

## Glossary of terms relating to Enterprise Risk Management

[Nematrian website page: [ERMGlossary](#), © Nematrian 2017]

The Nematrian website contains many tools and resources, including some relating to Enterprise Risk Management. As part of course material Nematrian has prepared for a university course in Enterprise Risk Management, Nematrian has developed a glossary of terms on this topic.

You can use this glossary in several different ways:

- (1) The Nematrian ERM glossary includes terms under the following headings:
  - (a) [Financial and Risk Management terms](#)
  - (b) [Governance terms](#)
  - (c) [Risk Categories](#)
  - (d) [Additional technical terms helpful for ERM students](#)
  - (e) [General financial terms helpful for ERM students](#)
  - (f) [Terms specific to Basel II and Basel III](#)
  - (g) [Terms specific to Solvency II](#)
  
- (2) You can use the Nematrian website's search facility to search for a definition of a specific term (and for occurrences of the term elsewhere on the Nematrian website).

The Nematrian website also contains a list of risk management acronyms, see [here](#), and a risk measurement glossary particularly tailored towards asset management, see [here](#).

### **(a) Financial and Risk Management terms**

[\[ERMGlossaryFinancialAndRMTerms\]](#)

Definitions of some of the Financial and Risk Management terms used in Enterprise Risk Management (ERM) are:

- [Contagion](#)
- [Chief Risk Officer \(CRO\)](#)
- [Downside risk](#)
- [Economic capital](#)
- [Economic Scenario Generator](#)
- [Emerging risks](#)
- [Enterprise Risk Management](#)
- [Expected shortfall](#)
- [Extreme event](#)
- [Holistic approach](#)
- [Indicative measures](#)
- [Predictive measures](#)
- [Risk adjusted return](#)
- [Risk adjusted return on capital \(RAROC\)](#)
- [Risk appetite](#)
- [Risk capacity](#)
- [Risk concentration](#)
- [Risk control](#)
- [Risk diversification](#)

- [Risk limits](#)
- [Risk management control cycle](#)
- [Risk management culture](#)
- [Risk management policy](#)
- [Risk management system](#)
- [Risk matrix \(or map\)](#)
- [Risk metric](#)
- [Risk mitigation](#)
- [Risk objectives](#)
- [Risk optimisation](#)
- [Risk profile](#)
- [Risk responses](#)
- [Risk tolerance](#)
- [Risk treatment](#)
- [Scenario analysis](#)
- [Stress testing](#)
- [Uncertainty](#)
- [Upside risk](#)

**(b) Governance terms**

[\[ERM Glossary Governance Terms\]](#)

Definitions of some of the Governance terms used in Enterprise Risk Management (ERM) are:

- [Audit Function](#)
- [Basel II](#)
- [Basel III](#)
- [Board strategy](#)
- [Central risk function](#)
- [Corporate governance](#)
- [Credit rating agency](#)
- [Internal control](#)
- [Listing Rules](#)
- [Market conduct](#)
- [PLC corporate entity](#)
- [Regulatory risk frameworks](#)
- [Risk management](#)
- [Sarbanes-Oxley](#)
- [Solvency II](#)
- [Stakeholder management](#)
- [Strategic risk management](#)
- [Turnbull Report](#)
- [UK Combined Code](#)
- [UK Listing Authority \(UKLA\)](#)

**(c) Risk Categories**

[\[ERM Glossary Risk Categories\]](#)

Definitions for some of the risk categories used in Enterprise Risk Management (ERM) are:

- [Agency risk](#)
- [Basis risk](#)
- [Business risk](#)
- [Compliance risk](#)
- [Conduct risk](#)
- [Credit risk](#)
- [Demographic risk](#)
- [Economic risk](#)
- [Financial risk](#)
- [Foreign exchange risk](#)
- [Insurance risk](#)
- [Interest rate risk](#)
- [Legal risk](#)
- [Liquidity risk](#)
- [Market risk](#)
- [Model risk](#)
- [Moral hazard](#)
- [Non-systematic risk](#)
- [Operational risk](#)
- [Political risk](#)
- [Project risk](#)
- [Regulatory risk](#)
- [Reputational risk](#)
- [Risk of bias](#)
- [Strategic risk](#)
- [Systematic risk](#)
- [Systemic risk](#)
- [Underwriting risk](#)

**(d) Additional technical terms helpful for ERM students**

[\[ERM Glossary Additional Terms\]](#)

Definitions of some additional terms relevant to Enterprise Risk Management (ERM) are:

- [Alternative Risk Transfer \(ART\)](#)
- [AS/NZS 4360](#)
- [Coefficient of tail dependence](#)
- [Coherent risk measure](#)
- [Copula](#)
- [COSO ERM framework](#)
- [Extreme value theory \(EVT\)](#)
- [Gaussian random variables](#)
- [ISO 31000](#)
- [Probability of ruin](#)
- [Residual risk](#)
- [Risk model](#)
- [Risk system](#)
- [Securitisation](#)
- [Tail correlation](#)

- [Weighted average cost of capital \(WACC\)](#)

Students may also sometimes need to refer to specific mathematical tools, e.g. [Kendal's tau](#) for selecting between different copulas within particular Copula families. To search the Nematrian website for more information on a specific mathematical topic please use the Site Search facility at the top of any Nematrian website page.

**(e) General financial terms helpful for ERM students**

[\[ERM Glossary General Terms\]](#)

Definitions of some general financial terms (with a bias towards banking) relevant to Enterprise Risk Management (ERM) are:

- [Asset-backed commercial paper](#)
- [Asset-backed security](#)
- [Alt-A loan](#)
- [Arrears \(or delinquency\)](#)
- [Backwardation](#)
- [Basis point](#)
- [Collateralised Debt Obligation \(CDO\)](#)
- [Credit Default Swap \(CDS\)](#)
- [Collateralised Loan Obligation \(CLO\)](#)
- [Commercial Mortgage-Backed Security \(CMBS\)](#)
- [Collectively Assessed Loan Impairment Provision](#)
- [Commercial Real Estate](#)
- [Conduit](#)
- [Contango](#)
- [Contractual maturity](#)
- [Core Tier 1 capital](#)
- [Core Tier 1 capital ratio](#)
- [Covered bond](#)
- [Commercial Paper \(CP\)](#)
- [Credit and Liquidity enhancement](#)
- [Credit derivative](#)
- [Credit risk spread \(or credit spread\)](#)
- [Credit valuation adjustment \(CVA\)](#)
- [Customer deposit](#)
- [Debt restructuring](#)
- [Derivatives](#)
- [Diversification](#)
- [Dynamic hedging](#)
- [Economic value and economic value added \(EVA\)](#)
- [Efficient Frontier](#)
- [Embedded equity conversion feature](#)
- [Expected Loss](#)
- [Exposure at Default](#)
- [First or Second Lien](#)
- [Hedging](#)
- [Impaired loan](#)
- [Impairment allowance](#)

- [Impairment loss and impairment provisions](#)
- [Investment grade](#)
- [Loss given default \(LGD\)](#)
- [Loan to deposit ratio](#)
- [Loan past due](#)
- [Loan-to-value ratio \(LTV\)](#)
- [Mortgage-backed security \(MBS\)](#)
- [Markets in Financial Instruments Directive \(MiFID\)](#)
- [Monoline insurer](#)
- [Monte Carlo simulation](#)
- [Mortgage vintage](#)
- [Multilateral trading facility \(MTF\)](#)
- [Medium Term Note \(MTN\)](#)
- [Negative basis bond](#)
- [Negative Equity Mortgage](#)
- [Net Interest Income](#)
- [Over-the-counter \(OTC\) derivative](#)
- [ERM Glossary: Organised trading facility \(OTF\)](#)
- [Prime Mortgage](#)
- [Packaged retail investment product \(PRIP\)](#)
- [Private equity](#)
- [Probability of default \(PD\)](#)
- [Reinsurance](#)
- [Renegotiated loan](#)
- [Repurchase agreement \(repo\)](#)
- [Residential Mortgage-Backed Security \(RMBS\)](#)
- [Risk discount rate](#)
- [Risk-weighted assets](#)
- [Swap execution facility \(SEF\)](#)
- [Systematic internaliser \(SI\)](#)
- [Special purpose vehicle \(SPV\) or special purpose entity \(SPE\)](#)
- [Sub-investment grade](#)
- [Subordinated liabilities](#)
- [Sub-Prime Mortgage](#)
- [Synthetic CDO](#)
- [Tier 1 capital](#)
- [Tier 1 capital ratio](#)
- [Tier 2 capital](#)
- [Undertakings for Collective Investment in Transferable Securities \(UCITS\)](#)
- [Wrapped loan or bond](#)
- [Write Down](#)

**(f) Terms specific to Basel II and Basel III**

[\[ERM Glossary Basel II and III Terms\]](#)

Definitions of some terms relating to Basel II and Basel III used in Enterprise Risk Management (ERM) are:

- [Advanced internal ratings-based approach \(A-IRB\)](#)
- [Advanced measurement approach \(AMA\)](#)

- [Available Stable Funding](#)
- [Banking book](#)
- [Internal capital adequacy assessment process \(ICAAP\)](#)
- [Liquidity Coverage Ratio \(LCR\)](#)
- [Net Stable Funding Ratio \(NSFR\)](#)
- [Required Stable Funding \(RSF\)](#)
- [Single Supervisory Mechanism \(Eurozone\)](#)
- [Supervisory Review and Evaluation Process \(SREP\)](#)
- [Trading book](#)

**(g) Terms specific to Solvency II**

[\[ERM Glossary Solvency II Terms\]](#)

Definitions of some terms relating to Basel II and Basel III used in Enterprise Risk Management (ERM) are:

- [Matching adjustment](#)
- [Ultimate forward rate](#)
- [Volatility adjustment](#)

## Glossary (in alphabetical order)

### Advanced internal ratings-based approach (A-IRB)

[\[ERM Glossary Advanced Internal Ratings Based Approach\]](#)

In Basel II/III, the *advanced* internal ratings-based approach (A-IRB) is one of two types of internal ratings-based approaches that can be used to calculate regulatory capital requirements for credit risk (the other is the *foundation* internal ratings-based approach).

With the advanced approach, firms are able to use internal data for determining probability of default, exposure at default and loss given default. However, they still need to use the Basel II/III model formula (including maturity adjustments) for actual calculation of credit risk based on these inputs.

### Advanced measurement approach (AMA)

[\[ERM Glossary Advanced Measurement Approach\]](#)

In Basel II/III, the advanced measurement approach (AMA) (for operational risk) allows firms to calculate the operational risk regulatory capital charge using the bank's internal operational risk measurement modelling system. Firms doing so can use their own internal models that must be pre-approved by supervisors. Their calculations need to involve:

- (a) Collection of data on their operational risk losses;
- (b) Combination of this data with external data; and
- (c) Use of key risk indicators and self-assessments.

### Agency risk

[\[ERM Glossary Agency Risk\]](#)

In economically related disciplines, agency risk refers to the risk of events or actions resulting from non-aligned interests of different stakeholders.

'Agency' here refers to the relationship between principal (typically client) and agent (typically adviser). Agency risk is often also used in an economic context to refer to the risk that managers of entities may not be incentivised to act in the best interests of shareholders, and may put their own (agent) interests above those of shareholders (who are here the principals).

### Alt-A loan

[\[ERM Glossary Alt A Loan\]](#)

An Alt-A loan is the name commonly given to a mortgage loan that is regarded as lower risk than a [sub-prime](#) loan, sharing with them higher risk characteristics than lending under normal criteria.

### Alternative Risk Transfer (ART)

[\[ERM Glossary Alternative Risk Transfer\]](#)

Alternative Risk Transfer (ART) is an umbrella term encompassing all 'non-traditional' ways that organisations can use to transfer risk to third parties.

In an actuarial context, it is particularly commonly applied to approaches that combine traditional insurance and reinsurance protection strategies with financial risk protection, often via the capital markets.

## **Arrears (or delinquency)**

[\[ERM Glossary Arrears\]](#)

Banking customers (or customers more generally) are said to be in arrears when they are behind in fulfilling their obligations resulting in an outstanding loan to them being unpaid or overdue. Such a customer is also said to be in a state of delinquency. When a customer is in arrears, the entire outstanding balance is said to be delinquent, meaning that delinquent balances are the total outstanding loans on which payments are overdue.

## **AS/NZS 4360**

[\[ERM Glossary AS\\_NZS4360\]](#)

The AS/NZS 4360 is a (best practice) Risk Management Standard published by Standards Australia, which has been widely adopted around the world.

## **Asset-backed commercial paper (ABCP)**

[\[ERM Glossary ABCP\]](#)

Asset-backed commercial paper (ABCP) is commercial paper in the form of [ABS](#).

## **Asset-backed security**

[\[ERM Glossary ABS\]](#)

An asset-backed security (ABS) is a security that represents an interest in an underlying pool of referenced assets. The referenced pool can comprise any assets which attract a set of associated cash flows. Commonly they involve pools of residential or commercial mortgages but they could also include leases, credit card receivables, motor vehicles, student loans etc.

## **Audit Function**

[\[ERM Glossary Audit Function\]](#)

The (internal) audit function of a firm is the part of the firm that is charged with carrying out reviews aiming at helping the firm achieve its stated objectives. It does this by using a systematic methodology for analysing business processes, procedures and activities with the aim of highlighting organisational weaknesses and recommending solutions.



The scope of internal auditing within an organization is often broad. It may involve topics such as the efficacy of operations, the reliability of financial reporting, deterring and investigating fraud, safeguarding assets, and compliance with laws and regulations. Within a financial firm, compliance with laws and regulations is typically important enough to require the establishment of a specific compliance function.

## Available Stable Funding (ASF)

[[ERMGlossaryASF](#)]

The concept of available stable funding (ASF) is used in the computation of the [Net Stable Funding Ratio](#) being introduced by Basel III.

ASF is defined by Basel III as the total amount of a bank's capital, preferred stock with maturity equal to or greater than one year, liabilities with effective maturities of one year or greater, the portion of non-maturity deposits and/or term deposits with maturities of less than one year that would be expected to stay with the institution for an extended period in an idiosyncratic stress event and the portion of wholesale funding with maturities of less than a year that is expected to stay with the institution for an extended period in an idiosyncratic stress event. Extended borrowing from central bank lending facilities outside regular open market operations are not considered in this ratio, in order not to create a reliance on the central bank as a source of funding.

To calculate the ASF, the carrying value of an institution's equity and liabilities is multiplied by an ASF factor, the maximum value for which depends on the type funding as set out in paragraph 128 of the Basel III liquidity proposals, i.e. [BCBS \(2010a\)](#).

## Backwardation

[[ERMGlossaryBackwardation](#)]

A commodity derivatives market is said to be in backwardation if its price structure is currently such that the price of a near-term contract for delivery of the commodity is higher than the price for forward deliveries.

Industry jargon for the opposite state is [contango](#).

## Banking book

[[ERMGlossaryBankingBook](#)]

The banking book of a bank is not defined as such in the EU's [Capital Requirements Directive](#) and [Capital Requirements Regulation](#). Instead, it can be derived as the part of the bank's overall book of exposures that is not part of its [trading book](#). Please note that within the banking book may be positions that fall within the scope of 'available for sale' and the regulatory treatment of such exposures can differ from other exposures in the banking book.

## Basel II

[[ERMGlossaryBaselII](#)]

Basel II is the second of the Basel Capital Accords (for banks). These are recommendations on banking laws and regulations issued by the Basel Committee on Banking Supervision. The purpose of Basel II, which was initially published in June 2004 (but is more commonly dated as corresponding to the capital adequacy framework issued by the Basel Committee on Banking Supervision in June 2006 in the form of the 'International Convergence of Capital Measurement and Capital Standards'), was to create an international standard that banking regulators could use when creating regulations about how much capital banks need to put aside to guard against the types of financial and operational risks banks face.

Basel II superseded earlier rules referred to as Basel I. In contrast to Basel I, Basel II aimed to be 'risk sensitive' in the sense that the capital requirements for internationally active banks that it proposed depended on the riskiness of their exposures.

### **Basel III**

[\[ERMGlossaryBaselIII\]](#)

Basel III is the term commonly used to refer to the capital reforms and introduction of a global liquidity standard proposed by the Basel Committee on Banking Supervision in 2010 and being phased in from 1 January 2013 onwards, see [Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems. Revised Version 2011](#), [Basel III: International framework for liquidity risk measurement, standards and monitoring](#) and/or [main BCBS webpage on Basel III](#).

### **Basis point**

[\[ERMGlossaryBasisPoint\]](#)

A basis point (bp) is one-hundredth of a per cent (i.e. 0.01 per cent), so 100 basis points is 1 per cent. Movements in interest rates or yields on securities are often quoted in basis points.

### **Basis risk**

[\[ERMGlossaryBasisRisk\]](#)

Basis risk occurs when cash flows from a hedging instrument do not exactly offset cash flows from the instrument(s) being hedged.

It also has a variety of related meanings (in an actuarial context), see e.g. GIRO 2008 Working party on securitisation of non-life insurance, including:

- (a) The residual risk that remains (with a (re)-insurer) in respect of exposures (e.g. perils and territories) covered by the selected protection strategy
- (b) The risk that arises when a counterparty's payments are based not on (an insurer's) actual claim payments but on industry averages
- (c) The possibility that (reinsurance) cover might prove insufficient to handle adequately the risk in question because hedging/reinsurance needs have not been precisely identified.

### **Board strategy**

[\[ERMGlossaryBoardStrategy\]](#)

Board strategy refers to the plans that the board of a company makes regarding future development of the company. It also usually refers to the steps it intends to take to realise those plans.

## **Business Risk**

[\[ERM Glossary Business Risk\]](#)

Business risk is defined by [Lam \(2014\)](#) in two different ways:

- (a) The risk of loss corresponding to unexpected changes in the firm's competitive environment, or to trends that damage the business franchise or operating economics.
- (b) The risk that annual financial and operating results may not meet management and stakeholder expectations.

For a firm, [reputational risk](#) can be thought of as an example of business risk.

## **Central risk function**

[\[ERM Glossary\]](#)

The (central) risk function of a firm or group of firms is the unit within the firm that gathers information relating to risk, analyses the firm's risks and reports on them to senior management.

Some risk functions may have a more proactive role in implementing or deciding upon risk mitigation actions than others. In the financial sector it is becoming increasingly common for the risk function to be headed up by a [chief risk officer](#).

## **Chief Risk Officer (CRO)**

[\[ERM Glossary Chief Risk Officer\]](#)

If an organisation has a Chief Risk Officer (CRO) then the CRO would normally have responsibility for overall leadership and development of ERM and other risk disciplines within the organisation. The CRO often reports to the Chief Executive Officer (CEO) or the Chief Financial Officer (CFO).

CEOs, CFOs and CROs are examples of individuals within the 'C-suite' layer of management within an organisation, loosely speaking those individuals who have 'chief' within their title or who carry equivalent responsibilities but are not given this title as such.

## **Coefficient of tail dependence**

[\[ERM Glossary Coefficient Of Tail Dependence\]](#)

The coefficient of tail dependence is a measure of the limiting 'correlation' between outcomes in the (far) tails of (two) distributions.

'Correlations' between tails of distributions often differ from correlations applicable to the generality of the distributions and are thus potentially poorly estimated using standard correlation coefficients (calculated as per e.g. [MnCorrelation](#), see e.g. the attached [slides](#)).

Coefficient of tail dependence can be thought of as a limiting version of [tail correlation](#).

### **Coherent risk measure**

[\[ERMGlossaryCoherentRiskMeasure\]](#)

A 'coherent' risk measure is one that satisfies several technical axioms which make it a 'good' way of measuring risk. These axioms are summarised [here](#). For further details see e.g. the attached [slides](#).

### **Collateralised Debt Obligation (CDO)**

[\[ERMGlossaryCDO\]](#)

A (physical) Collateralised Debt Obligation (CDO) is a security issued by a third party which references ABSs or other assets purchased by the issuer. The main feature of a CDO that generally differentiates it from other asset pools is the presence of tranching, in which different investors in the CDO have different priority rights to cash flows arising from the asset pool.

CDOs may also be [synthetic](#).

### **Collateralised Loan Obligation (CLO)**

[\[ERMGlossaryCLO\]](#)

A Collateralised Loan Obligation (CLO) is a security backed by the repayments from a pool of commercial loans. CLOs are usually structured products with different tranches in which senior classes of holder receive repayment before other tranches are repaid.

### **Collectively Assessed Loan Impairment Provision**

[\[ERMGlossaryCollectivelyAssessedLoanImpairmentProvision\]](#)

A provision that a bank might establish following an impairment assessment on a collective basis for a homogeneous group of loans (e.g. credit card receivables and personal loans) which are not considered individually significant and for which loan losses have been incurred but not separately identified at the balance sheet date.

### **Commercial Mortgage-Backed Security (CMBS)**

[\[ERMGlossaryCMBS\]](#)

A Commercial Mortgage-Backed Security is a security that represents an interest in a pool of commercial mortgages. Investors in these securities have the right to cash received from mortgage repayments of interest and principal.

### **Commercial Real Estate**

[\[ERMGlossaryCommercialRealEstate\]](#)

Commercial real estate (commercial property in UK-parlance) includes office buildings, industrial property, medical centres, hotels, malls, retail stores, shopping centres, farm land, multifamily housing buildings, warehouses, garages, and industrial properties.

It can be contrasted with residential real estate, which focuses on individual family housing.

## **Compliance Risk**

[\[ERM Glossary Compliance Risk\]](#)

Compliance risk is defined by [Lam \(2014\)](#) as the risk that a company violates laws and regulations (“compliance requirements”). It is closely associated with [conduct risk](#).

## **Conduct risk**

[\[ERM Glossary Conduct Risk\]](#)

Conduct risk is the risk that a firm’s conduct (e.g. how it interacts with its regulator, how it treats its customers, how it organises itself) falls below what the regulator expects or considers reasonable. More specifically, it tends to be associated with the risk that the firm’s behaviour results in poor outcomes for its customers (i.e. poorer than is reasonable from a regulatory perspective).

Some regulatory bodies, such as the UK’s Financial Conduct Authority (FCA) are particularly focused on conduct risk, see e.g. [FCA Risk Outlook](#).

## **Credit Default Swap (CDS)**

[\[ERM Glossary CDS\]](#)

A Credit Default Swap is a type of credit derivative (indeed it is the main example of such a derivative at the current time). It is an arrangement in which the credit risk of an asset (the reference asset) is transferred from the buyer to the seller of protection. The protection seller receives premium or interest-related payments in return for contracting to make payments to the protection buyer upon a defined credit event. Credit events normally include bankruptcy, payment default on a reference asset or assets, or downgrades by a rating agency.

## **Commercial Paper (CP)**

[\[ERM Glossary CP\]](#)

Commercial paper is an unsecured promissory note usually issued to finance short-term credit needs. It specifies the face amount paid to investors on the maturity date. Commercial Paper can be issued as an unsecured obligation of a banking group or, for example when issued by a group’s conduit, as an asset-backed obligation (in which case it is referred to as asset-backed commercial paper).

Commercial Paper is usually issued for periods from as little as a week up to nine months.

## **Conduit**

[\[ERMGlossaryConduit\]](#)

A conduit is a financial vehicle that holds asset-backed securities which are financed with short-term deposits (generally [commercial paper](#)) that use the asset-backed securities as collateral.

Conduits may be used by banks to securities loans that they have made. The conduit will often then have a liquidity line provided by the bank that it can draw down on in the event that it is unable to issue funding to the market.

## **Contagion**

[\[ERMGlossaryContagion\]](#)

Contagion refers to a situation where occurrence of one risk leads to occurrence of another.

It can refer to contagion between different entities within the same corporate group (e.g. failure of a group company can disrupt activity at another, leading to other types of risk becoming manifest).

More usually, it refers to a spiral across companies and potentially across entire economies. For example, failure of one or more key financial institutions may lead to failures in other firms or a broader weakness in the real economy. Contagion is particularly great when asset values are very sensitive to confidence as is the case for banks and for sovereign borrowers.

## **Contango**

[\[ERMGlossaryContango\]](#)

A commodity derivatives market is said to be in contango if its price structure is currently such that the price of a near-term contract for delivery of the commodity is lower than the price for forward deliveries.

Industry jargon for the opposite state is [backwardation](#).

## **Contractual maturity**

[\[ERMGlossaryContractualMaturity\]](#)

Contractual maturity refers to the final payment date of a loan or other financial instrument, at which point all the remaining outstanding principal will be repaid and interest is due to be paid. For some loan types, especially those that are likely to be repaid early in part or in full, it may be contrasted with expected maturity date which might be taken as the average time to maturity bearing in mind expected repayments.

## **Copula**

[\[ERMGlossaryCopula\]](#)

A copula is a mathematical framework for describing the dependence structure within a multivariate, i.e. multidimensional, probability distribution. For further details see [here](#).

## **Core Tier 1 capital**

[\[ERM Glossary Core Tier 1 Capital\]](#)

Core Tier 1 capital is usually understood to be the highest ‘quality’ of capital and is defined in broad terms by, say, the UK’s Prudential Regulation Authority as consisting of shareholders’ equity and equity non-controlling interests after deducting goodwill, other intangible assets and other regulatory deductions.

## **Core Tier 1 capital ratio**

[\[ERM Glossary Core Tier 1 Capital Ratio\]](#)

A bank’s core Tier 1 capital ratio is its [core Tier 1 capital](#) as a percentage of its [risk weighted assets](#).

## **Corporate governance**

[\[ERM Glossary Corporate Governance\]](#)

Corporate governance is the set of processes, customs and policies by which an entity is directed, administered or controlled. It also typically deemed to include:

- The relationships between the aims and objectives of the many stakeholders involved in an entity and the aims and objectives that the entity itself sets; and
- The laws, regulations and institutions affecting the entity.

## **COSO ERM framework**

[\[ERM Glossary COSO ERM Framework\]](#)

The Committee of the Sponsoring Organizations of the Treadway Commission (COSO) is a US private sector organisation that issues standards and definitions which organisations can use to assess their internal control frameworks. In 2004 it published its “Enterprise Risk Management – Integrated Framework”, see [here](#), to encourage increased focus on ERM.

## **Covered bond**

[\[ERM Glossary Covered Bond\]](#)

A covered bond is a bond backed by a pool of loans. For example, a covered mortgage bond might be backed by a pool of mortgage loans. The mortgages remain on the issuer’s balance sheet. The issuing bank can generally change the make-up of the loan pool or the terms of the loans to preserve credit quality. Covered bonds thus have a higher risk weighting than mortgage-backed securities because the holder is exposed to both the non-payment of the mortgages and the financial health of the issuer.

## **Credit and Liquidity enhancement**

[\[ERM Glossary Credit And Liquidity Enhancement\]](#)

Credit enhancement involves improving the creditworthiness of a financial obligation to provide better protect for its holders against losses due to asset default. Two general types of credit enhancement are third-party guarantees (such as guaranteed mortgages) and self-enhancement through over-collateralisation (in the case of covered bonds). A credit enhancement facility is an arrangement in which, say, a bank agrees to provide credit enhancement if needed (potentially in return for a premium).

Liquidity enhancement makes funds available if required, for other reasons than asset default, e.g. to help to ensure maturing commercial paper is repaid in a timely fashion.

### **Credit derivative**

[\[ERM Glossary Credit Derivative\]](#)

A credit derivative is a financial instrument that derives its value from the credit rating of an underlying instrument carrying the credit risk of some specific issuing entity. The principal type of credit derivatives are credit default swaps.

### **Credit rating agency**

[\[ERM Glossary Credit Rating Agency\]](#)

A credit rating agency (CRA) is a company that assigns *credit ratings* to issuers of certain types of debt obligations as well as to the debt instruments themselves. In most cases, the issuers of securities rated by such agencies are companies, special purpose entities, state and local governments, non-profit organisations or national governments issuing debt-like securities (bonds) that can be traded on a secondary market.

Credit ratings agencies may also rate portfolios, e.g. money market funds, but the ratings ascribed to these types of entities may not have the same meaning as the ratings they assign to debt instruments.

In the EU, credit rating agencies are often referred to as external credit assessment institutions (ECAIs).

### **Credit risk**

[\[ERM Glossary Credit Risk\]](#)

Credit risk is the risk that a counterparty to an agreement will be unwilling or unable to make the payments required under that agreement. More loosely, it can refer to the risk that the (market) value of a credit-sensitive asset or liability (e.g. a corporate bond) can change due to factors other than risk-free interest rate changes.

### **Credit risk spread (or credit spread)**

[\[ERM Glossary Credit Risk Spread\]](#)



Credit risk spread (or credit spread) is the yield spread between securities with the same currency and maturity structure but with different associated credit risks.

Often the spread is expressed relative to a corresponding benchmark or deemed risk-free rate and then it represents the spread required by the market to take on a (usually) lower credit quality.

## **Credit valuation adjustment (CVA)**

[\[ERMGlossaryCVA\]](#)

Credit valuation adjustment (CVA) is an adjustment to the fair value of a (usually derivative) asset to reflect the creditworthiness of the counterparty (as far as the bank using the valuation in its balance sheet is concerned).

Banks may also in some circumstances apply equivalent adjustments to the fair value of derivatives to reflect their own creditworthiness, which is then called debit valuation adjustment (DVA).

## **Customer deposit**

[\[ERMGlossaryCustomerDeposit\]](#)

Customer deposits are money deposited by (bank) account holders. Such funds are recorded as liabilities in the balance sheet of a bank. In some cases, banking groups may include some repo contracts within their classification of customer deposits.

## **Debt restructuring**

[\[ERMGlossaryDebtRestructuring\]](#)

Debt restructuring occurs when the terms and provisions of an outstanding debt agreement are changed. This may be done in order to improve cash flow and the ability of the borrower to repay the debt. It can involve altering the repayment schedule as well as reducing the debt or interest charged on the loan.

## **Demographic risk**

[\[ERMGlossaryDemographicRisk\]](#)

Demographic risk is the risk arising from variations in demographic factors such as mortality rates or longevity trends. It can be a component of insurance risk but is perhaps more commonly used in the context of pension risk.

## **Derivatives**

[\[ERMGlossaryDerivatives\]](#)

Derivatives are financial instruments whose behaviour 'derives' from some more fundamental instruments. They are transacted with third parties and permit the hedging and transfer of market and/or credit risk and in some cases other types of risk too.

## **Diversification**

[\[ERM Glossary Diversification\]](#)

Diversification involves spreading exposures between ones that are not fully correlated, thereby reducing the overall level of risk.

## **Downside risk**

[\[ERM Glossary Downside Risk\]](#)

Downside risks are ones that affect the enterprise's total position in negative ways. ERM aims to take account of both [upside](#) and downside risk by creating opportunities for the firm's business units to take advantage of upside risks as well as measuring, managing and mitigating downside risk.

## **Dynamic hedging**

[\[ERM Glossary Dynamic Hedging\]](#)

Dynamic hedging is the process of adjusting hedges frequently in order to maximise the effectiveness of the hedge.

## **Economic capital**

[\[ERM Glossary Economic Capital\]](#)

Economic capital is the amount of capital that an enterprise considers that it intrinsically needs to hold to function as a going concern business. By 'intrinsic' we mean not directly imposed on the business by outside stakeholders such as regulators (or ratings agencies).

Some commentators argue that capital for financial firms like banks and insurance companies is largely determined by regulatory or rating agency requirements. In this case, an economic capital level that is typically higher than required by these external stakeholders can be viewed as involving the firm aiming to hold a buffer to guard against hitting the regulatory minimum.

## **Economic risk**

[\[ERM Glossary Economic Risk\]](#)

The (UK) Actuarial Profession defines economic risk as risks arising from the impact of macroeconomic factors. More generally, it could be used to refer to *any* economic impact arising from the behaviours and decisions of individuals, households and firms.

## **Economic Scenario Generator (ESG)**

[\[ERM Glossary Economic Scenario Generator\]](#)

The term 'economic scenario generator' (ESG) is the name given in insurance or actuarial science to a tool that allows a user to simulate many possible ways in which economic conditions might evolve in the future, and to ascribe a likelihood to these scenarios.

Often an ESG uses [Monte Carlo simulation](#). In its most basic form, this simulation approach assumes that each potential evolution provided by the ESG has equal likelihood (i.e. each is an equally likely draw from the relevant distribution of possible future outcomes being modelled by the ESG). More sophisticated simulation techniques can give different assumed probabilities of occurrence to different sampled outcomes, or can select the outcomes in other ways designed to provide a more 'uniform' fit to the overall distribution, to speed up computation times.

ESGs can target either so-called 'real-world' distributions of outcomes or so-called 'risk-neutral' distributions of outcomes.

Real world distributions aim to characterise the actual likelihoods of different outcomes. They can be useful for identifying the likely actual range of results.

Risk-neutral distributions are adjusted so that the probability-weighted average of the modelled values ascribed to a given set of cash flows under each scenario is aligned with the observed market value of that set of cash flows.

For example, commonly it is assumed that riskier assets such as equities will on average deliver a higher average return than less risky assets such as cash, albeit with increased risk of significant loss. The valuation of an equity instrument using an ESG targeting a real-world distribution would then include this assumed (average) outperformance. A consequence is that the present 'value' it would place on the equity instrument would likely be higher than its actual market value. Risk neutral distributions eliminate this bias and thus provide a better basis if the aim is to estimate the [market consistent](#) or fair values to ascribe to different instruments.

ESGs (and their use in [Solvency II](#)) are explained further in [Varnell \(2009\)](#).

## **Economic value and economic value added (EVA)**

[\[ERMGlossaryEconomicValue\]](#)

Economic value (to shareholders) is the present value of all expected future transfers to shareholders, determined on a realistic economic basis. It is also called 'shareholder value' or 'embedded value'. The 'economic value added' of an action is the amount that is expected to be (or has been) added to overall economic value by a given action.

## **Efficient frontier**

[\[ERMGlossaryEfficientFrontier\]](#)

An efficient portfolio is one for which it is not possible to increase expected return without increasing risk or to reduce risk without reducing expected return. A range of portfolios may be efficient depending on the trade-off between risk and return that a particular investor might be happy to adopt. The efficient frontier is the line joining all efficient portfolios in risk-return space.

## **Embedded equity conversion feature**

[\[ERMGlossaryEmbeddedEquityConversionFeature\]](#)

An embedded equity conversion feature is a derivative contained within the terms and conditions of a debt instrument that enables or requires the instrument to be converted into equity under a particular set of circumstances. Debt instruments with these features may be 'callable' or 'puttable' depending on which party is able to exercise the conversion feature.

## Emerging risks

[\[ERM Glossary Emerging Risks\]](#)

Emerging risks are new or evolving risks that may (currently) be difficult to manage since their likelihood, impact or timing may be highly uncertain.

## Enterprise Risk Management

[\[ERM Glossary Enterprise Risk Management\]](#)

Enterprise Risk Management (ERM) is a term that has multiple meanings. It can refer to a set of business disciplines or to the application of these disciplines in practice. For example:

(a) [Lam \(2003\)](#) defines ERM as follows:

*"ERM is all about integration in three ways. It requires:*

- *An integrated risk organization*
- *The integration of risk transfer strategies*
- *The integration of risk management into the business processes of a company"*

(b) [Kemp and Patel \(2011\)](#) define ERM as follows:

*"A framework, using risk as the core building block, to enable key business decisions to be aligned with inherent risk.*

*Key differentiators are:*

- *Considers all risks*
- *Is applied across the whole business*
- *Has risk embedded into the decision-making process*

*Key enablers are:*

- *Commitment and leadership from the top*
- *Risk owned by the business*
- *A supporting risk management function*
- *Effective communication to all stakeholders of how risk is managed"*

It might also be defined as a holistic risk management process that considers the risks of the enterprise as a whole rather than considering individual risks and business units in isolation.

Usually Enterprise Risk Management aspires to focus on both [downside](#) risk and [upside](#) risk/opportunity. However, in practice, [centralised risk functions](#) within firms may be expected to focus more on mitigating downside risk (e.g. acting as a 'second line of defence') if this aids clarity of roles and responsibilities.

## Expected Loss

[\[ERMGlossaryExpectedLoss\]](#)

The expected (credit) loss on an instrument is the amount of loss that can be expected by the bank holding it (often calculated in accordance with any applicable regulatory requirements). It is generally calculated by multiplying the Default Frequency by the [Loss Given Default](#) and (if the [Loss Given Default](#) is expressed as a percentage) the [Exposure at Default](#).

## Expected shortfall

[\[ERMGlossaryExpectedShortfall\]](#)

The expected shortfall is the mean loss (possibly relative to some specified loss or profit level) on a portfolio over a given period of time conditional on losses exceeding a quantile with a given confidence level. See also [here](#).

A 'market-implied' expected shortfall would calculate the mean loss using a probability distribution derived from market-implied data, e.g. option prices, whilst a 'real world' expected shortfall would calculate the mean loss using a probability distribution derived from some view of actual probabilities of occurrence, either extrapolating past data into the future or via expert judgement (or a mixture).

Usually, Expected Shortfall is interpreted similarly to [Tail Value-at-Risk](#).

## Exposure at Default

[\[ERMGlossaryExposureAtDefault\]](#)

Exposure at Default is an estimate of the amount expected to be owed by a counterparty (or customer) at the time the default of the counterparty is assumed to occur (or a probability weighted average if the counterparty might default at various points in time).

## Extreme event

[\[ERMGlossaryExtremeEvent\]](#)

Extreme events are outcomes that lie in the tail of the total loss or payoff distribution of the enterprise. As explained in [Kemp \(2010\)](#), what is or is not an 'extreme event' always implicitly requires some prior probability distribution against which observed outcomes are being compared.

Measuring and modelling such risks is difficult, not least because there is usually relatively little data available relating to the tails of the distribution. For some types of risk, modelling of extreme events may benefit from the use of [Extreme Value Theory](#) (EVT). For further information on EVT see [here](#).

## Extreme value theory (EVT)

[\[ERMGlossaryExtremeValueTheory\]](#)

Extreme value theory (EVT) is a methodology that seeks to deal in succinct statistical fashion with low probability but potentially high severity events.

## Financial risk

[\[ERM Glossary Financial Risk\]](#)

Financial risk is typically understood, for a non-financial organisation, to refer to any type of risk relating to financial matters. It would thus include 'market' and 'credit' risk (and 'foreign exchange' risk), using normal financial sector parlance. For financial organisations, it is more usual to refer to these types of risk separately given their importance for such firms.

## First or Second Lien

[\[ERM Glossary First Or Second Lien\]](#)

A first lien gives the holder (usually a bank lending funds to someone) the first right to collect compensation from the sale of the underlying collateral in the event of a default on the loan.

A second lien (and conceivably further liens) may relate to the same collateral. However, in the case of default, compensation for this debt would only be received after the first lien has been repaid.

Liens of this nature can be viewed as being equivalent to tranches in a structured product, e.g. a [CDO](#) or [CLO](#)

## Foreign exchange risk

[\[ERM Glossary Foreign Exchange Risk\]](#)

Foreign exchange risk (or FOREX risk) is the risk arising from movements in foreign exchange rates.

## Gaussian random variables

[\[ERM Glossary ABCP\]](#)

Returns / losses (from several sources simultaneously) are said to be 'Gaussian' if the relevant variables are drawn from a multivariate [normal distribution](#).

A Gaussian [copula](#) is the copula associated with a Gaussian, i.e. multivariate normal distribution.

## Hedging

[\[ERM Glossary Hedging\]](#)

Hedging is a strategy that is designed to minimise exposure to certain risks by, for example, taking an equal but opposite position or by using derivatives. Depending on how hedging is carried out it may or may not remove the potential to benefit from upside.

## Holistic approach

[\[ERM Glossary Holistic Approach\]](#)

To manage and mitigate its risk effectively, an enterprise needs to consider all its risks collectively within a consistent framework. This is referred to as the ‘holistic’ approach to risk management.

## **Impaired loan**

[\[ERM Glossary Impaired Loan\]](#)

An impaired loan is a loan that a bank has made where it does not expect to collect all the contractual cash flows or to collect them when they are contractually due.

## **Impairment allowance**

[\[ERM Glossary Impairment Allowance\]](#)

A (loan) impairment allowance is a provision held on a balance sheet as a result of the raising of a charge against profit for impairment losses arising in a lending book. An impairment allowance may either be individual (i.e. relating to an individual loan) or collective (i.e. relating to a collection of loans).

## **Impairment loss and impairment provisions**

[\[ERM Glossary Impairment Loss\]](#)

An impairment loss is a reduction in value following an impairment review of an asset that determines that the value of the asset is lower than its carrying value.

For impaired financial assets measured at amortised cost, impairment losses are the difference between the carrying value and the present value of estimated future cash flows, discounted at the asset’s original effective interest rate. For impaired financial assets measured at fair value the reference would be to the asset’s market value before allowing for impairment.

Individually assessed loan impairment provisions may be assessed for individually significant impaired loans on a case-by-case basis, taking into account the financial condition of the counterparty, any guarantor and the realisable value of any collateral held. Loan impairment provisions may be collectively assessed where a portfolio comprises homogenous assets each one of which is less significant in isolation and where appropriate statistical techniques are available.

## **Indicative measures**

[\[ERM Glossary Indicative Measures\]](#)

For many types of credit, market, operational and insurance risks, the degree of risk exposure is not readily apparent from company accounting systems. To monitor, control, and manage risk exposures, indicative risk measures need to be used. Ideally, these risk measures will also be sensitive to risk characteristics and be [predictive risk measures](#) (in the sense that if the risk does occur then the measure will provide some guide as to its magnitude).

'Indicative' risk measures are thus indicators of the degree of risk that a firm has taken on, based on information supplied by its accounting, administrative or underwriting systems. Changes in such measures may provide a broad indication of trends relating to the risk. For example, they might include life insurance sums insured and/or premiums earned (for insurance), probable maximum losses, asset values, staff turnover rates, key performance indicators under service level agreements, audit exception reports, etc.

## Insurance risk

[\[ERM Glossary Insurance Risk\]](#)

Insurance risk is the risk of fluctuations in the timing, frequency and severity of insured claims. Usually the risk refers to *insurable* events (e.g. mortality, morbidity, or property/casualty insurance risks), although it is not always easy to define precisely what is an insurance risk and what isn't, except by reverting to the partly circular definition that insurance risks are ones that relate to insurance companies.

Insurance risk (particularly in an actuarial context) may also include risks relating to adverse expense and lapse/persistency experience.

## Interest rate risk

[\[Entity Wide Risk Management For Pension Funds\]](#)

Interest rate risk is the risk arising from changes in interest rates. These include both the financial impact on mark-to-market values as well as the impact on customer behaviour of changes in interest rates. It may therefore be viewed as subset of market risk (or of 'financial' or 'economic' risk).

## Internal capital adequacy assessment process (ICAAP)

[\[ERM Glossary ICAAP\]](#)

Firms subject to the EU's [Capital Requirements Directive](#) are required to review the amount of capital they internally think they need to hold to face the risks to which they are exposed. Features of an [ICAAP](#) that national supervisors such as the UK's Prudential Regulation Authority generally expect to be present include:

- (a) Firms need to take responsibility for ensuring that the capital they have is adequate, and the ICAAP is an integral part of meeting this requirement
- (b) The ICAAP and the internal processes and systems supporting it should be proportionate to the nature, scale and complexity of the firm's activities. It should include suitable stress testing, reverse stress testing, scenario analysis and other capital management disciplines that capture the full range of risks to which the firm is exposed. It should enable these risks to be assessed against a range of plausible yet severe scenarios. If models are used in the ICAAP then they should be appropriately conservative and have a suitable structure, parameterisation and governance.
- (c) Supervisors may also have specific expectations on how detailed an ICAAP might be for an IRB firm and in relation to its treatment of specific types of risk, such as liquidity risk, market risk, group risk, operational risk, currency risk and pension obligation risk.



## Internal control

[[ERMGlossaryInternalControl](#)]

In accounting and auditing parlance, an internal control is a process put into effect by an organisation's structure, work and authority flows, people and/or management information systems that is designed to help the organisation accomplish specific goals or objectives. A firm's 'internal controls' are thus the combination of all of these controls.

A firm's internal controls provide a means by which its resources are directed, monitored, and measured. They play an important role in preventing and detecting fraud. They also play an important role in protecting the organisation's resources, both tangible (e.g. machinery and real estate) and intangible (e.g. reputation or intellectual property such as trademarks).

## Investment grade

[[ERMGlossaryInvestmentGrade](#)]

Investment grade is the designation given to securities that have high credit ratings, from 'AAA' to 'BBB' as measured by external credit rating agencies. They may be contrasted with '[sub-investment grade](#)' securities, sometimes called 'junk bonds'.

## ISO 31000

[[ERMGlossaryISO31000](#)]

ISO 31000 is a global standard on Risk Management issued by the International Organization for Standardization. It principally provides generic guidelines on risk management rather than guidance covering specific risks or sectors.

## Knightian uncertainty

[[ERMGlossaryKnightianUncertainty](#)]

The intrinsic nature of Knightian [uncertainty](#) is that it is immeasurable, i.e. not possible to estimate reliably. It is named after the University of Chicago economist Frank Knight (1885-1972). [Knight \(1921\)](#) highlighted the intrinsic difference between this type of 'uncertainty' and 'risk' (the latter being amenable to quantitative analysis):

*"Uncertainty must be taken in a sense radically distinct from the familiar notion of Risk, from which it has never been properly separated.... The essential fact is that 'risk' means in some cases a quantity susceptible of measurement, while at other times it is something distinctly not of this character; and there are far-reaching and crucial differences in the bearings of the phenomena depending on which of the two is really present and operating.... It will appear that a measurable uncertainty, or 'risk' proper, as we shall use the term, is so far different from an unmeasurable one that it is not in effect an uncertainty at all."*

According to [Cagliarini and Heath \(2000\)](#), Knight's interest in the difference between 'uncertainty' and 'risk' was spurred by the desire to explain the role of entrepreneurship and profit in the economic process. Knight viewed profits accruing to entrepreneurs as being justified and explained by their willingness to bear the consequences of the uncertainties inherent in production process

that cannot be readily quantified. Where the risks can be quantified then it is generally possible (at least in theory) to hedge them or diversify them away, i.e. they are not really ‘risks’ at all, or at least not ones that should obviously bear any excess profits.

Despite it not being possible to measure ‘uncertainty’, it is still arguably possible to infer some characteristics about it, in particular how others might react to it, see e.g. [Kemp \(2010\)](#).

## **Legal risk**

[\[ERMGlossaryLegalRisk\]](#)

Legal risk is often viewed as having 3 elements:

### **Legislative risk**

Risks involved in failing to adhere to legislation/regulation, including risks relating to changes in accepted interpretations

### **Contractual risk**

Risks contained in contracts, particularly ones involving disputes in interpreting contracts

### **Litigation risk**

Risks involving court judgements that give rise to unexpected outcomes or unanticipated interpretations of legislation or contracts. These may include litigation between unrelated third parties that create precedents that may apply to the entity in question.

## **Liquidity Coverage Ratio (LCR)**

[\[ERMGlossaryLCR\]](#)

The Liquidity Coverage Ratio is being introduced by Basel III. It is designed to promote the short-term resilience of a bank’s liquidity risk profile by ensuring that it has sufficient high-quality liquid assets to survive a significant (liquidity) stress scenario lasting for one month.

Banks will be required to hold a stock of high-quality liquid assets sufficient to meet expected net cash outflows over the next 30 calendar days. ‘High-quality’ here is designed to encompass assets that have some fundamental characteristics (e.g. low credit and market risk, ease and certainty of valuation, low correlation with risky assets), market-related characteristics (e.g. active and sizeable market, low market concentration), are unencumbered (e.g. not pledged explicitly or implicitly to secure or collateralise other activities) and are practically able to be accessed for liquidity management (e.g. are under the control of functions within the bank charged with managing liquidity risk). The value to be placed on an asset in this computation is set out in paragraphs 21 – 49 of the Basel III liquidity proposals, i.e. [BCBS \(2010a\)](#).

Details on how to calculate expected net cash outflows over the next 30 calendar days are set out in paragraphs 50 – 118 of the Basel III liquidity proposals, i.e. [BCBS \(2010a\)](#), for a range of activities that a bank might undertake.

## **Liquidity risk**

[\[ERMGlossaryLiquidityRisk\]](#)

There are two main types of liquidity risk:

### **Funding liquidity risk**

This is the risk that money markets will not be able or willing to supply funding to the entity in question

### **Asset liquidity risk**

This is the risk that there will be insufficient capacity in markets to handle asset transactions when the entity wants to transact without a material impact on price.

## **Listing Rules**

[\[ERMGlossaryListingRules\]](#)

Listing rules or requirements are the set of conditions imposed by a given stock exchange (or stock exchange regulator) on companies that want to be listed on that exchange. These conditions may include minimum number of shares outstanding, minimum market capitalisation, minimum annual income, minimum auditing requirements and minimum standards of governance. Attached to the London Stock Exchange's listing rules are a set of guidelines on corporate governance referred to as the [Combined Code](#), see [here](#).

## **Loan past due**

[\[ERMGlossaryLoanPastDue\]](#)

A loan is said to be past due when a counterparty has failed to make a payment when contractually due.

## **Loan to deposit ratio**

[\[ERMGlossaryLoanToDepositRatio\]](#)

The loan to deposit ratio is the ratio of loans and advances to customers net of allowance for impairment losses (and typically excluding reverse repurchase agreements) divided by customer deposits excluding repurchase agreements.

## **Loan-to-value ratio (LTV)**

[\[ERMGlossaryLTV\]](#)

The loan-to-value ratio (LTV) is the amount of a mortgage balance outstanding as a percentage of the total appraised value of the property. A high LTV indicates that there is less value to protect the lender against house price falls or increases in the loan if repayments are not made and interest is added to the outstanding balance of the loan.

## Loss given default (LGD)

[\[ERMGlossaryLGD\]](#)

The loss given default (LGD) is the estimated loss that will arise if a counterparty (e.g. a customer) defaults. It would generally be calculated after taking account of credit risk mitigation and would include the costs of recovering any value from the outstanding debt.

## Market conduct

[\[ERMGlossaryMarketConduct\]](#)

Market conduct refers to a firm's pattern of behaviour in interacting with the markets in which it operates.

For financial firms this includes the way it executes its pricing and promotion strategy. Within the UK, market conduct is regulated by the FCA's Code of Market Conduct that sets out in broad terms what the FCA regards as abuses or deviations from acceptable market conduct.

## Market risk

[\[ERMGlossaryMarketRisk\]](#)

Within the financial community, market risk relates to risks arising from changes in investment market values of assets. This includes risks relating to movements in the mark-to-market (or 'mark-to-model') values placed on assets and liabilities which have no quoted market value. Market risk is generally deemed to include risks relating to changes in interest rates, equity and property prices and foreign exchange rates.

Some commentators, particularly ones from outside the financial services industry, use terms such as [financial risk](#) and [economic risk](#) to cover aspects of as market risk as defined above. They would then use the term 'market risk' to cover, say, risks relating to changing sales or margins, or other business activities resulting from changes in the market(s) in which the business operates.

## Markets in Financial Instruments Directive (MiFID)

[\[ERMGlossaryMiFID\]](#)

The Markets in Financial Instruments Directive (MiFID) is a core pillar in EU financial market integration. It consists of a framework Directive (Directive 2004/39/EC), an implementing Directive (Directive 2006/73/EC) and an implementing Regulation (Regulation No 1287/2006). The original MiFID directive came into force in November 2007 and at the time of writing (early 2012) a new MiFID II Directive is being planned.

The overarching aim of MiFID is to enhance the integration, competitiveness and efficiency of EU financial markets and MiFID I abolished the requirement EU member states might have imposed to require trading in financial instruments to take place on traditional exchanges, therefore leading to EU-wide competition between exchanges.

MiFID II is expected to introduce further rules promoting competition and transparency in EU financial markets by requiring that all organised trading take place on a 'regulated trading venue', i.e. a regulated market, [multilateral trading facility](#) (MTF) or organised trading facility (OTF), by requiring appropriate pre and post trade transparency on all three types of regulated trading venue, by extending MiFID type rules currently applicable to any [packaged retail product](#) (PRIP) to also apply to equivalent structured products sold by investment firms or credit institutions and generally to upgrade market structure frameworks, corporate governance and organisation requirements on those firms that are active in markets (including algorithmic traders).

## **Matching adjustment**

[\[ERMGlossaryMatchingAdjustment\]](#)

The matching adjustment is an adjustment that EU insurers subject to Solvency II are allowed (subject to certain conditions) to apply to the discount rates that they would otherwise use in their Solvency II regulatory capital computations to value predictable liability cash flows, see Article 77b of the [Solvency II Directive](#).

It is more difficult to get supervisory approval for use of the matching adjustment than it is to get supervisory approval for use of the [volatility adjustment](#) but the regulatory capital relief is usually larger.

## **Medium Term Note (MTN)**

[\[ERMGlossaryMTN\]](#)

A Medium Term Note is a form of corporate borrowing covering maturity periods ranging from nine months to c. 30 years.

## **Model construction risk**

[\[ERMGlossaryModelConstructionRisk\]](#)

This is a type of [model risk](#) and is the risk that although our underlying model framework is sound we somehow introduce errors in how it is actually constructed. Quantitative models usually involve the application of mathematical algorithms, which are often implemented using spreadsheets or other types of computer software. Model construction risk may therefore be mitigated in part by adopting appropriate Information Technology (IT) disciplines.

## **Model output misinterpretation risk**

[\[ERMGlossaryModelOutputMisinterpretationRisk\]](#)

This is a type of [model risk](#). It is the risk that, even though we have avoided model [selection](#), [construction](#) and [parameter](#) risk, those making decisions based on the output of the model still misinterpret what the output means when deciding what to do.

## **Model parameter risk**

[\[ERMGlossaryModelParameterRisk\]](#)

This is a type of [model risk](#) and is the risk that although our model is actually intrinsically sound, we feed it the wrong input parameters. This can occur for a variety of reasons. For example, the relevant parameters may be hard to estimate accurately (or we may use inappropriate ways to estimate them). There may also be misunderstandings regarding what inputs the model needs on the part of users (who will often not be the same individuals as those who have selected the model or those who have constructed it).

## **Model risk**

[\[ERMGlossaryModelRisk\]](#)

Model risk is the risk that we select the wrong model to characterise risk, or implement or interpret it incorrectly.

[Kemp and Patel \(2011\)](#) identify at least four different types of model risk, including:

- [Model selection risk](#)
- [Model construction risk](#)
- [Model parameter risk](#)
- [Model output misinterpretation risk](#)

## **Model selection risk**

[\[ERMGlossaryModelSelectionRisk\]](#)

This is a type of [model risk](#) and is the risk that our underlying model framework is wrong.

## **Monoline insurer**

[\[ERMGlossaryMonoline\]](#)

Technically, a monoline insurer could be an insurer that has just one line of business. However, a monoline insurer is generally understood to be an entity which specialises in providing credit protection to the holders of debt instruments in the event of default by the debt security counterparty. This protection is typically provided in the form of derivatives such as credit default swaps referencing the underlying exposures held.

## **Monte Carlo Simulation**

[\[ERMGlossaryMonteCarloSimulation\]](#)

Monte Carlo simulation is a modelling technique that considers a large number of randomly generated scenarios.

## **Moral hazard**

[\[ERMGlossaryMoralHazard\]](#)

Moral hazard is the risk that a party (stakeholder) behaves in a way which suits that party when they would have behaved differently if they had been fully exposed to the consequences of their behaviour.

For example, policyholders may be less careful when protecting their insured assets because they are insured against losses arising from accidents or theft.

Moral hazard is often related to *information asymmetry*. The party subject to moral hazard may have information allowing them to exploit another party who does not have access to that information.

## **Mortgage-backed security (MBS)**

[\[ERM Glossary MBS\]](#)

See [Residential](#) and [Commercial](#) mortgage-backed securities.

## **Mortgage vintage**

[\[ERM Glossary Mortgage Vintage\]](#)

The vintage of a mortgage is the year in which it was issued, likewise vintages of other financial instruments.

## **Multilateral trading facility (MTF)**

[\[ERM Glossary MTF\]](#)

A multilateral trading facility (MTF) is a type of regulated trading venue recognised by [MiFID](#). A MTF generally needs to be 'pre-trade transparent', i.e. the price at which orders may be executed generally needs to be made available on market data fees, its prices and charges need to be made public and applied consistently across all members, it needs to have a rulebook advising how it operates and how one can apply for membership and it needs to provide post trade transparency, with details of the price of trades on the platform being published in real-time. However, unlike most recognised exchanges it does not support a listing process as such.

## **Negative basis bond**

[\[ERM Glossary Negative Basis Bond\]](#)

A negative basis bond is an [ABS](#) held with a separately purchased matching credit default swaps to protect against the risk of default of the security. An ABS without the benefit of CDS protection is sometimes called an 'Uncovered ABS'.

## **Negative Equity Mortgage**

[\[ERM Glossary Negative Equity Mortgage\]](#)

A negative equity mortgage is one that is 'in negative equity'. This occurs when the value of the property purchased using the mortgage is below the balance outstanding on the loan.

The amount of the negative equity is the value of the asset less the outstanding balance on the loan.

## **Net Interest Income**

[\[ERM Glossary Net Interest Income\]](#)

Net Interest Income is the difference between interest received on assets and interest paid on liabilities.

Net interest margin would usually refer to net interest income as a percentage of average interest-earning assets.

## **Net Stable Funding Ratio (NSFR)**

[\[ERM Glossary NSFR\]](#)

The Net Stable Funding Ratio relates to a proposal within Basel III that will require banks to maintain a minimum proportion of long-term assets that are funded by long term, stable funding.

In this context, 'stable' funding includes most types of customer deposits, long-term wholesale funding and the bank's equity (more precisely the portion of those types and amounts of equity and liability financing expected to be reliable sources of funds over a one-year time horizon under conditions of extended stress) but excludes most types of short-term wholesale funding (the assumption being that this type of funding may be more likely to be withdrawn at short notice). See [Available Stable Funding](#) for more details.

## **Non-systematic risk**

[\[ERM Glossary Non Systematic Risk\]](#)

Non-systematic risk is risk that can be eliminated by adopting a diversified portfolio, in contrast with [systematic risk](#). It is also called 'idiosyncratic risk'.

## **Operational risk**

[\[ERM Glossary Operational Risk\]](#)

Operational risk relates to the risk of losses resulting from inadequate or failed internal processes, people and systems.

It is often also deemed to include risks from external events, particularly when risks are being categorised in a three-way subdivision involving 'market risk', 'credit risk' and 'operational risk' (with 'operational risk' then being deemed to be the residual item covering all risks other than market and credit risk).

## **Organised trading facility (OTF)**

[\[ERM Glossary OTF\]](#)



An organised trading facility is any facility or system that is designed to bring together buyers and sellers of financial instruments. No rules were introduced on such facilities by the original [MIFID](#) directive, but at the time of writing (early 2012) MIFID II is planning to regulate such facilities in much the same way as [Multilateral trading facilities](#).

OTFs are similar in scope to swap execution facilities (SEFs) created by the Dodd-Frank Act in the USA, with the aim of bringing greater transparency and structure to the [OTC derivative](#) market.

## **Over the counter (OTC) derivative**

[\[ERM Glossary OTC Derivative\]](#)

Over the counter derivatives are derivatives for which the terms and conditions can be freely negotiated by the counterparties involved. They may be contrasted with exchange traded derivatives which have standardised terms.

## **Packaged retail investment product (PRIIP)**

[\[ERM Glossary PRIIP\]](#)

The term 'packaged retail investment product' (PRIIP) has been introduced by the EU to refer to financial products generally sold to the retail market that offer exposure to underlying financial assets, but in packaged forms which modify that exposure compared with direct holdings. They are typically 'manufactured' meaning that they combine different assets into a single proposition, or include some element of financial engineering. Examples include investment funds such as those governed by the Undertakings for Collective Investment in Transferable Securities ([UCITS](#)) directive, other non-harmonised retail investment funds, (retail) structured products (which can take many legal forms), and unit-linked insurance contracts.

## **PLC corporate entity**

[\[ERM Glossary PLC Corporate Entity\]](#)

A public limited company is a type of limited liability company in the United Kingdom and the Republic of Ireland (and in some other jurisdictions whose corporate legal frameworks ultimately derive from English law) which is permitted to offer its shares to the public. 'Public limited company' is often abbreviated to 'plc'.

## **Political risk**

[\[ERM Glossary Political Risk\]](#)

Political risk relates to the risks arising from political decisions (or omissions), changes in government(s), and events related to political instability such as wars and terrorism.

## **Predictive measures**

[\[ERM Glossary Predictive Measures\]](#)

Predictive measures of risk are those supplied by formal probabilistic risk models. They may include simulation modelling. Predictive measures may include [expected shortfall](#), [Value-at-Risk](#) and [tracking error](#).

## **Prime Mortgage**

[\[ERMGlossaryPrime\]](#)

A prime mortgage is one that has been granted to the most creditworthy category of borrower.

## **Private equity**

[\[ERMGlossaryPrivateEquity\]](#)

Private equity involves equity securities in (operating) companies that are not quoted on a public exchange. Investment in private equity often involves the investment of capital in private companies or the acquisition of a public company that results in the delisting of public equity. Capital for private equity investment is raised by retail or institutional investors and used to fund investment strategies such as leveraged buyouts, venture capital, growth capital, distressed investments and mezzanine capital.

## **Probability of default (PD)**

[\[ERMGlossaryProbabilityOfDefault\]](#)

The probability of default in a credit risk analysis context is the likelihood that a customer will default on their obligation within (typically) the next year.

## **Probability of ruin**

[\[ERMGlossaryProbabilityOfRuin\]](#)

The probability of ruin is the probability that the net financial position of an entity falls below zero over a defined time horizon (technically speaking given certain underlying assumptions, e.g. that the current business/investment strategy is maintained, no future capital raising takes place, etc.).

## **Project risk**

[\[ERMGlossaryProjectRisk\]](#)

Project risk is the risk of failure or loss arising from a specific project undertaken by an entity.

## **Regulatory risk**

[\[ERMGlossaryRegulatoryRisk\]](#)

Regulatory risk is the subset of legal risk that relates to losses arising from changes in regulation (or related legislation). In a regulated industry, its definition may also be extended to cover losses (reputational or financial) arising from a firm's failure to manage appropriately its relationship with its regulator.

## **Regulatory risk frameworks**

[\[ERM Glossary Regulatory Risk Frameworks\]](#)

Within the financial services industry, regulatory risk frameworks refer to the sets of rules and regulations around risk management processes and functions that firms are required to adhere to by regulatory and supervisory authorities.

## **Reinsurance**

[\[ERM Glossary Reinsurance\]](#)

This is a form of risk transfer arrangement in which one party (the reinsurance company, i.e. reinsurer), generally in consideration for a premium, agrees to indemnify another party (the cedant, generally another insurance company) against part or all of the a liability assumed by the cedant under one or more insurance or reinsurance policies. Reinsurance obtained by a reinsurer is also known as retrocession.

## **Renegotiated loan**

[\[ERM Glossary Renegotiated Loan\]](#)

Renegotiated loans are loans and advances that have been renegotiated since first made. Loans may be renegotiated either as part of an ongoing customer relationship or in response to an adverse change in the circumstances of the borrower. In the latter case renegotiation can result in an extension of the due date of payment or repayment plans under which the bank offers a concessionary rate of interest to genuinely distressed borrowers.

## **Repurchase agreement (repo)**

[\[ERM Glossary Repurchase Agreement\]](#)

A repurchase agreement or 'repo' is a (usually) short-term funding agreement which allows a borrower to sell a financial asset, such as ABS or Government bonds as collateral for cash. As part of the agreement the borrower agrees to repurchase the security at some later date, usually less than 30 days, repaying the proceeds of the loan.

A reverse repurchase agreement or 'reverse repo' is the same but looked at the opposite way round, i.e. with the positions of the two parties involved in the transaction reversed.

## **Reputational risk**

[\[ERM Glossary Reputational Risk\]](#)

Reputational risk is the risk that an entity's reputation (or brand) might be damaged by actions or events.

## Required Stable Funding (RSF)

[\[ERM Glossary RSF\]](#)

The concept of required stable funding (RSF) is used in the computation of the [Net Stable Funding Ratio](#) being introduced by Basel III.

RSF is defined by Basel III as the amount of stable funding required by supervisors based on the value of on-balance sheet assets held multiplied by a RSF factor assigned to a particular asset type plus an equivalent computation for on off-balance sheet activities (or potential liquidity exposures). The RSF factors assigned to various types of assets are intended to approximate to the amount of a particular asset that could *not* be monetised through sale or use as collateral in a secured borrowing on an extended basis during an adverse liquidity stress lasting one year. Details are set out in paragraphs 129 to 136 of the Basel III liquidity proposals, i.e. [BCBS \(2010a\)](#).

## Residential Mortgage-Backed Security (RMBS)

[\[ERM Glossary RMBS\]](#)

A Residential Mortgage-Backed Securities (RMBS) is a type of ABS that represents an interest in a pool of residential mortgages. Investors in these securities have the right to cash received from mortgage repayments of interest and principal.

## Residual risk

[\[ERM Glossary Residual Risk\]](#)

Residual risk is any risk that remains with an organisation following the application of its risk management process. It may result from a positive decision to retain the risk or an inability to mitigate or transfer it to someone else. It may also arise as a secondary risk arising from some other response to risk.

## Reverse Stress testing

[\[ERM Glossary Reverse Stress Testing\]](#)

Reverse stress testing involves starting out with a specified outcome (typically that the firm's business model becomes broken) and then working out:

- Some potential scenarios which might be expected to give rise to this outcome (plausible conditional on the outcome actually materialising); and
- What mitigating steps can be taken to reduce the likelihood of these scenarios occurring and/or their impact if they did materialise

For further information on reverse stress testing see [here](#) or refer to [Market Consistency](#) or [Extreme Events](#).

## Risk adjusted return

[\[ERM Glossary Risk Adjusted Return\]](#)

The risk adjusted return is the expected return on an exposure adjusted to allow for the premium (or discount) that the market or the enterprise itself requires in recompense for holding the risk in question.

For example, the premium involved might be derived from the additional capital a firm may have to hold to keep its overall risk level constant, multiplied by the additional cost of issuing equity capital to fund this capital.

Most texts seem to assume that it is axiomatic that additional risk requires an increased risk adjusted return. However, this is not always the case, particularly for market consistent computations involving sets of contingencies that would provide effective hedges for some market participants, as explained in [Kemp \(2009\)](#).

## Risk adjusted return on capital (RAROC)

[\[ERM Glossary RAROC\]](#)

Risk adjusted return on capital (RAROC) is an adjustment to traditional return on capital that accounts for risk.

For example, it might for a bank be calculated as:

$$RAROC = \frac{E}{K}$$

where:

*E = Adjusted earnings = Interest rate – Expected Loss – Funding Costs – Other Costs*

*K = Capital Employed*

There are various similar definitions for different industry types, the important element being that all include some adjustment for risk.

## Risk appetite

[\[ERM Glossary Risk Appetite\]](#)

An entity's risk appetite is the degree of risk it is willing to accept in order to achieve objectives. Implicitly it requires that the objectives are specified as entity-wide targets/limits with detailed breakdowns.

## Risk capacity

[\[ERM Glossary Risk Capacity\]](#)

The risk capacity of a firm indicates how much risk it can handle, as measured by (say) Economic Capital, and still stay within its tolerances/limits.

### **Risk concentration**

[\[ERM Glossary Risk Concentration\]](#)

Risk concentration refers either to a single exposure that contributes substantially to an enterprise's overall risk or to a combination of correlated exposures that jointly contribute significantly to an enterprise's overall risk.

### **Risk control**

[\[ERM Glossary Risk Control\]](#)

The (risk) control functions of a firm comprise its risk departments, and may also be construed as including related control functions such as Internal Audit, Compliance, and Legal. The risk control function is sometimes called 'risk controlling'.

### **Risk discount rate**

[\[ERM Glossary Risk Discount Rate\]](#)

The risk discount rate is the rate at which future uncertain cash flows may be discounted when carrying out a discounted cash flow (DCF) assessment of the value of a project. It can be viewed as representing the risk-free rate of return (in a given currency) that providers of capital demand plus an amount to allow for the risk that the profits from the project may not emerge as expected.

### **Risk diversification**

[\[ERM Glossary Risk Diversification\]](#)

Risk diversification involves taking on a variety of imperfectly correlated exposures. It is a simple way in which an enterprise can mitigate risk. However, the degree of diversification any particular implementation offers may be hard to assess as the correlations (co-movements between positions) may behave differently from what is expected. This is often viewed as particularly true in a crisis period, as correlations may then be higher than in normal periods.

### **Risk limits**

[\[ERM Glossary Risk Limits\]](#)

Risk limits are guidelines or rules that set out limits on business unit actions. The units will be operating within permitted risk tolerances if risk limits are met.

### **Risk management**

[\[ERM Glossary Risk Management\]](#)

Risk management can be defined in an ERM context as the identification, assessment, and prioritisation of risks followed by the coordinated and economical application of resources to minimise, monitor and control the probability and/or impact of downside risk or to maximise the realisation of upside opportunities.

### **Risk management control cycle**

[\[ERM Glossary Risk Management Control Cycle\]](#)

The risk management control cycle involves examining experience arising from decisions and actions taken and provides feedback from this experience analysis for use in future decisions and actions.

It resembles the actuarial control cycle typically used by insurers. However, the risk management control cycle examines a broader range of institutional and risk issues than the pure 'actuarial' cycle (which focuses mainly on valuation and reserving).

### **Risk management culture or Risk culture**

[\[ERM Glossary Risk Management Culture\]](#)

The risk management culture of an enterprise characterises how aware of risks individuals at different levels in an enterprise are and how active they are in mitigating those risks by taking account of them in their business decisions.

A strong risk management culture (or 'risk culture' for short) may be just as or more effective in limiting risk than elaborate sets of risk controls and systems.

### **Risk management policy or Risk policy**

[\[ERM Glossary Risk Management Policy\]](#)

A firm's risk management policy (or 'risk policy' for short) outlines the way in which it manages (or plans to manage) each relevant and material category of risk, both strategically and operationally. The policy should also describe how the way it manages risks link with the firm's risk appetite, risk tolerance and risk limits, supervisory capital requirements and economic capital. It should also describe the processes and methods the firm uses to monitor risk.

### **Risk management system**

[\[ERM Glossary Risk Management System\]](#)

An organisation's risk management system is the combination of practices, tools and methodologies that it uses to identify, assess, measure, mitigate and manage the risks that it faces as it conducts its business.

### **Risk matrix (or map)**

[\[ERM Glossary Risk Matrix\]](#)

A risk matrix or risk map is a tool used in the identification and (initial) assessment of risks, often including plotting of severity versus probability of occurrence (or frequency).

## Risk metric

[\[ERM Glossary Risk Limits\]](#)

A risk metric is a measure of risk. Examples include [Value-at-Risk](#), [Tail Value-at-Risk](#), [Expected Shortfall](#) and several measures such as tracking error referred to [here](#).

## Risk mitigation

[\[ERM Glossary Risk Mitigation\]](#)

An action that reduces the frequency or severity of a risk.

## Risk model

[\[ERM Glossary Risk Model\]](#)

A (portfolio) risk model is defined in [Market Consistency](#) by M.H.D. Kemp as ‘a mathematical framework for estimating the future spread of returns / outcomes a portfolio might generate were its positions versus its benchmark to remain unaltered in the future’\*.

More generally it is any formulation of how risks might arise that is amenable to mathematical analysis.

### Multivariate normal risk models

A particularly simple mathematical risk model is one in which the behaviour of future returns / outcomes is characterised by a multivariate normal distribution with parameters  $\boldsymbol{\mu}$  (a vector of assumed returns for each asset) and  $\mathbf{V}$  (a covariance matrix).

Often in an asset management context each element of  $\boldsymbol{\mu}$  would be assumed to be the same constant value (i.e. we do not presume any ability to outperform the benchmark). Without loss of generality this constant can be set equal to zero if we are focusing on returns relative to a benchmark.

The easiest risk statistic that can be derived from such a model is the (ex-ante) [tracking error](#),  $\sigma = \sqrt{\mathbf{a}^T \mathbf{V} \mathbf{a}}$  where the  $\mathbf{a}$  correspond to the active positions versus the benchmark (i.e. each element  $a_i$  of  $\mathbf{a}$  is defined as  $a_i = p_i - b_i$ , where  $p_i$  is the weight of the  $i$ 'th security in the portfolio and  $b_i$  is its weight in the benchmark).

For this model type, other risk statistics such as [Value-at-Risk](#) (VaR) for a given confidence level  $\alpha$  can be derived from  $\sigma$  by referring to the  $(1 - \alpha)$  quantile of a normal distribution with standard deviation  $\sigma$ . Such a VaR model is often called the variance-covariance VaR (particularly if  $\mathbf{V}$  is based on the historical covariance matrix of different return series).



\* Or, if the positions were to change in any prespecified dynamical manner under consideration

## **Risk objectives**

[\[ERM Glossary Risk Objectives\]](#)

The risk objectives of an enterprise are a broad statement of the overall level of risk the firm intends to take on and how the contributing risks will be managed.

## **Risk of bias**

[\[ERM Glossary Risk Of Bias\]](#)

The risk of bias relates to the human tendency to view things more optimistically (or sometimes more pessimistically) than the available information actually warrants. It can be viewed as a form of model risk, although it may arise even if no formal model or heuristic is being used.

## **Risk optimisation (optimization)**

[\[ERM Glossary Risk Optimisation\]](#)

Risk optimisation is the process of achieving an optimal balance between risk and return (reward) within a specified portfolio. It should take into account not just the nature of the risks themselves but also the risk appetite of relevant stakeholders.

## **Risk profile**

[\[ERM Glossary Risk Profile\]](#)

The risk profile of an organisation is a complete description of its risk exposures, including potential future risks.

## **Risk responses**

[\[ERM Glossary Risk Responses\]](#)

Risk responses are the ways in which an organisation reacts (or might react) to risk. The key potential responses are: avoidance, acceptance, transfer and management.

## **Risk system**

[\[ERM Glossary Risk System\]](#)

A (software) risk system can be conceptually differentiated from a [risk model](#). A risk system is then a practical software tool (within which is embedded one or more risk models) that can be used to calculate risk statistics or do other related tasks, e.g. risk-reward optimisation. The underlying risk model defines what answers the risk system will deliver, even if ease of use, cost and run times are also key elements that firms will consider when deciding which risk systems to buy.

Alternatively, if the term is being used in a governance context it would relate to the systems and processes a firm uses to manage its risks.

## **Risk tolerance**

[\[ERM Glossary Risk Tolerance\]](#)

The risk tolerance of a firm is a detailed set of statements (more detailed than the firm's [risk appetite](#)), many quantitative or statistical, applying to business units or specific categories of risk.

## **Risk treatment**

[\[ERM Glossary Risk Treatment\]](#)

The process of selecting actions and making decisions to transfer, retain, limit and avoid risk. This can include determining risk tolerance, choosing risk appetites, setting risk limits, performing risk mitigation activities and optimising organisational objectives relative to risk.

## **Risk-weighted assets**

[\[ERM Glossary Risk Weighted Assets\]](#)

Risk-weighted assets are a measure of a bank's assets adjusted for their associated risks. The risk weightings used would often be ones set by regulation, e.g. set in accordance with the Basel Capital Accord as implemented by the bank's regulator.

## **Sarbanes-Oxley**

[\[ERM Glossary Sarbanes Oxley\]](#)

The Sarbanes-Oxley Act of 2002 (also known as 'Sarbox' or 'SOX') is a United States federal law that set new or enhanced standards for U.S. public company boards, management and public accounting firms. It was enacted following a number of major corporate and accounting scandals including those affecting Enron, Tyco International, Adelphia, Peregrine Systems and WorldCom. These scandals shook public confidence in US securities markets and cost investors billions of dollars when the share prices of affected companies collapsed.

## **Scenario analysis**

[\[ERM Glossary Scenario Analysis\]](#)

Scenario analysis consists of the analysis of the impact on the institution's portfolio of exposures of a combined set of individual movements in underlying exposures. A scenario might therefore include a given shock to the yield curve accompanied by plausible additional impacts on term structures in other countries and on equity markets.

Scenario analyses might be differentiated from stress tests in two ways:

- (a) A scenario analysis would typically include a combination of different 'stresses'; and/or

- (b) The 'stresses' used in a scenario analysis would not necessarily be adverse. Scenarios tested might include favourable ones.

## Securitisation

[\[ERM Glossary Securitisation\]](#)

Securitisation is a special case of [Alternative Risk Transfer](#) (ART) involving packaging risks into capital market instruments. It involves a group of assets, usually loans, being aggregated into a pool that is then used to back the issuance of new securities.

Securitisation is the process by which [ABS](#) are created. A company sells assets to a special purpose entity which then issues securities backed by these assets. This allows the credit quality of the assets to be separated from the credit rating of the original company and transfers risk to external investors.

Assets used in securitisations include mortgages to create mortgage-backed securities or residential mortgage-backed securities (RMBS) as well as commercial mortgage-backed securities. Credit card receivables may also be securitised (indeed nearly any form of cash flows can in principle be securitised).

## Single Supervisory Mechanism

[\[ERM Glossary SSM\]](#)

The Single Supervisory Mechanism (SSM) is the name for the mechanism that has given the European Central Bank (ECB) a supervisory role monitoring the financial stability of banks in participating states. With effect from 4 November 2014, Eurozone states are obliged to participate in the SSM. Other member states of the European Union can voluntarily participate (but at the time of writing have typically not done so).

Under the SSM, a common bank supervision is applied that involves both national supervisors and the ECB, although final authority (for core supervisory responsibilities) rests with the ECB. In practice, this means that 'significant' banks (suitably defined) are supervised directly by the ECB but smaller banks covered by the SSM continue to be directly monitored by their national supervisors. Non-core supervisory activities (e.g. anti-money laundering and consumer protection) remain within the scope of the relevant national authority.

## Solvency II

[\[ERM Glossary Solvency II\]](#)

Solvency II is an updated set of regulatory requirements for insurance firms that came into effect in the European Union on 1 January 2016. It is designed to create a single overarching regulatory framework for insurance within Europe and thus to promote an EU common market in insurance. Like [Basel II](#) and [Basel III](#), it aims to be risk sensitive in the capital requirements it places on firms. Solvency II focuses on 'market consistent' measurement of assets and liabilities. Sophisticated European insurers are likely to be encouraged under Solvency II to employ internal models to calculate their solvency capital.

For further details on Solvency II, see Nematrian's [Solvency II](#) webpages.

## **Special purpose vehicle (SPV) or special purpose entity (SPE)**

[\[ERMGlossarySPVOrSPE\]](#)

A special purpose vehicle (SPV) or special purpose entity (SPE) is an entity created to accomplish a narrow and well defined objective. There are often specific restrictions or limits around their ongoing activities. The term is most commonly used in connection with securitisation. In an EU context these types of vehicle (if they are set up in a corporate form) can also be called a Financial Vehicle Company (FVC).

## **Stakeholder management**

[\[ERMGlossaryStakeholderManagement\]](#)

Stakeholder management is the process by which an organisation seeks to further its strategic objectives by creating positive relationships with its stakeholders (or at least minimising its negative relationships). It generally involves appropriate management of stakeholder expectations and clarity regarding agreed objectives.

## **Strategic risk**

[\[ERMGlossaryStrategicRisk\]](#)

Strategic risk is the risk of failing to achieve the entity's overall strategic business plans and objectives. The term might also be used to refer to the risk of failing to identify the 'right' strategic plan.

## **Strategic risk management**

[\[ERMGlossaryStrategicRiskManagement\]](#)

[Strategic risk](#) management refers to high level analysis and management of a firm's risks. The focus is typically on trade-offs between risk and return. Risks covered would usually include business risk.

## **Stress testing**

[\[ERMGlossaryStressTesting\]](#)

Stress testing involves analysing the impact on a firm's portfolio of a shock to a set of well-defined market prices (or economic factors), for example a given fall in an equity index. Multiple stress events are often referred to as a scenario. The term stress testing is also employed to indicate the impact on a risk calculation such as the estimation of a VaR using inputs associated with a particularly bad outcome for the firm's portfolio, for example an increase in the assumed level of correlation.

Usually, stress testing would focus on adverse shocks, i.e. downside risk.

For further information on stress testing see [here](#) or refer to [Market Consistency](#) or [Extreme Events](#).

## Sub-investment grade

[\[ERMGlossarySubInvestmentGrade\]](#)

Sub-investment grade refers to credit ratings issued by external credit rating agencies that are below 'BBB' grade or its equivalent, i.e. below '[investment grade](#)'. Securities in default (i.e. with grade 'D') might be excluded from this definition.

## Subordinated liabilities

[\[ERMGlossarySubordinatedLiabilities\]](#)

Subordinated liabilities are liabilities that in the event of insolvency or liquidation of the issuer would be subordinated to the claims of depositors and other creditors of the issuer.

## Sub-Prime Mortgage

[\[ERMGlossarySubPrime\]](#)

Sub-prime refers to loans (e.g. mortgages) to borrowers typically having weakened credit histories. These might include payment delinquencies and potentially more severe problems such as adverse court judgements and bankruptcies. Such loans may also display reduced repayment capacity as measured by credit scores, high debt-to-income ratios, or other criteria indicating heightened risk of default.

## Supervisory Review and Evaluation Process (SREP)

[\[ERMGlossarySREP\]](#)

Firms subject to the EU's [Capital Requirements Directive](#) are subject to Supervisory Review and Evaluation Process (SREP). Supervisors such as the UK's Prudential Regulation Authority interpret the [SREP](#) as being a process by which the supervisor, taking into account the nature, scale and complexity of a firm's activities, reviews and evaluates the:

- arrangements, strategies, processes and mechanisms implemented by a firm to comply with its regulatory requirements laid down in the national supervisor's rules and in the [CRR](#);
- risks to which the firm is or might be exposed;
- risks that the firm poses to the financial system; and
- further risks revealed by stress testing.

As part of the SREP, supervisors will review the firm's [ICAAP](#), other vulnerabilities identified by e.g. reverse stress tests, the governance arrangements of the firm, its corporate culture and values, the ability of members of its management body to perform their duties and a range of other issues that the supervisor considers are relevant to the risks such a business faces.

## Swap execution facility (SEF)

[\[ERMGlossarySEF\]](#)

A swap execution facility (SEF) is a type of regulated trading venue in swap contracts created by the Dodd-Frank Act in the USA with the aim of bringing greater transparency and structure to the [OTC derivative](#) market. Any swaps that are cleared will be required to be traded on such a facility if covered by this Act. A SEF is akin to an [Organised trading facility](#) (OTF) in the EU.

## Synthetic CDO

[\[ERMGlossarySyntheticCDO\]](#)

A synthetic CDO is security similar in structure to a [CDO](#) but where the pool of referenced assets is created synthetically usually by credit default swaps.

## Systematic internaliser (SI)

[\[ERMGlossarySI\]](#)

Systematic internalisation is a concept being introduced by [MiFID II](#) in the EU. A systematic internaliser is a market participant that is allowed to execute client transactions against its own internal proprietary capital but is not allowed to bring together different clients in functionally the same way as a regulated market.

## Systematic risk

[\[ERMGlossarySystematicRisk\]](#)

Systematic risk is risk that cannot be eliminated merely by adopting a diversified portfolio. For example, a diversified portfolio of equities will still be exposed to aggregate equity market risk.

## Systemic risk

[\[ERMGlossarySystemicRisk\]](#)

Systemic risk is the risk of a system-wide risk occurring. In the financial world 'system-wide' typically refers to the financial or economic system, e.g. breakdown in the payments function of the banking system.

## Tail correlation

[\[ERMGlossaryTailCorrelation\]](#)

This is the correlation between observations in the tails of distributions.

'Correlations' between tails of distributions often differ from correlations applicable to the generality of the distributions and are thus potentially poorly estimated using standard correlation coefficients (calculated as per e.g. [MnCorrelation](#)), see e.g. the attached [slide](#).

The [coefficient of tail dependence](#) can be thought of as a limiting version of tail correlation.

## Tier 1 capital

[\[ERM Glossary Tier 1 Capital\]](#)

Tier 1 capital is a measure of a bank's financial strength defined by the regulator. It captures Core Tier 1 capital plus other Tier 1 securities in issue, but may be subject to deductions in respect of material holdings in financial companies under e.g. current UK interpretations of Basel capital accords.

## **Tier 1 Capital Ratio**

[\[ERM Glossary Tier 1 Capital Ratio\]](#)

A bank's Tier 1 capital ratio is its [Tier 1 capital](#) as a percentage of its [risk weighted assets](#).

## **Tier 2 capital**

[\[ERM Glossary Tier 2 Capital\]](#)

Tier 2 capital is a component of regulatory capital as defined by the regulator. Under current UK interpretations of the Basel capital accords this might consist mainly of qualifying subordinated loan capital, certain non-controlling interests and eligible collective impairment allowances.

## **Trading book**

[\[ERM Glossary Trading Book\]](#)

The trading book of a bank is defined in e.g. the EU's [Capital Requirements Directive](#) and [Capital Requirements Regulation](#) as all positions in financial instruments and commodities held by an institution either with trading intent, or in order to hedge positions held with trading intent. 'Positions held with trading intent' means any of the following:

- (a) Proprietary positions and positions arising from client servicing and market making;
- (b) Positions intended to be resold short term;
- (c) Positions intended to benefit from actual or expected short term price differences between buying and selling prices or from other price or interest rate variations.

## **Turnbull Report**

[\[ERM Glossary Turnbull Report\]](#)

The Turnbull Report (technically known as the 'Internal Control: Guidance for Directors on the Combined Code (1999)') was a report drawn up for the London Stock Exchange for listed companies. The committee that wrote the report was chaired by Nigel Turnbull of The Rank Group plc. The report informs directors of their obligations under the Combined Code to maintain good [internal controls](#) in their companies. Good internal controls include having good audits and suitable checks to ensure, if possible, the quality of financial reporting and the catching of fraud before it becomes a problem.

## **UK Combined Code / UK Corporate Governance Code**

[\[ERM Glossary UK Combined Code\]](#)

The UK Combined Code on Corporate Governance, now called the UK Corporate Governance Code is a set of principles of good corporate governance. It provides a code of best practice aimed at companies listed on the London Stock Exchange. It is overseen by the (UK's) Financial Reporting Council. Its importance derives from the (UK's) Listing Rules.

## **UK Listing Authority (UKLA)**

[\[ERMGlossaryUKLA\]](#)

When acting as the competent regulatory authority regarding listing of shares on a UK stock exchange, the Financial Conduct Authority is referred to as the UK Listing Authority (UKLA).

## **Undertakings for Collective Investment in Transferable Securities (UCITS)**

[\[ERMGlossaryUCITS\]](#)

UCITS are a common way in which open ended investment funds are structured in the EU. There are a range of UCITS Directives that the EU has introduced governing the operation and management of these funds, which may be sold to both retail and institutional investors.

## **Ultimate forward rate**

[\[ERMGlossaryUltimateForwardRate\]](#)

The ultimate forward rate is an interest rate specified under the EU's [Solvency II Directive](#), see Article 77a of the Directive. It is the forward interest rate that risk-free interest term structures are assumed to tend towards infinitely far out along the maturity axis. It therefore has a significant influence on how very long term insurance liabilities are valued for Solvency II regulatory capital purposes.

## **Uncertainty**

[\[ERMGlossaryUncertainty\]](#)

In risk management it is often important to differentiate between 'risk' and 'uncertainty'. In this context, 'risk' is usually taken to mean some measurable assessment of the spread of possible future outcomes, with 'uncertainty' then taken to mean lack of knowledge, even (or particularly) concerning the size of this spread.

In economics, this type of 'uncertainty' is typically known as [Knightian uncertainty](#).

## **Underwriting risk**

[\[ERMGlossaryUnderwritingRisk\]](#)

Underwriting risk relates to the risk of poor selection and approval of insurance risks. In an actuarial context this would typically also include taking on these risks at an inadequate price. Generally speaking the term would apply primarily at the point in time when a decision is made on whether to accept a new policyholder for an insurance risk, although the occurrence of the risk might only become evident later.



## Upside risk

[\[ERM Glossary Upside Risk\]](#)

Up-side risks are ones that affect an enterprise's total position in positive ways. ERM aims to take account of both upside and [downside](#) risk by creating opportunities for the firm's business units to take advantage of upside risks as well as measuring, managing and mitigating downside risk.

## Volatility adjustment

[\[ERM Glossary Volatility Adjustment\]](#)

The volatility adjustment is an adjustment that EU insurers subject to Solvency II are allowed (subject to certain conditions) to apply to the discount rates that they would otherwise use in their Solvency II regulatory capital computations to value predictable liability cash flows, see Article 77b of the [Solvency II Directive](#).

It is less difficult to get supervisory approval for use of the volatility adjustment than it is to get supervisory approval for use of the [matching adjustment](#) but the regulatory capital relief is usually smaller.

## Weighted average cost of capital (WACC)

[\[ERM Glossary Weighted Average Cost Of Capital\]](#)

The weighted average cost of capital (WACC) is the aggregate return required by providers of (debt and equity) capital, allowing for the effects of taxes and risks borne by the capital providers.

## Wrapped loans or bonds

[\[ERM Glossary Wrapped Loan Or Bond\]](#)

If a loan or bond (usually an ABS security) is originally issued with a credit default swap already attached then the package is called a 'wrapped bond' or 'wrapped loan'.

## Write Down

[\[ERM Glossary Risk Matrix\]](#)

A write down is a lowering of the value of an asset in the books of an organisation to reflect a decline in its value, or its expected future cash flows.