Getting comfortable with dependencies

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Why are dependencies so tough?

- Complex structure
- Not intuitive
- Limited data
- Multiple owners
Dependencies validation

- What turns the dials?
  - Driver based analysis
- Scenario testing
- Sense check
- Sensitivity testing
- Stress testing
- Benchmarking
- Input/output testing

Validating using driver based model

Three key features:
- 4-dimensional “heartbeat”:
  - Inception time
  - Accident time
  - Reporting time
  - Payment time
- Individual risks consistent with internal model
- Tangible judgements

Simplified example
Practical steps

1. Business input from workshops
2. Setup and run model
3. Analyse model results

Comparison of headline results

Internal model vs. driver based model

Insurance risk excluding catastrophes £m

-100
0
100
200
300
400
500

1 in 4
(75th percentile)
1 in 10
(90th percentile)
1 in 200
(99.5th percentile)

Internal Model
Driver Based Model
**Waterfall build-up**

Build-up of risk at 99.5th percentile (turning on each driver in turn)

**Volatility build-up**

Build-up of volatility (turning on each driver in turn)
Other example diagnostics

Conditional exceedance and correlation comparisons

Next steps

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