Structured Reinsurance Refresher

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Agenda

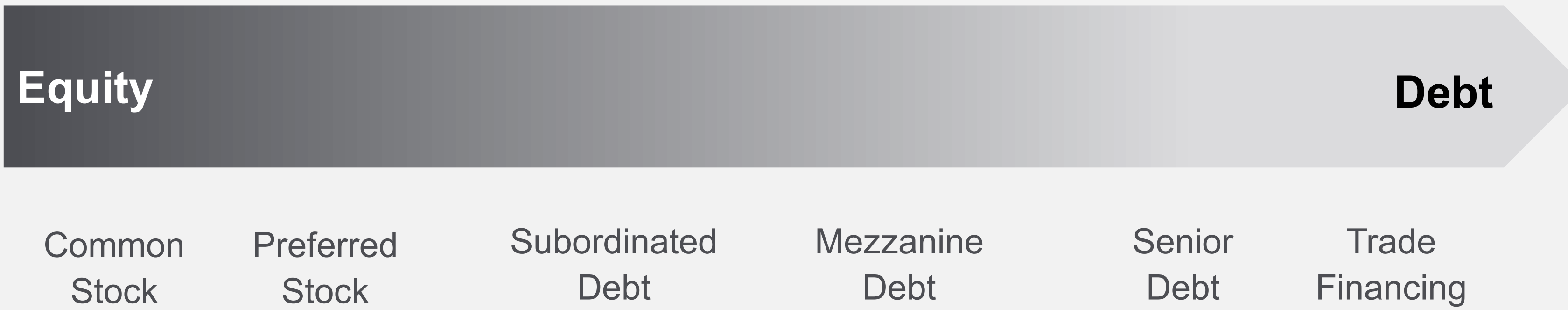
- Why do cedants purchase structured reinsurance?
- What makes it "structured"?
- Examples

WHY DO CEDANTS PURCHASE STRUCTURED REINSURANCE?

Why Structured Reinsurance?

- Risk tranching
- Efficiency
- Bridging expectation gaps
- Only tool available
- When the old solutions don't fit

Capital alternatives



- Management has a spectrum of alternatives to choose from when capitalizing an enterprise
- Not just form, but term, conditions, etc.
- For insurance companies, reinsurance is often viewed as a capital substitute

Reinsurance alternatives

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Reinsurance

Quota Share | Surplus Share | Aggregate | Catastrophe | Per Occurrence | Per Risk

- Same choice applies to the choice of a reinsurance program, and the analogy is usually made with respect to the form of the reinsurance
- Capital alternatives differ by degree of participation in the risk of the entity
- Structured reinsurance adds this dimension

Risk tranching

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Form

Per Risk

Per Occurrence

Catastrophe

Aggregate

LPT or ADC

ASL

Surplus Share

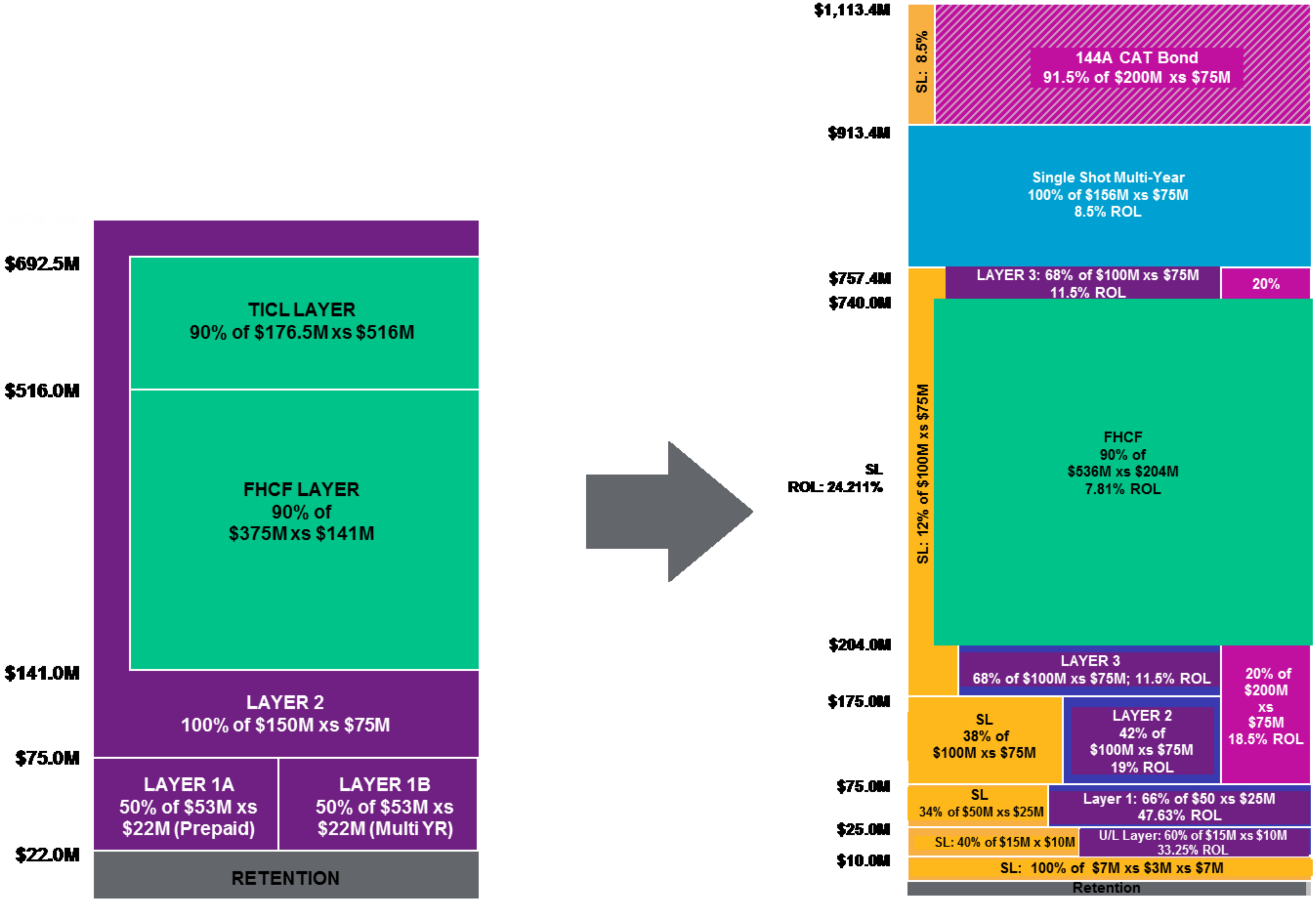
Quota Share

Traditional → Structured

Efficiency

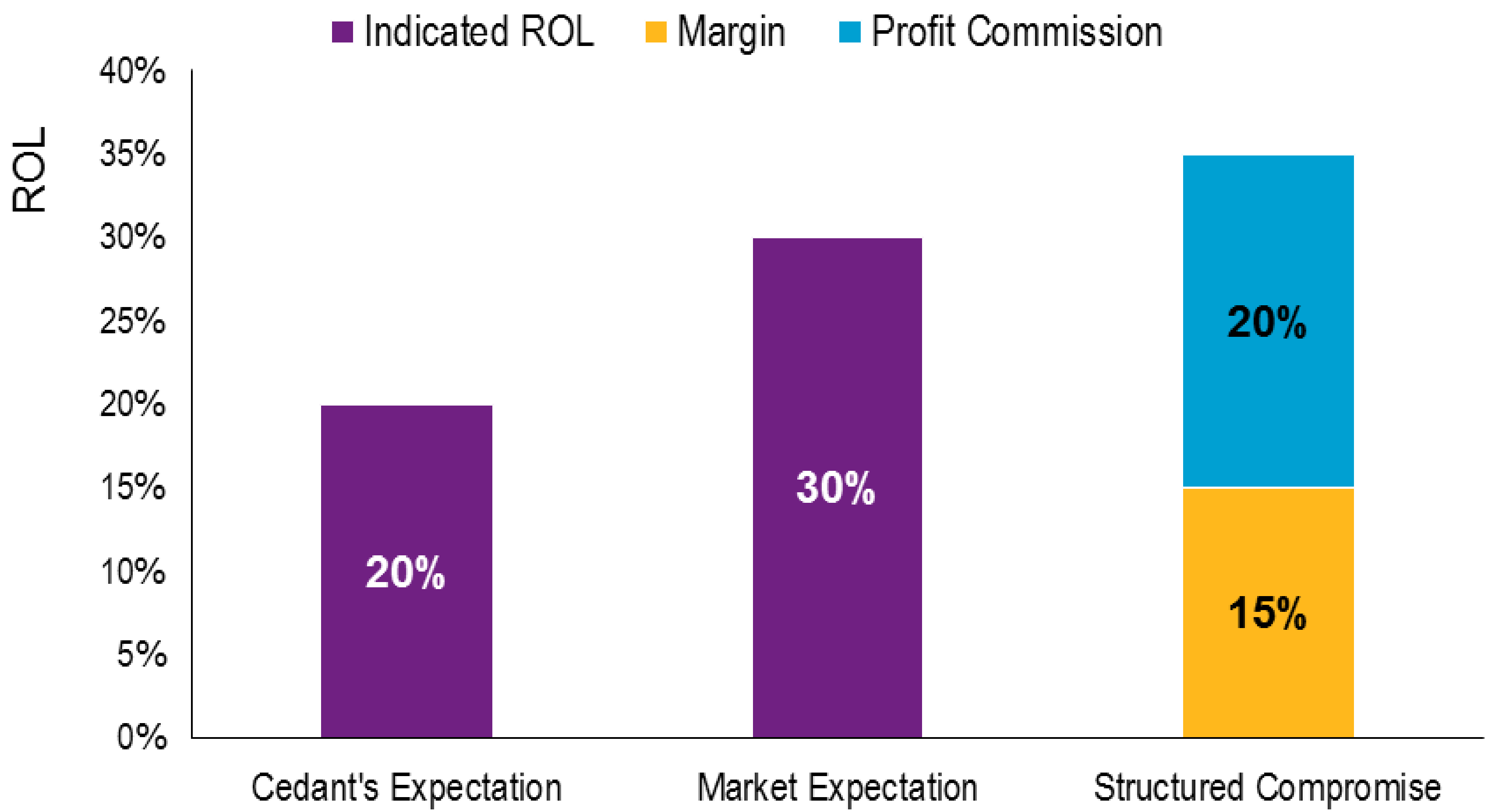
	Efficiency	Earnings Volatility	Capital management	Other
Rationale / Client motivation	▪ Budget ▪ Less swapping ▪ Optimization – buy only what you need	▪ Avoid surprises ▪ Secure low funding costs for future growth ▪ Stabilize R/I expenses	▪ Reduce risk capital requirements ▪ Support share buy-backs ▪ Enable M&A activities	▪ Reserve increases, bad winters, retrocession covers, growth strategy, … ▪ Customized features
Possible Solutions	▪ Introduce AAD ▪ Multi-line top-layers (short-tail or long-tail) ▪ Multi-line bundlers or aggregates ▪ Top and Drops, Top and Gaps	▪ Multi-line aggregates, 2nd /3rd event covers ▪ Quarterly protections ▪ Double trigger (u/w) based solutions ▪ Overall aggregate covers	▪ Multi-year Nat Cat top-layer or QS ▪ Multi-year structured QS ▪ Loss portfolio transfers / ADCs ▪ Combination of QS and Cat Aggregates	▪ Client specific demand driven solutions ▪ LPT/ADC/QS package ▪ Combination ILW and Cat Aggregate ▪ ILS-Reinsurance Combo

Efficiency

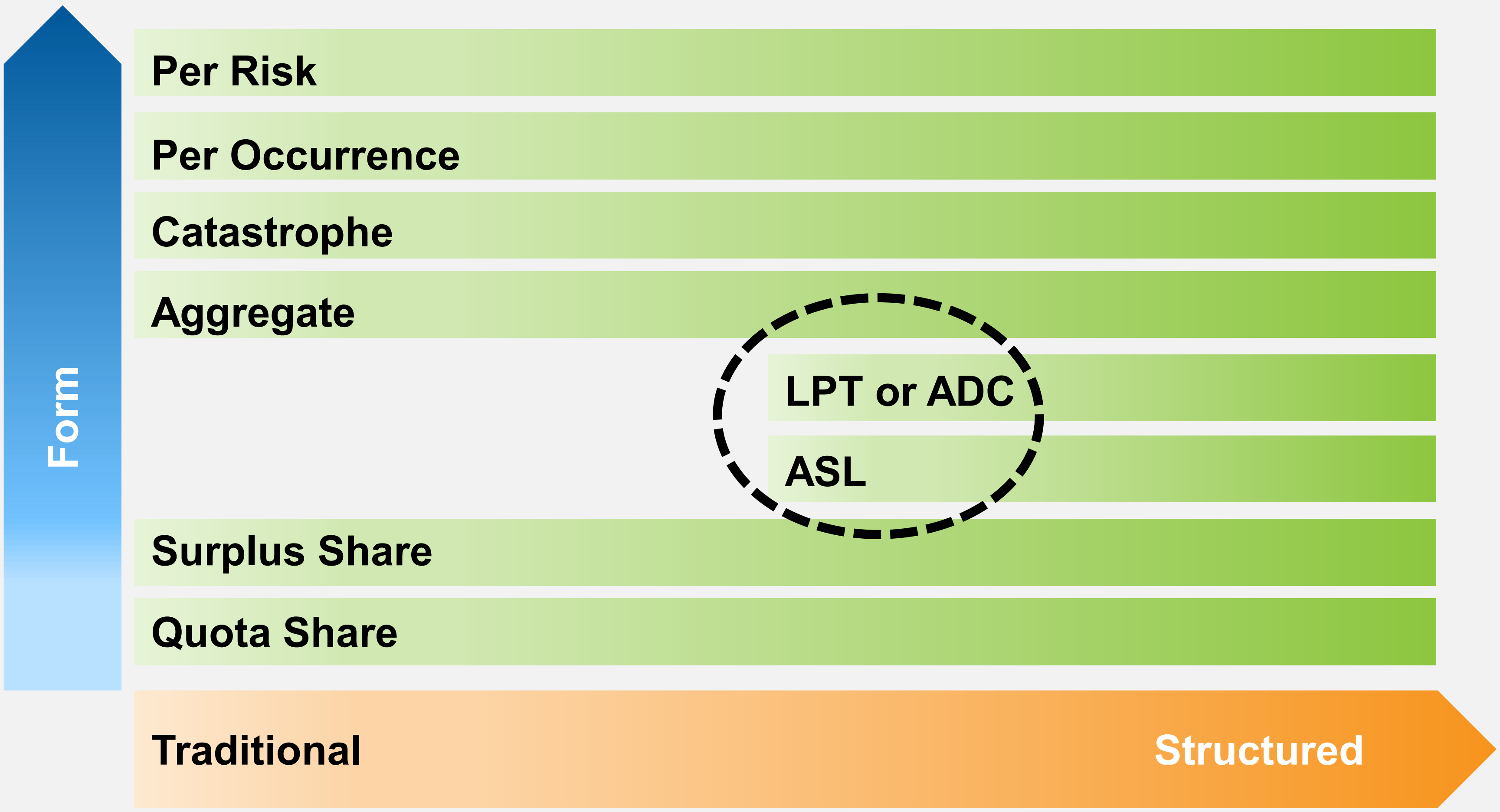


$692.5M
$516.0M
$141.0M
$75.0M
$22.0M
TICL LAYER
90% of $176.5M xs $516M
FHCF LAYER
90% of
$375M xs $141M
LAYER 2
100% of $150M xs $75M
LAYER 1A
50% of $53M xs
$22M (Prepaid)
LAYER 1B
50% of $53M xs
$22M (Multi YR)
RETENTION
$1,113.4M
$913.4M
$757.4M
$740.0M
SL
ROL: 24.211%
$204.0M
$175.0M
$75.0M
$25.0M
$10.0M
SL: 8.5%
144A CAT Bond
91.5% of $200M xs $75M
Single Shot Multi-Year
100% of $156M xs $75M
8.5% ROL
LAYER 3: 68% of $100M xs $75M
11.5% ROL
20%
SL: 12% of $100M xs $75M
FHCF
90% of
$536M xs $204M
7.81% ROL
LAYER 3
68% of $100M xs $75M; 11.5% ROL
20% of
$200M
xs
$75M
18.5% ROL
SL
38% of
$100M xs $75M
LAYER 2
42% of
$100M xs $75M
19% ROL
SL
34% of $50M xs $25M
Layer 1: 66% of $50 xs $25M
47.63% ROL
SL: 40% of $15M x $10M
U/L Layer: 60% of $15M xs $10M
33.25% ROL
SL: 100% of $7M xs $3M xs $7M
Retention

Bridging Expectations



Only tool available



Why Structured Reinsurance?

- Risk tranching
- Efficiency
- Bridging expectation gaps
- Only tool available
- When the old solutions don't fit

WHAT MAKES IT “STRUCTURED”?

Structured reinsurance is not a product

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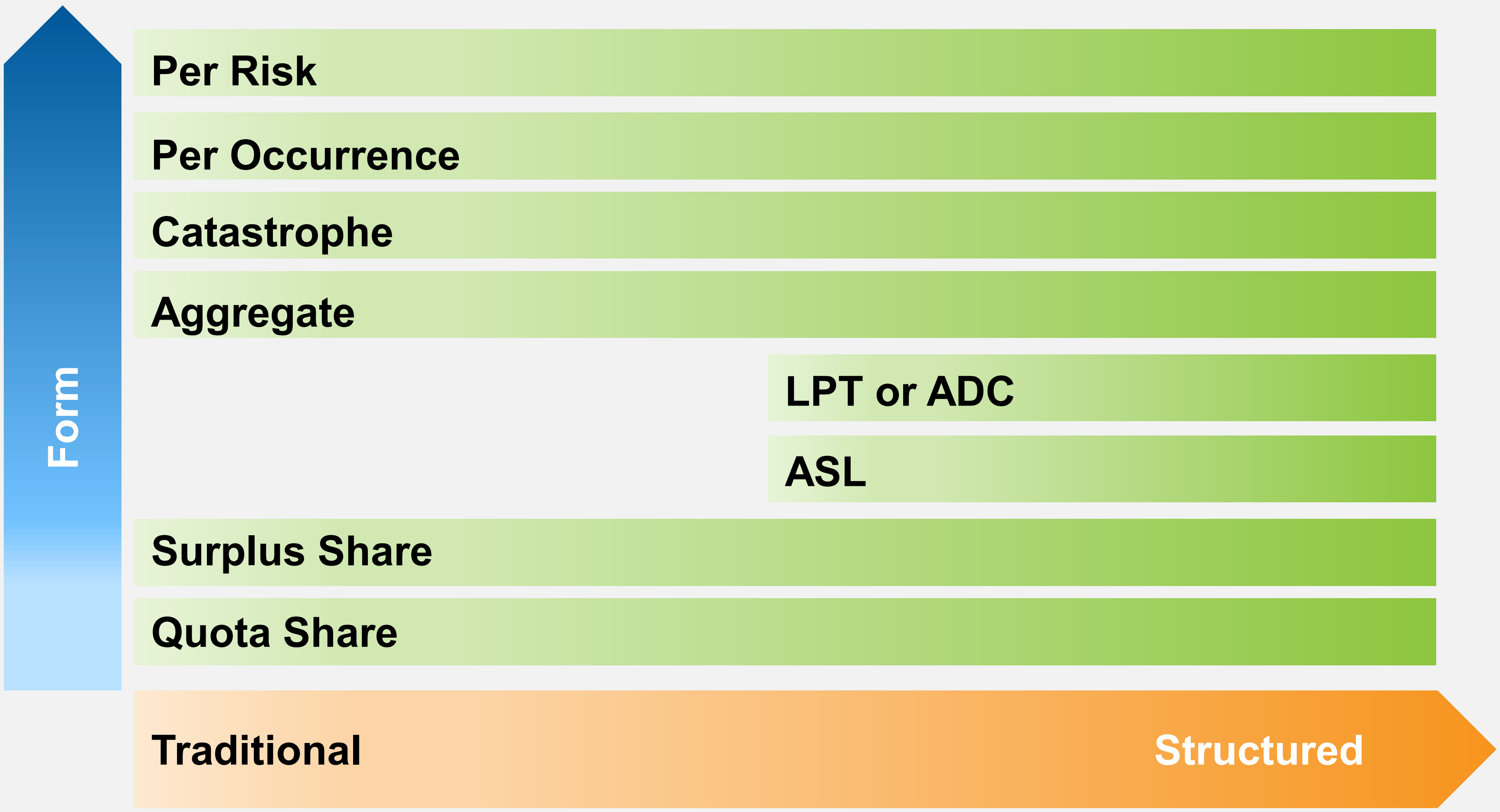


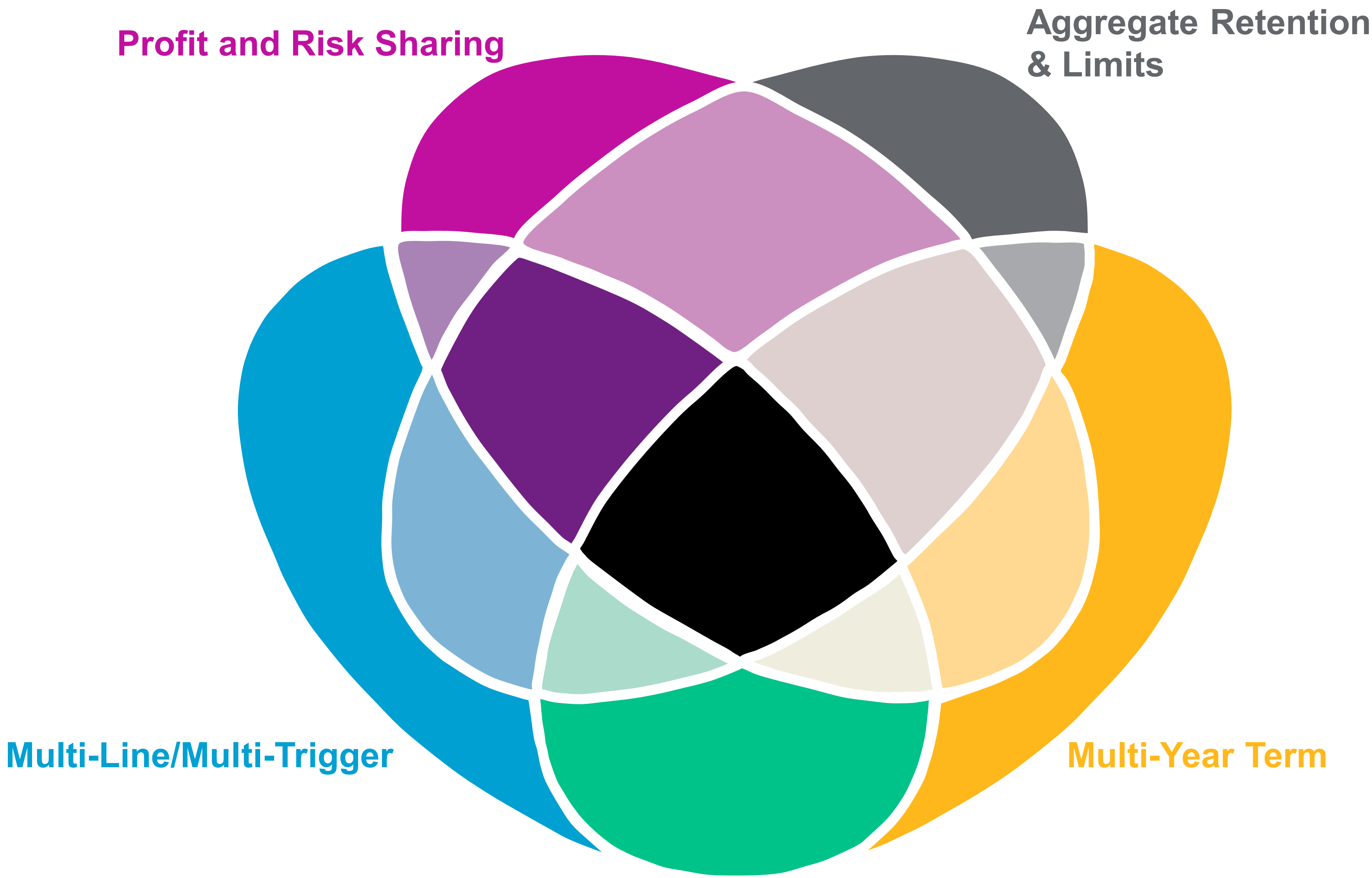
“Structured Reinsurance” is NOT a Product

Structured Reinsurance is an approach which:

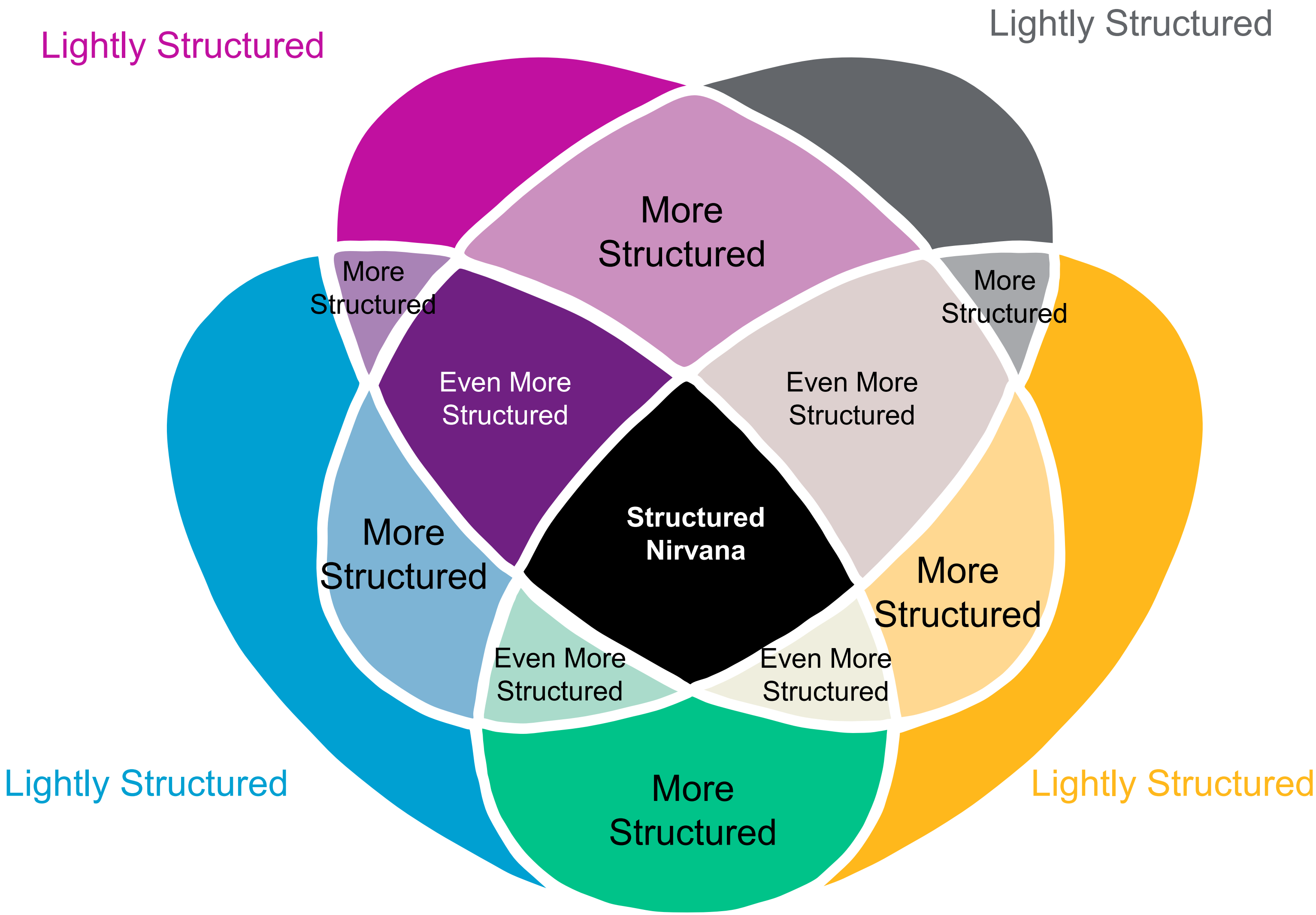
- Adds a spectrum of cost/risk combinations, and
- Seeks efficiencies by blending risks

This approach is implemented through a number of contract features which can be added to “traditional” reinsurance products or used to create new “structured” reinsurance products

Typical Features



Typical Features



Typical Features

Annual Aggregate Deductible (AAD)

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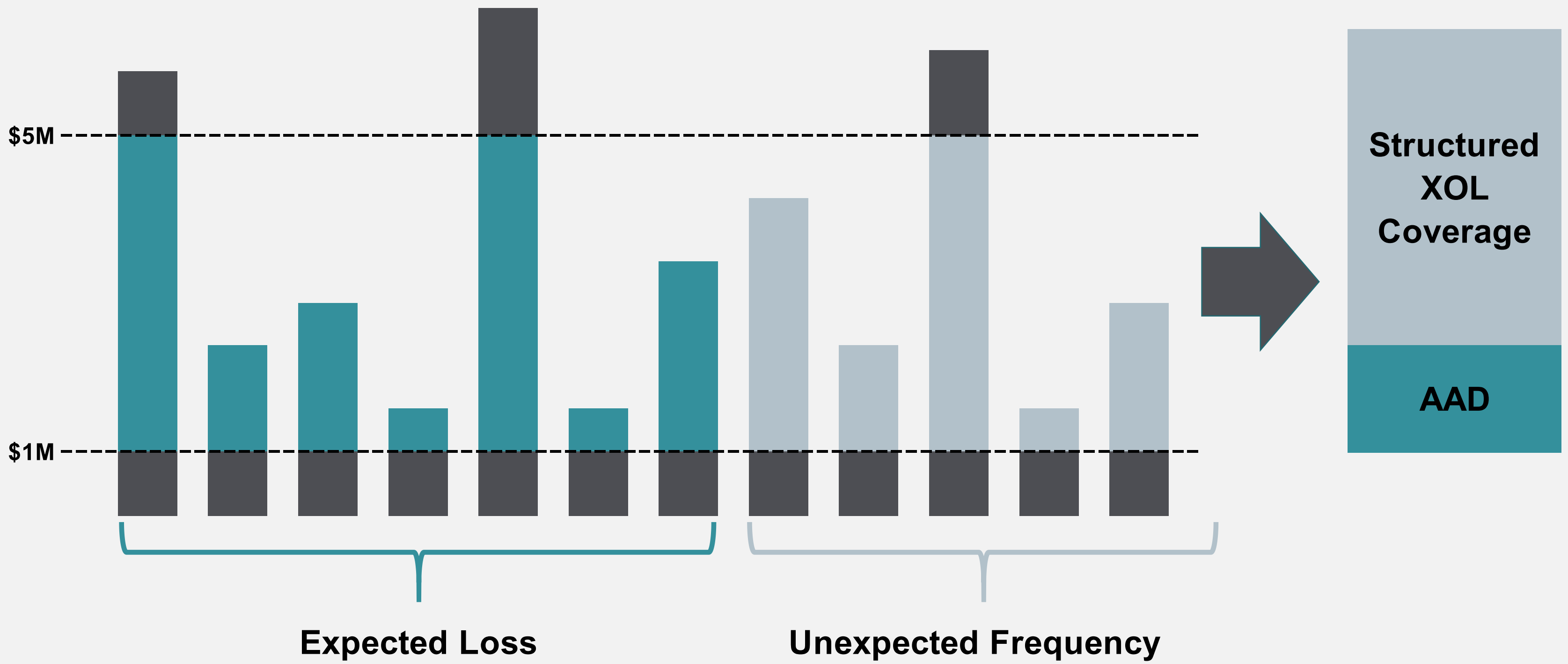
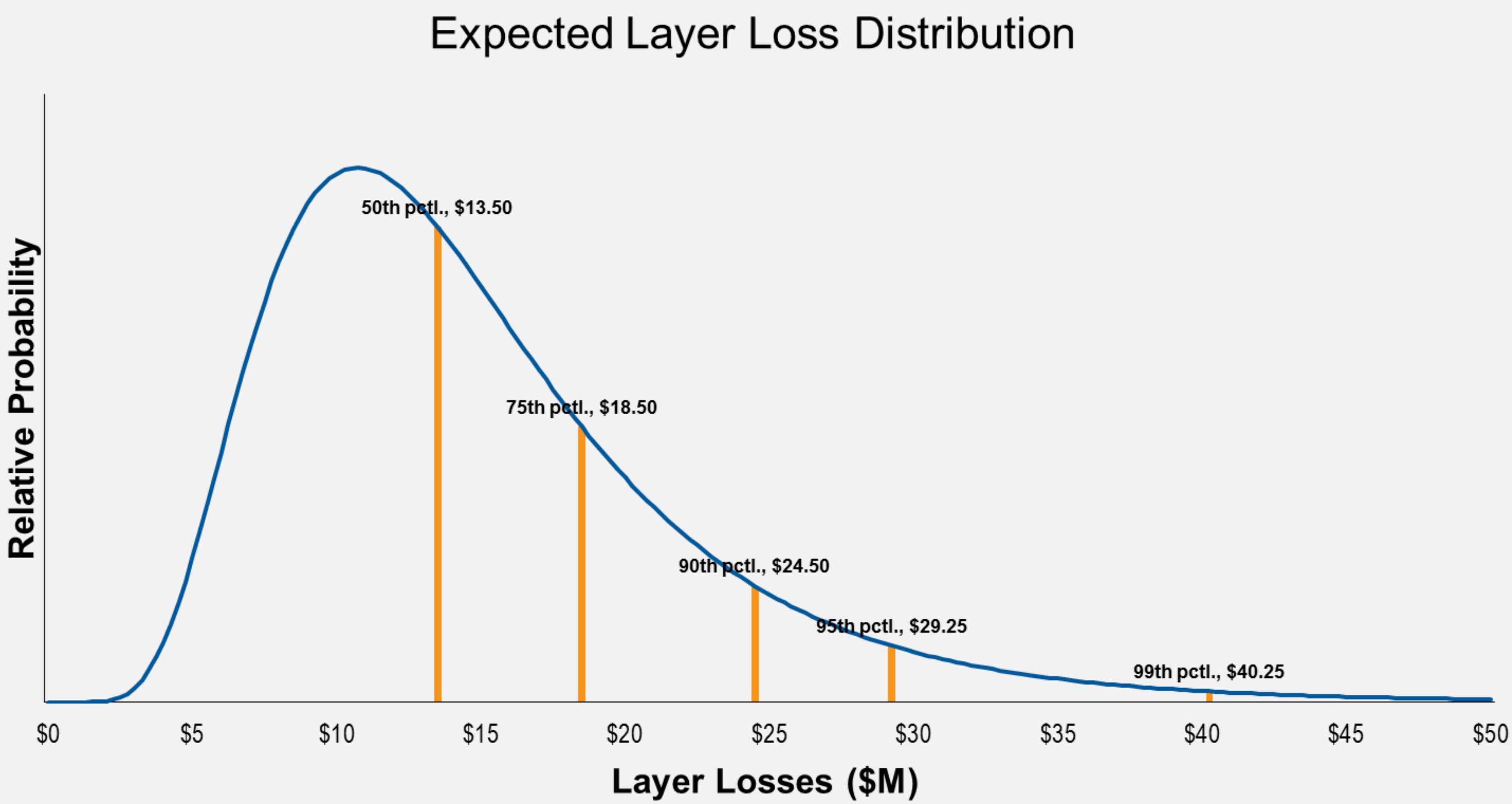
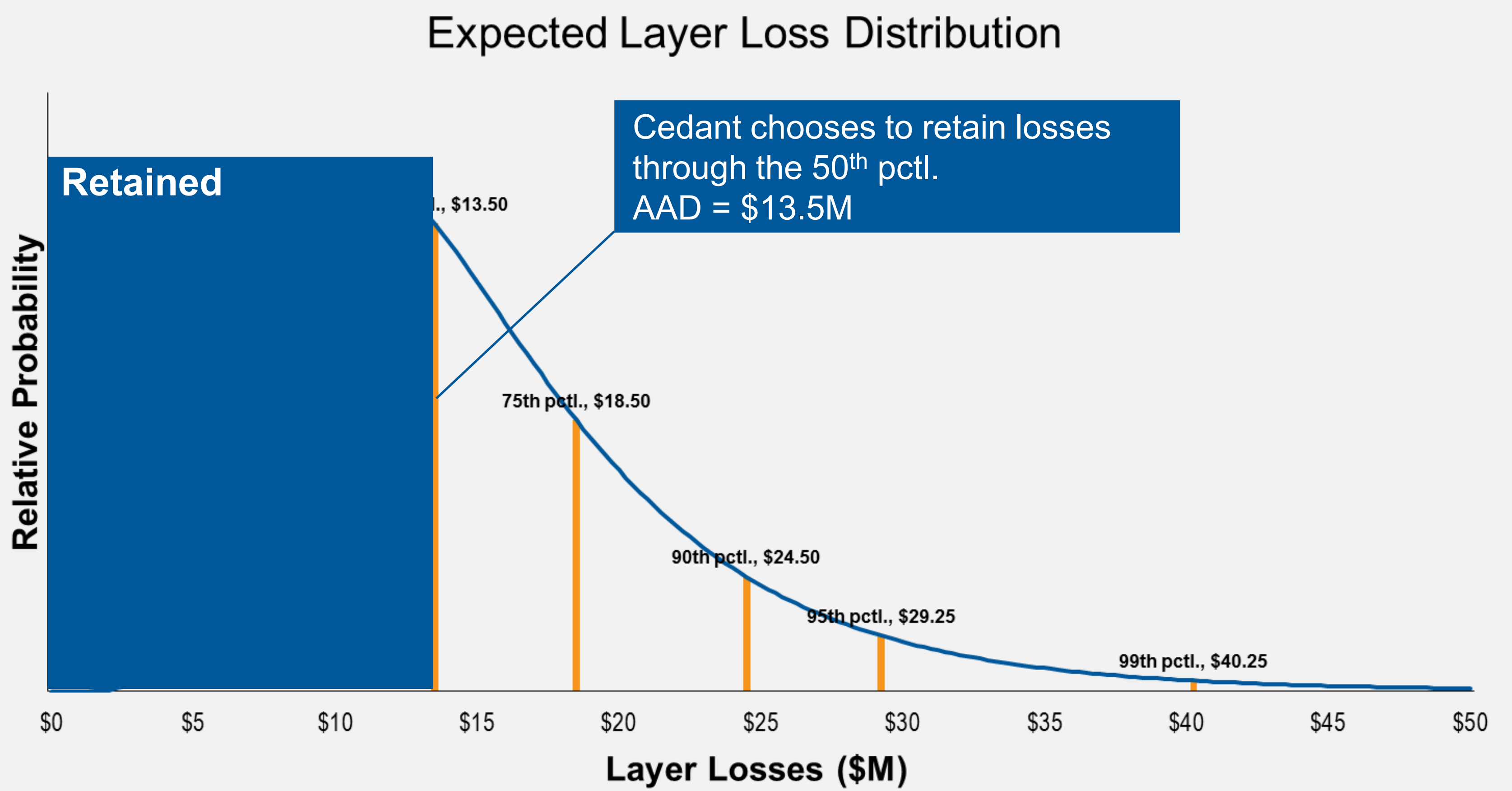


- Structured covers can be designed to address spikes in frequency and avoid dollar trading of expected losses
- An AAD can be selected at a level of loss in the layer that the Company is comfortable retaining - losses within this deductible are retained and losses above (the most volatile losses) are ceded

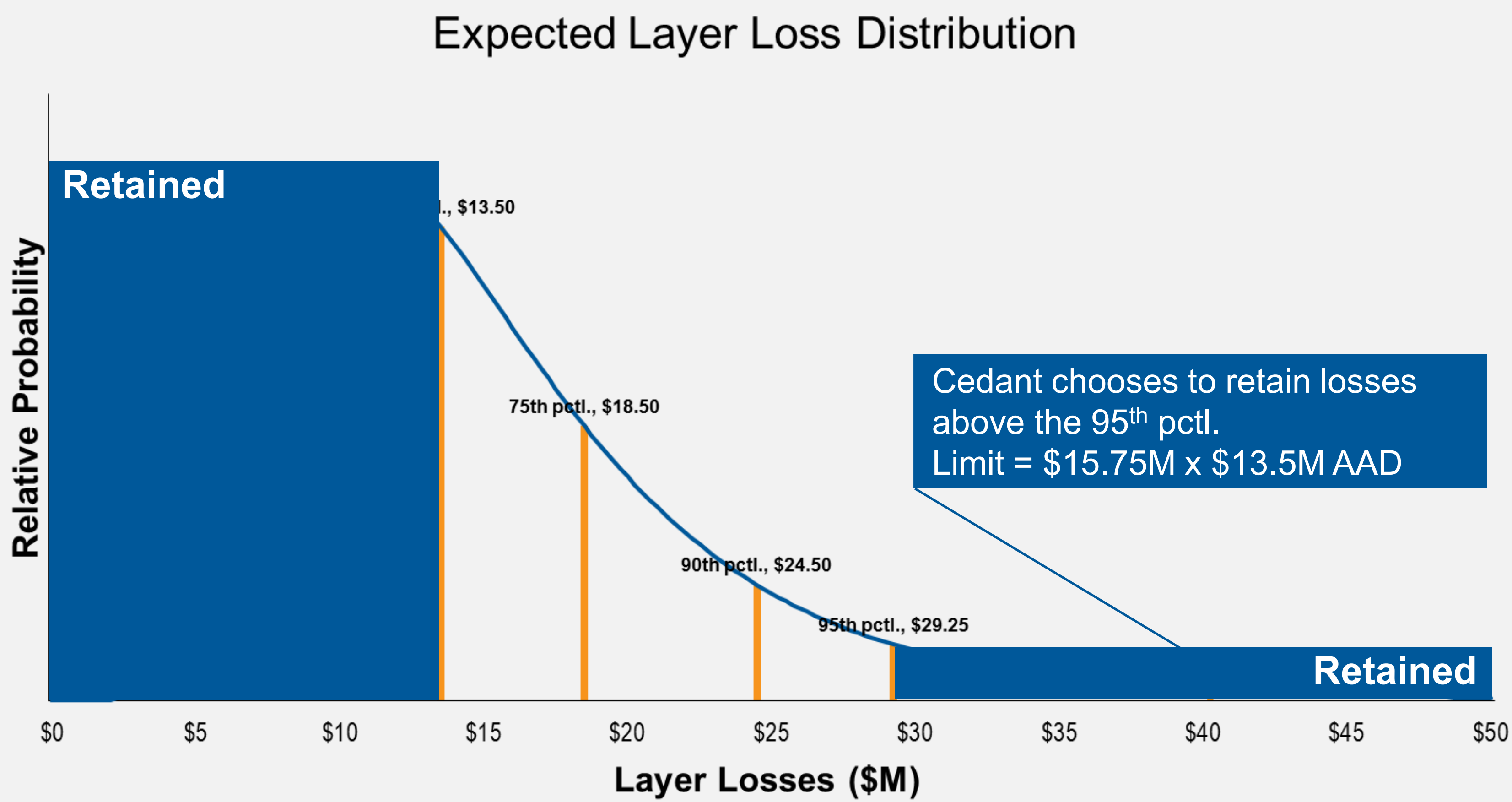
Annual Aggregate Deductible (AAD)



Annual Aggregate Deductible (AAD)

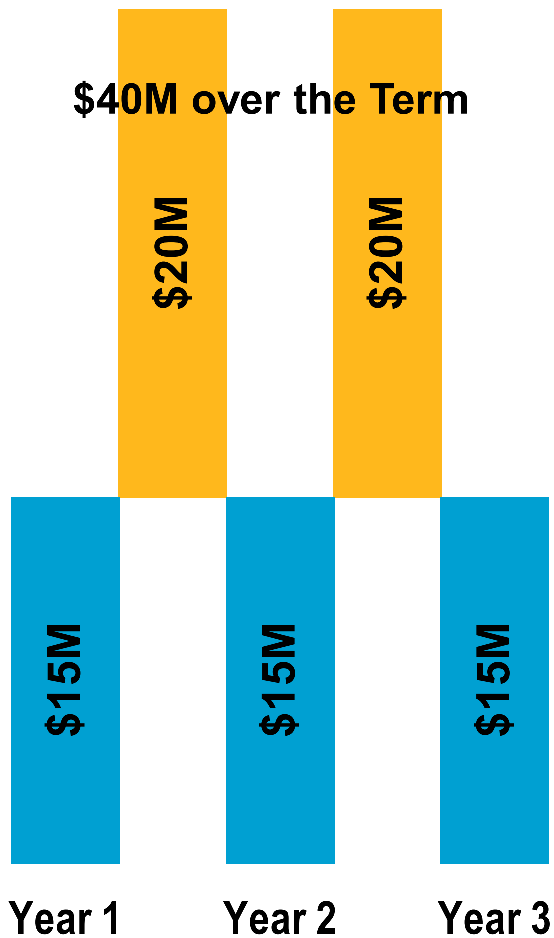


Annual Limits – Avoiding Unnecessary Cover



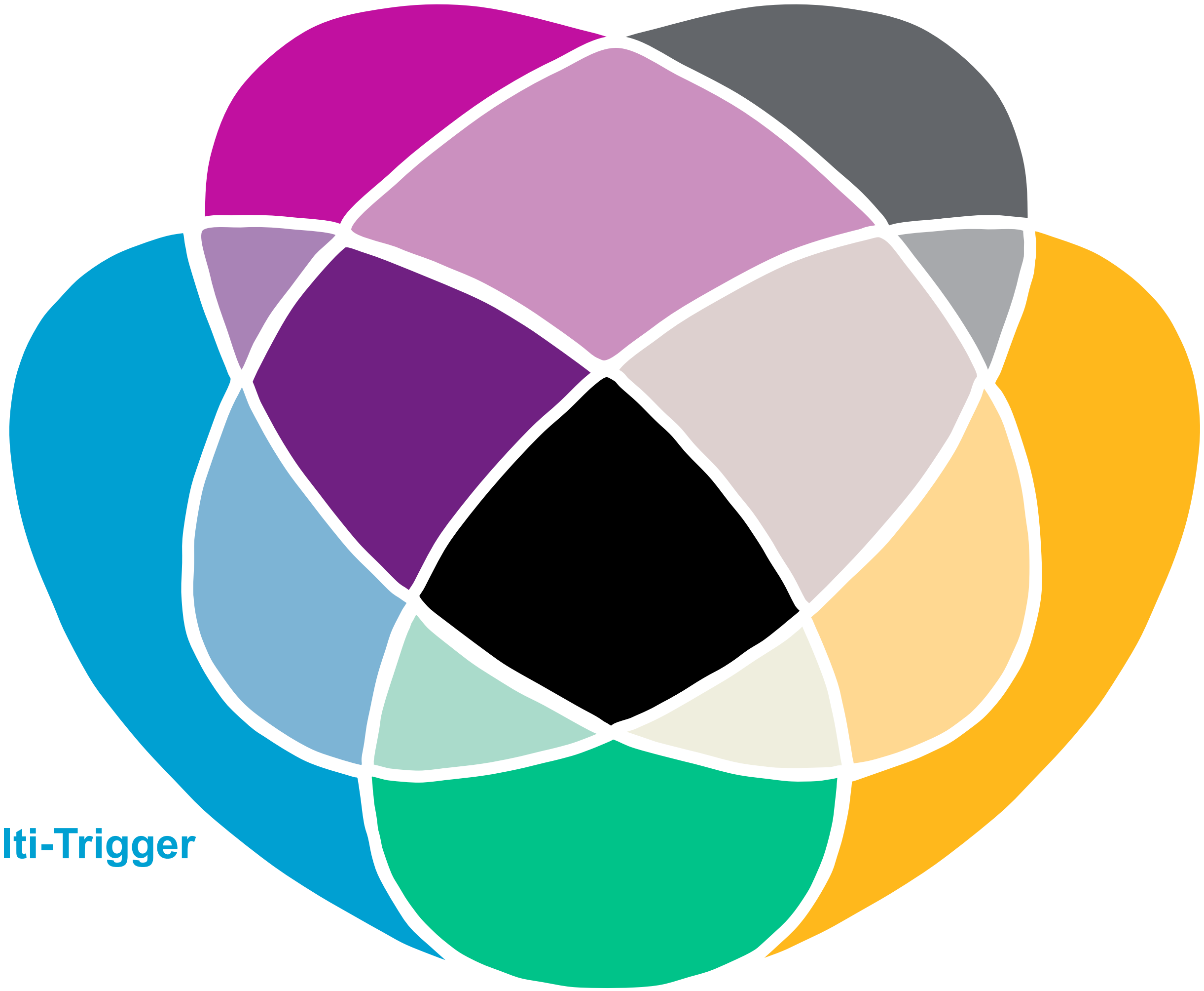
Typical Features

Limits - Achieving Efficiencies through a “Stretched” Term Limit



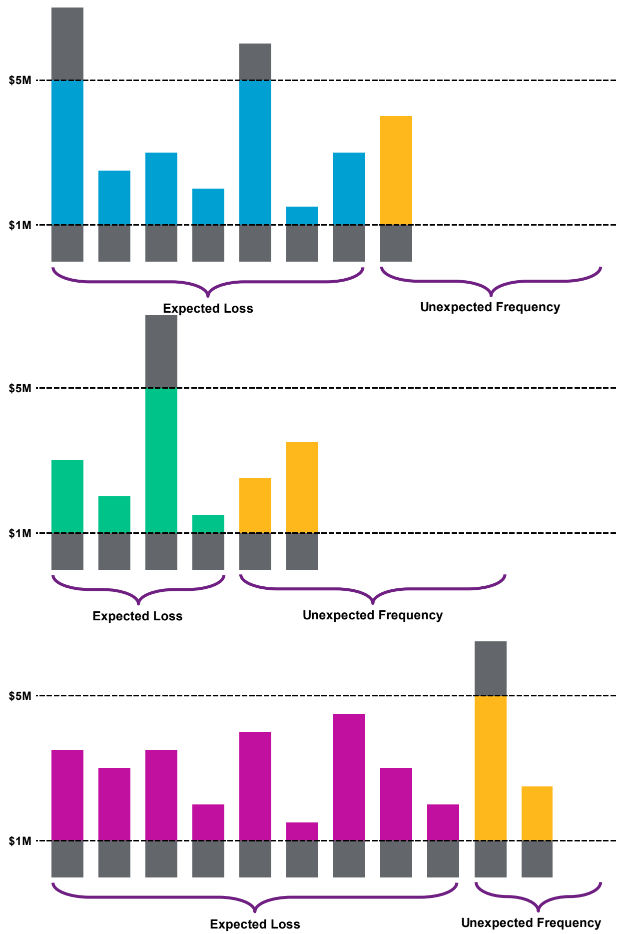
- Retaining expected losses, in conjunction with a multi-year, term allows the Cedant to “stretch” their limits and share annual limits between contract years.
  - The coverage has a 50% chance of attaching any one year and a roughly 5% chance of exhausting
  - The chance of attaching two years in a row is 25% and the chance of exhausting a full annual limit each of those two years is 0.25% assuming no correlation between years
  - The chance of attaching three years in a row is 12.5% and the chance of exhausting a full annual limit each of those three years is 0.0125% assuming no correlation between years
  - Two full annual limits available over three years provides a significant degree of protection
  - The Cedant can recover $20M (excess of $15M) any one year but no more than $40M over the three year term. The Cedant can recover each and every year, subject to these limits

Typical Features



Multi-Line/Multi-Trigger

Achieving Efficiencies through a Multi-Line Cover



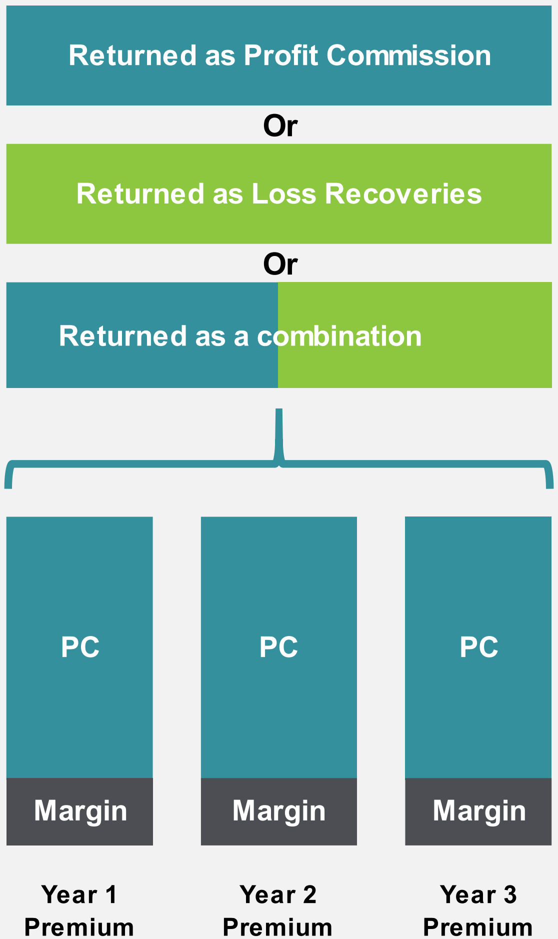
- The same efficiencies available through a multi-year term can be achieved on a single year basis by covering multiple non-correlated lines of business.
  - Covering multiple non-correlated, or weakly correlated lines in a single contract allows the Company to avoid "silo" thinking and set an aggregate retention on an enterprise basis
  - Since there is a lower probability of adverse results in multiple lines, the amount of annual limit can be reduced – in effect limit can be shared across lines just as it was shared across years in the prior example

Multiple Trigger – Taking Advantage of Diversification

Typical Features

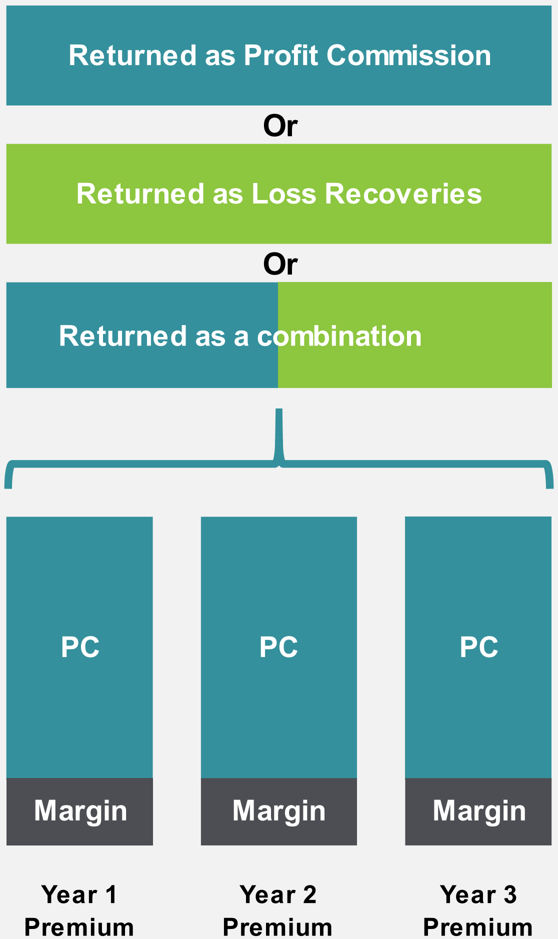
Profit and Risk Sharing

Alignment of interest



- Profit Commission structures bridge pricing differences between the Cedant and reinsurer
  - Under this feature, a substantial portion of the premium may be returned to the Cedant as a Profit Commission if experience is favorable
  - If experience is poor, the entire premium is available to offset ceded losses, reducing the reinsurer’s downside risk
  - The PC depends on experience over the entire term and is received once the contract is commuted which is at the Cedant’s sole discretion
  - Partial PCs are possible – unlike a No Claims Bonus this is not an all or nothing feature
  - The portion of the annual premium kept by the reinsurer, the margin, is the true cost of coverage - the portion of the annual premium in excess of margin will be returned to the Cedant as a PC, a loss recovery or a combination of the two

Alignment of interest

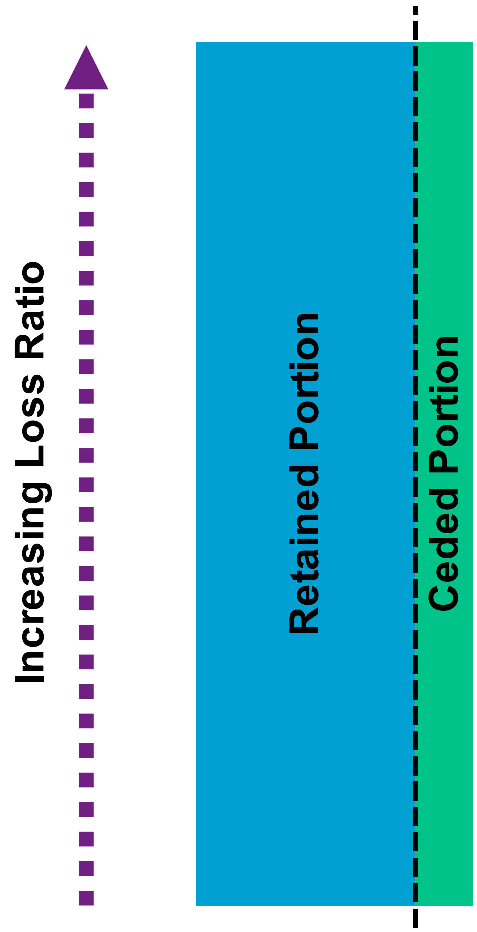


- Calculating the Experience Account Balance
  - For each Contract a separate Notional Experience Account Balance (EAB) is calculated each quarter as follows:
    - The prior quarter's balance ($0 at inception), plus
    - The Reinsurance Premium paid during the quarter, less
    - The Ceding Commission, if applicable, on the Reinsurance Premium, less
    - The reinsurer's margin on the Reinsurance Premium, less
    - Losses paid during the quarter, plus
    - An interest credit (which differs for funds transferred vs. funds withheld)
  - The Profit Commission due is a contractual liability of the reinsurers and is accrued currently by the Cedant and received upon commutation (at the Cedant's sole option)

EXAMPLES – APPLYING STRUCTURED REINSURANCE CONCEPTS TO PRODUCTS

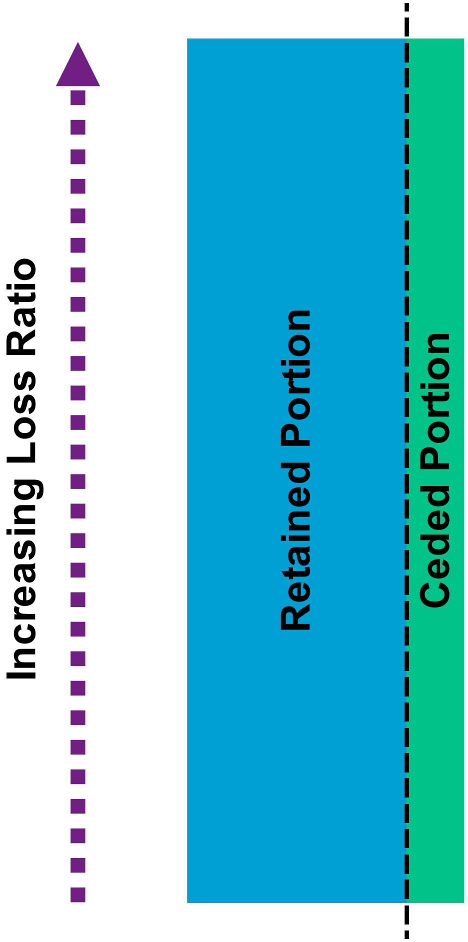
EXAMPLE 1
SURPLUS RELIEF QUOTA SHARE

Traditional Quota Share



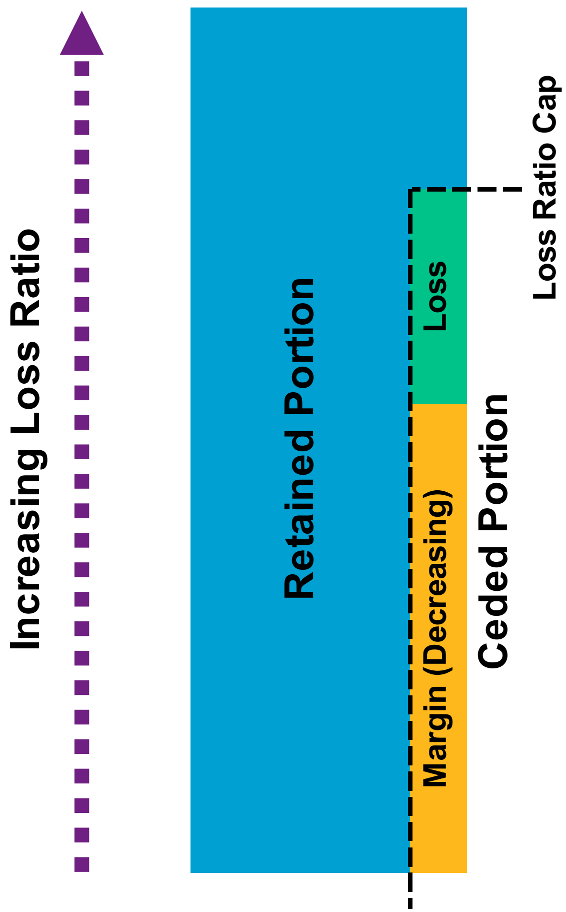
- Traditional quota share contracts put the reinsurer in the same position as the cedant
- What do we mean by a "traditional" quota share?
  - Flat ceding commission
  - No limitation on losses
  - Reinsurer shares in the results with the cedant
- Traditional quota shares represent an economic partnership between the cedant and reinsurer and may require significant due diligence depending on the nature of the business reinsured and the amount of risk assumed

Traditional Quota Share



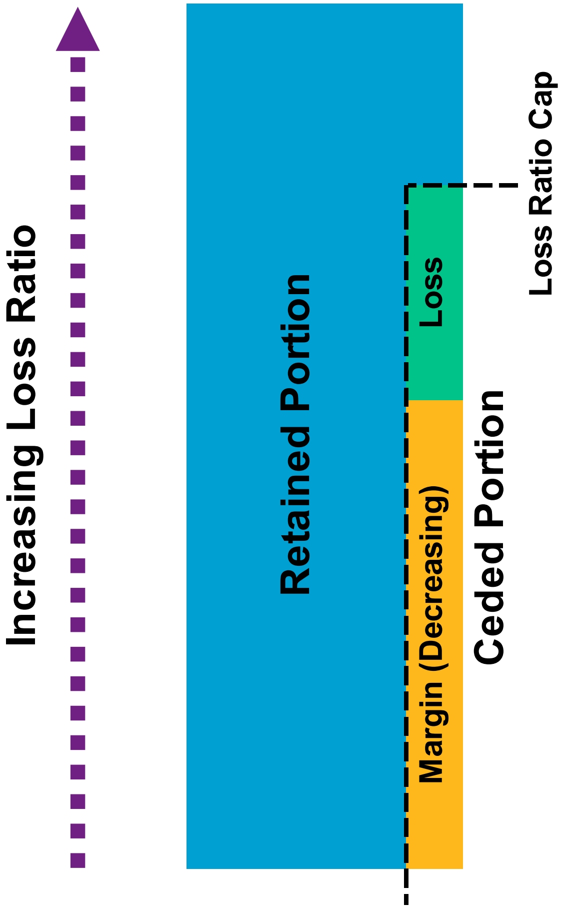
- When would a company seek a quota share?
  - If it seeks to reduce exposure to a particular line of business
  - To achieve an “over-ride” a ceding commission in excess of expenses on a profitable line
  - To reduce premium leverage when capital is constrained
  - To reduce surplus strain from expenses through a ceding commission
- A Traditional Quota Share is the right solution to the first two motivations, but is it the best solution to the last two? What if you’re just seeking leverage or surplus relief rather than an economic partner?

Surplus Relief Quota Share



- A better answer might be a structured, or Surplus Relief Quota Share
- Surplus Relief Quota Shares are designed to:
  - Provide the required surplus and leverage relief to the cedant, and
  - Allow the cedant to share in the profit of the ceded business if results are favorable
- A Traditional Quota Share is analogous to equity: the reinsurer fully participates in the results of the underlying business
- A Surplus Relief Quota Share is analogous to debt: the reinsurer's upside is limited, but they also take on less downside risk

Surplus Relief Quota Share

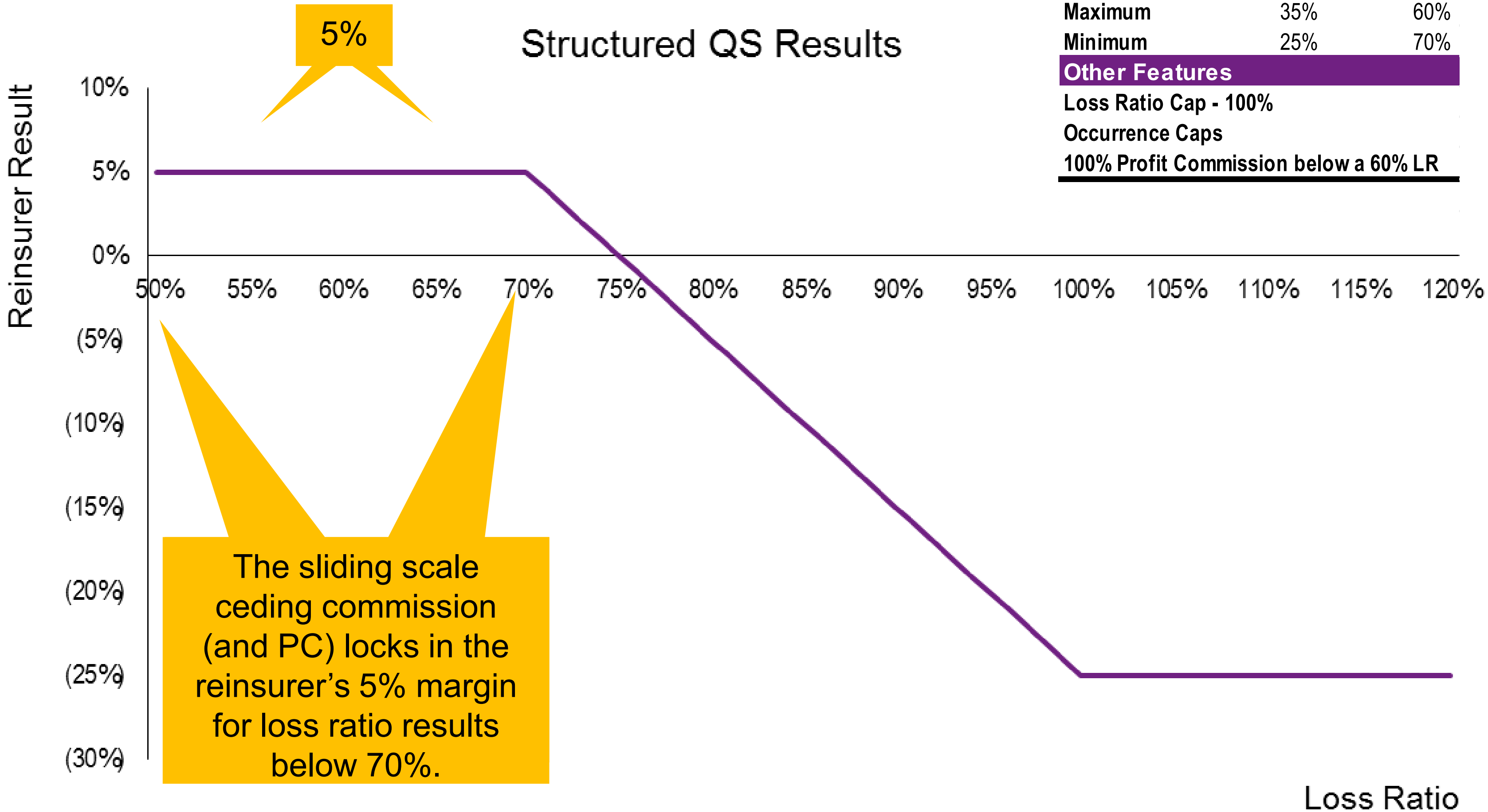


- Common features of Surplus Relief Quota Shares include:
  - Loss Ratio and Occurrence Caps
  - Sliding Scale Ceding Commissions
  - Profit Commissions
- The sliding scale ceding commission feature provides the reinsurer with a fixed "margin" over a range of outcomes
- The provisional cede is set at the expected loss ratio and varies based on actual results

Example – Sliding Scale in Operation

Structured QS

Ceding Commission		at LR
Provisional	30%	65% implied
Maximum	35%	60%
Minimum	25%	70%
Other Features		
Loss Ratio Cap - 100%		
Occurrence Caps		
100% Profit Commission below a 60% LR		



Example – Minimum Cede

Structured QS

Ceding Commission		at LR
Provisional	30%	65% implied
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Other Features		
Loss Ratio Cap - 100%		
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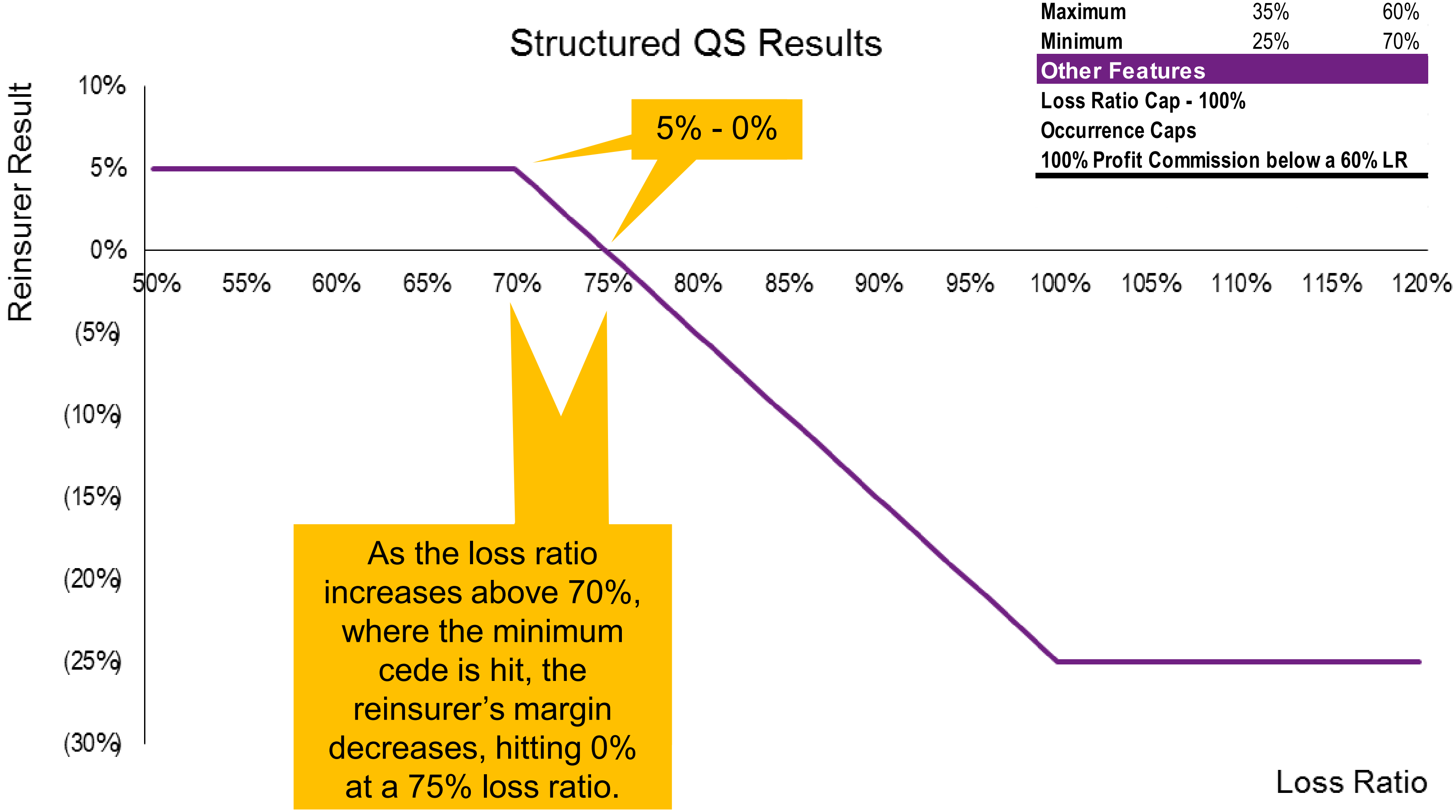
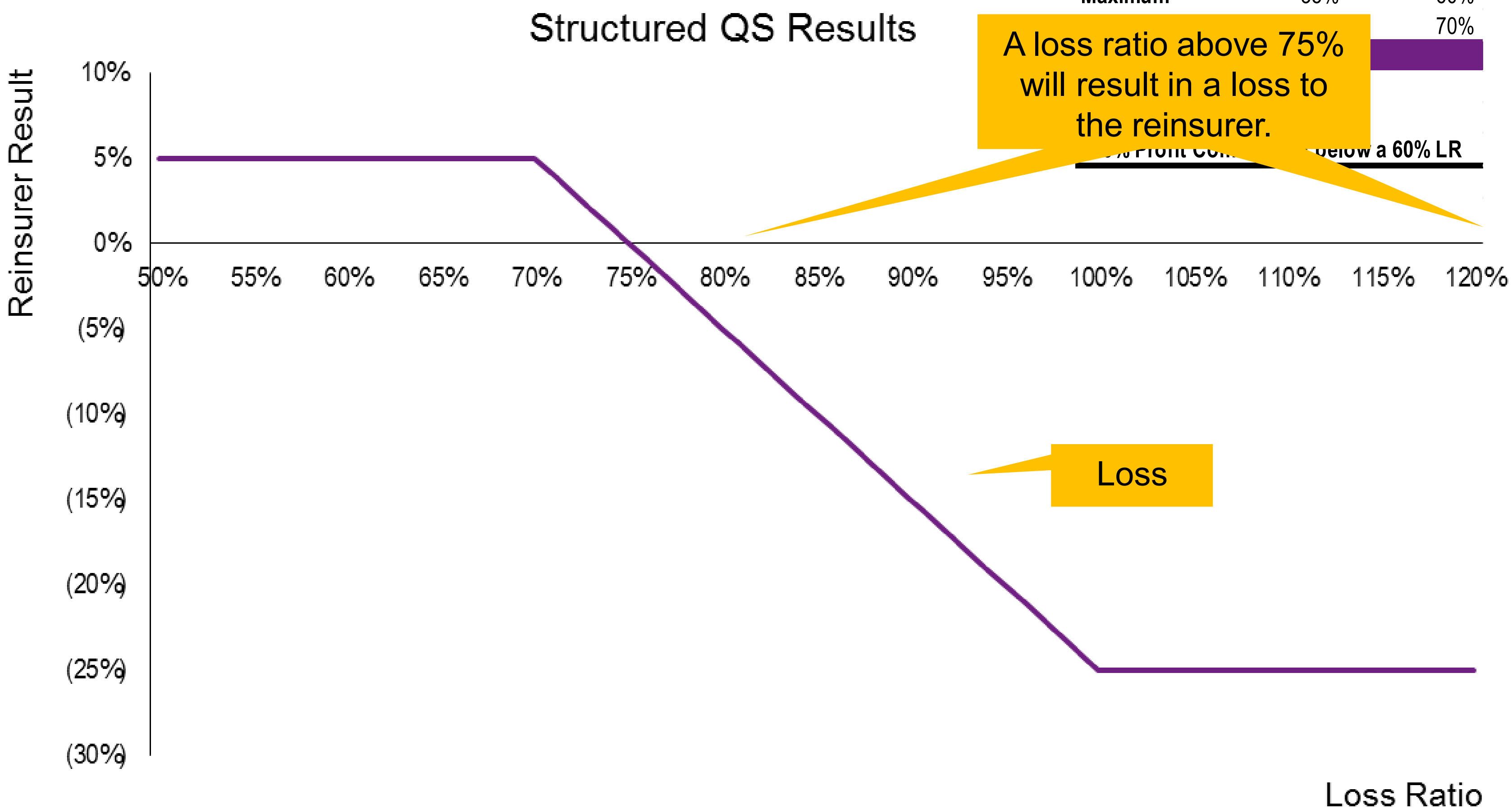


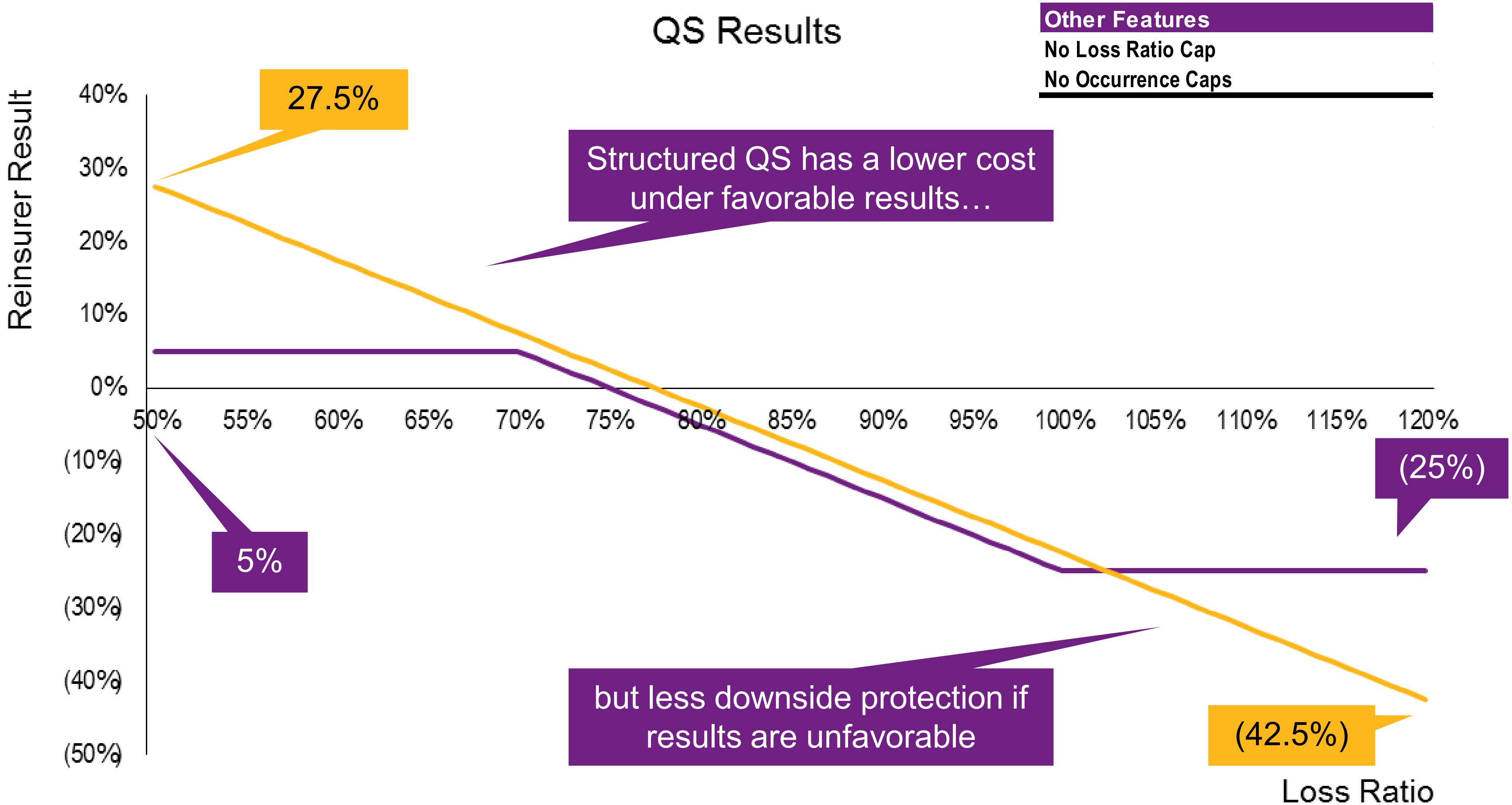
Example – Reinsurer Loss

Structured QS

Ceding Commission		at LR
Provisional	30%	65% implied
Maximum	35%	60%
		70%



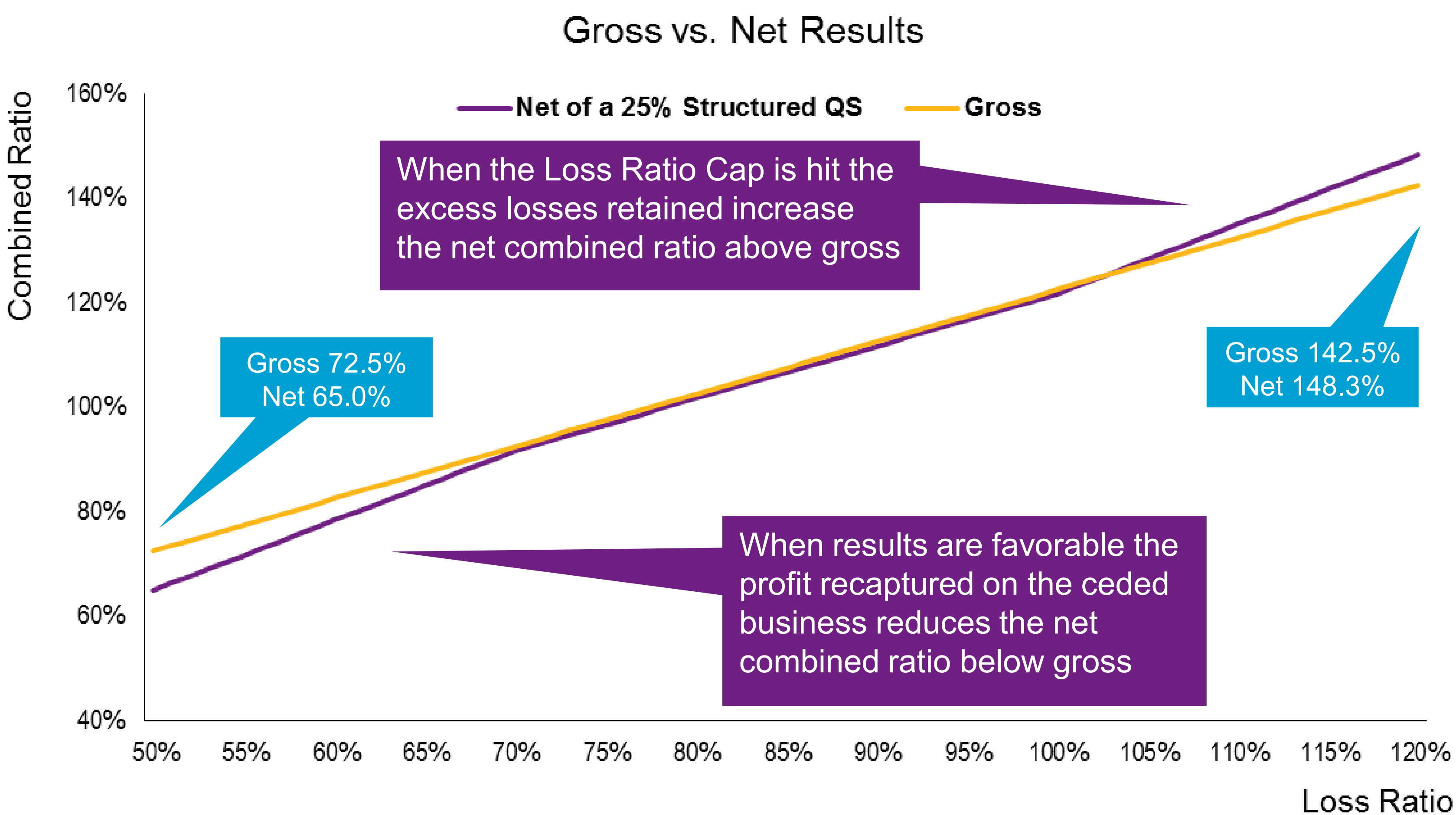
Comparison to Traditional QS



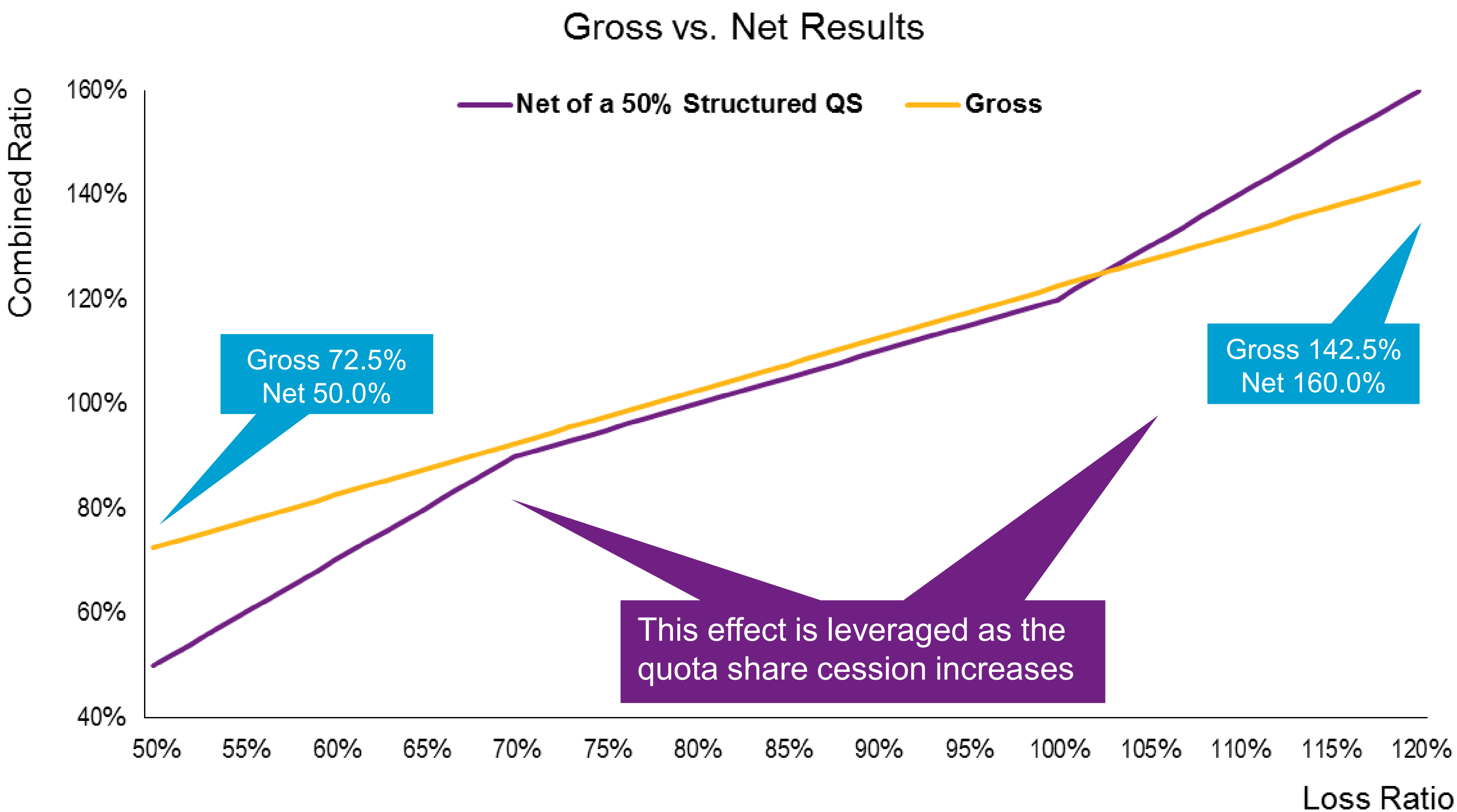
Traditional QS

Ceding Commission	
Flat	22.5%
Other Features	
No Loss Ratio Cap	
No Occurrence Caps	

Effect on Net Combined Ratio



Effect on Net Combined Ratio



Structured Reinsurance

Themes

- Wider spectrum of cost/risk combinations
- Seek efficiencies by blending risks

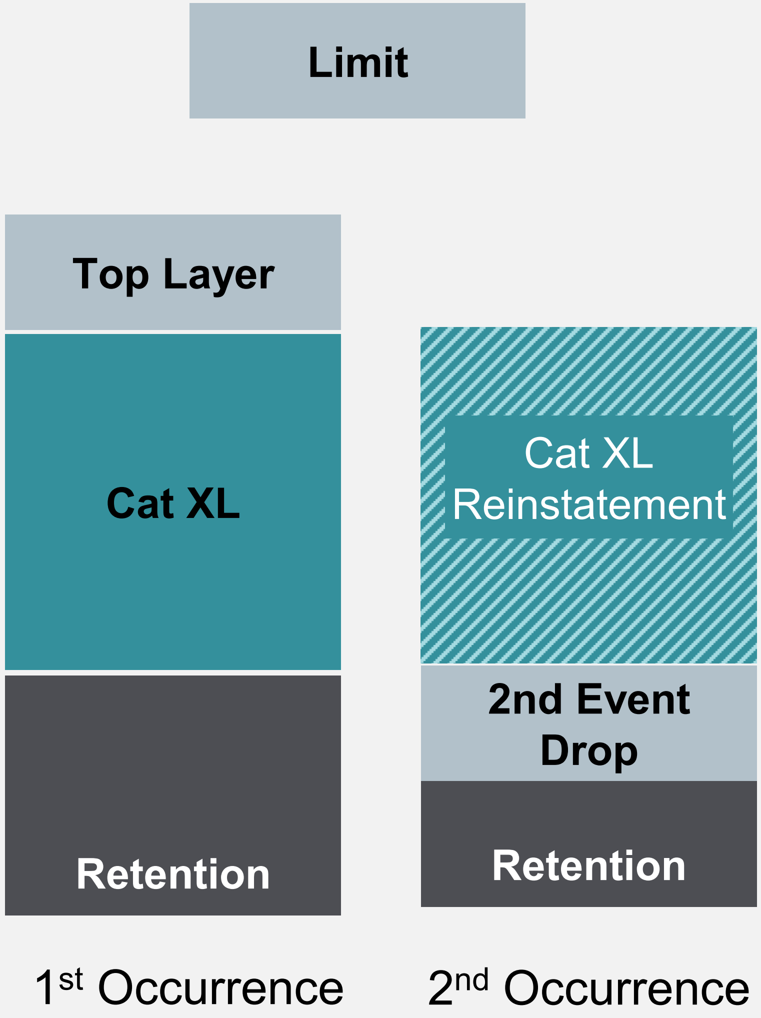
Methods

- Aggregate Retention and Limits
- Multi-Year Terms
- Multi-Line/Multi-Trigger
- Profit and Risk Sharing

EXAMPLE 2
PROPERTY CAT “TOP AND DROP”

"Top and Drop"

- "Top and Drop" Features:
  - One Shared Limit
  - The Limit provides protection where needed for either:
    - Severity – If a single event exceeds the Company's catastrophe coverage, or
    - Frequency – To reduce the Company's effective catastrophe retention if there are multiple events within the Company's catastrophe coverage
  - Achieves lower cost due to sharing of limit and helps overcome minimum ROL requirements
  - Provides horizontal protection when Company and competitors are suffering from losses



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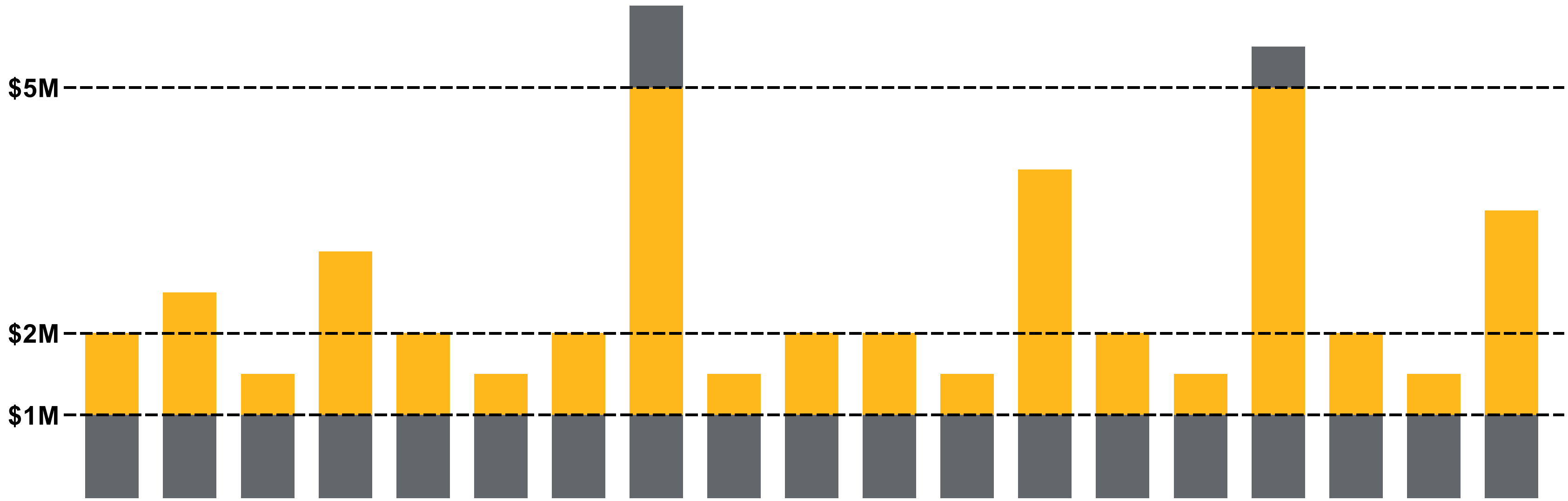
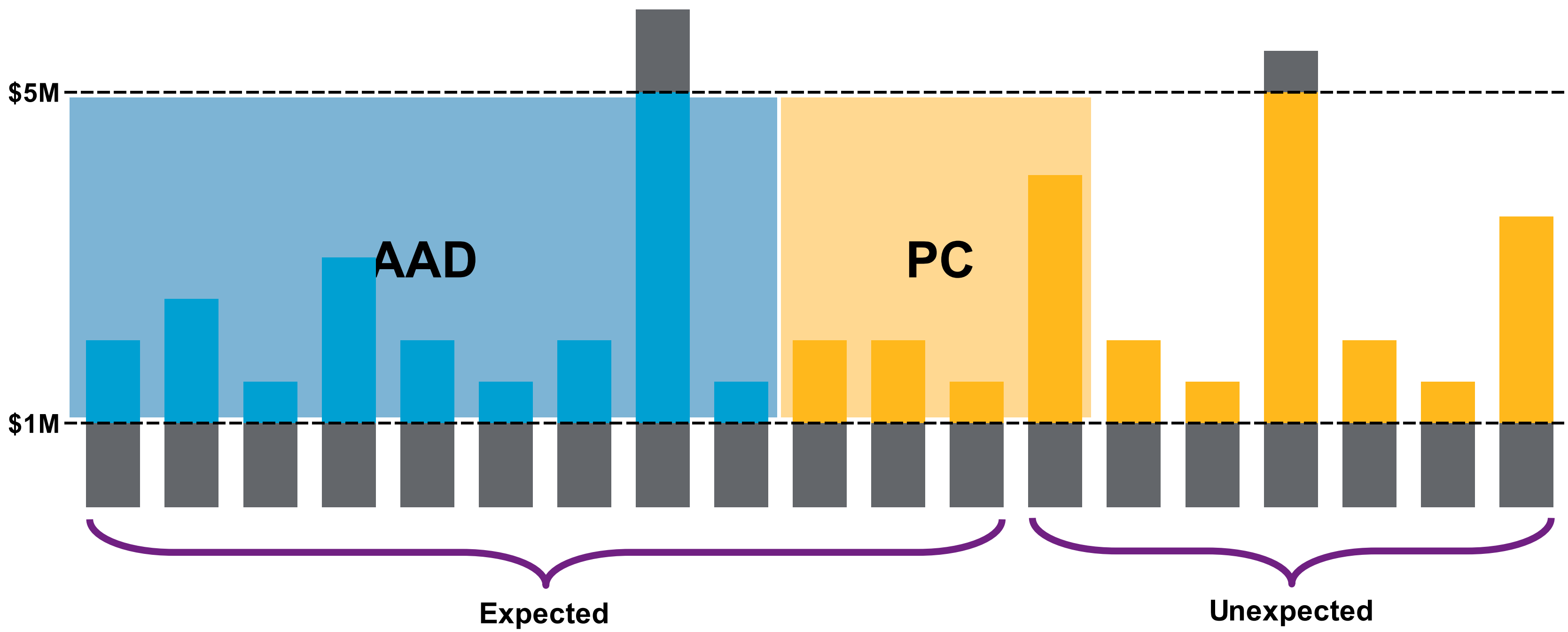
EXAMPLE 3
LOW LAYER FREQUENCY COVER

Low Layer Frequency Cover



- Company previously purchased reinsurance coverage of $4M x $1M per occurrence but was forced to raise retention to $2M due to relatively high cost.
- Company still has protection for relatively infrequent severity losses above $2M but now retains exposure to a frequency of losses in the $1M x $1M layer.

Low Layer Frequency Cover



- A structured XOL with an AAD allows the Company to purchase protection against frequency in the $1M x $1M layer while avoiding dollar trading.
- Placing it on a multi-year basis with a Profit Commission allows the Company to manage its retention over a longer time frame and share limit between years.

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EXAMPLE 4
AGGREGATE STOP LOSS

Aggregate Stop Loss (ASL)

- An Aggregate Stop Loss (ASL) is a prospective reinsurance structure that can:
  - Protect against surplus loss
  - Reduce earnings volatility
  - Manage retentions
- ASLs attach and provide coverage based on the cedant's overall net loss ratio
- All other reinsurance programs; per risk coverage, excess of loss coverage, etc., inure to the benefit of the ASL

ASL coverage

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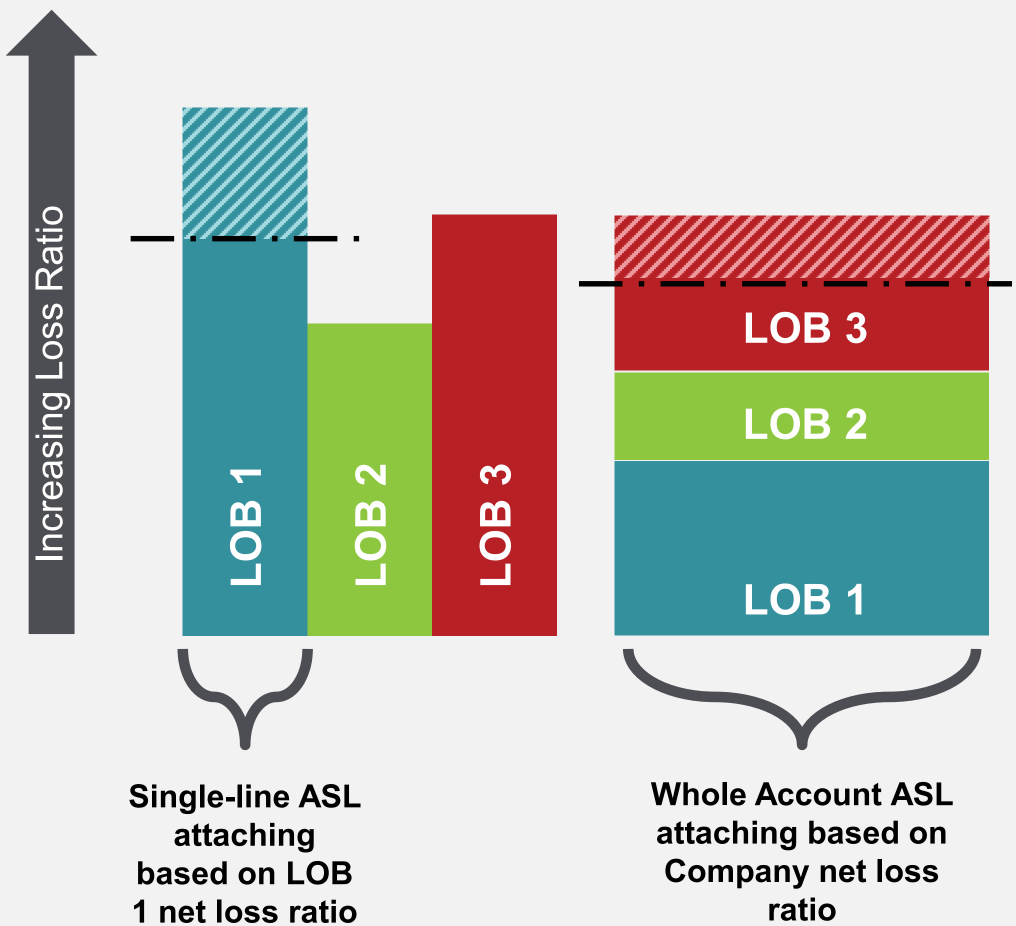
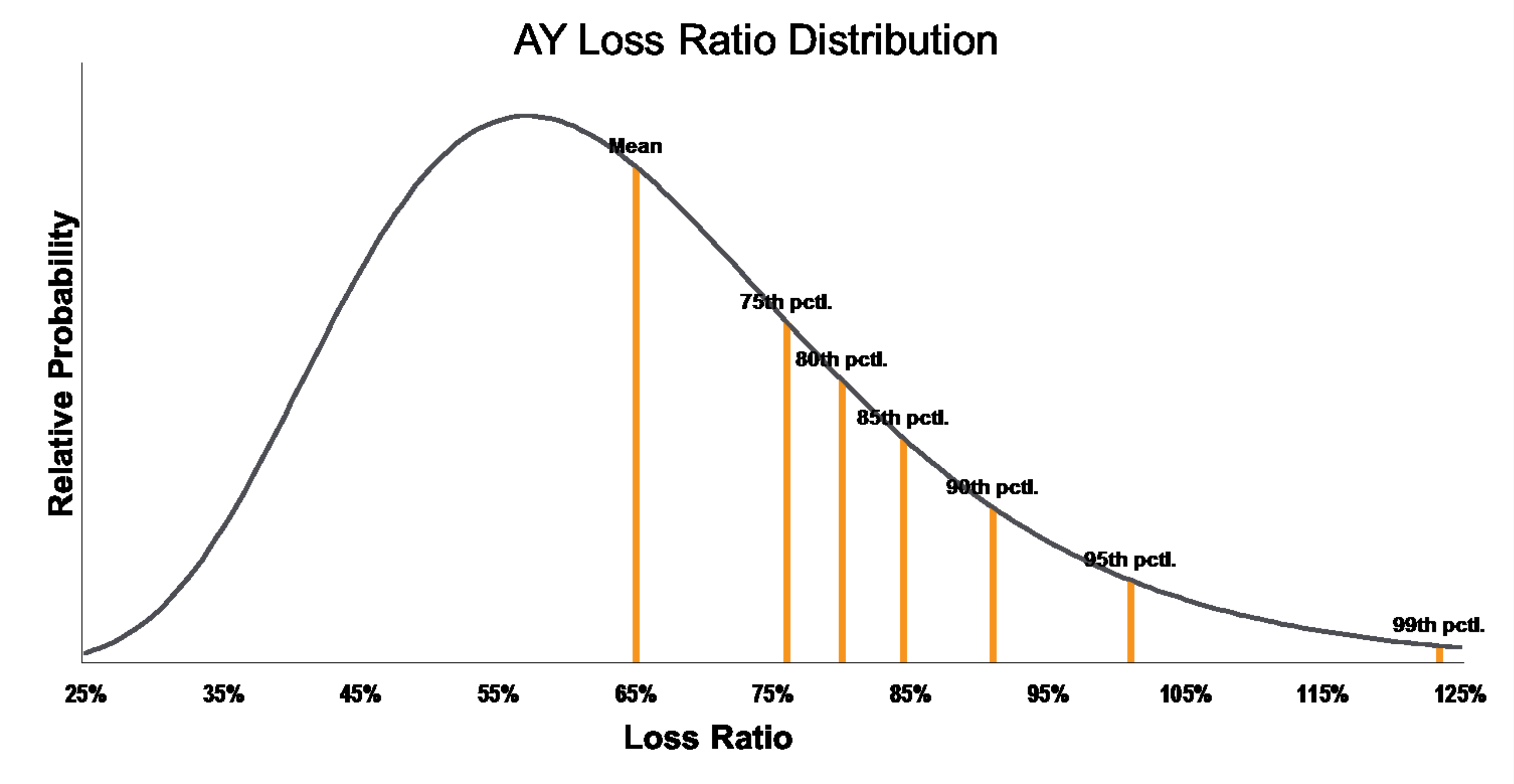
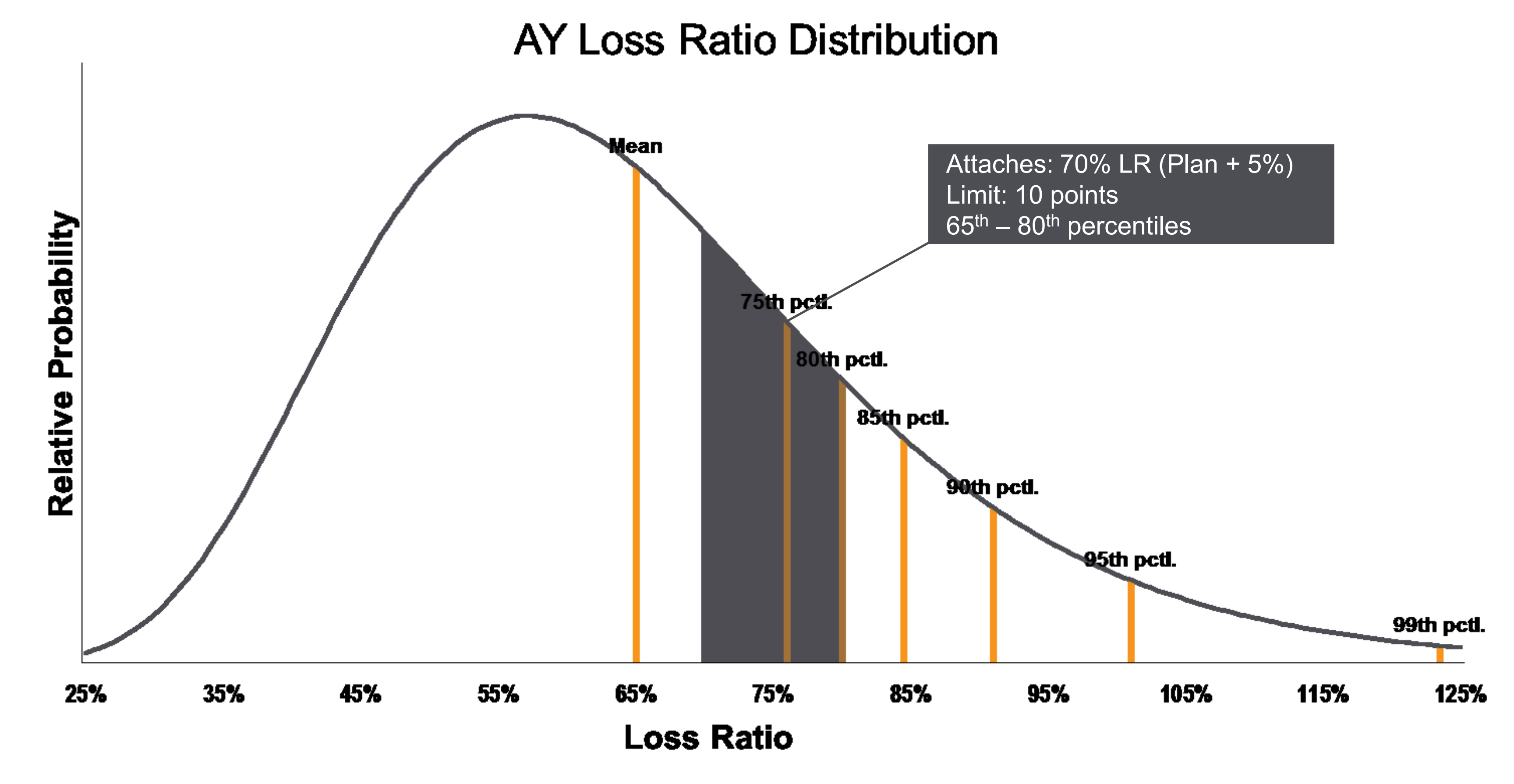


- ASLs can cover single or multiple lines
- Single-line covers (e.g., WC only) are best at addressing specific concerns and are the easiest to execute
- Multi-line or "Whole Account" ASLs are better at addressing general concerns (e.g., earnings volatility, surplus loss) and offer several advantages
- If the covered lines are non- or only weakly correlated the diversification benefit can reduce the cost of coverage
- Allows sharing of coverage between lines so less limit is required

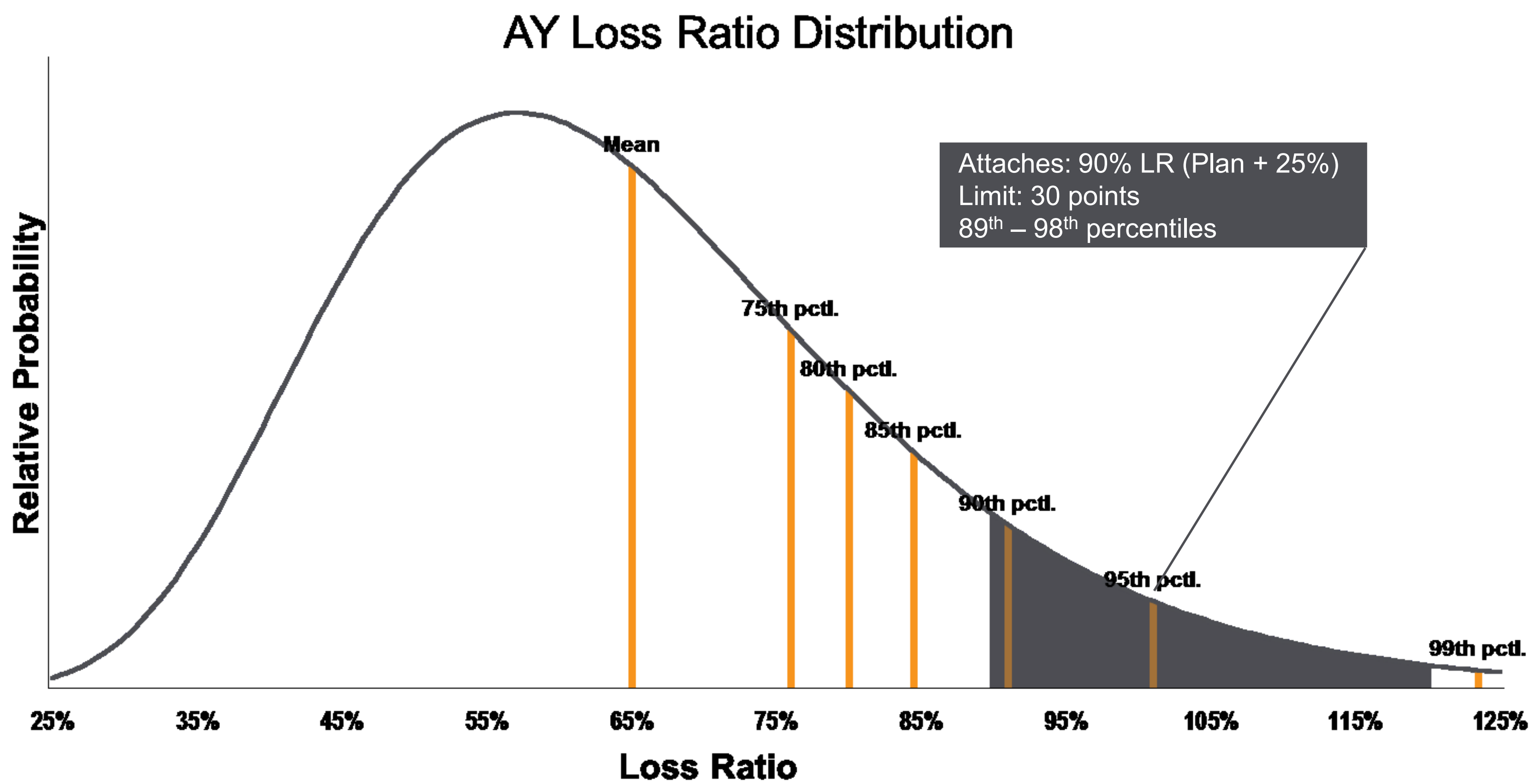
ASL attachment and motivation



ASL attachment and motivation
Reduce volatility



ASL attachment and motivation
Protect surplus



Only tool available

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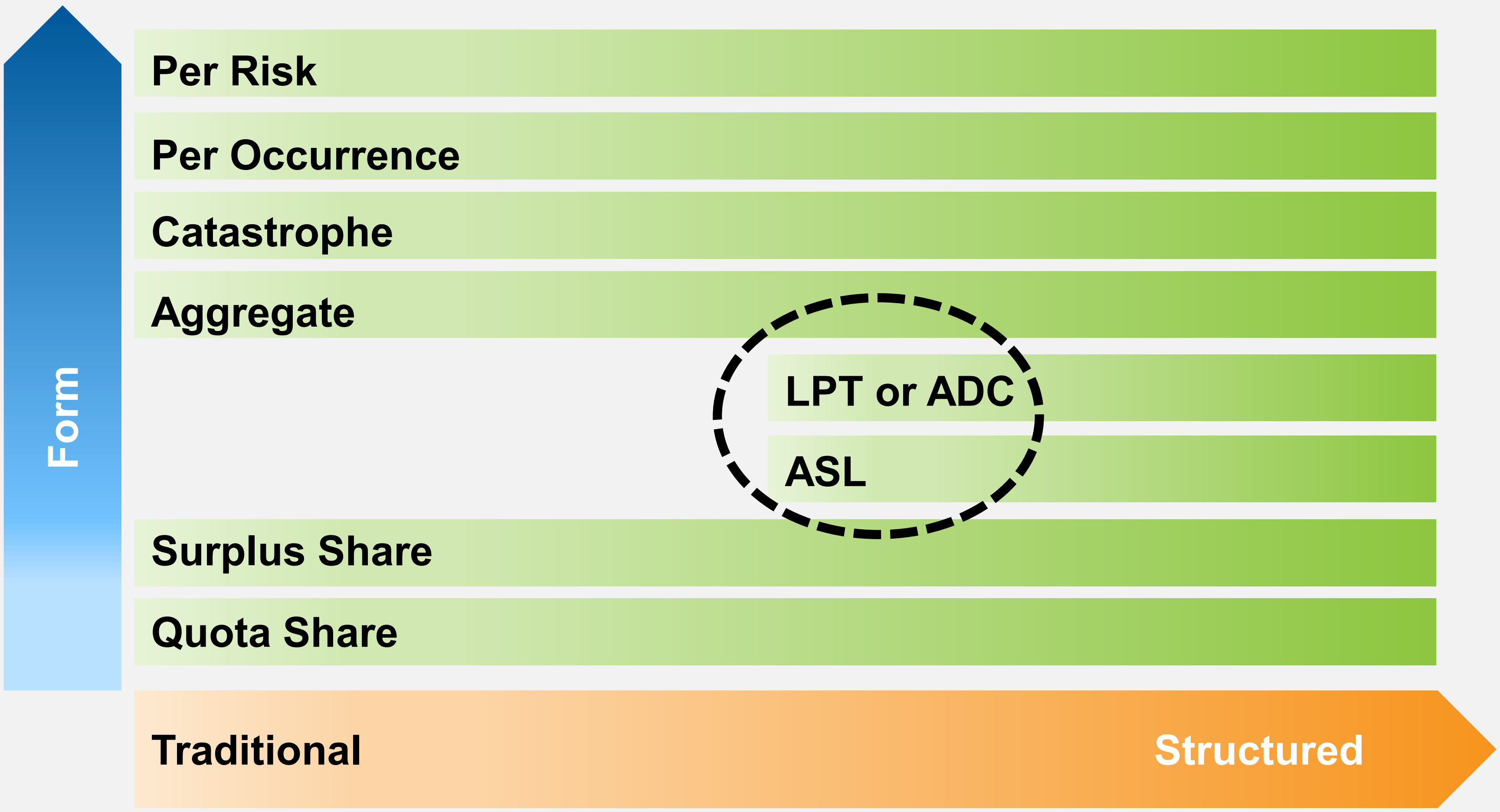

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- Aggregate Retention and Limits
- Multi-Year Terms
- Multi-Line/Multi-Trigger
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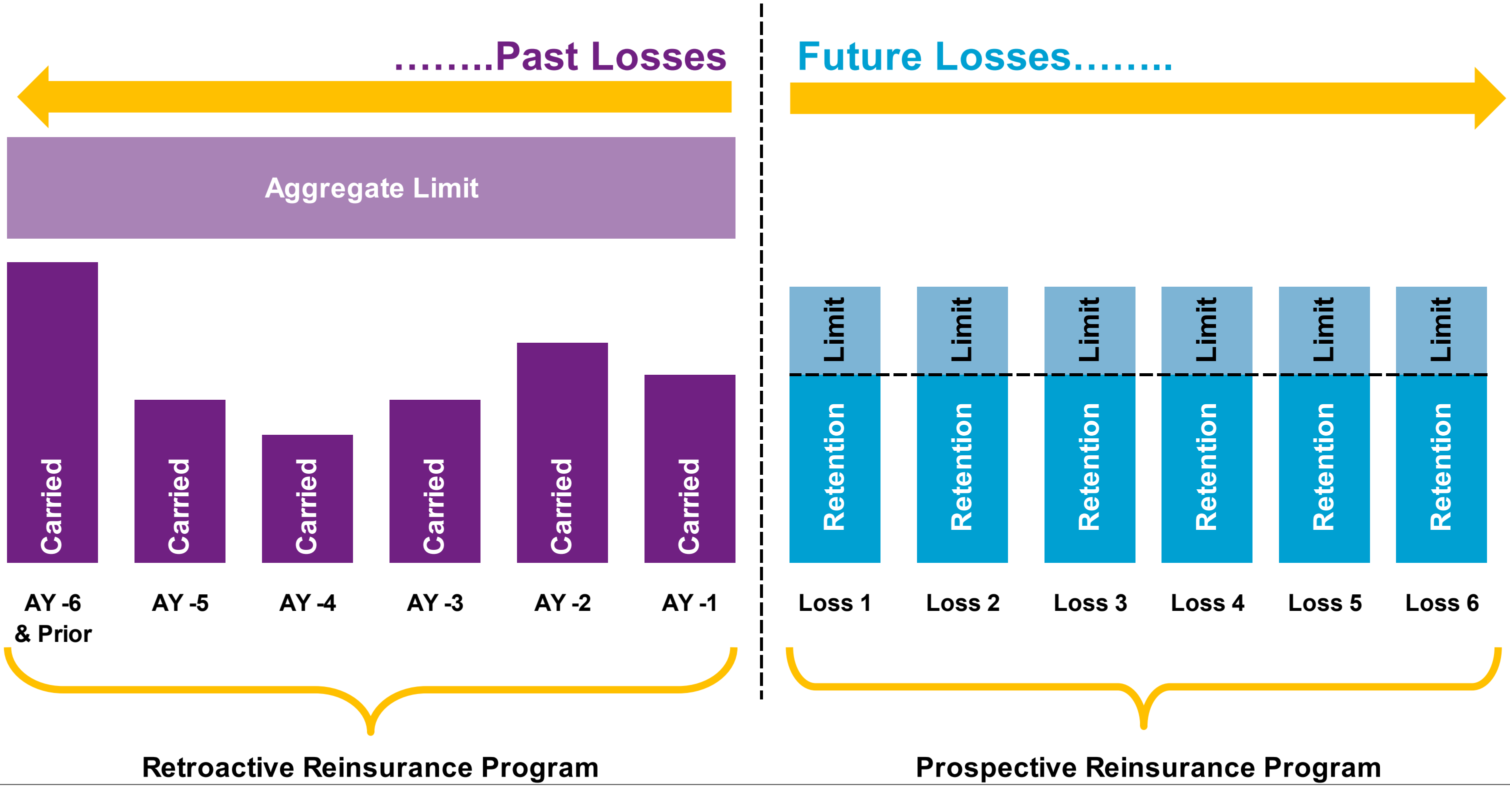
EXAMPLE 5
RETROACTIVE COVERS

Retroactive Reinsurance

- Retroactive reinsurance covers provide protection against losses that have already occurred
- These covers are most frequently used by companies exiting a line of business or geographic region to provide a degree of closure and assurance to stakeholders regarding future results or to improve rating agency capitalization



Coverage Forms

- **Loss Portfolio Transfers** ("LPTs") attach at first dollar of the covered reserves and act like a QS with respect to losses
- Best suited for companies that have exited a line of business or region and wants finality

- **Adverse Development Covers** ("ADCs") attach at or above the covered reserves and act like a Stop Loss
- Efficient way to reduce reserve risk and/or obtain rating agency relief

- **Hybrid LPTs** split the difference and attach within covered reserves but above first dollar
- Used on long-tail business to help finance the risk layer through the discount on transferred reserves

Retroactive Pricing

Higher Premium

Reserve Adequacy	Reserve Volatility	Pay-Out Period	Interest Rates	Attachment Point	Limit Required
Deficient	High	Short	Low	Lower	More
Conservative	Low	Long	High	Higher	Less

Lower Premium

CONCLUSION

Structured Reinsurance

- Is an approach to customizing reinsurance programs rather than a specific product - a range of strategies designed to help clients seize opportunities that aren't adequately dealt with via the usual market channels.

- Exists in a continuum ranging from lightly structured, more traditional products to more highly structured offerings

- Allows cedants finer control over deciding what risk to retain or transfer

Questions?