

Operational risk and insurance

Capital and insurance optimisation

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Introduction

- We help clients:
 - > Understand exposure to potential loss
 - > Unlock the value of insurance to finance capital
 - > Establish strategies to drive cost efficiencies and minimise residual exposures
- Appointed by ORX to explore risk transfer options
- We have a dedicated operational risk practice
- Our credentials

“ It would be a mistake to conclude that the only way to succeed in banking is through ever greater size and diversity. Indeed, better risk management may be the only truly necessary element of success in banking.”

*Alan Greenspan, 2004
Former Chairman, Board of Governors of the Federal Reserve System*

“We cannot let our ability to innovate exceed our capacity to manage. Given the size and interconnected nature of markets, the growth in volumes, the global nature of trades and their cross-asset characteristics, managing operational risk will only become more important.”

*Lloyd Blankfein, 2009
Chief Executive, Goldman Sachs*

Agenda

1. The credit crunch and operational risk
2. Risk identification and assessment
3. What role does/can insurance play
4. Insurance and capital optimisation
5. What's the value in it for me
6. Conclusions

Credit crunch and operational risk

Introduction

- Many institutions under estimate their exposures
- Risk management practices within banks need to be improved
- Integration and use of risk management within businesses varies widely
- Culture of risk / reward

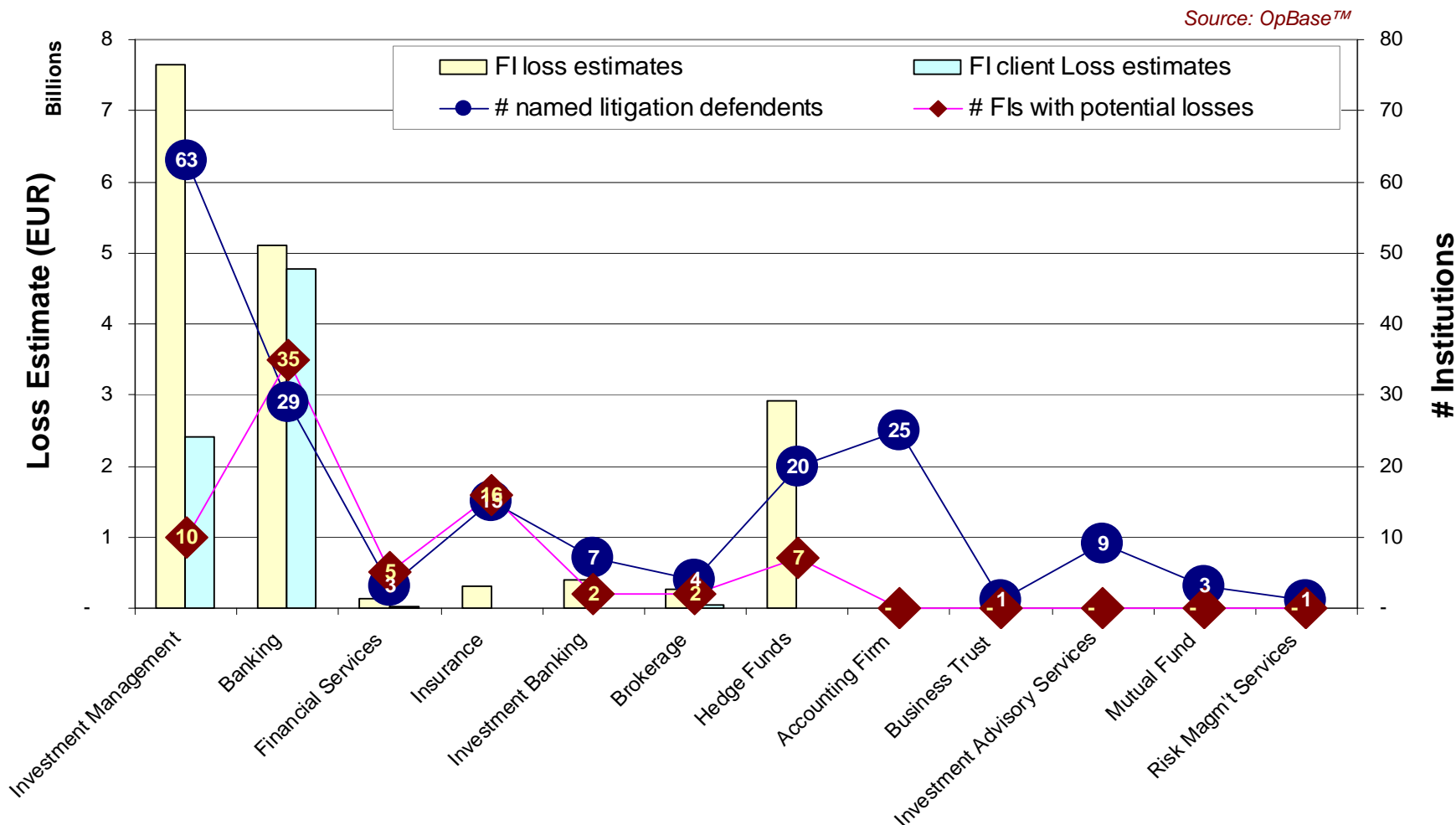
Credit crunch and operational risk

Case study:

- Large European institution:
 - > Maximum possible single loss < Euros 100m
 - > We were aware of 2 events for which they had a liability of up to 5 times this maximum
 - > Risk management assumed such data to be irrelevant when controls taken into consideration
- Medium-sized European institution
 - > Maximum foreseeable loss:
 - Clients, Products & Business Practices ~ €200 million
 - Internal/External Fraud ~ €10 million
 - > The board would not accept a higher exposure

Credit crunch and operational risk

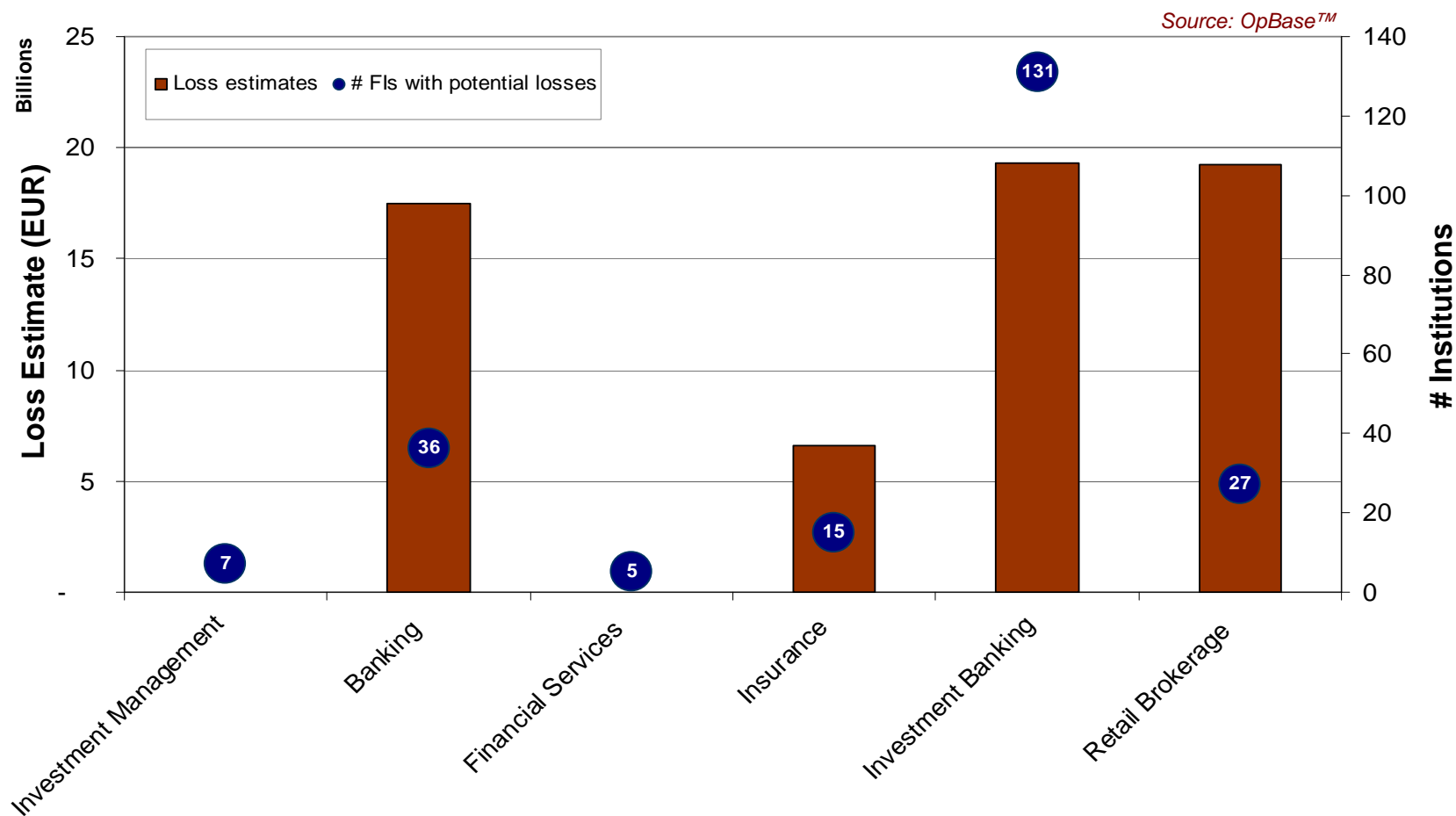
Madoff: Exposures to FIs and their clients



Credit crunch and operational risk

Litigation: Subprime Mortgage / Auction Rate Securities

Subprime Mortgage Crisis / Auction Rate Securities (ARS) Related Litigation



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Risk identification and assessment

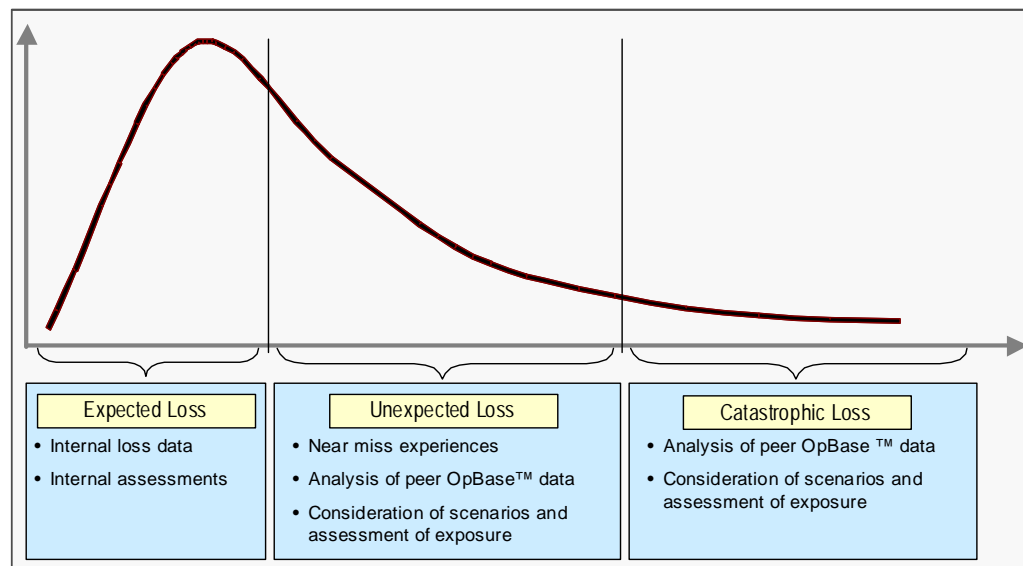
Role of internal data, external data and scenarios

- The current economic environment has shown a number of institutions have underestimated their exposure to risk
- Historical internal losses do not provide a good understanding of exposure to unexpected loss
- External data used in isolation does not take into consideration an organisations specific dynamics and controls

Risk identification and assessment

Role of internal data, external data and scenarios

- Scenarios provide an excellent mechanism to enable organisations to:
 - > identify possible future events that could give rise to unexpected or catastrophic loss; and
 - > assess their exposure for a 1:5, 1:20 year loss, etc
 - > identify control & transfer mechanisms to manage and finance losses
- OpBase™, our loss database, is a powerful tool for assessing exposure to unexpected loss and the development of loss scenarios



Risk identification and assessment

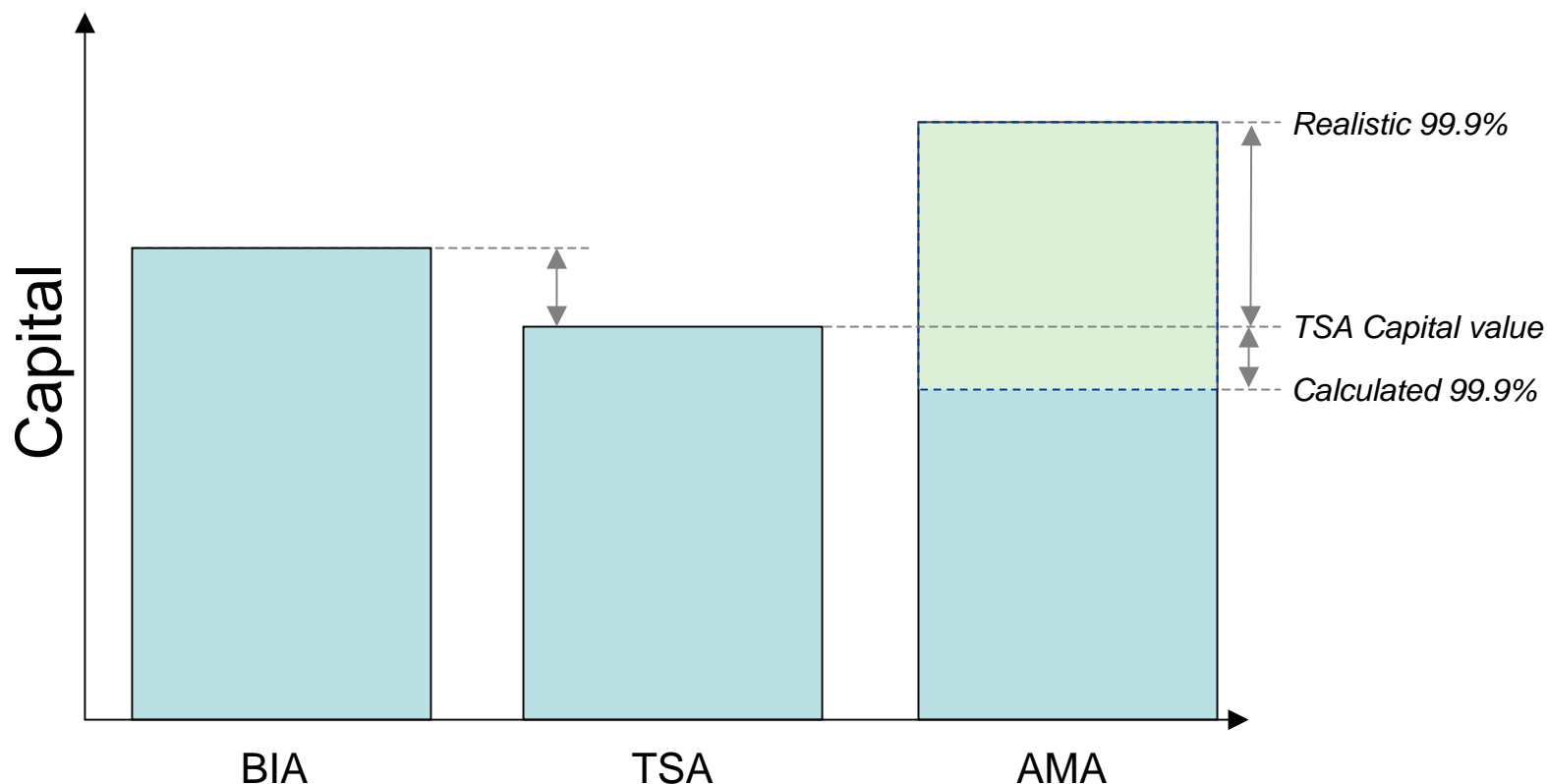
Gross revenue as a proxy for exposure

- Our analysis of OpBase™ data
 - > In 2007 we undertook a study to investigate the relationship between size of loss and size of institution using OpBase™ data
 - > OpBase™ is our proprietary operational risk loss event database containing information on more than 16,500 losses and incidents suffered by financial institutions globally
 - > The banks whose losses are captured in OpBase™ were placed into one of four buckets depending on their respective revenue – small, medium, large, very large
 - > The different percentile and average loss amounts within each band were plotted against average revenue of the band to determine any relationship
 - > The average loss for a large bank is expected to be higher than the average loss for a small bank
 - > Examination of the losses by event type led to the selection of a power relationship, with different parameters for each event type

Risk identification and assessment

Gross revenue as a proxy for exposure

- Our analysis and experience:



Risk identification and assessment

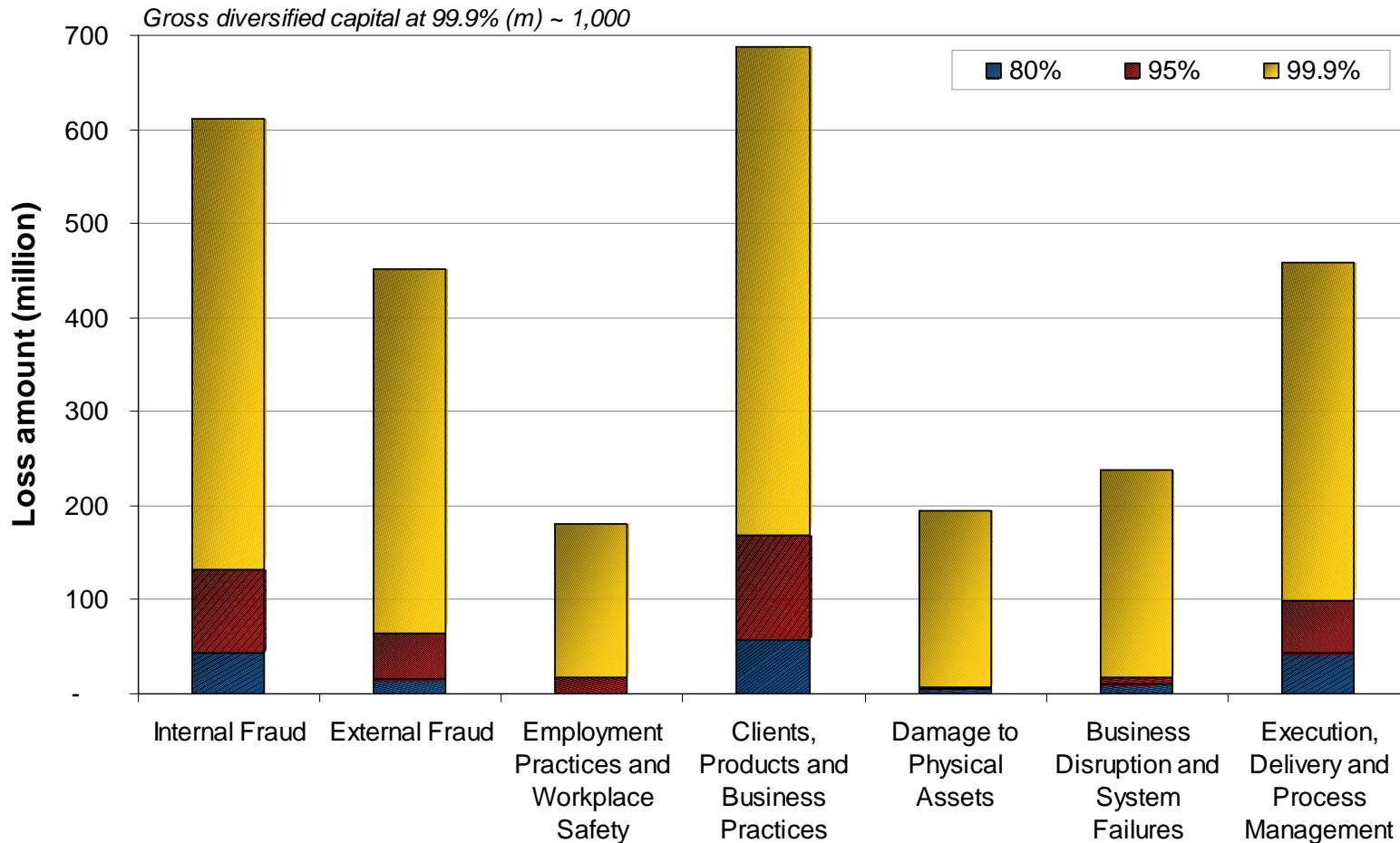
Gross revenue as a proxy for exposure

- Conclusions

- > Analysis suggests Basic and Standardised approaches underestimate exposure when measured against a confidence level of 99.9% for all but the largest banks
- > An accurate assessment of exposure at a confidence level of 99.9% (as required under the AMA) will in general result in a larger capital value than that defined by the simpler approaches
- > But please note this analysis does **not** consider:
 - historical internal losses; or
 - Loss scenarios, which take into consideration the specific business environment and control dynamics of a bank

Risk identification and assessment

Typical risk profile for a bank – LDA driven



Note: This case study uses an overall capital number of 1,000 million for illustrative purposes only.

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What role does/can insurance play

Introduction

- Many programmes are fragmented
- Insurance has an important role to play in both:
 - > Business unit P&L management; and
 - > Group capital management
- The development of operational risk models is enabling us to:
 - > Understand the greatest risks faced and their quantum from an insurable and uninsurable perspective
 - > Assess the value of existing programmes
 - > Identify those solutions offering greatest value
 - > Optimise an organisation's risk finance structure

What role does/can insurance play

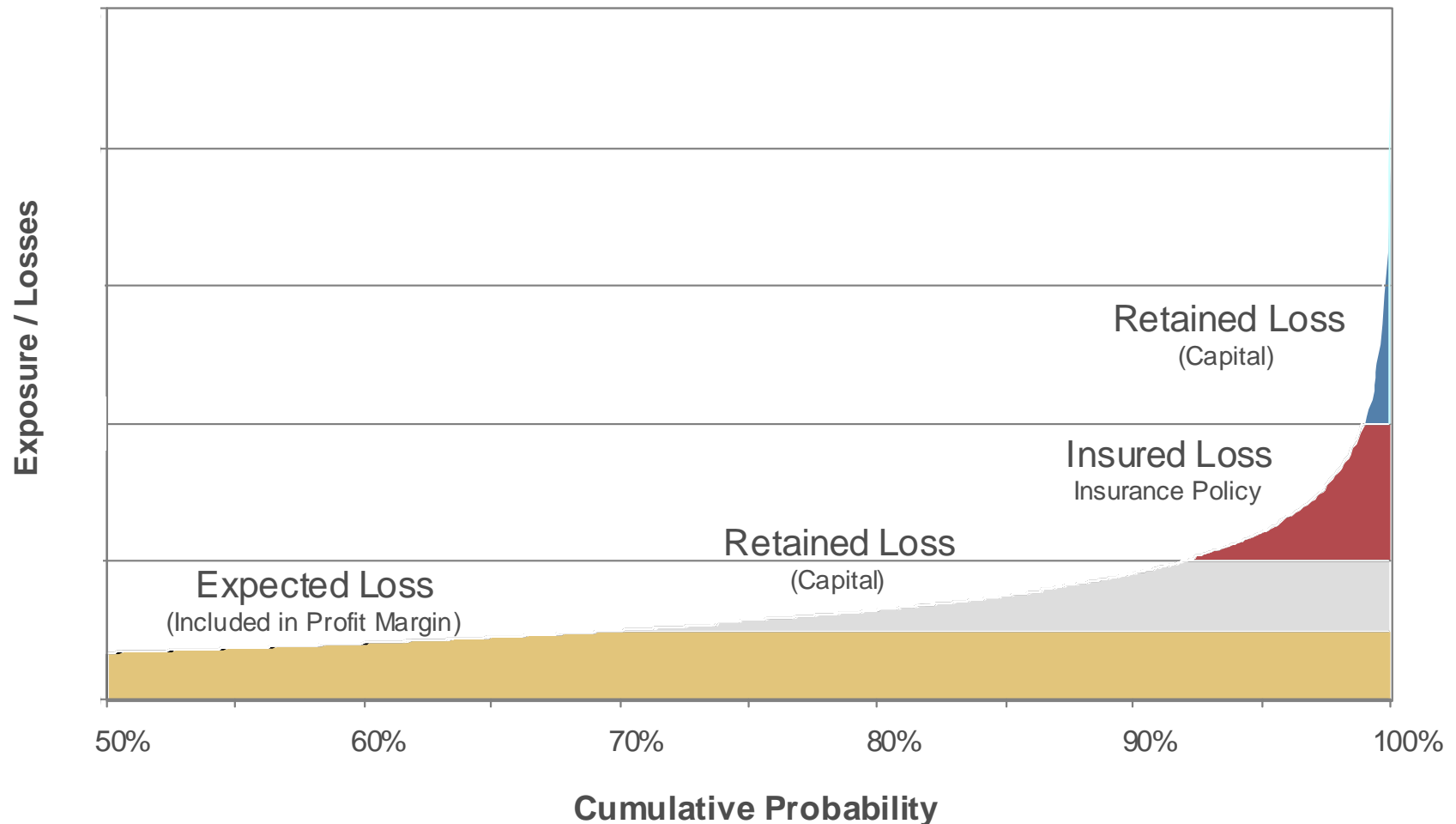
Understanding the relationship between events and policies

- Insurance has a long history of responding to operational risk
- But, individual events link to multiple policies and multiple events link to single policies
- The relationship is complex

Event Type Level 1	Event Type Level 2	Mapping to Policies
Internal Fraud	Unauthorised activity	1 st ~ BBB, UT 3 rd ~ PI
	Theft & fraud	1 st ~ BBB, Cyber, Property 3 rd ~ PI
External Fraud	Theft & fraud	1 st ~ BBB, Cyber, Property 3 rd ~ PI
	Systems Security	1 st ~ BBB, Cyber, Property 3 rd ~ PI
Employment Practices & Workplace Safety	Employee Relations	3 rd ~ EPL, GL
	Safe Environment – Employees	3 rd ~ EL, GL
	Safe Premises – Invitees	3 rd ~ GL
	Diversity & Discrimination	3 rd ~ PI, GL
Clients, Products & Business Practices	Suitability, Disclosure & Fiduciary	3 rd ~ PI, Cyber
	Improper Business / Market Practices	3 rd ~ PI, Cyber, GL
	Product Flaws	3 rd ~ PI, GL
	Selection, Sponsorship & Exposure	3 rd ~ PI
	Advisory Activities	3 rd ~ PI, Cyber
Damage to Physical Assets	Disasters & Other Events	1 st ~ Property
Business Disruption & Systems Failure	Systems Failure	1 st ~ Property, Cyber, BBB 3 rd ~ Cyber
Execution, Delivery & Process Management	Transaction Capture, Execution & Maintenance	3 rd ~ PI
	Monitoring & Reporting	3 rd ~ PI
	Customer Intake, Documentation	3 rd ~ PI
	Customer Account Management	3 rd ~ PI, Cyber
	Trade Counter-parties	3 rd ~ PI
	Vendors & Suppliers	3 rd ~ PI, GL

What role does/can insurance play

Capital management - A blended risk finance programme



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Insurance and capital optimisation

Introduction

- Using a case study we can assess the impact on exposure and value of alternative insurance structures
- The following slide summarises the risk profile of a bank at different confidence levels, e.g. 80%ile (1 in 5 years), etc:
 - > In the aggregate Value at Risk (VaR) at 99.9%ile ~ €175 m
 - > By event type
 - > Identifying the key risk spikes, notably:
 - Clients, Products & Business Practices
 - Internal Fraud

Insurance and capital optimisation

Quantifying impact of insurance

- The following chart shows the impact of an insurance structure on the underlying exposures:
 - > In the aggregate
 - > By event type
- We can see the impact of insurance at different confidence levels, e.g. 80% (1 in 5 years), 99.9% (1 in 200 years)

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What's the value in it for me

Top management

- The institution's management gets a clear and well founded picture of the effectiveness of the current and potential risk financing, with respect to both frequency and severity losses, across the Op Risk event types
- This can be produced on a regular, e.g. quarterly, basis for continuing adjustment of risk management and business strategy adjustments

What's the value in it for me

Risk management

- The institution's risk management obtains information about the institution's operational risk exposures which can be used in the overall risk assessment, correlation studies, etc.
- The cooperation within the institution's different risk management specialties is facilitated by easily updated information which can be used in the institution's own models
- The information is designed to be used in communication with regulators and authorities.

What's the value in it for me

Insurance management

- Effective, regular communication with top management and risk management;
- Top-of-the-market risk information for insurers and for business unit training purposes
- You own your information and it is regularly updated with external loss data for adjusted models
- Your insurance programme can be designed to a proven cost effectiveness;
- Risk management measures can be weighed against benefits from a risk financing perspective.

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Conclusions

- There is value in investing in operational risk management
 - > Operational risk is a significant risk for any business
 - > By understanding potential exposures, you can put in place management strategies
- Insurance has an important role to play
 - > Group capital management
 - > Business unit P&L management
 - > Its use depends on your objectives
 - Minimise Total Cost of Risk
 - Annual Expected Losses + Premium
 - Maximise reduction in capital or minimise volatility
 - To free-up capital to invest in the business for a higher return
 - A combination of both

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