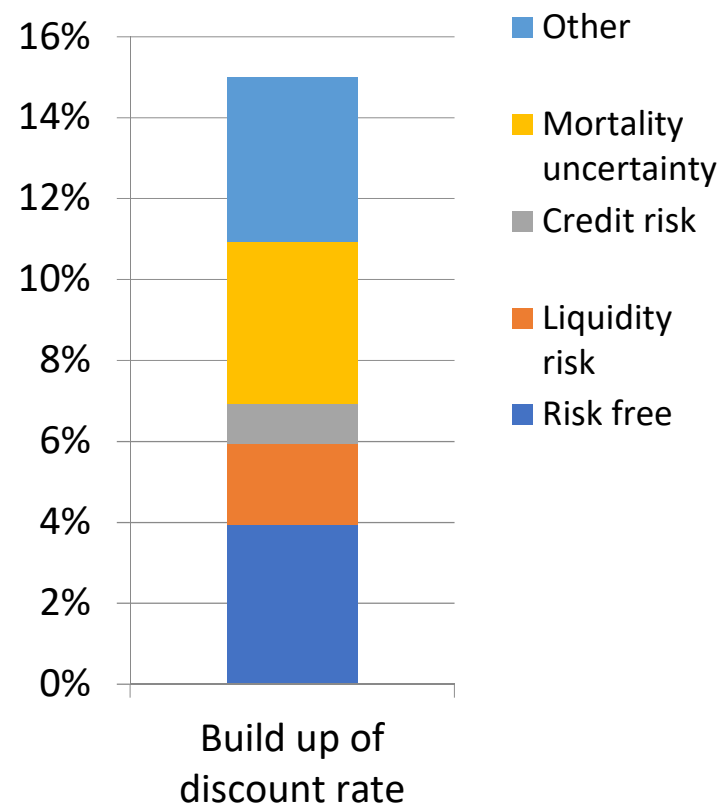


Valuation principles

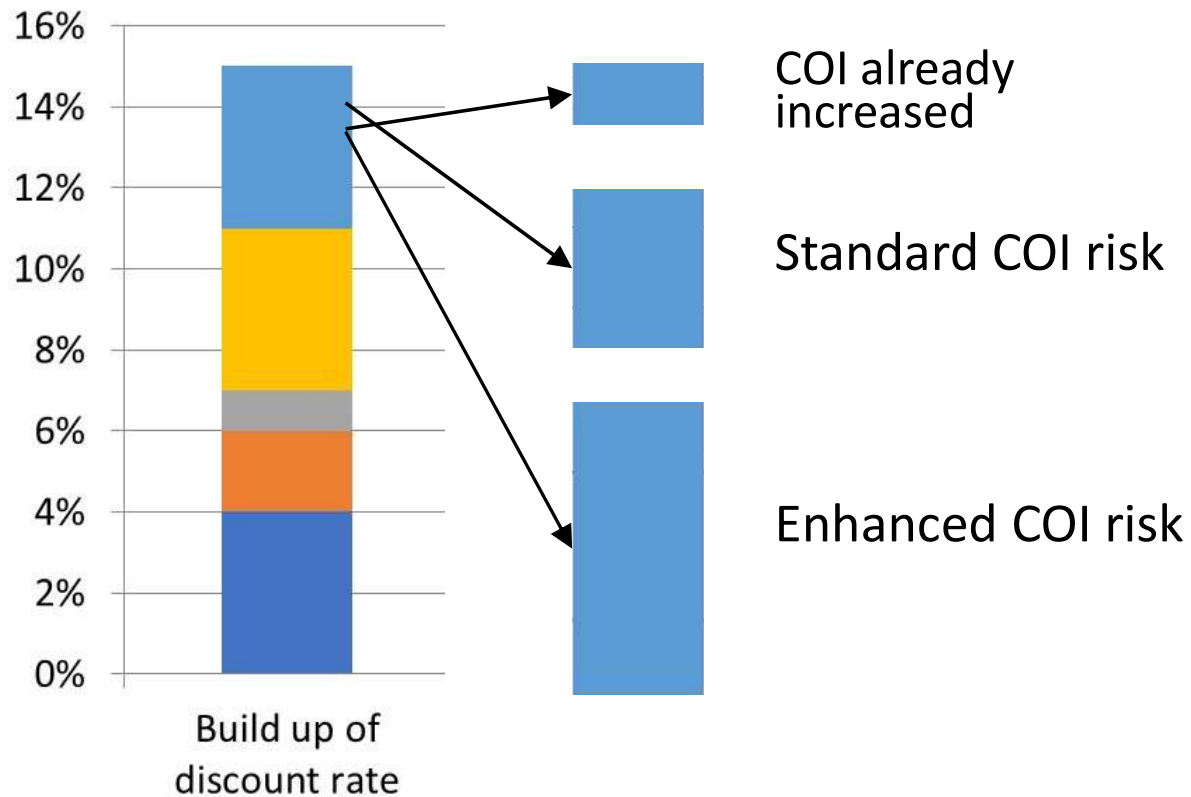
- Fair valuation for IFRS / USGAAP requires a best estimate view of cost of insurance risk
- Similar is true to be fair to investors in a fund valuation
- Relevant excerpts from IFRS 13
 - *A measurement that does not include **an adjustment for risk** would not represent a fair value measurement ...*
 - *it might be **necessary to include a risk adjustment** when there is significant measurement uncertainty ...*
 - *An entity shall develop unobservable inputs using the **best information available** in the circumstances, which might include the entity's **own data**... but it **shall adjust those data** if reasonably available information indicates that other market participants would use different data.*
 - *An entity **need not undertake exhaustive efforts** to obtain information about market participant assumptions.*

Build up of discount rate (notional - historic)

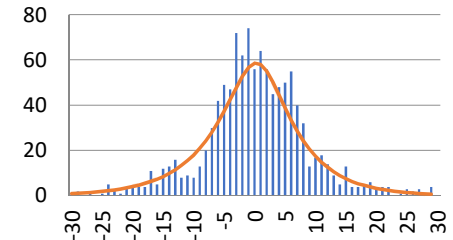
- Discount rates can be decomposed as per this graphic (with indicative numbers).
- Can be benchmarked against market observable rates and against others in the industry
- Can then consider from first principles whether the rates seem reasonable



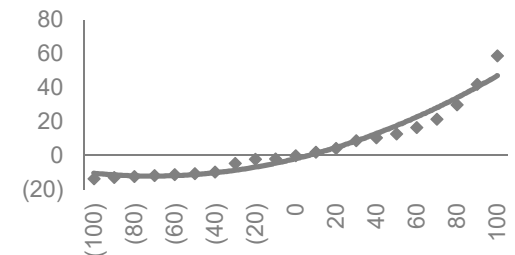
Build up of discount rate (considerations)



Probability of change and by how much
Likelihood of change in COI



Loss in the event of each of the above changes



Market practice and future practice

- Ignore impact
- Adjust for known COI changes
- Specific reserves for unknown future changes
- Uplifts in premium streams across the board
- Changes in discount rate
- Machine learning
- Predictive analytics on potential changes



Increased:

- Sophistication
- Complexity
- Cost

Increased Cases

Number of Carriers (by Prevalence)

1 10 50

1 6 11 16 21 26 31 36 41 46 50

Single Carrier

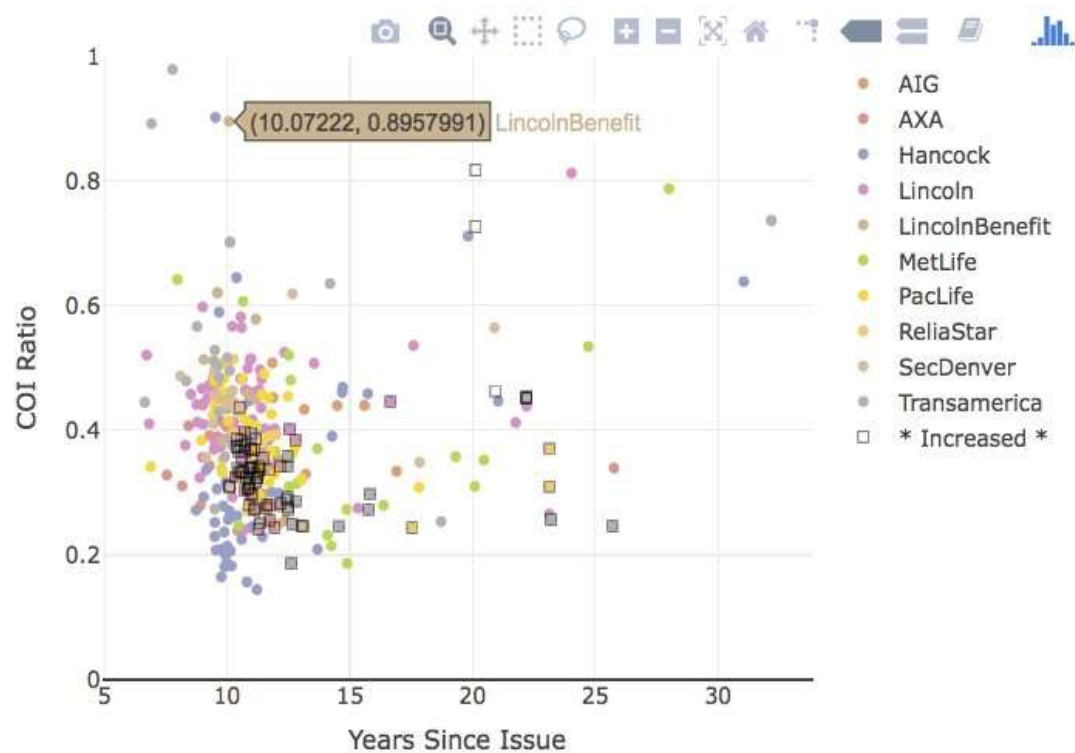
Premium Class

All

Pre / Post Increase COI

Pre Increase

☒ Show All Increase Cases



Preferred Risks: 10-13Yr Minimum Pricing

Number of Carriers (by Prevalence)

1 6 50

1 6 11 16 21 26 31 36 41 46 50

Single Carrier

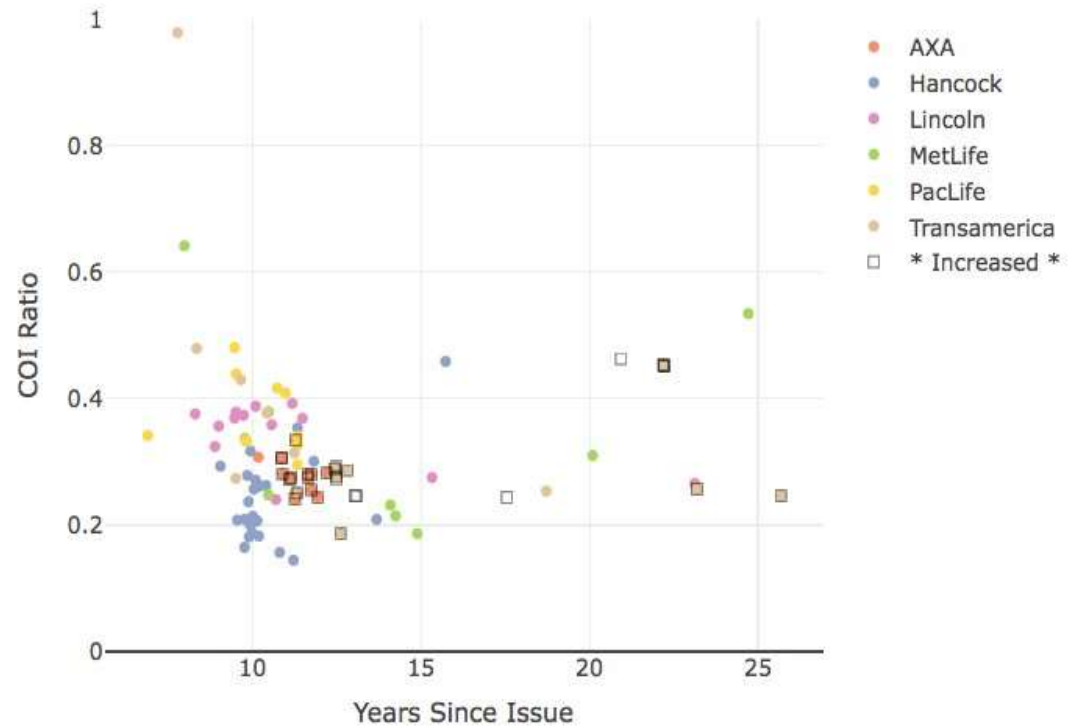
Premium Class

Preferred

Pre / Post Increase COI

Pre Increase

☒ Show All Increase Cases



Trans at Product Level: Standard Risk

Number of Carriers (by Prevalence)

1 6 50

1 6 11 16 21 26 31 38 41 46 50

Single Carrier

Transamerica ▼

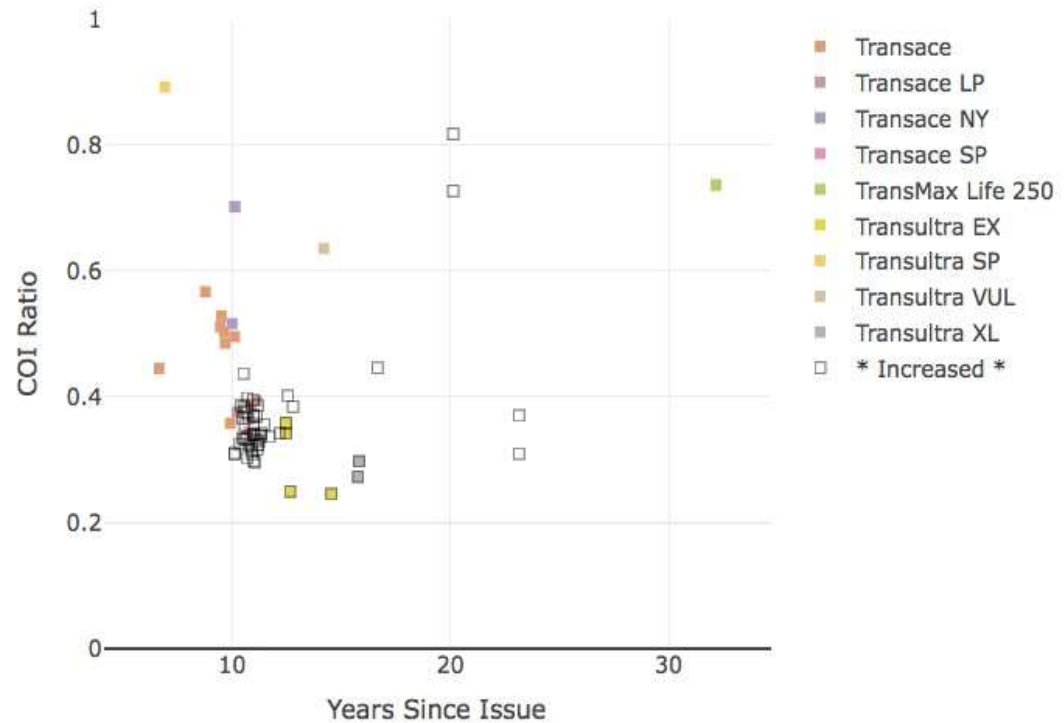
Premium Class

Standard ▼

Pre / Post Increase COI

Pre Increase ▼

☒ Show All Increase Cases



AXA Pre Increase: Standard Risk

Number of Carriers (by Prevalence)

1 6 50

1 6 11 16 21 26 31 36 41 46 50

Single Carrier

AXA ▼

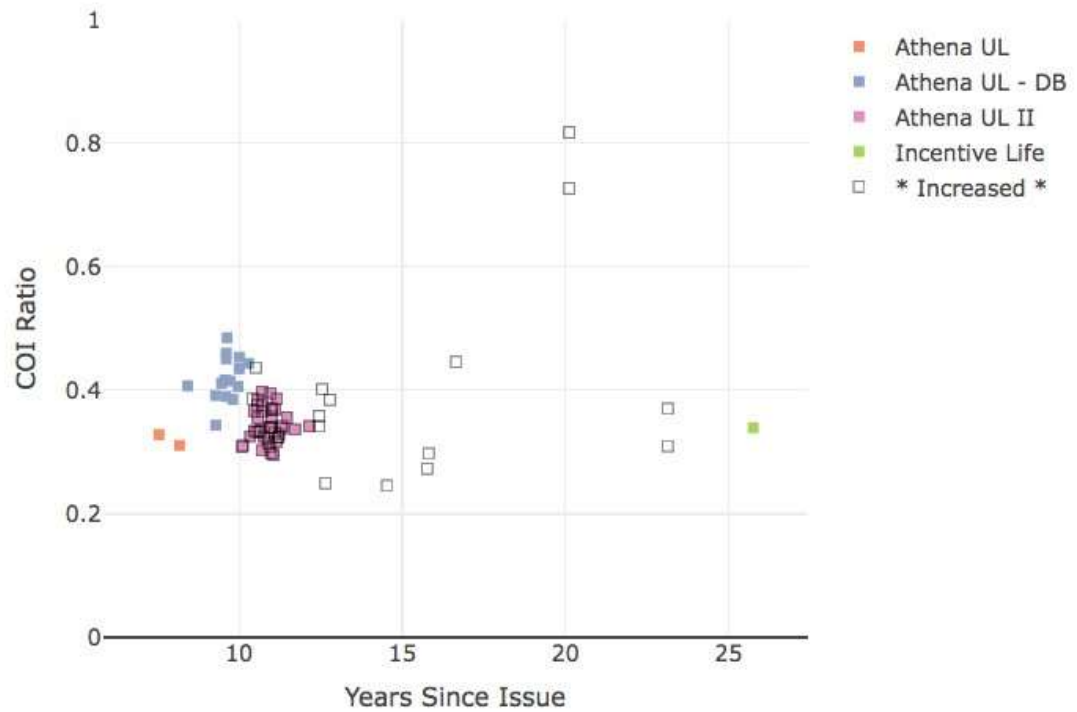
Premium Class

Standard ▼

Pre / Post Increase COI

Pre Increase ▼

☒ Show All Increase Cases



AXA Post Increase: Standard Risk

Number of Carriers (by Prevalence)

1 6 50

1 6 11 16 21 26 31 36 41 46 50

Single Carrier

AXA ▼

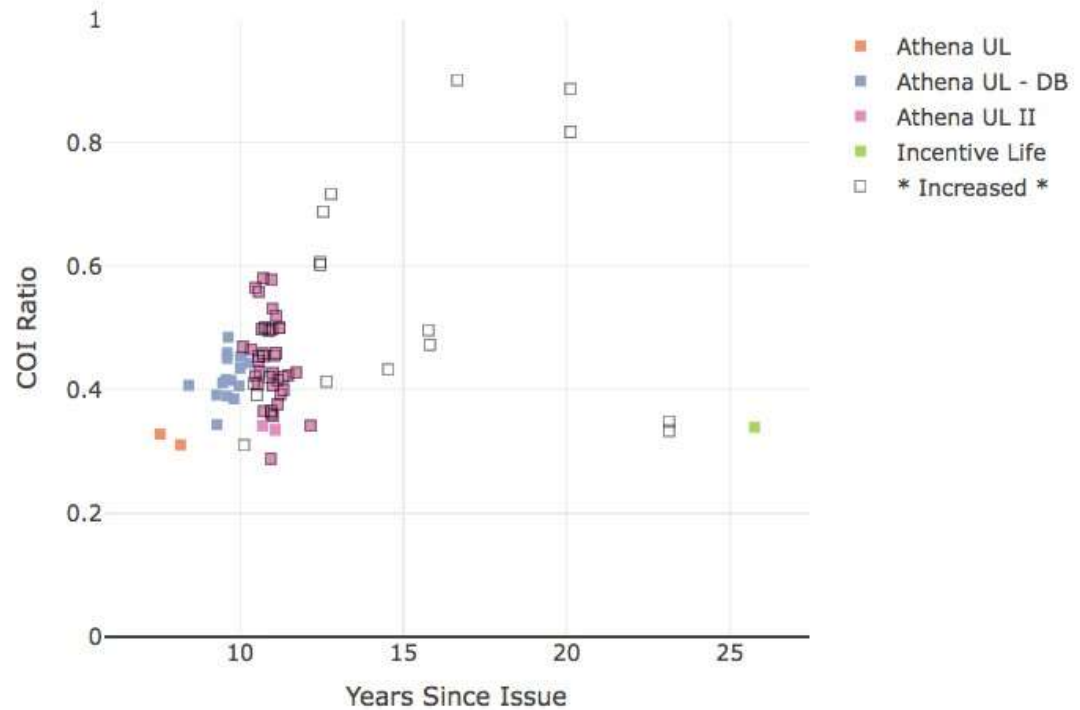
Premium Class

Standard ▼

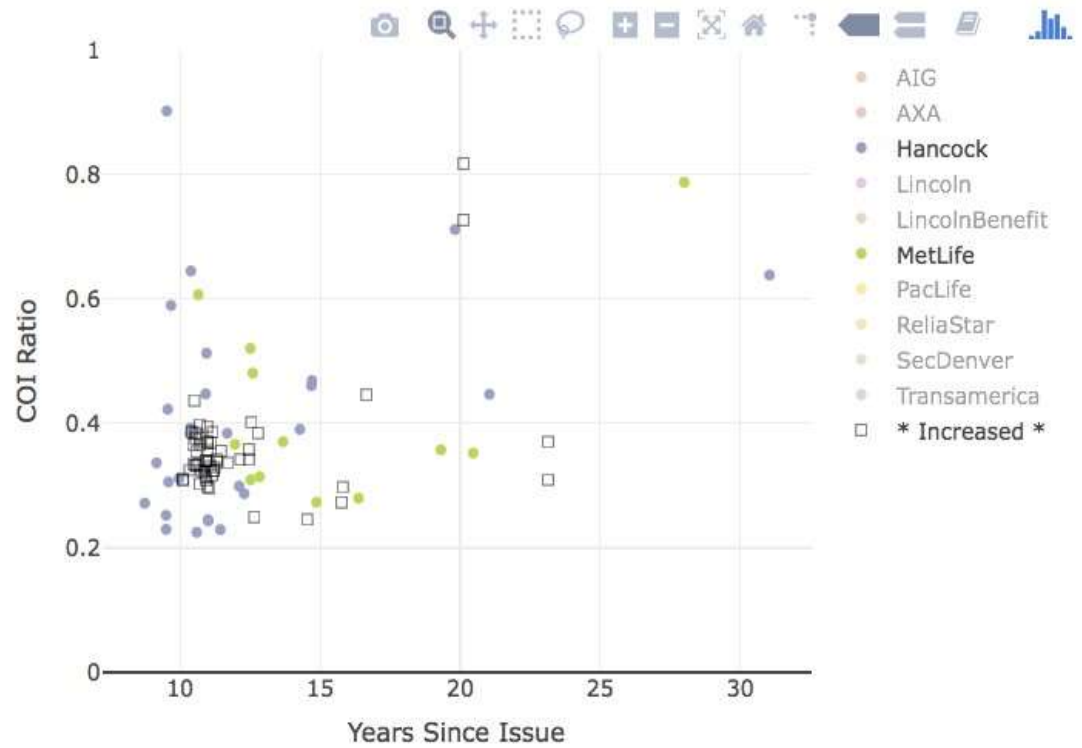
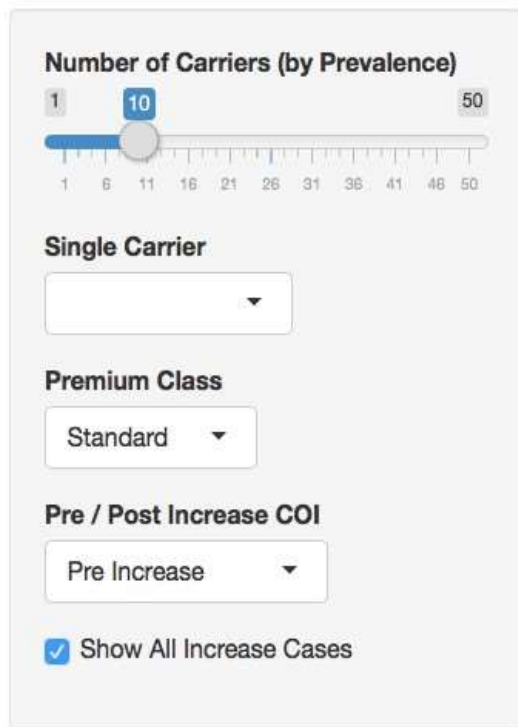
Pre / Post Increase COI

Post Increase ▼

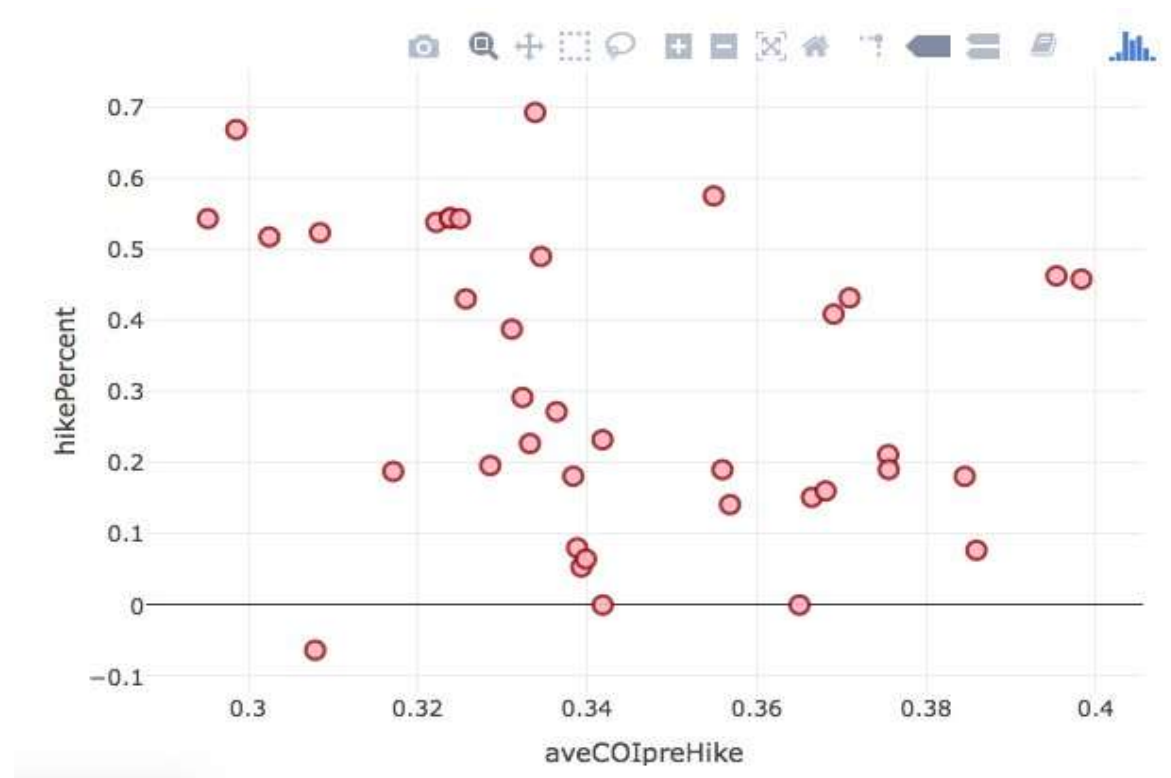
☒ Show All Increase Cases



Risky Carriers

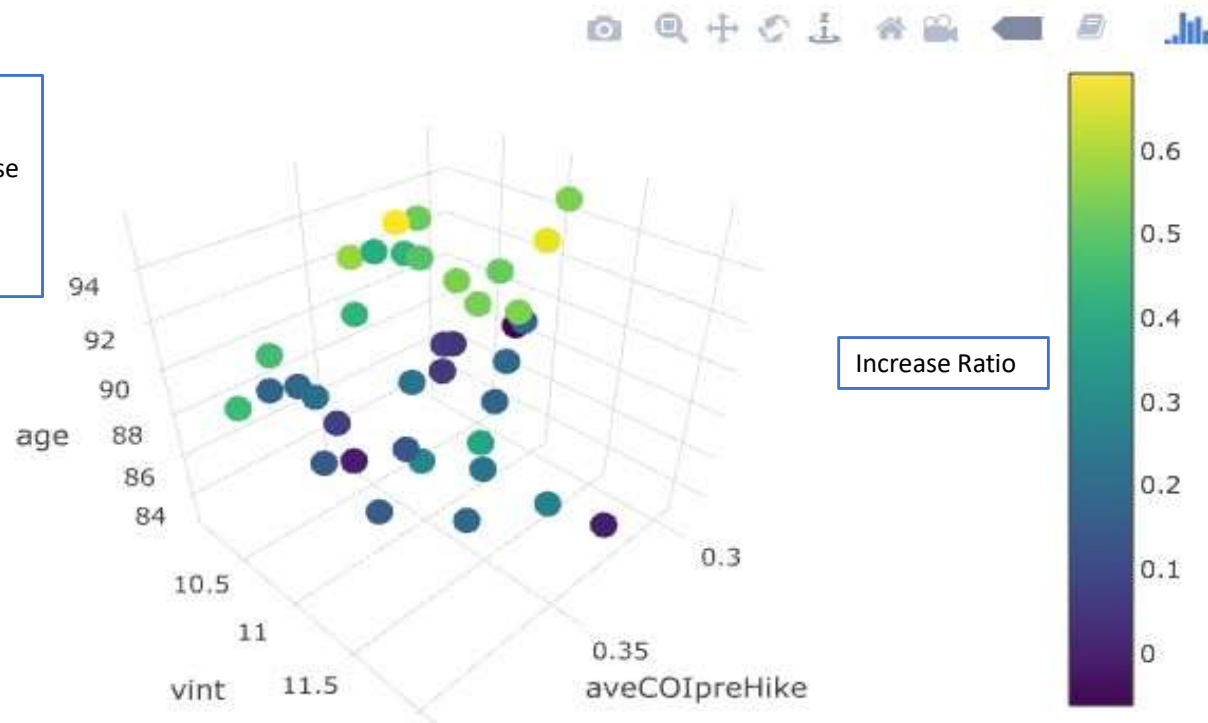


Predicting Increase Sizes

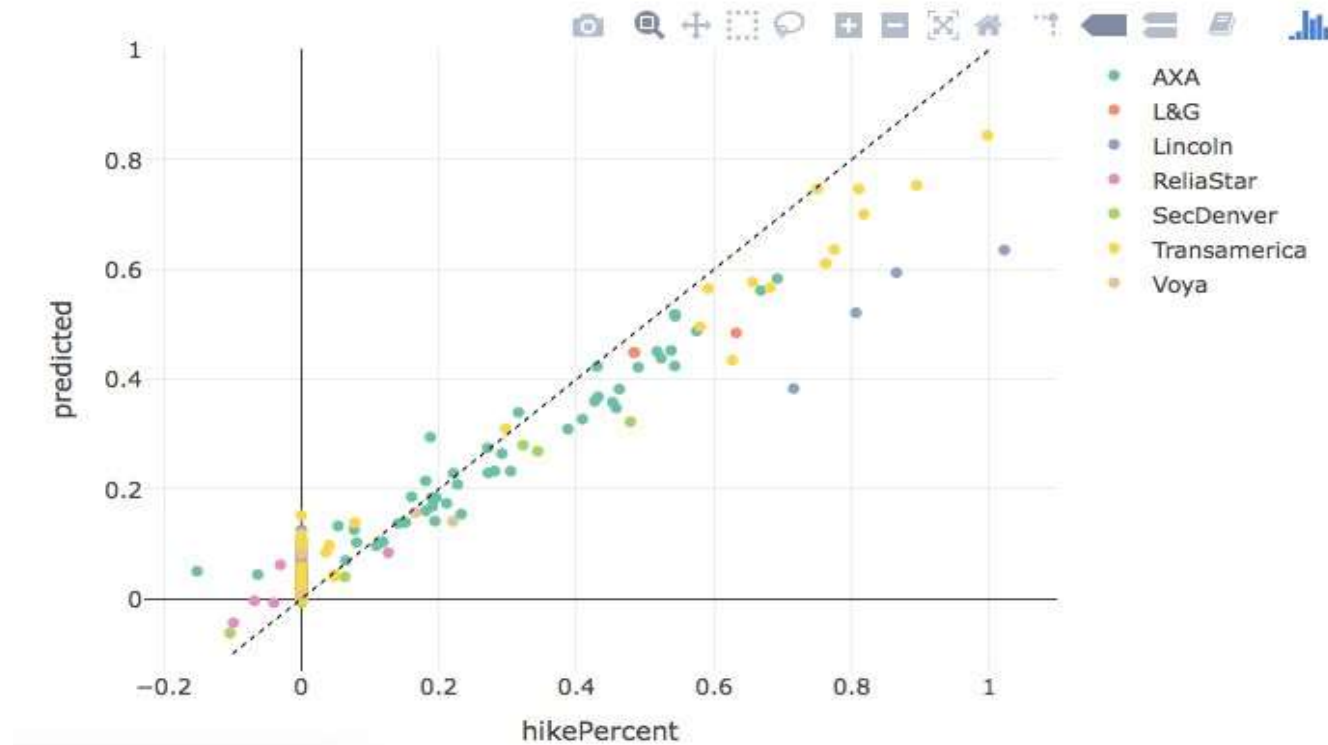


A Four-Dimensional View

- Alternate view on the data
- Does it help us recognise a pattern?
- Bearing in mind our human limitations



Forest Performance (In sample)



Forest Performance (Out of sample)

