



FSB

INSURANCE DIVISION



Stress Testing

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What is Stress Testing?

Definition...

- Risk Management technique
- Evaluate potential effects of a specified change in risk drivers
- Usually corresponding to severe but plausible events
- Includes:
 - Sensitivity Testing
 - More severe “sensitivities”
 - Scenario Analysis



What is Stress Testing?

Definition...

- Sensitivity Testing
 - Usually referred to small changes in single assumptions
 - Often to identify most important assumptions
 - We will use it to refer to more severe “sensitivities” as well
 - Often instantaneous effect considered
 - Market risk example...



What is Stress Testing?

Definition...

- Scenario Analysis
 - Severe but plausible state of the world
 - May be complex in nature, e.g. a mild recession
 - ...or simpler in nature, e.g. low interest rates coupled with low equity returns and growing inflation
 - Need to think about the time horizon of these scenarios



Using Stress Tests...

Multiple uses...

- Risk Identification
- Risk Measurement
- Support and enhance Capital Management
- Improving liquidity management
- A communication tool for risk, thereby facilitating embedding of ERM
- Helping define Risk Appetite
- Identification of systemic risks



Using Stress Tests...

Risk Identification...

- In terms of the risk universe, can assist with the identification of emerging risks
- This is clearly an area where statistical models cannot help us!
- Highly subjective, and difficult to achieve buy-in
- A multi-disciplinary team, and creativity, help with this process
- Stress Testing can also help identify risk dependencies previously unidentified



Using Stress Tests...

Measurement...

- Dependencies which are known to exist are notoriously difficult to measure with any degree of confidence – scenarios can help
- Risk measures coming out of more rigorous models also need to be challenged – again stress testing can assist
- Risks that are difficult to quantify (e.g. Operational risk)
- Risks that are easy to quantify (e.g. market risk)
- Effects of control breakdown, management action, etc



Using Stress Tests...

As a communication tool...

- Stress testing moves away from “X” to english
- Having the right people involved in identifying and quantifying scenarios helps buy-in
- It can facilitate a discussion about models among people who aren’t actuaries
- It can also help articulate (and also sense-check) risk appetite statements



Developing Stress Tests...

Categorisation...

Stress Tests

Sensitivity
Analysis

Scenario-Based Analysis

Portfolio Driven

Event Driven

Historical

Hypothetical

Historical

Hypothetical



Developing Stress Tests...

Definition...

- Known Risks
 - Sensitivities in risk models
 - Interdependency
 - Ripple effects

- Unknown Risks
 - Emerging risks framework
 - Monitor trends?



Developing Stress Tests...

Assessing Scenarios...

- Need to consider how precisely the identified scenarios might impact the insurer
- Initially, useful to think broadly
- Consider both qualitative and quantitative aspects
- Ripple effects
- Management actions



Developing Stress Tests...

Impact measure...

- Need to consider one or more measures
 - Asset and liability values
 - Level of impaired assets / write-offs
 - Profit and Loss
 - Regulatory Cover
 - Economic Capital
 - Liquidity/Cashflow/Funding measures



Reverse stress testing...

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- Not as complex as it sounds
- Not something you need a complex model for
- Really just the consideration of:
- “How bad must it be before our business model is compromised?”
- Market risk example
- Broader than the easily quantifiable risks



Monitoring Stress Tests...

Early Warning Signals...

- Most people tend to leave out the last part of a stress testing exercise...
- ...identifying early warning signals!
- These should be given as much rigour as the identification of the scenarios themselves
- These should also feature in regular reporting, as part of the risk reporting processes



Governance...

Formalising Stress Testing...

- As with the other aspects of an ERM framework, good governance should apply
- Ideally a stress testing policy, but may fall under another risk management policy
- Some formalisation of stress testing approach, aims, and processes and procedures



Group Stress Testing

Key Considerations...

- Fungibility of capital
- Diversification / concentration
- Intergroup transactions
- Changes in cyclical relationships
- Group management actions assumed?
- Regulators
- Non-controlling interests
- Contagion



FSB Stress Testing

Key Considerations...

- Is the current approach still valid?
- Very much in progress...



On the Horizon

Activity for the next few months...

- Finalise stress-testing documents, including FSB's internal process for conducting macro stress tests
- Complete guidance on stress testing for insurers as well as Group considerations for publishing
- Update on the MER stress test



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