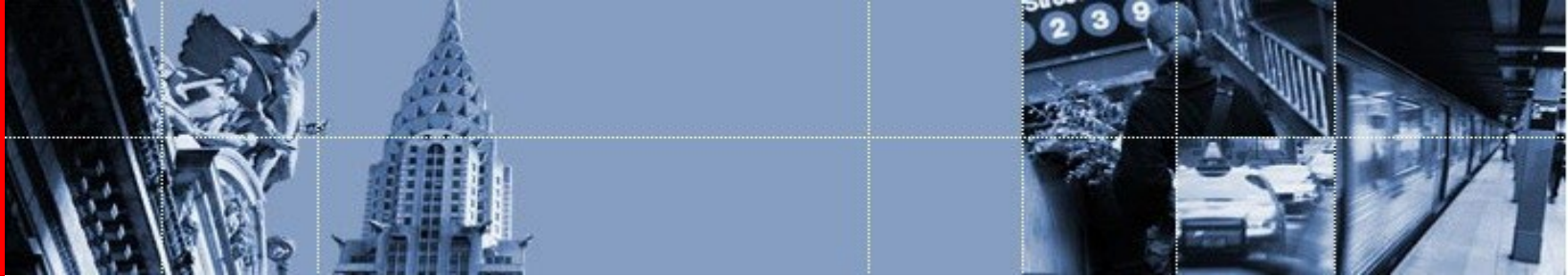


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US GAAP LDTI

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Model validation and common LDTI validation observations

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Agenda

- LDTI background
- Model validation background
- Sample LDTI model validation test plan
- Common LDTI-related validation observations



LDTI background

- In August 2018, the FASB issued ASU 2018-12, *Targeted Improvements to the Accounting for Long-Duration Contracts* (commonly referred to as LDTI)
 - One of the most fundamental updates to life insurance and annuity accounting in 30 years
 - The new guidance is effective on January 1, 2023, for calendar year-end public business entities and on January 1, 2025, for calendar year non-public business entities.

	Summary changes	Products affected	Implications
Liability for future policy benefits (LFPB)	<ul style="list-style-type: none"> •Improve the timeliness of recognizing changes in assumptions •Modify the discount rate used 	<ul style="list-style-type: none"> •Non-par traditional long-duration and limited payment contracts 	<ul style="list-style-type: none"> •Requires cash flow assumptions and actual experience to be updated on a cumulative catch-up basis (i.e., retrospective); recognized through earnings •Requires discount rate assumption to be updated using the upper-medium-grade fixed-income instrument yield each period; recognized through OCI •Eliminates loss recognition testing
Market risk benefits (MRB)	<ul style="list-style-type: none"> •Simplify and improve accounting for certain market-based options or guarantees associated with deposit contracts 	<ul style="list-style-type: none"> •Deposit products with certain benefit features (e.g., variable annuities, fixed index annuities) 	<ul style="list-style-type: none"> •Creates new classification for these features •Requires features to be measured at fair value with changes recognized in income (except for own credit spread effect)
Deferred acquisition costs (DAC)	<ul style="list-style-type: none"> •Simplify the methods to amortize DAC 	<ul style="list-style-type: none"> •All products except certain investment contracts 	<ul style="list-style-type: none"> •Simplifies DAC amortization (a constant basis over the life of the contract) •Eliminates impairment testing
Disclosures	<ul style="list-style-type: none"> •Improve the effectiveness a timeliness of disclosures in interim and annual financial statements 	<ul style="list-style-type: none"> •All products except certain investment contracts 	<ul style="list-style-type: none"> •Adds significant new granular disclosures •Requires disaggregated tabular reserve roll-forwards •Supplements with qualitative disclosures about significant inputs, judgments and assumptions •Requires recording of equity/AOCI impacts at transition



Model validation background

Three lines of defense model has been widely used by insurance companies for their model risk management framework. The purpose of the three lines of defense model is to manage model risk under a company's broader ERM program.

- **The first line of defense is the model developers and model owners**
- **The second line of defense is the model validation and model governance teams**
 - Performed by the company's internal model risk management (MRM) team or external consultants. The purpose of the 2nd line of defense is to provide an independent challenge to the model.
 - LDTI brings in large amount of data and process elements which would add more model risks and greater reliance on a company's MRM team
- **The third line of defense is the company's internal auditors**



Model validation framework

The list below shows a model validation framework that would provide coverage to a variety of potential model risk sources and aim at providing an effective challenge to the models:

- Data suitability and quality
- Conceptual soundness
- Model performance and integrity
- Model implementation
- Documentation and governance



Sample LDTI model test plan

A brief sample test plan for validating a LDTI model is provided below:

Risk control area	Sample tasks/procedures for LDTI valuation models
Data quality	<ul style="list-style-type: none">• Assess LDTI model inputs against administrative systems, policy forms and other sources.• Assess LDTI assumptions used against the company's approved LDTI best-estimate assumptions document and experience studies.
Conceptual soundness	<ul style="list-style-type: none">• Assess model methodologies, mathematical formulations, and model design and construction against LDTI guidance, the company's accounting policy and industry practices.
Model performance and integrity	<ul style="list-style-type: none">• Perform independent LDTI cash flows projection and recalculations of LDTI balances and compare results against model output.• Perform sensitivity analysis on key inputs and assumptions.
Model implementation	<ul style="list-style-type: none">• Assess model processes and controls as well as model change control procedures.
Documentation and governance	<ul style="list-style-type: none">• Assess model documentation completeness, model transparency and developer testing.



Common LDTI-related validation observations

Based on our experience, below are areas that companies should pay special attention to as they are developing and validating the LDTI models:

1. **LDTI methodology**
2. **LDTI assumptions**
3. **Calculation of ceded reinsurance reserves**
4. **Modeling of riders**
5. **Second-degree impact to SOP 03-1**



Common LDTI-related validation observations, cont'd

6. Treatment of LFPB and deferred profit liability (DPL) disclosure roll-forwards
7. Market risk benefit (MRB) attributed fee ratio (AFR) calculation
8. Treatment of MRB disclosure roll-forward
9. Data gathering
10. Model process



Conclusions

- Importance of model validation
- Can help uncover non-LDTI related findings with existing models
- Agile approach to model validation
- Implementation of other new accounting standards



Questions ?

