2021 Pacific Life Case Competition

Team 15

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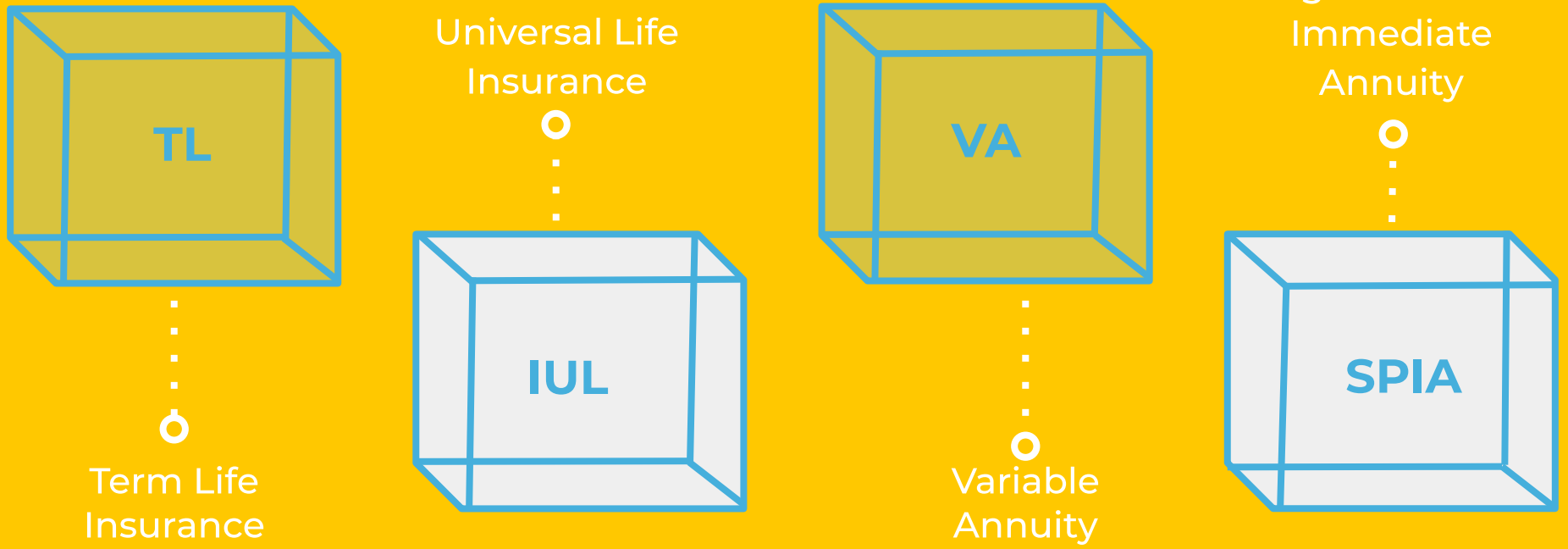


KEY RISKS


PREMATURE MORTALITY
MARKET VARIABILITY
OVER PROJECTED MORTALITY

SPIA MECHANICS

SENSITIVITY FACTORS

Modal Benefit

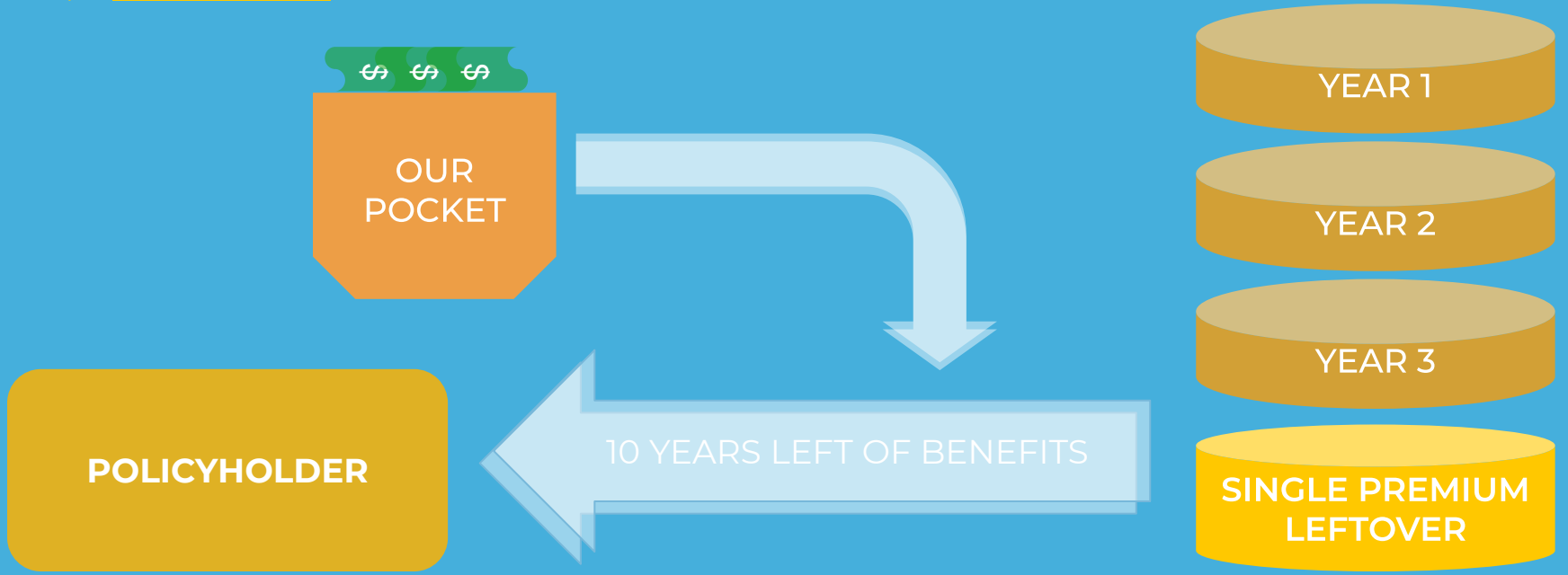
Issue Date

Mode

Mortality Rate

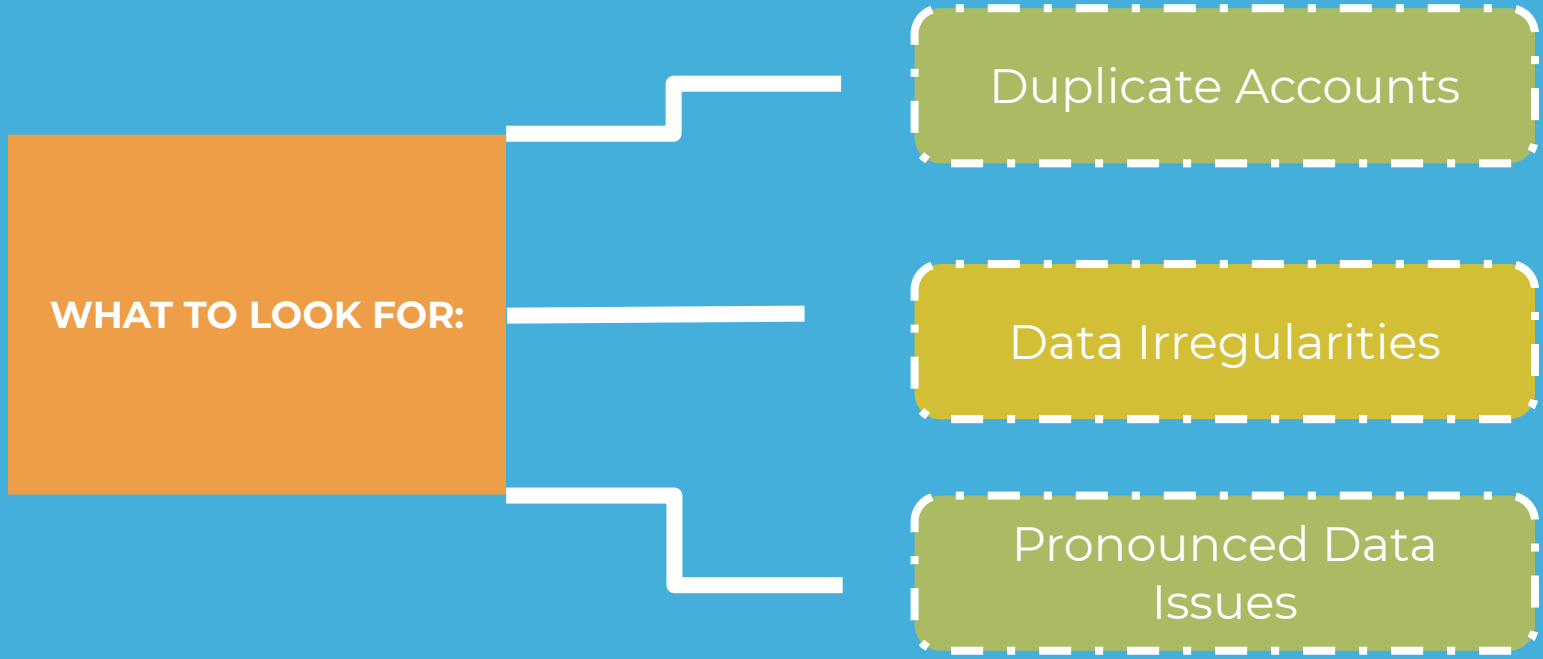
SENSITIVITY CONSEQUENCES

EXAMPLE:

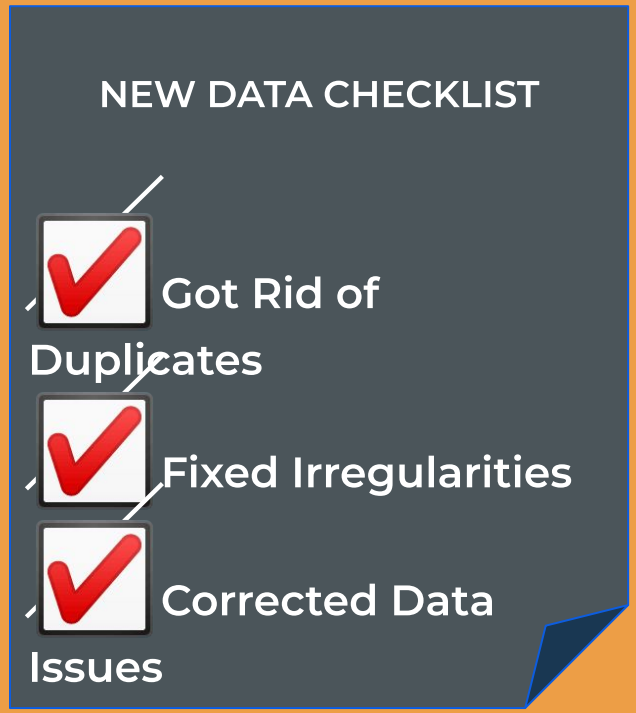


DATA QUALITY ANALYSIS

Checking the Data

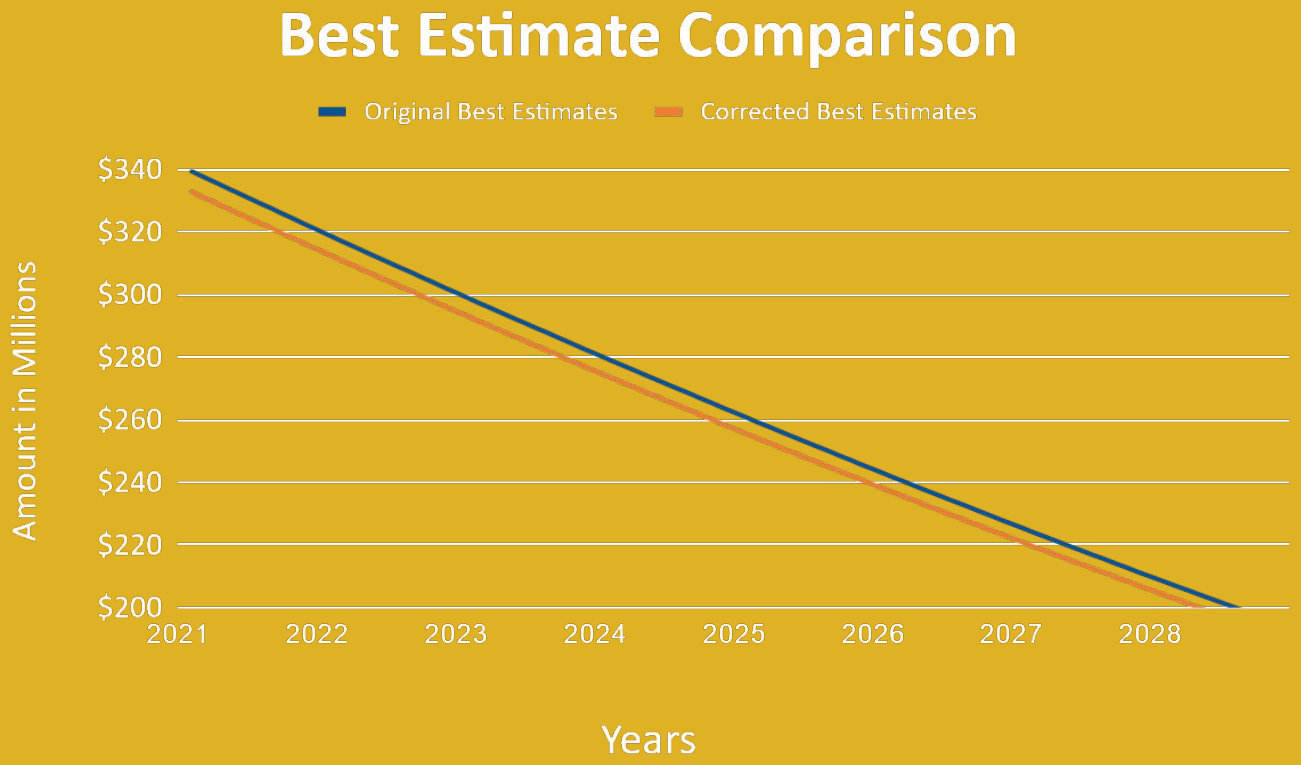


Data Expectations: NEW vs OLD



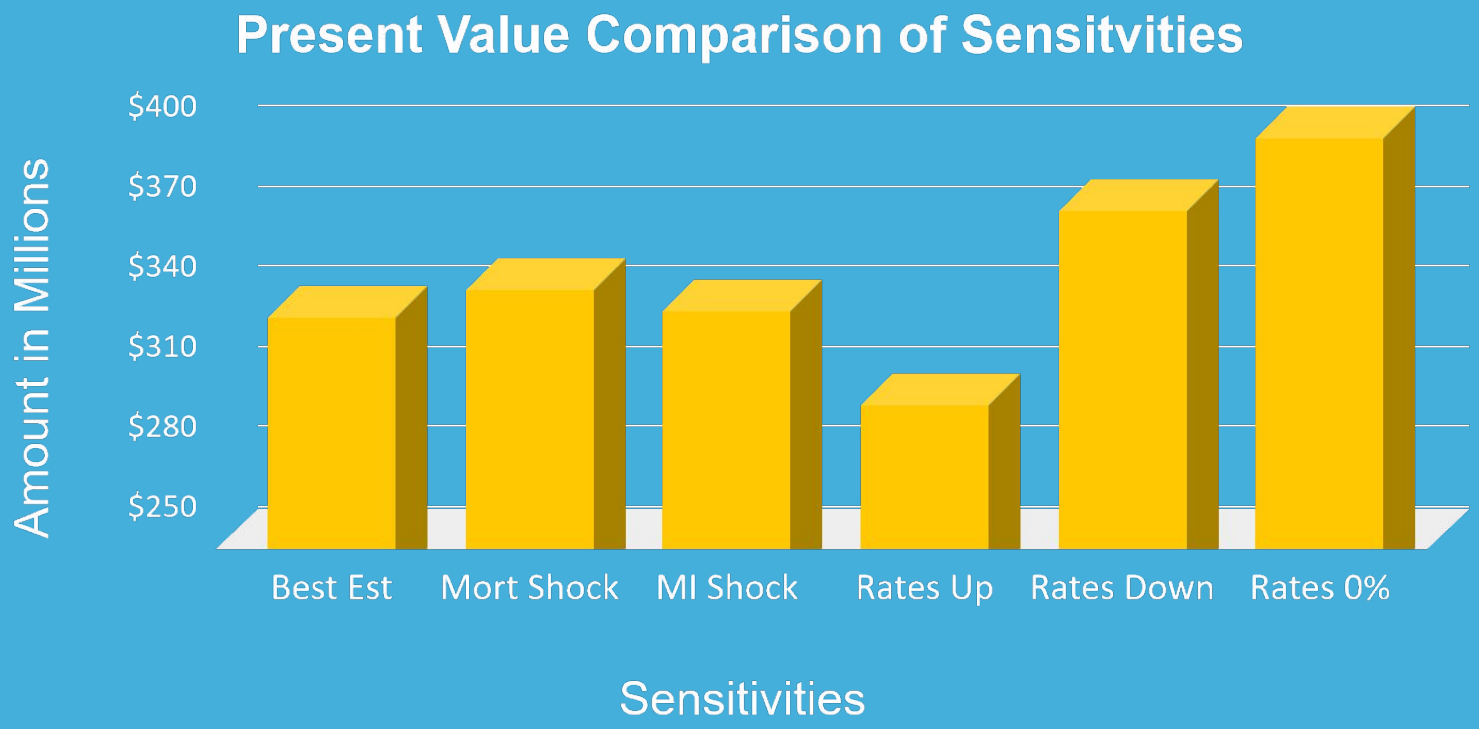
Sensitivities should be LOWER

Best Estimate Comparison Graph



EXPECTATIONS: Sensitivities

Graph of Sensitivities



Data Validation

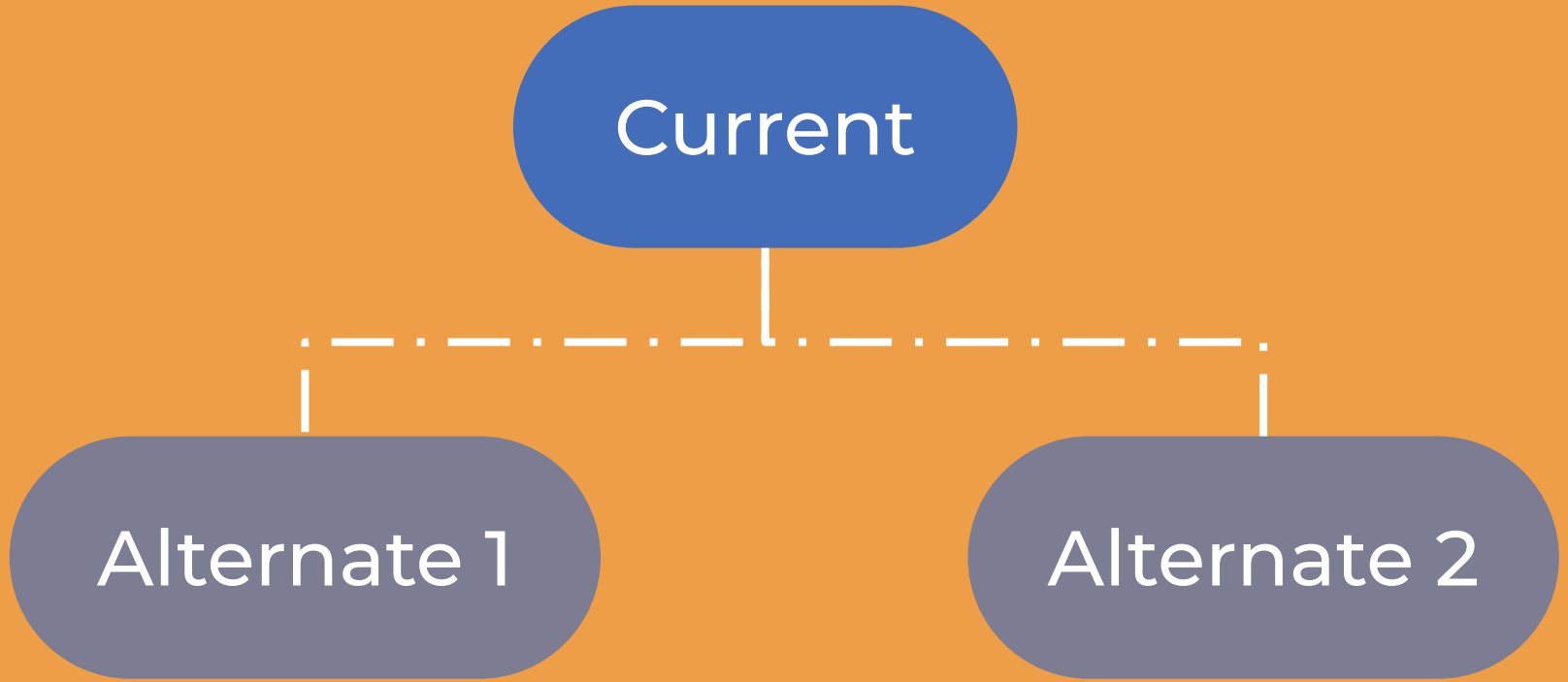
Check to see if expectations were met

Take some time to understand the model and its calculations

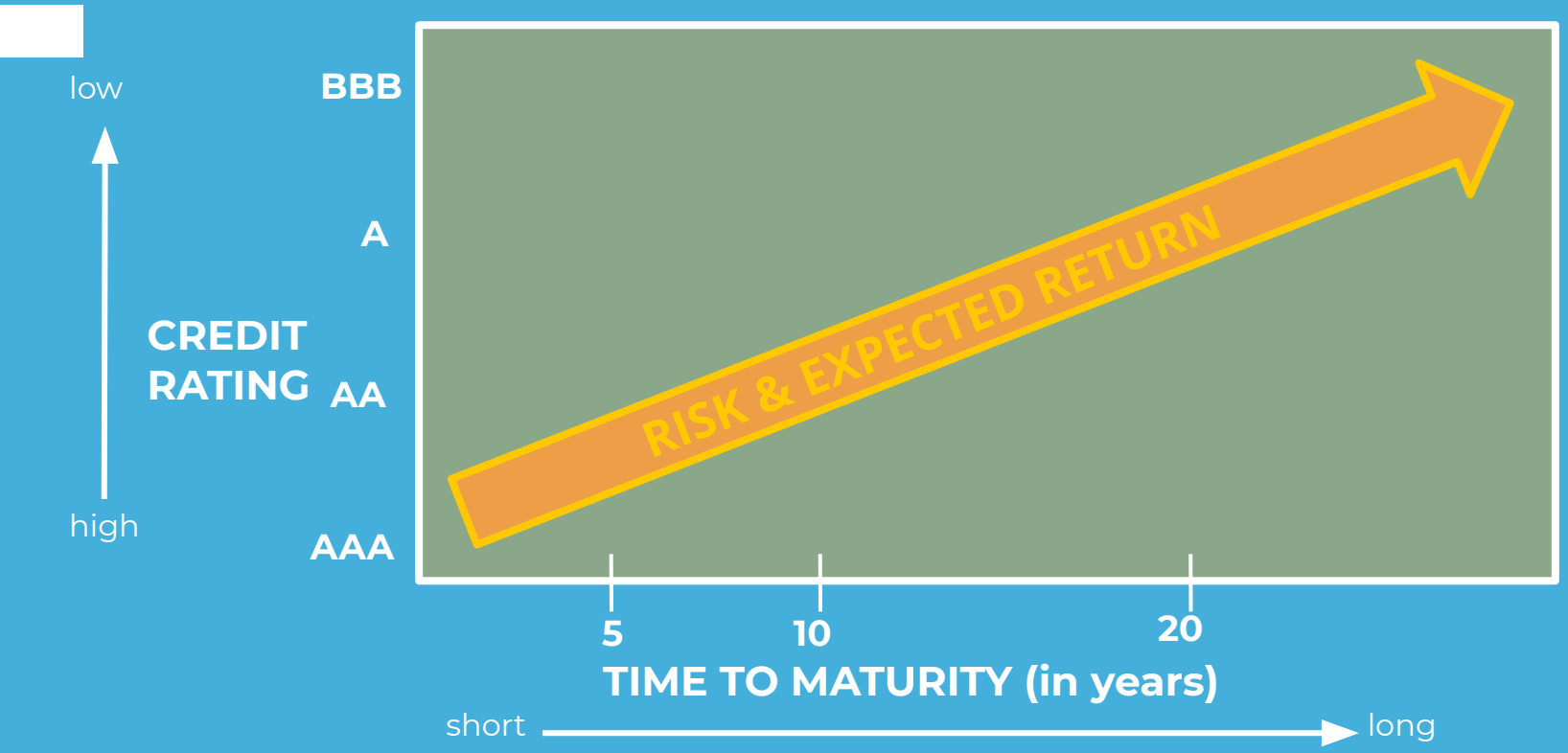
Discuss the results with your teammates. Make sure it makes sense to everyone.

PORTFOLIO ALLOCATION ANALYSIS

PORTFOLIO BREAKDOWN



BOND RISK


low
high
CREDIT RATING
BBB
A
AA
AAA
RISK & EXPECTED RETURN
5
10
20
TIME TO MATURITY (in years)
short
long

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)

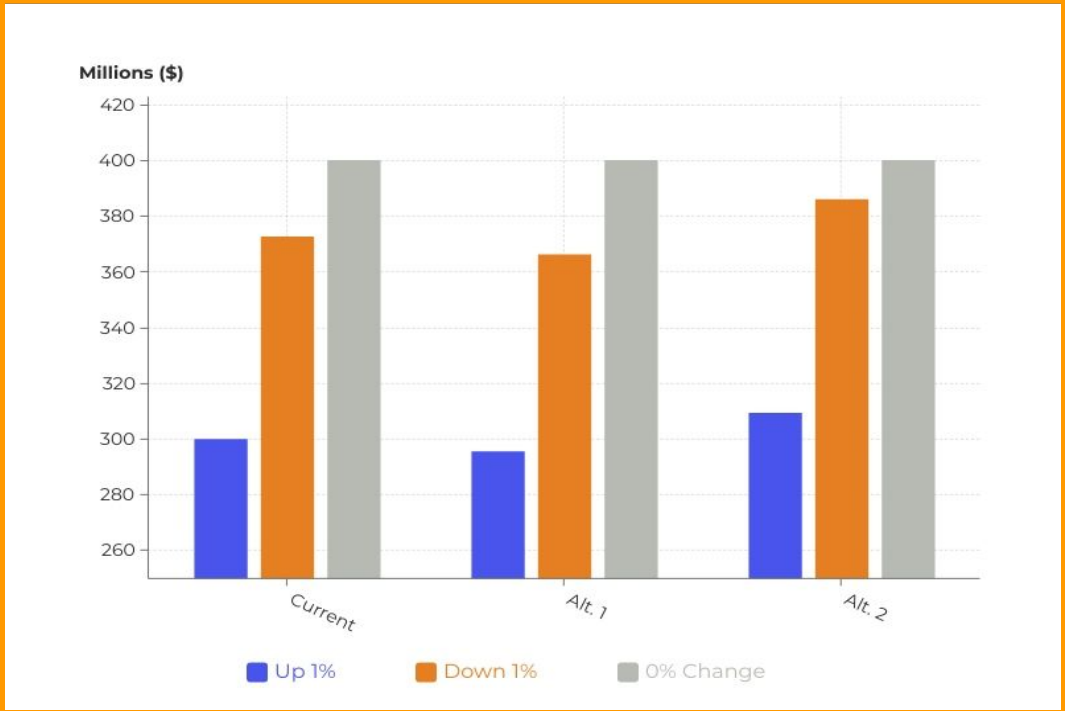
Alternate 2

- 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)

Portfolio (baseline yield)	Up 1%	Down 1%	0% Change
Current (2.1%)	300.05	372.59	399.99
Alternate 1 (2.25%)	295.56	366.21	399.99
Alternate 2 (1.8%)	309.39	385.91	399.99

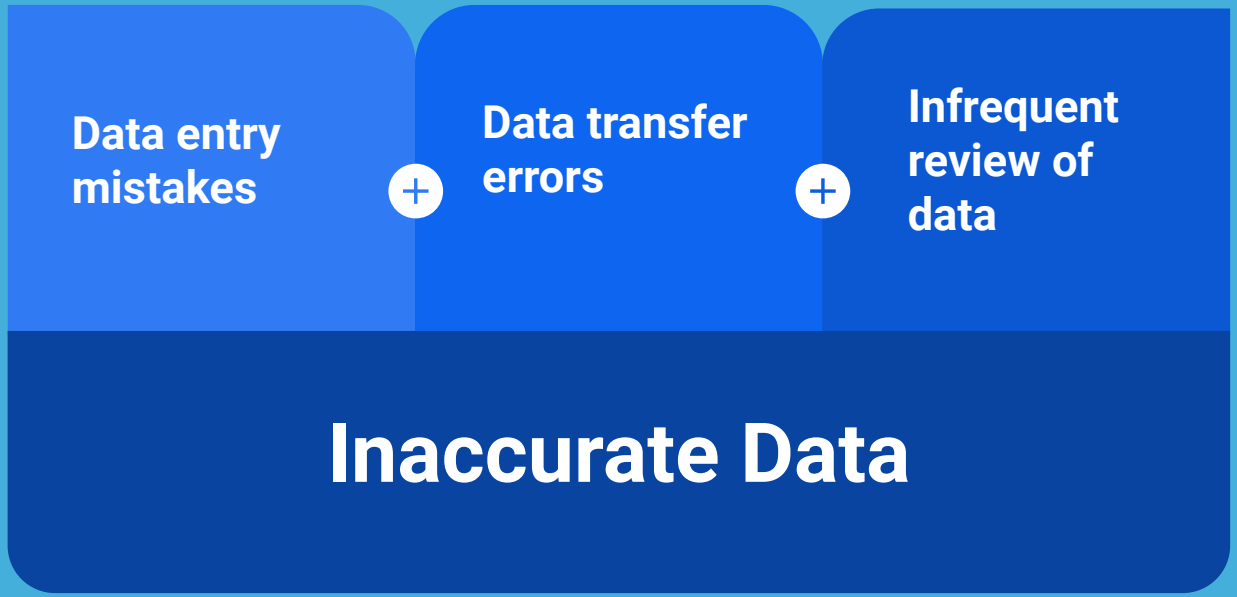
Interest Rate Fluctuations



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

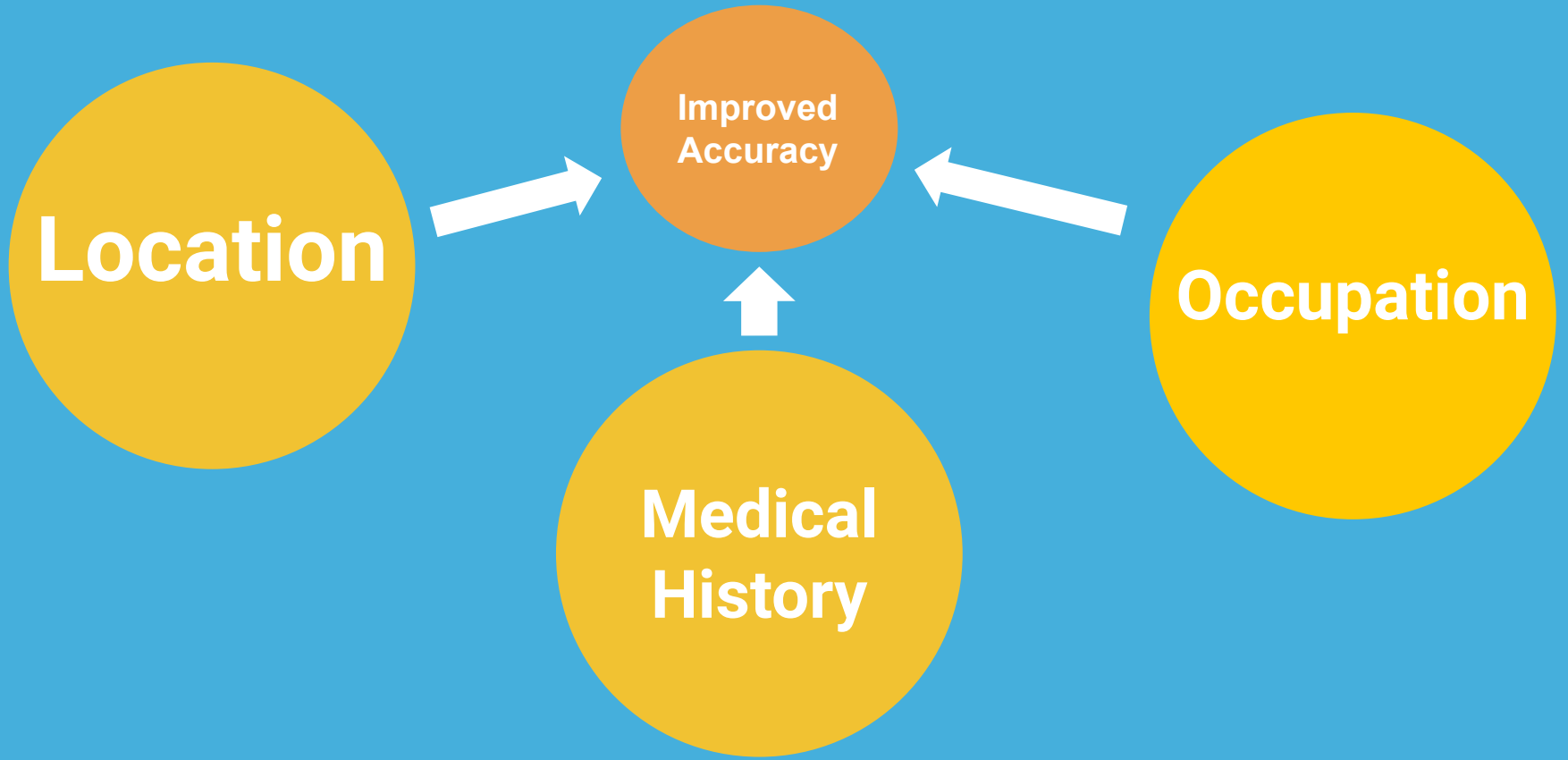
Reasons for Flawed Data



Implications from Flawed Data

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



THANK YOU / Q&A