MAKING RISK APPETITE MEASURABLE

Roelof Coertze
07824 324100
roelof.coertze@gmail.com

Network of Consulting Actuaries
27 July 2017

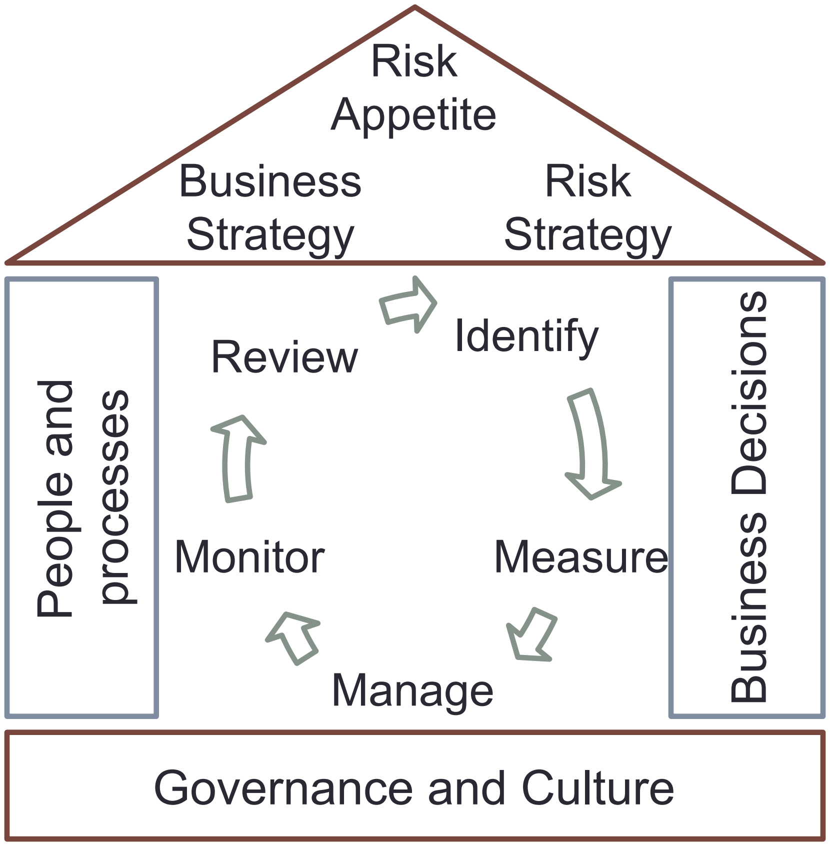
Introduction

- Please feel free to ask questions as we go along
- Remember to push *6 to unmute and re-mute yourself

Content

- Starting with the ERM Framework
- Capital
- Liquidity
- Operational risk
- Other risk appetite statements

Starting with the ERM framework



- This is an example Enterprise Risk Management (ERM) framework
- Today's discussion looks at the links between risk appetite, business strategy and risk strategy so as to enable business decisions

Risk appetite statements

Aviva 2014

The Aviva Board has approved four risk appetite statements:

- **Economic capital:** Based on economic capital at risk in an extreme loss event over a one year time horizon
- **European Insurance Groups Directive (IGD) capital:** Based on maintaining an appropriate level of required regulatory solvency capital in a severe loss event
- **Liquidity:** Based on stressing one year forecast central liquid assets and cash inflows and outflows (covering Group centre costs, debt costs and dividends)
- **Franchise value:** Long-term sustainability depends upon the protection of franchise value and good customer relationships. As such, Aviva will not accept risks that materially impair the reputation of the Group and requires that customers are always treated with integrity.

Legal & General 2015

Strategy: We manage a diversified portfolio in which we accept risk in the normal course of business and aim to deliver sustainable returns on risk based capital in excess of cost of capital.

Strategy: We have an appetite for risks we understand and are rewarded for, and which are consistent with delivery of our strategic objectives.

Capital: We aim to maintain an appropriate buffer of capital resources over the minimum regulatory and economic capital requirements.

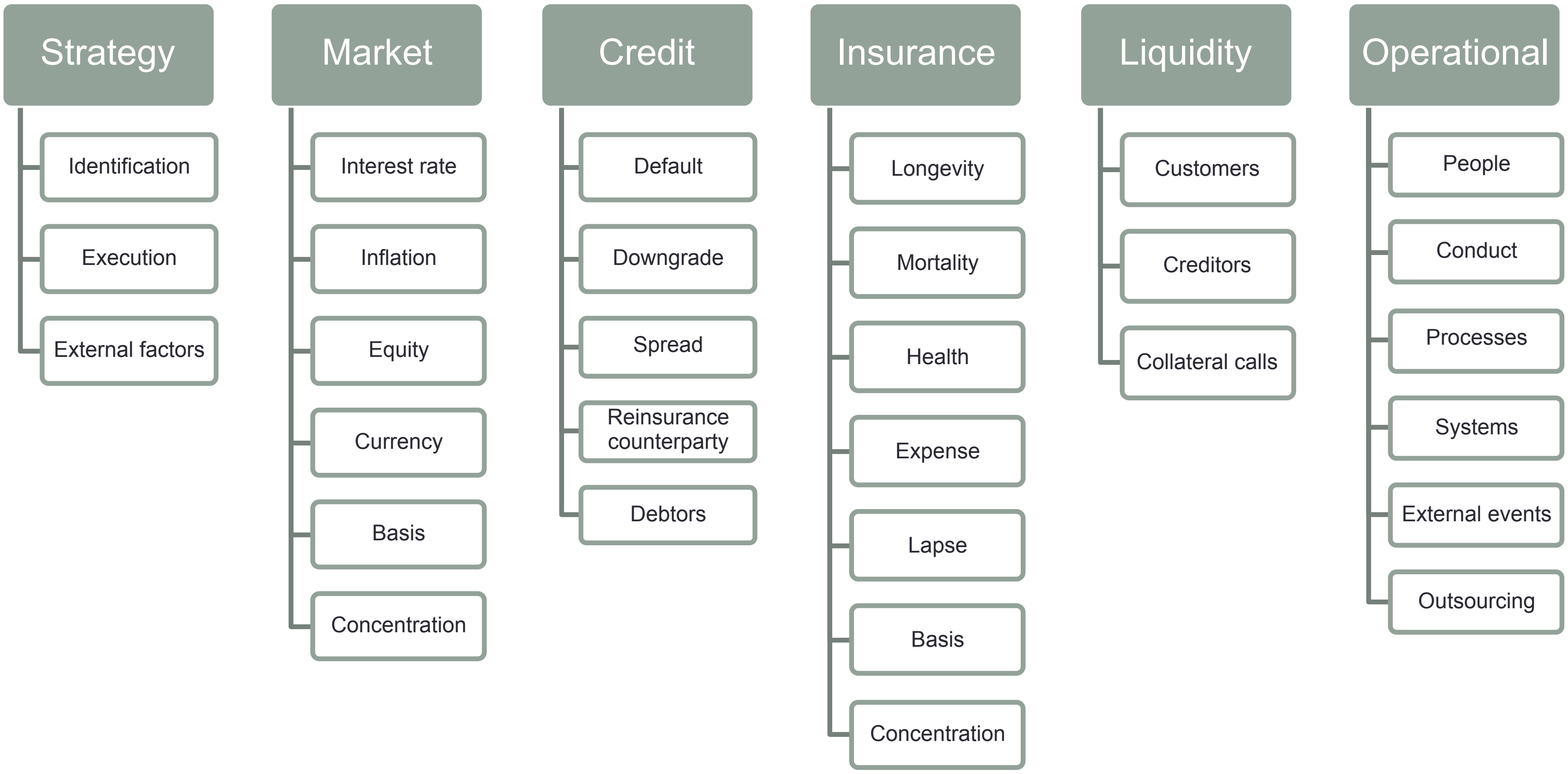
Earnings: We have a low appetite for volatility of earnings; in particular volatility arising from risks where Legal & General has more exposure than the wider market.

Customer: We treat our customers with integrity and act in a manner that protects or enhances the group franchise.

Liquidity: We expect to be able to meet our payment and collateral obligations under extreme, but plausible, liquidity scenarios.

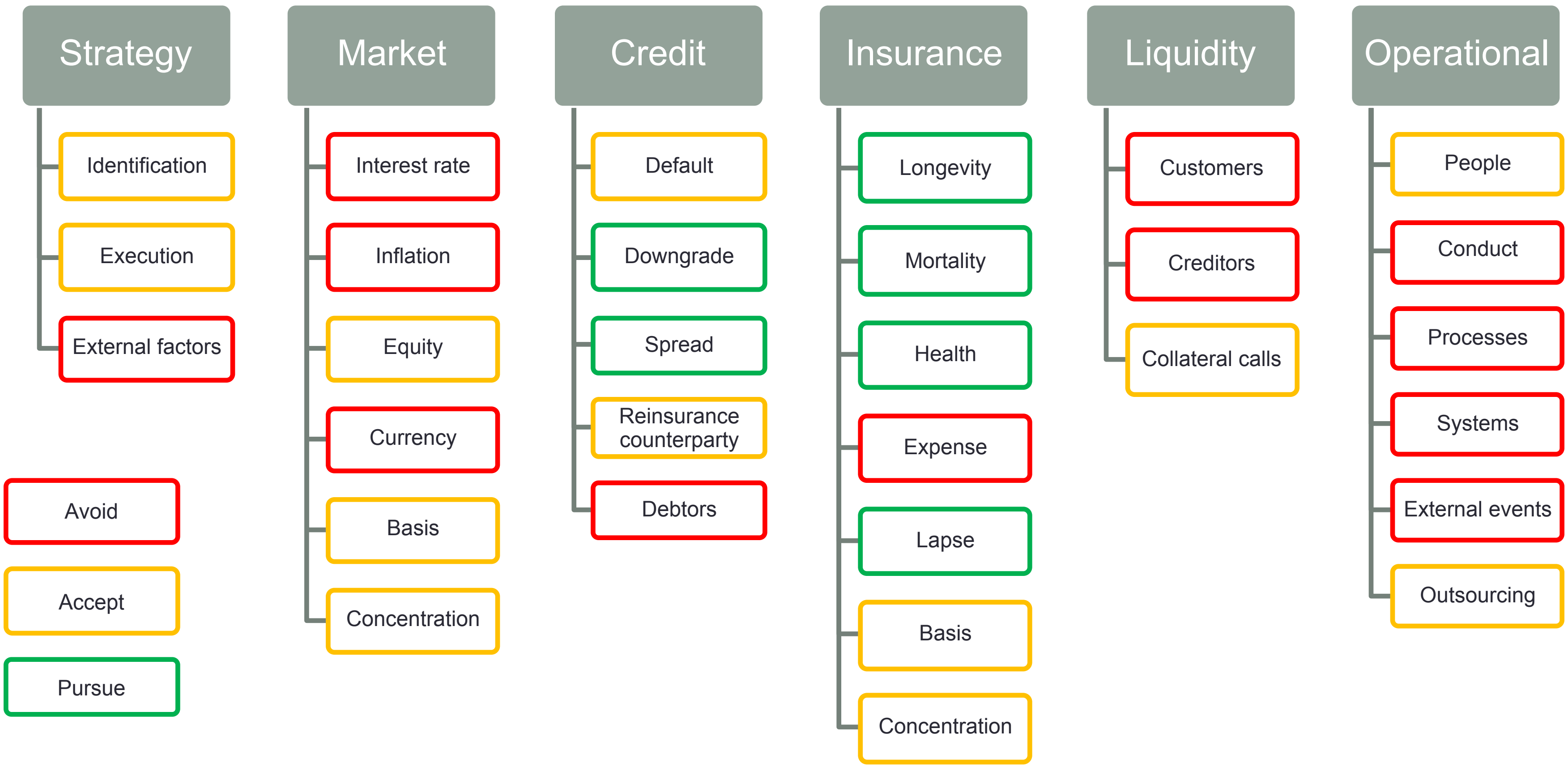
Risk Universe

The diagram below shows a Risk Universe for a life insurer, which covers the **known** risks



Risk Strategy

Criteria is used to overlay the business strategy and risk appetite onto the risk universe to give the risk strategy.

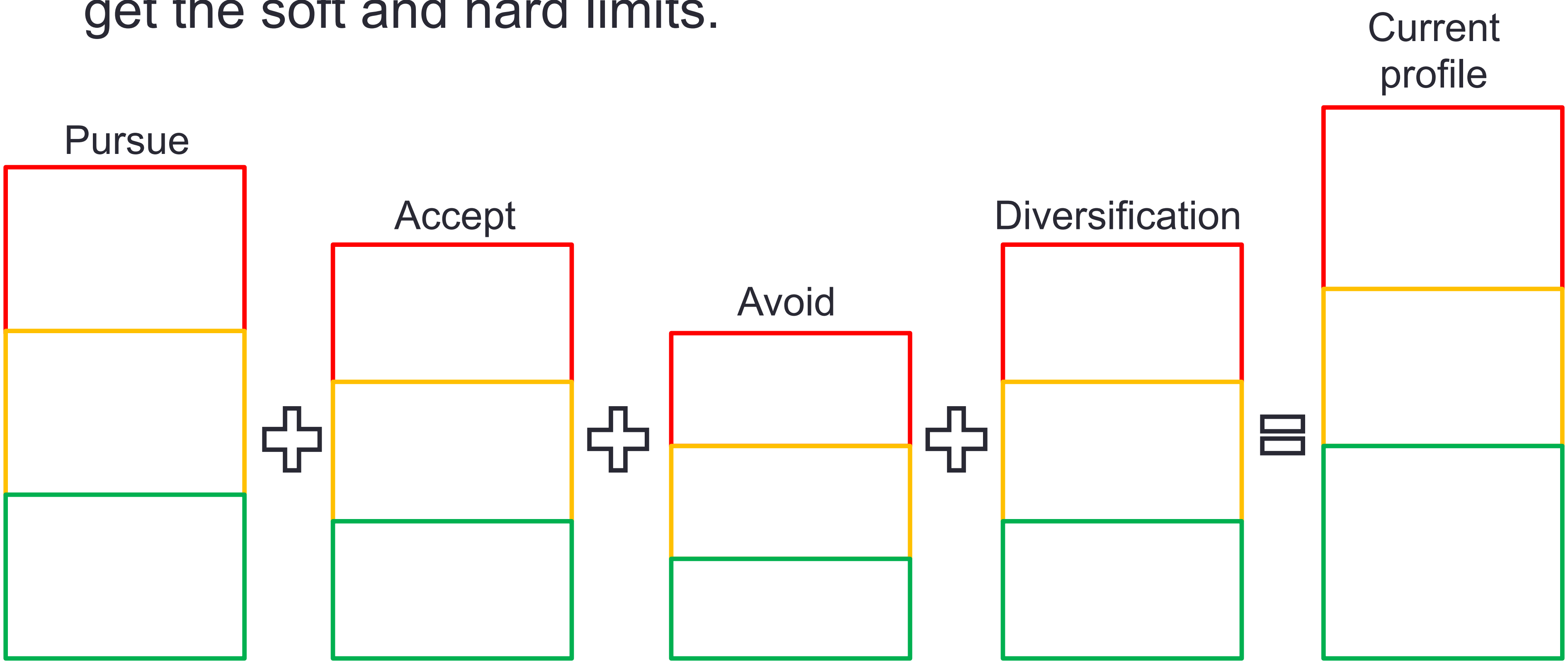


Risk Capacity

- The diagram on the right shows the different ranges that the current exposure to a risk could lie in
- There is normally soft and hard limits to the top and bottom of the range we would like to be in
- Above the hard limit may be extra capacity that we may choose not to use for strategic and regulatory reasons

Measuring risk appetite: Capital

A simple tool (like Euler) or more complex tool is used to allocate the current risk profile between the risks and diversification. Then we combine it with the Risk Strategy to get the soft and hard limits.



Breaking capital down further

What are the underlying assumptions? E.g.:

- Mix of assets
- Mix of liabilities
- Quality of counterparties
- Hedging strategy
- Management actions

Practical issues

In no particular order…

- Non-static risk profile
- Communication between Line 1 and Line 2
- Cultural change
- Support from senior management
- Remaining agile
- Being pragmatic
- Need to be forward looking

Measuring risk appetite: Liquidity

- Can use a similar process to Capital to cover customers, creditors and collateral calls
- Useful to be able to use the same stresses but not a requirement, e.g. 1-in-200 event over a 1 year horizon is very extreme for collateral calls
- Consider/define different types of liquid assets
- Need to look at legal requirements
- Fungibility
  - RFFs
  - Group considerations

Breaking liquidity down further

- Legally required types of assets
- Limits on counterparty exposures
- Quality of counterparties e.g. reinsurers
- Changes in hedging strategy
- Management actions: legal rights vs. reality

Measuring risk appetite: Operational risk

Traditional	Frequency	×	Severity	×	Aggregation	=	Loss distribution
Bayesian network	Processes	×	Controls	×	Distributions	=	Loss distribution

Breaking Op Risk down further

- Monitoring processes, people, systems
- Monitoring external events: falls more under emerging risks monitoring
- Particular issues around outsourcing
- Bayesian network: can test savings directly from investing more in controls

Other risk appetites

- Profitability / earnings volatility
  - Potentially follow similar process to capital or liquidity
  - Keep levels of triggers and tolerance consistent
- Conduct risk
  - Key performance indicators, such as
    - Customer complaints
    - Sales figures