primary result being enhanced product performance (facilitated by lower commissions). Term blending in a UL product is typically accompanied by some sort of policyholder offset for the better current performance, such as a lower guaranteed minimum crediting rate, or term coverage that terminates at age 100 versus continuing for life.

For the accompanying examples, term blending is used in the UL products in order to match the WL commission level. In example #1, UL and WL products from the same carrier have been included since, in theory, products from the same carrier may provide the most accurate comparison. The comparison focuses on the affect of product mechanics on product performance due to the similar underlying pricing assumptions. Funding for all products will be identical to the WL 10-Pay premium solve, assuming the current dividend scale and 50% term blending.

Note that the WL funding level, even with term blending, could be considered conservative, with the M Carrier UL product endowing before age 104.

### Example #1 - Current Assumptions - WL with Term Blending - 10-Pay Funding

| Policy Year             | Age | Carrier A Whole Life | Carrier A Universal Life | Proprietary Universal Life |
|-------------------------|-----|----------------------|--------------------------|----------------------------|
| 10 Annual Premiums      |     | 49,513               | 49,513                   | 49,513                     |
| <b>Surrender Values</b> |     |                      |                          |                            |
| 1                       | 55  | 17,543               | —                        | 32,355                     |
| 5                       | 59  | 194,573              | 187,531                  | 230,652                    |
| 10                      | 64  | 523,567              | 519,057                  | 557,506                    |
| 20                      | 74  | 855,484              | 777,409                  | 795,786                    |
| 30                      | 84  | 1,252,307            | 964,514                  | 1,116,922                  |
| 40                      | 94  | 1,603,611            | 1,035,542                | 1,654,130                  |
| 50                      | 104 | 1,810,134            | 1,468,459                | 2,735,520                  |
| 60                      | 114 | 2,295,137            | 2,568,405                | 4,582,472                  |

Carrier A is defined as a non-M Carrier in this example.

## Whole Life vs. Universal Life (continued)

As stated previously, when comparing the products from the same carrier, it is logical to think that performance will be the same due to the use of the same carrier experience for pricing. However, different products will be priced based on segregated experience and may have different profit targets (therefore, WL pricing will be based on WL experience, and UL pricing will be based on UL experience). WL experience tends to have better persistency, and therefore WL products make longer term investments to take advantage of the yield curve (typically, longer-term investments yield more than shorter-term investments). This may explain why, with identical funding levels, the WL surrender values are superior to the UL surrender values for products from the same company; though it is also possible that the WL product has a lower profit target than the UL product.

Additionally, due to the history of decreasing new money rates and longer term investments that do not turn over as quickly, a portfolio yield will be sustained by the older and higher yielding investments that are still on the books. This has been an advantage for WL with the longer-term investments; however, since UL has a shorter lag time between new money rates and the resulting portfolio rate—due to shorter duration investments—UL will have an advantage if/when new money rates increase.

The M proprietary UL product has been priced with M experience, which as seen in example #1, provides better surrender values in all years as compared to the other non-M Carrier UL product, and provides better early and late policy year surrender values when compared to the non-M Carrier WL product.

Example # 2 below compares less conservative UL funding levels to WL, as UL has the flexibility to fund at much lower premium levels: solve to endow and solve for \$1. Note that UL is typically funded at these lower levels.

### Example #2 - Current Assumptions - Term Blending - Lower UL Funding Levels

| Carrier   | Product        | Target                   | Premium \$ | % Diff* |
|-----------|----------------|--------------------------|------------|---------|
| Carrier A | Whole Life     | Required - Endow Age 110 | 49,513     |         |
| Carrier A | Universal Life | Endow Age 110            | 49,583     | 0.1%    |
| M Carrier | Proprietary UL | Endow Age 110            | 44,393     | -10.3%  |
| M Carrier | Proprietary UL | \$1 Age 120              | 40,454     | -18.3%  |

\*Percentage change in premium from WL premium

For the two products from the same carrier, the premiums are virtually identical when using a premium solve for the UL product that targets endowment at the same age (age 110) as the WL product. For the same endowment target, the M proprietary product provides a premium that is significantly less (by 10%) than the WL premium. However, UL can fund even lower; when solving for \$1 of cash value at age 120, the resulting premium is 18% less than the WL premium. WL cannot match the lower funding levels of UL as additional premiums or a reduced death benefit would then be required.

But do the lower funding options for UL present more risk if assumptions change? Keep in mind, policy performance based on current assumptions is not guaranteed for either WL or UL.

**Evaluation of Downside Risk with Lower UL Funding Levels - Reduced Interest Credited and Resulting Additional Premiums:** Example #3 quantifies the additional number of premiums needed when the interest rate assumption is reduced by 50 basis points (bps), 100 bps, or lowered to the guaranteed minimum interest rate. The additional premiums are solved in order to achieve the original target such as endowing at age 110 or \$1 at age 120.

## Whole Life vs. Universal Life (continued)

### Example #3 - Additional Premiums with Lower Interest

| Carrier<br>Product<br>Funding Target | Carrier A              |                                 |                                 | M Carrier                       |                                 |                               |
|--------------------------------------|------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|
|                                      | Whole Life<br>Required | Universal Life<br>Match WL Prem | Universal Life<br>Endow Age 110 | Universal Life<br>Match WL Prem | Universal Life<br>Endow Age 110 | Universal Life<br>\$1 Age 120 |
| 10 Annual Premiums                   | 49,513                 | 49,513                          | 49,583                          | 49,513                          | 44,393                          | 40,454                        |
| <u># of Premium Payments</u>         |                        |                                 |                                 |                                 |                                 |                               |
| Current Interest                     | 10                     | 10                              | 10                              | 10                              | 10                              | 10                            |
| 50 bps Interest Drop                 | 12                     | 12                              | 12                              | 11                              | 12                              | 12                            |
| 100 bps Interest Drop                | 13                     | 13                              | 13                              | 12                              | 14                              | 13                            |
| Guaranteed Interest                  | 26                     | 19                              | 19                              | 18                              | 22                              | 20                            |

\*Number of premium payments to obtain the original solve target

The additional premiums needed when interest credited is lowered 50 bps are virtually identical with two additional premium payments, except proprietary UL funding at the higher Whole Life level only requires one additional premium. For a 100 bps interest crediting drop, the number of additional premiums needed increases to three, but again the higher WL funding level in the proprietary UL product is slightly better at two additional premiums. When lowering credited interest to the guaranteed level, the UL products (when funding at the WL level) only require eight to nine additional premiums versus 16 for the WL product. Even the lower funding levels for proprietary UL, both endow and \$1, require less additional premiums than WL with only 10 to 12 additional premiums.

As a result of this analysis, there does not appear to be better downside risk protection for WL, as compared to UL, due to higher funding levels. In fact, in this example, WL with term blending has more downside risk than UL.

**Reduced Interest - What Happens If The Client Does Not Want To Pay Additional Premiums?** When the client does not want to pay the additional premiums when interest rates drop, WL will require additional future premiums and/or a reduction in the face amount, though some WL products provide Extended Term coverage. UL will not require additional premiums, carrying the original death benefit with resulting lower cash values, and possibly lapse if the cash value goes to zero.

### Example #4 - Reduced Interest - Objective: Stick with 10 Pay Funding - Resulting Performance

| Carrier<br>Product<br>Funding Target   | Carrier A              |                                 |                                 | M Carrier                       |                                 |                               |
|--|------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|-------------------------------|
|  | Whole Life<br>Required | Universal Life<br>Match WL Prem | Universal Life<br>Endow Age 110 | Universal Life<br>Match WL Prem | Universal Life<br>Endow Age 110 | Universal Life<br>\$1 Age 120 |
| 10 Annual Premiums   | 49,513                 | 49,513                          | 49,583                          | 49,513                          | 44,393                          | 40,454                        |
| <u>Lapse Age for UL/Age Additional Premiums are Required for WL - When Staying with the Original 10 Pay Funding Target</u> |                        |                                 |                                 |                                 |                                 |                               |
| Current Interest   | n/a                    | n/a                             | n/a                             | n/a                             | n/a                             | n/a                           |
| 50 bps Interest Drop   | 91*                    | 99#                             | 99#                             | n/a                             | 119#                            | 103#                          |
| 100 bps Interest Drop  | 86*                    | 93#                             | 93#                             | 120#                            | 103#                            | 97#                           |
| Guaranteed Interest  | 74*                    | 87#                             | 87#                             | 96#                             | 92#                             | 90#                           |

\* Age additional premiums are required (in addition the face is gradually reduced over time to the base face)

# Age the policy lapses due to account value going to zero

## Whole Life vs. Universal Life (continued)

As Example #4 shows, WL allows policyholders to maintain the funding levels at the original 10 premiums, but in the future the policy will require additional premiums and gradually reduce the total face amount to the base face over time (note Extended Term is not offered in this particular WL product). UL does not require additional premiums or a face decrease. With proprietary UL funded at the higher WL premium level (\$49,513) and keeping with the original 10 premium payments, coverage stays in force to age 120 for up to a 100 bps crediting rate drop, and even lasts to age 96 with guaranteed interest. With standard endowment funding for proprietary UL, even dropping the crediting rate to the guaranteed rate results in coverage lasting past life expectancy (age 91). Even with more aggressive funding at \$1 of CV at age 120, coverage stays in force to age 97 with a 100 bps crediting rate drop, and almost to life expectancy (age 90) with guaranteed interest.

### Summary

UL provides the flexibility to fund at lower levels than WL, and yet still offers downside risk protection. In addition, UL provides flexibility with the duration of coverage, including coverage for less than life, which may not be provided with WL, unless Extended Term is offered.

Refer to the attached appendices for additional product performance comparisons and a summary of strengths/challenges for WL and UL.

## For More Information

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## Appendix A Guaranteed Assumptions

Whole Life will typically solve for a guaranteed level premium to age 99 that provides guaranteed coverage for life. Guaranteed coverage assumes no dividends or term insurance.

To secure guaranteed coverage with UL, the illustration must be run with guaranteed assumptions (loads and crediting rate).

At this very conservative funding level, WL will typically solve for a lower guaranteed premium than UL (assuming matched commissions). In the example below, funding UL at the same level as WL results in the policy lapsing at age 94, the WL guaranteed premium being 4% less than the M proprietary UL premium guaranteed to endow. However, if a policyholder is truly looking for guaranteed coverage for life, then a No Lapse Guarantee (NLG) product may be more appropriate due to a significantly reduced premium level. In this example, the NLG premium is 62% lower than the WL premium. Note that NLG typically has very low or nonexistent surrender values.

Scenario Specifications:

- Male, Age 55, Best Nonsmoker Class
- \$2 million Death Benefit
- Match 10 Year Present Value of WL Commissions with Term Blending for UL
- Products: Whole Life, Proprietary Universal Life, and No Lapse Guarantee.

### Guaranteed Assumptions

| Age | Policy Year | Whole Life (no Dividends) |            | Proprietary UL - Match WL Prem |            | Proprietary UL - Endow |            | No Lapse Guarantee |            |
|-----|-------------|---------------------------|------------|--------------------------------|------------|------------------------|------------|--------------------|------------|
|     |             | Premium                   | Cash Value | Premium                        | Cash Value | Premium                | Cash Value | Premium            | Cash Value |
| 56  | 1           | 60,900                    | —          | 60,900                         | —          | 63,401                 | —          | 23,325             | —          |
| 60  | 5           | 60,900                    | 144,040    | 60,900                         | 160,595    | 63,401                 | 173,459    | 23,325             | —          |
| 65  | 10          | 60,900                    | 396,020    | 60,900                         | 436,051    | 63,401                 | 464,897    | 23,325             | 9,200      |
| 75  | 20          | 60,900                    | 924,810    | 60,900                         | 890,140    | 63,401                 | 971,653    | 23,325             | —          |
| 85  | 30          | 60,900                    | 1,378,340  | 60,900                         | 1,143,953  | 63,401                 | 1,408,036  | 23,325             | —          |
| 95  | 40          | 60,900                    | 1,679,700  | Lapse Age 94                   |            | 63,401                 | 1,697,644  | 23,325             | —          |
| 99  | 44          | 60,900                    | 1,840,420  |                                |            | 63,401                 | 1,878,552  | 23,325             | —          |
| 110 | 55          | 0                         | 1,913,780  |                                |            | 0                      | 2,205,710  | 0                  | —          |
| 120 | 65          | 0                         | 1,961,260  |                                |            | 0                      | 2,962,194  | 0                  | —          |

## Appendix B Current Assumptions (No Term Blending for WL)

Life insurance is typically sold based on current assumptions. For Whole Life, that means including non-guaranteed participating dividends. For UL, current assumptions are used. For WL, dividends can be used to reduce or offset premiums. If dividends are used to offset premiums, funding is typically reduced from pay to age 99 to 10-15 premium payments. Please note that if dividends are later reduced, the policyowner will be required to resume premium payments in order to maintain the original death benefit for life (or else the coverage will be reduced). If current assumptions deteriorate for UL, additional premiums will be needed to achieve the original coverage target, but the additional premiums are not required. The UL policyholder has the flexibility to not pay additional premiums and deal with potentially lower cash values and lapsed coverage.

The following is a competitive comparison using current assumptions:

Scenario Specifications:

- Male, Age 55, Best Nonsmoker Class
- \$2 million Death Benefit
- Whole Life - Dividends used to purchase PUAs
- Match 10 Year Present Value of WL Commissions with Term Blending for UL
- Products: Whole Life and Proprietary Universal Life

### UL: Current Assumptions      WL: Current Dividend Scale with PUAs

| Policy Year             | Age | WL Dividend Offset* | Proprietary UL Match WL Funding |
|-------------------------|-----|---------------------|---------------------------------|
| 10 Pay Premium          |     | 60,900              | 60,900                          |
| <u>Surrender Values</u> |     |                     |                                 |
| 1                       | 56  | —                   | 13,003                          |
| 5                       | 60  | 187,848             | 242,406                         |
| 10                      | 65  | 581,586             | 669,711                         |
| 20                      | 75  | 995,213             | 1,001,032                       |
| 30                      | 85  | 1,563,950           | 1,520,166                       |
| 40                      | 95  | 2,286,366           | 2,439,624                       |
| 50                      | 105 | 3,252,558           | 4,042,178                       |
| 60                      | 115 | 4,404,850           | 6,772,481                       |
| 66                      | 121 | 5,249,819           | 9,231,203                       |
| <u>Death Benefit</u>    |     |                     |                                 |
| 1                       | 56  | 2,000,000           | 2,000,000                       |
| 5                       | 60  | 2,077,111           | 2,000,000                       |
| 10                      | 65  | 2,308,052           | 2,000,000                       |
| 20                      | 75  | 2,076,543           | 2,000,000                       |
| 30                      | 85  | 2,207,427           | 2,000,000                       |
| 40                      | 95  | 2,661,895           | 2,681,879                       |
| 50                      | 105 | 3,448,193           | 4,042,178                       |
| 60                      | 115 | 4,538,029           | 6,772,481                       |
| 66                      | 121 | 5,249,820           | 9,231,203                       |

In this current assumption example, the M proprietary UL product is funded at the same level required in the WL product. With current dividends used to offset premiums, the number of required premiums for WL is reduced to ten.

The amount of the WL premium has not been reduced from the guaranteed premium seen in Appendix A, only the number of premium payments has been reduced. For WL, the increasing death benefit stream is due to excess dividends (dividends, in excess of what is needed to offset premiums) purchasing PUAs. In this particular example, the resulting early and late policy year UL cash values are superior to WL (green shading), although WL is supporting a higher death benefit for the first 30+ years due to PUAs.

Note that the required WL funding level is very conservative, with UL hitting corridor before age 95.

\*Current dividend scale used to offset premiums

## Appendix B Current Assumptions (No Term Blending for WL) cont.

### UL Funding Levels

A typical funding level for UL is endowment at age 120 with a level death benefit option. In the example we have been using, the M proprietary UL 10-Pay premium to endow at age 120 is \$45,464, which is a 25% reduction from the required WL 10-Pay premium level of \$60,900 (see the summary grid below). However, the WL premium is supporting an increasing death benefit due to PUAs.

And therefore, the age 95 death benefit (DB) IRR has been included, since it reflects both the premium paid and the death benefit received. On this performance measurement basis, both WL and UL (targeting endowment), provide a 4.2% DB IRR at age 95. When solving for a \$1 at age 120, UL provides a slightly higher DB IRR of 4.4%. While UL can provide a much lower premium for a level death benefit, when taking into consideration the increasing death benefit for WL, the rate of return is very similar between WL and UL.

| Product        | Target        | Premium \$ | % Diff* | Age 95 DB IRR |
|----------------|---------------|------------|---------|---------------|
| Whole Life     | Required      | 60,900     |         | 4.2%          |
| Proprietary UL | Endow Age 120 | 45,464     | -25.3%  | 4.2%          |
| Proprietary UL | \$1 Age 120   | 43,466     | -28.6%  | 4.4%          |

\*Percentage change in premium from WL premium

### Downside Assumption Risk

Typically, UL funding levels are significantly lower than the required WL funding level, which leads to concerns about downside risk protection. What happens if current assumptions end up worse than originally projected? In the above example, if the UL crediting rate is reduced by 50 bps and 100 bps, and additional premiums are not paid in, the policy coverage carries to ages 108 and 99 respectively, both of which exceed the life expectancy age of 91.

## Appendix C

### Relative Product Strengths and Challenges

#### UL Strengths and Challenges

##### Strengths

1. Transparent mechanics which allow the policyholder to better understand and evaluate/audit policy performance.
2. Competitive performance as compared to WL when matching funding target and commissions.
3. The option to reduce the premium cost by targeting lower than endowment funding levels, such as \$1 of cash value at age 120.
4. Virtually unlimited flexibility with premium payments (subject to DOLI and MEC testing).
5. Flexibility in death benefit coverage. As an example, an insured may be comfortable with the risk of funding to target coverage to age 100 as that is past his/her life expectancy. Or a policyholder may be low on funds, and choose to stop scheduled premium payments and let the existing coverage run for as long as possible (coverage ceases when the account value goes to zero), taking the risk that he/she outlives the coverage.
6. Downside risk protection that is similar or better than WL when funding at similar levels.

##### Challenges

1. Premium and coverage flexibility can provide situations of misunderstood policyholder risk, such as lapse, due to low funding and worse policy assumptions (loads and/or interest credit).
2. Lower safeguards to keep the policy inforce, as there is no requirement for additional premiums or reduced face amount when funding falls behind.

#### WL Strengths and Challenges

##### Strengths

1. Whole Life is particularly competitive for heavier funding and cash accumulation.
2. Dividends and term blending provide competitive non guaranteed performance similar to UL when compared on a level playing field (i.e., same solve target and matching commissions).
3. Dividends and term blending can provide some premium funding flexibility.
4. WL requires higher funding levels, which may provide better downside risk protection as compared to UL when funded at lower levels. However, UL risk protection is similar to WL if UL is funded at the same level as WL.
5. WL provides stronger safeguards than UL to automatically keep a policy inforce, such as required additional premiums or reduced coverage.
6. The increasing death benefit from PUAs is a good match for policyholders who may have an increasing death benefit need.

##### Challenges

1. The policy loads and credits for WL are not transparent to the policyholder. The black box nature of the policy mechanics makes it difficult for a policyholder to understand, evaluate, and audit actual performance.
2. Higher required funding levels that always endow the policy. As an example, unlike UL, there is no flexibility with WL to lower the premium cost by targeting a lower funding level such as \$1 of cash value at age 120.
3. Less flexibility with actual premium funding. If premiums are not paid according to schedule, then additional premiums will be required or the face amount will be reduced.
4. Less flexibility with death benefit coverage. WL does not allow the policy to lapse. This can be considered negative when either the policyholder does not have the cash to pay premiums and/or wants to maintain the full death benefit for as long as possible. Note that WL may provide the option for Reduced Paid Up and/or Extended Term.
5. Term blending may be more susceptible (i.e., more leverage) to relatively worse performance than UL when