2021 Pacific Life Case Competition

Team 15

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INSURANCE PRODUCTS

- Term Life Insurance
- Indexed Universal Life Insurance
- Variable Annuity
- Single Premium Immediate Annuity
KEY RISKS

- Premature Mortality
- Market Variability
- Over Projected Mortality
SPIA MECHANICS

401K

SINGLE PREMIUM

SINGLE PREMIUM

POLICYHOLDER
SENSITIVITY FACTORS

- Modal Benefit
- Issue Date
- Mode
- Mortality Rate
SENSITIVITY CONSEQUENCES

EXAMPLE:

OUR POCKET

POLICYHOLDER

10 YEARS LEFT OF BENEFITS

YEAR 1

YEAR 2

YEAR 3

SINGLE PREMIUM LEFTOVER
DATA QUALITY ANALYSIS
Checking the **Data**

**WHAT TO LOOK FOR:**
- Duplicate Accounts
- Data Irregularities
- Pronounced Data Issues
Data Expectations: **NEW** vs **OLD**

NEW DATA CHECKLIST

- Got Rid of Duplicates
- Fixed Irregularities
- Corrected Data Issues

Sensitivities should be LOWER
Best Estimate Comparison Graph

Best Estimate Comparison

- **Original Best Estimates**
- **Corrected Best Estimates**

![Graph showing Best Estimate Comparison with years from 2021 to 2028 and amounts in millions from $340 to $200.](image-url)
EXPECTEDATIONS: Sensitivities

- Best Estimate
- 10% MI Shock
- 10% MO Shock
- 1% Interest Rate Up
- 1% Interest Rate Down
- 0% Interest Rate Shock
Graph of Sensitivities

Present Value Comparison of Sensitivities

Amount in Millions

Best Est  |  Mort Shock  |  MI Shock  |  Rates Up  |  Rates Down  |  Rates 0%

$250     |  $310        |  $340      |  $280      |  $370        |  $400
Check to see if expectations were met

Take some time to understand the model and its calculations

Discuss the results with your teammates. Make sure it makes sense to everyone.
**BOND RISK**

Credit Rating: AAA, AA, A, BBB

Time to Maturity (in years): 5, 10, 20

Risk & Expected Return: Low, High

Diagram shows the relationship between credit rating, time to maturity, and risk, with higher ratings and longer maturities associated with higher risk and expected return.
Portfolio Assessment

**Current**
- Investment in strictly A and AA bonds
- Majority 10-year and 20-year bonds
- Duration of 10.1 (longest duration)

**Alternate 1**
- Investment in BBB and A bonds
- Majority 5-year and 10-year bonds
- Duration of 8.9 (comparatively mid-length duration)

**Alternate 2**
- Investment in strictly A and AA bonds
- Majority 5-year and 10-year bonds
- Duration of 7.5 (shortest duration)
## Updated Interest Rate Sensitivities ($m)

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Up 1%</th>
<th>Down 1%</th>
<th>0% Change</th>
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<tbody>
<tr>
<td>Current (2.1%)</td>
<td>300.05</td>
<td>372.59</td>
<td>399.99</td>
</tr>
<tr>
<td>Alternate 1 (2.25%)</td>
<td>295.56</td>
<td>366.21</td>
<td>399.99</td>
</tr>
<tr>
<td>Alternate 2 (1.8%)</td>
<td>309.39</td>
<td>385.91</td>
<td>399.99</td>
</tr>
</tbody>
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Interest Rate Fluctuations

![Graph showing interest rate fluctuations across different scenarios: Current, Alt. 1, and Alt. 2. The graph indicates varying millions of dollars with three categories: Up 1%, Down 1%, and 0% Change.]
## CONCLUSION

- Corrected flaws in the data
- Ran Projection Model on corrected data
- Compared 3 portfolios, each with its own strengths and weaknesses
- Based on the results, our team recommends Alternate 2
Reasons for Flawed Data

- Data entry mistakes
- Data transfer errors
- Infrequent review of data

Inaccurate Data
## Implications from Flawed Data

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| **01** | Inaccuracies in Data | • Loss in profit  
• Incorrect future rates |
| **02** | Ways to improve? | • Frequently analyze current data |
| **03** | Additional Problems | • Current model far too limited |
Model Improvements

- Location
- Medical History
- Occupation

Improved Accuracy
THANK YOU / Q&A