### Appendix B: Pricing and Costs

*Appendix B1: Mortality Savings Macro Code*

Explanation: By utilising the in-force data, we simulated through all the mortality experiences at each issue age over the past 20 years, starting from 2004. This required us to find the different possible mortality years experienced over each different policy type. For example, for an individual aged 35, who was issued a T20 policy in year 2014, they would have only experienced at most 10 years of their policy, thus we simulate the expected mortality cost of 10 years. We do this for each age issue for each of our policy bundles, in accordance with our Figure 1. The final expected mortality costs at each age issue is then returned utilising the macro below. This is then subtracted from the actual mortality costs at each age issue for the given policy type as found in the in-force dataset to obtain the mortality savings.

*A close-up of a text

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*Appendix B2: Deriving Economic Value*

Our process to derive the economic value of our process is as follows. To start off, we have to determine what the premium is for the policy to obtain a net present value of 0. This is done using the solver function in Excel. After this, we apply a 20% premium loading to obtain our estimated premium if we were not implementing our program. We also obtain the net present value as a proxy for profits obtained under this policy type. We then implement the mortality improvements and intervention costs into our Excel model to create a new model that includes the benefits and costs of our intervention program. We apply the premiums obtained from the previous policy types, however also applying the premium discounts we offer as financial incentives. We then loop through each issue age, as each issue age has different premium discounts as well as different mortality improvement, to obtain the net present value at each issue age. The difference between the net present value we just calculated with the intervention program and the net present value without the intervention program is used as a measure for the added economic value. We utilise the composition of the original book to perform a weighted sum on the economic value at each issue age to obtain an average economic value for each policy sold. This is multiplied by 100 for our final metric of added economic value per 100 policies sold.

A screenshot of a computer program

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A table with numbers and a number of people

Description automatically generated with medium confidence*Appendix B3: Mortality Savings T20 Non-Smoker Bundle*

A table with numbers and symbols

Description automatically generated*Appendix B4: Mortality Savings T20 Smoker Bundle*

A table with numbers and a few money

Description automatically generated with medium confidence*Appendix B5: Mortality Savings SPWL Non-Smoker Bundle*

*A table with numbers and a few green text

Description automatically generated with medium confidenceAppendix B6: T20 Non-Smoker - Granular Results Over 20 Years*   
As referenced in the main body of the report, our T20 Non-Smoker Bundle is most profitable at younger age groups, due to the smaller premium reduction. However, at older ages larger premium reductions reduce the overall profitability. The mortality improvements at older ages are significantly higher, resulting in the increase in added economic value from 3.97% at age 30 to 7.29% at age 45.

*Appendix B7: T20 Smoker - Granular Results Over 20 Years*

Over a 20 year projection, the T20 Smoker Bundle is profitable at all ages, increasing at each age segment of premium reduction. That is, between ages 26-30, 31-35 and 36-40 all have the largest percentage profitability or largest percent added economic value at the older ages of the segment. Furthermore, unlike T20 Non-Smoker, the profitability increases at each age. For example, whereas T20 Non-Smoker bundle was less profitable at age 45, our Smoker bundle is most profitable at age 40.

***A table with numbers and a few words

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*Appendix B8: Whole Life Non Smoker - Granular Results Over 20, 40 and 60 Years*

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