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# Insurance Risk Management Revolution

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**1500 – 1630 hours**

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## Table of Contents

1. Risks Pre-Hedging
2. Risks Post-Hedging
3. Hedging GMXX
4. Questions To Ask When Running A Hedging Programme

# 1. Risks Pre-Hedging

## Contributors

- **Market:** Changes in market variables that result in fund values changes
- **Actuarial:** Changes in actuarial assumptions
- **Operational:** Inaccurate/untimely information
- **Regulatory:** Required capital/reserves, accounting

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## 2. Risks Post-Hedging

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## Capital Markets

- Basis Risks
- Market Risks
- Rollover Risks
- Counterparty Risks
- Liquidity Risks



## Actuarial

- Deviations in
  - Mortality patterns
  - PH behavior



## Operational

- Key Person
- Process/control
- Systems Related

## Regulatory

- Impact of hedging programs on
  - Accounting
  - Capital/reserves

## 3. Hedging GMXX

## Risk Management Strategies

Strategy	Advantages	Disadvantages
<b>Naked</b>	<ul style="list-style-type: none"> <li>•No cost</li> </ul>	<ul style="list-style-type: none"> <li>•Total exposure to risks</li> <li>•Potentially very expensive</li> </ul>
<b>Reinsurance</b>	<ul style="list-style-type: none"> <li>•Complete mitigation of risk</li> </ul>	<ul style="list-style-type: none"> <li>•Potentially expensive</li> <li>•Huge counterparty risks</li> <li>•Reinsurance not available</li> </ul>
<b>Customized Options</b>	<ul style="list-style-type: none"> <li>•Mitigation of market risk</li> </ul>	<ul style="list-style-type: none"> <li>•Expensive</li> <li>•Could over/under hedge</li> <li>•Potentially huge counterparty risks</li> <li>•Huge bid-offer spread for exotic options</li> </ul>
<b>Delta Hedging</b>	<ul style="list-style-type: none"> <li>•Moderate costs</li> <li>•No notion of over/under hedging</li> <li>•No counterparty risks</li> <li>•Very liquid instruments</li> <li>•Easy to unwind</li> </ul>	<ul style="list-style-type: none"> <li>•Risk is managed and not mitigated</li> <li>•Volatility in results</li> <li>•Resource intensive</li> <li>•Need a sound infrastructure, trading experience/expertise</li> </ul>

## Quasi-static Hedging strategy

- More stable than delta hedging in that more greeks are hedged
- Long term vanilla/exotic options, reinsurance treaties are also used as hedges ONLY if prices are more favorable relative to replicating the risks associated with these assets
- Strategy looks for opportunities or “mispricings” so as to lock in long-term risks at favourable times
- Cheaper than all other strategies
- Less volatile than all strategies except reinsurance

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## 4. Questions To Ask When Running A Hedging Programme