



ASIAN BUREAU OF FINANCE
AND ECONOMIC RESEARCH

The ABFER 2nd Annual Conference 2014
The Shangri-La Hotel, Singapore

Industry Panel and Round Table

The Use of Research in Risk Management : Perspectives from Industry Practitioners

**Panelists: Elbert Pattijn (DBS), Paul Bernard, CFA (TTS), Kate Chiew (NTUC
Income), Sung Cheng Chih (MOF/MAS/GIC) Chair**

26 May 2014
6.15pm to 7.30pm





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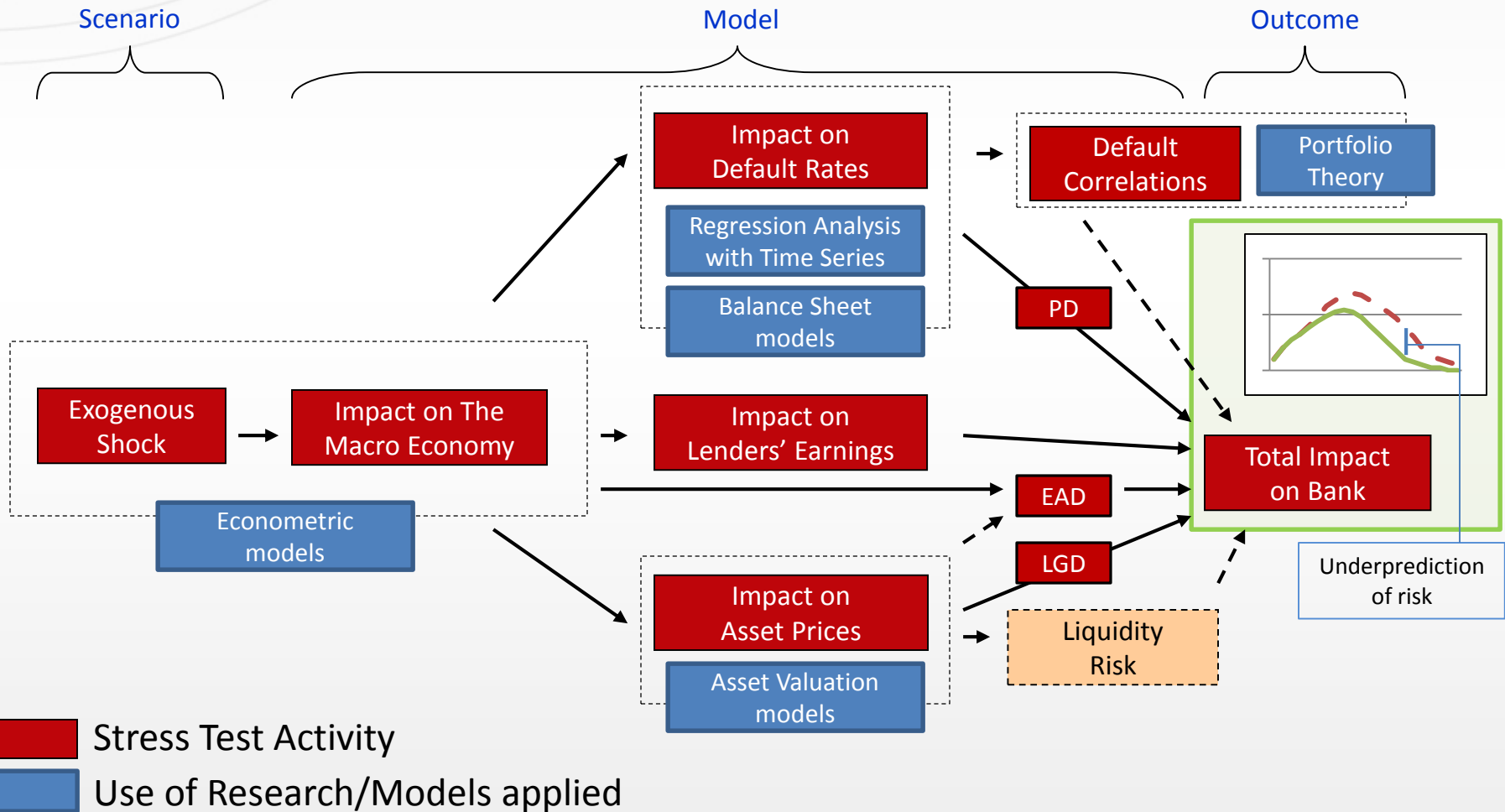
Mr. Elbert Pattijn

Chief Risk Officer, DBS Bank

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Credit Stress Test

Structure of Credit Stress Tests: Schematic Overview



Benefits/Risks

- Using the credit stress test schematic,
 - Benefits
 - Research models provide the construct for applied models to be built
 - Provide the necessary assumption to inform decisions
 - Risks
 - Financial model ‘chameleons’
 - Assumptions have been over-simplifying or unrealistic



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Ms Kate Chiew

Chief Risk Officer, NTUC Income

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***What risk does insurers
have to deal with?***

– From An Insurer’s Perspective

Risk Appetite & Capital Management

Returns vs. Losses

Invested in variety of Assets

- Equity / Property Investment Risks
- Interest Rate Risk (Bond MV)
- Credit / Spread Risk
- Derivatives
- Inflation / Forex, etc...

Solvency

ALM

- **Duration mismatch**, i.e. long-term liabilities (20yr+) vs. short-term assets (5yr)
- **Cost of guarantee**, supporting minimum return to PH
- **Yield gap**, PH expectation vs. actual return

Ability to Pay Claims

Liability risk

Life Insurance:

- Mortality / Longevity / Disability
- Lapse / Surrender

Health Insurance:

- Morbidity (*pandemics*)
- Hospitalization

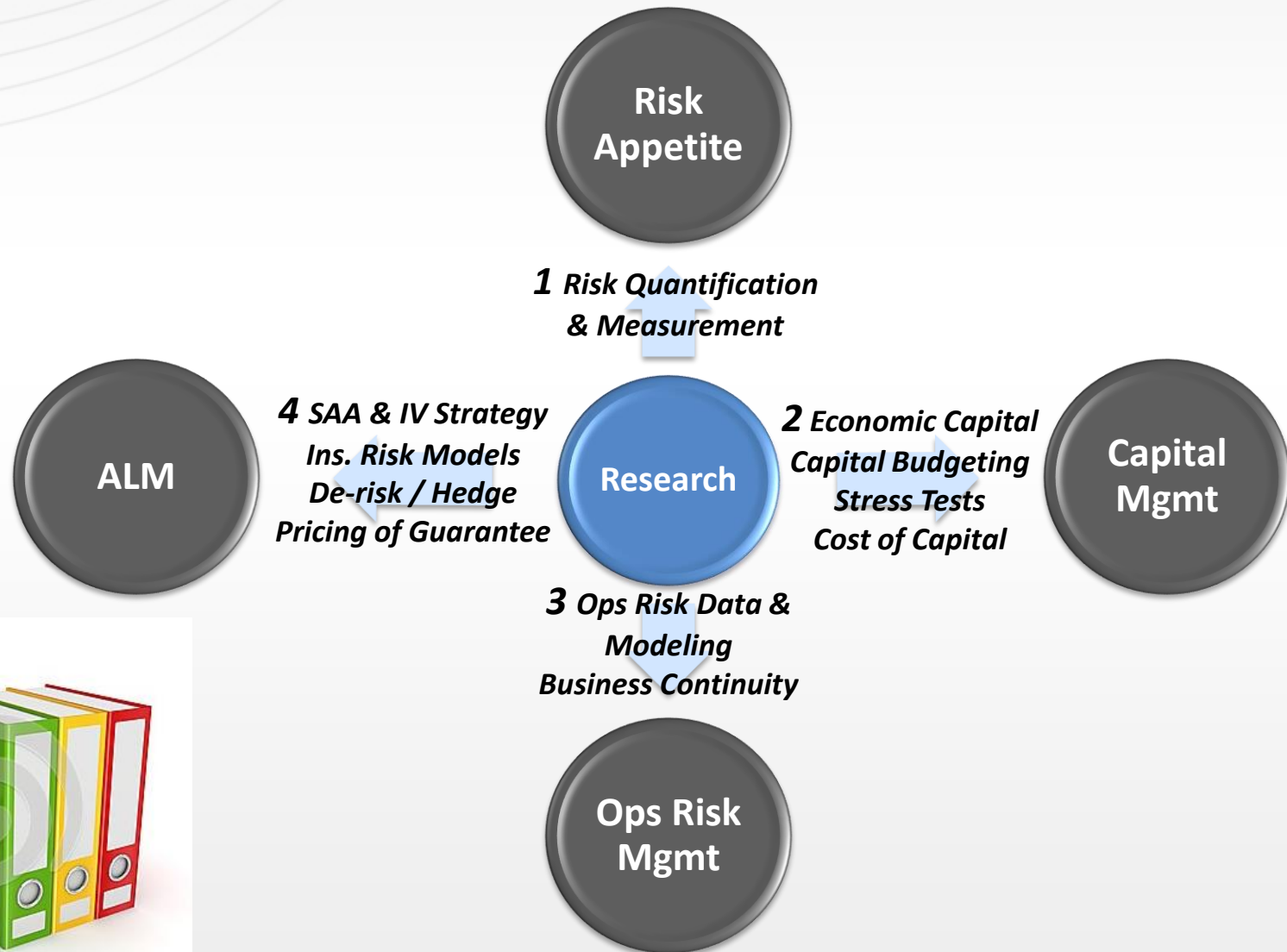
General Insurance:

- Motor
- Marine/Fire/PA, etc.

Operational Risks (technology, fraud, BCM, etc.)

Risk Management

– Areas of Research

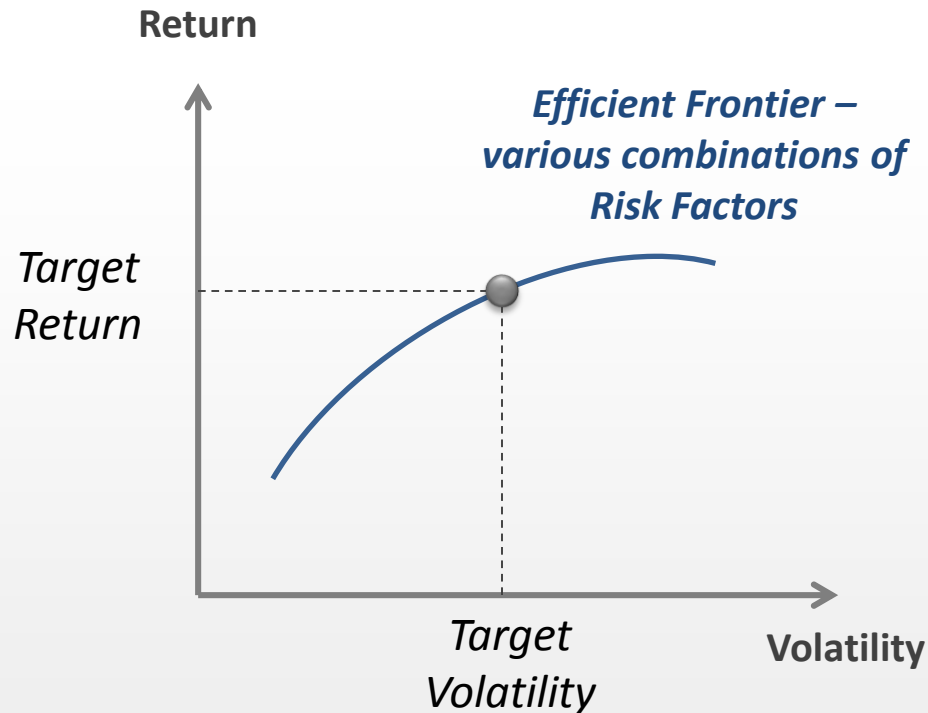


Capital Management



Mean-Variance Optimization

Optimizer: A General Concept in Research



*Approach can be applied to more complex structure in Capital optimization
.....*

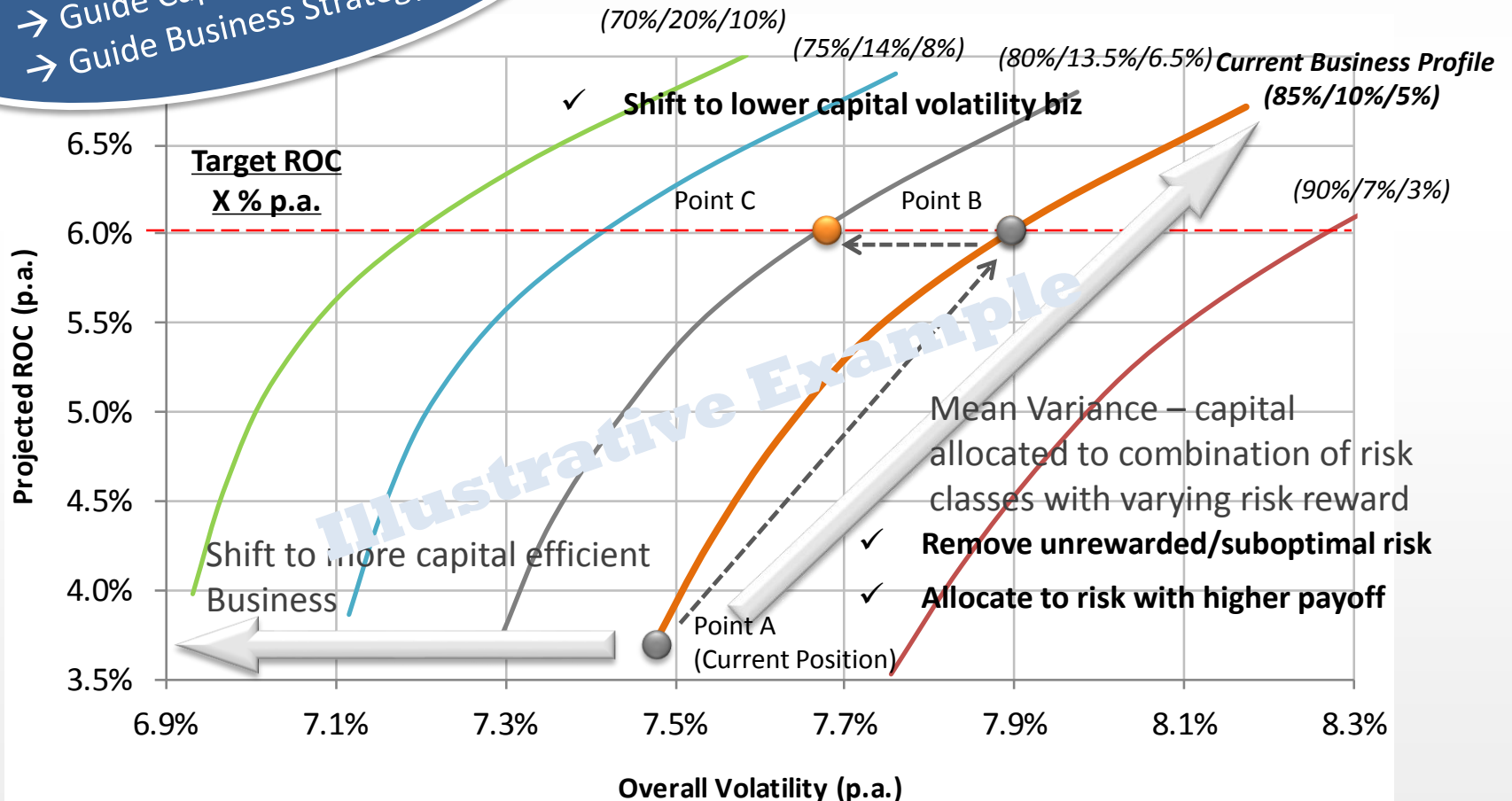
Capital Allocation based on Mean-Variance Optimization Concept



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Capital Optimization
 → Guide Capital risk budgeting
 → Guide Business Strategy

Combination of different business mix with varying capital requirement



Asset Liability Management (ALM)

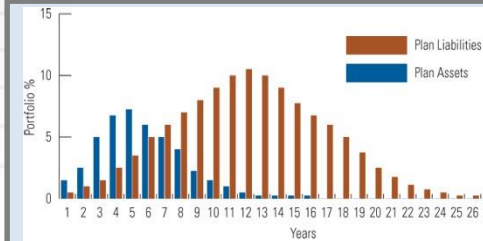


Asset Liability



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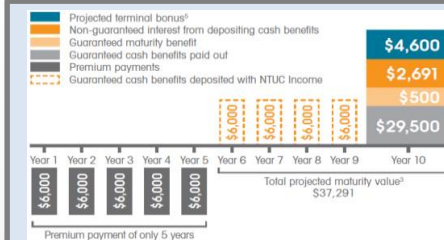
Management include...



- **Long-Term Liabilities vs. Short-Term Assets**
 - Mitigate A/L mismatch to reduce capital loss
 - Ensure proper assets backing liabilities plus margins



- **Unpredictable Insurance Claims**
 - Manage liquidity to maintain claim paying ability
 - Contingency plans for catastrophe scenario



- **Embedded Guarantees and Options**
 - Price the guarantees / options embedded in insurance plans
 - Ensure costs are accounted for in the IV strategy
 - Put in place proper hedging / de-risking plans

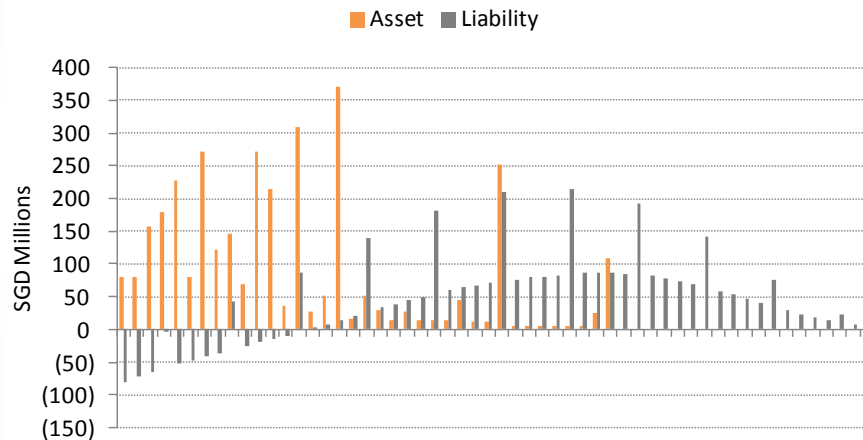


- **Policyholders' Expectation on Returns**
 - Develop investment strategy & SAA to meet expected long-term returns

Illustrative Example

ALM Hedging – Rates Immunization

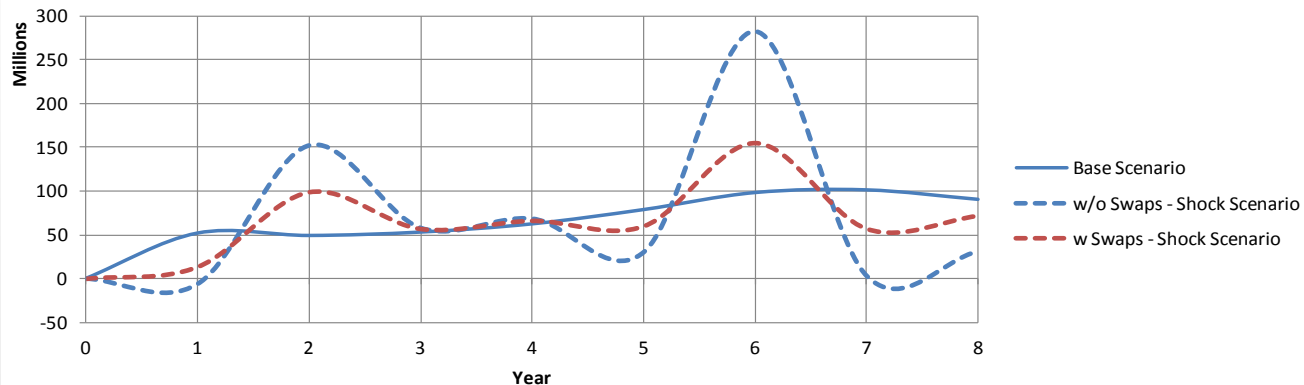
Mismatched Cash Flows of Assets and Liabilities creates P&L volatility and attract regulatory capital requirement



Hedging Reinvestment risk arising from Mismatch with use of Interest Rate Swaps.

Immunize delta (DV01) & Convexity gap between assets and liabilities

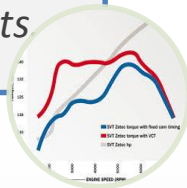
Effectiveness of the Hedging – reduce volatility of P&L and Surplus



Topics for Future Research

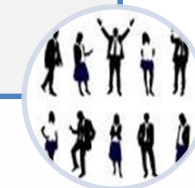
Stress Tests

Scientific design of stress scenarios which capture the correlation between key risk drivers, and produce reasonable stress events



Policyholder Behavior

Modeling of policyholder behavior i.e. persistency behavior. To avoid "run on bank" scenario and liquidity risks



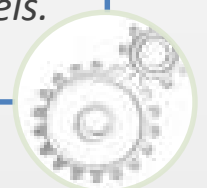
Operational Risks

Modelling of operational risk, to formulate appropriate capital requirement. Current regulatory basis is onerous and not risk sensitive



Model Risk

ERM framework relies on models. So, to what extent a company should (or shouldn't) rely on models.






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Mr. Paul Bernard

Managing Director, TTS Advisors

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Understanding the Links Between Real Estate and the Financial System

Why is this relevant?

- Symbiotic relationship between banks and real estate
 - Virtuous circle on the way up
 - Viscous cycle on the way down
 - Includes both traditional and shadow banks
- Real estate can be both a cause of financial crisis, as well as a transmission mechanism for them

Inextricably linked

- To financial institutions, property is
 - A large part of their loan books
 - A key source of collateral, even for non-ppty lending
 - A key source or profit growth
- Property developers, owners and investors:
 - Developers depend on leverage for their returns
 - End-buyers depend on leverage for affordability
 - Investors depend on leverage for returns

Resulting Investor Opportunities

Great opportunities for investors

- Banks are a large % of market capitalization
 - Sector allocation can add meaningful alpha
- Sector is a key domestic, non-tradable sector
 - Low correlation vs. sector elsewhere
- History can repeat itself across markets across time

US Subprime



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“Yes, but it represents only 6% of all outstanding property loans....”

Regulatory Challenges



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- Host of variables solving for:
 - Economic growth
 - Housing affordability
 - Wealth effects for home owning population
 - Strength of financial system
- This is where shadow banking lives
- Macro-prudential policies may/may not work
- May or may not control interest rates

Focus Areas for Directed Research

- How effective are macro-prudential policies?
- What are the critical warning signs?
- Sensitivities to/effectiveness of interest rate changes?
- How solve for dependencies between shadow and traditional banks?



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