Market Risk Economic Capital

Financial business is exposed to many types of risks due to the nature of business. To guard against the risk, financial institutions must hold capital in proportion to the potential risk. Market risk economic capital is intended to capture the value change due to changes in market risk factors. It is an internal capital reserve to cover unexpected loss due to market movement.

Economic capital falls into the category of Value at Risk measures as both try to capture value change due to market movement. Most institutions use the existing Value at risk system to compute economic capital. Value at risk captures the market risk of 1-day time period at 99% confidence level whereas Economic capital measures the market risk of 1-year time period at 99.95 confidence level.

Therefore, scaling methodology is the key to compute economic capital, i.e., scaling 1-day to 1-year and 99% to 99.95%. This presentation is intended to answer several fundamental economic capital questions: what is economic capital? What is the difference between economic capital and regulatory capital? How to compute economic capital?

Economic Capital vs Regulatory Capital

- Economic Capital
    - EC is an internal measure for internal risk control purpose.
    - EC is statistically measured for 1-year time period at 99.95% confidence level (consistent with the probability of default (0.05%) targeted by most institutions)
- Regulatory Capital
    - Regulatory capital is an external measure used by regulators.
    - RC is statistically measured for 10-day time period at 99% confidence level

Economic Capital Calculation

- Economic capital falls into the category of Value at Risk (Value at risk) measures as both try to capture value change due to market movement.

- Most institutions use the existing Value at risk system to compute economic capital.
- Value at risk captures the market risk of 1-day time period at 99% confidence level
- Economic capital measures the market risk of 1-year time period at 99.95 confidence level
- Scaling methodology is the key to compute economic capital, i.e., scaling 1-day to 1-year and 99% to 99.95%

Reference:

https://finpricing.com/lib/EqBarrier.html