## Solvency PART II

## SEARCH FOR THE MAIN TOPIC; SEARCH IN INTERNET IF NOT SURE

***TOPICS:***

**Negative Externalities-** Occurs when actions or events concerning one financial institution negatively affects other institution and even the whole market. For example, the failure of one bank may equate in loss of confidence in other banks. Supervisors are keen on to avoid these situations as the jeopardize the entire confidence level of financial institutions. Minimum capital requirements will increase the resilience of individual institutions avoiding failures which may contaminate the public confidence.

**Technical provisions-** Reflect the estimated amount of all insurance liabilities for claims occurred on or before the valuation date, as well they reflect the estimated amount of insurance liabilities of future claims, from contracts in force at the valuation date.

**Ancillary own funds-** may be eligible to cover the Solvency capital requirements but not the minimum capital requirements due to their lower quality. The Minimum capital requirements can only be covered by own funds of very high quality.

**Calculation of Solvency Capital Ratio-** The SCR could be calculated by internal models or by the standard formula, and NOT always the internal is smaller than the standard. In particular, it should be noted that the supervisor may require the development of an internal model when the standard formula is considered inappropriate with respect to the insurer’s risk profile.

**4 key functions**- Risk management, compliance, actuarial and internal audit, are the main functions that all insurers must have, may or may not be outsourced, it’s up to the insurer decision. All insurers, despite their size, should follow these 4 functions. At the most, the principle of proportionality allows insurers with low-risk profiles to accumulate more than one function (Except for the internal audit function) in the same organizational unit.

**Impact on the Balance Sheet of a non-life Insurer**

|  |  |  |  |
| --- | --- | --- | --- |
| Description | Investments | Reinsurance recoverable | Best estimate of technical provisions |
| Contracting of a new reinsurance treaty to cover risks of existing policies | No change | Increase | No change |
| Unexpected downgrade of the creditworthiness of the issuer of a large number of securities held by the insurer | Decrease | No change | No change |
| Upward revision of the expected severity of future claims partly covered by reinsurance | No change | Increase | Increase |
| Default of a large reinsurer with whom the insurer has established a contractual relationship | No change | Decrease | No change |
| Sudden increase of the market risk-free interest rates | Decrease | Decrease | Decrease |

**Calculation and Classification of own funds under BASEL III**

The own funds of a bank include capital items, common equity, and eligible subordinated debt instruments with maturity of 5 years, liabilities. Some deductions are applied in order to reflect the likely loss of value of certain assets of the bank in case of liquidation (e.g., intangible assets).

Going concern capital (TIER1) comprise instruments with the capacity to unconditionally absorb losses as they arise, allowing banks to remain in business.

Tier 1 is broken down between Common Equity tier 1 and Additional Tier 1, with the former being the highest quality component, because it has the greatest ability to absorb losses.

Gone-concern capital (Tier 2) comprise instruments with the capacity to absorb losses ahead of depositors and general creditors of the bank, but only on the event of liquidation. The bank should be able to write-off or convert them to common equity at the point of non-viability

**Capital Requirement Directives (CRD IV) and Capital Requirements Regulation (CRR)-** The CRR contains the detailed prudential requirements for credit institutions and investment firms while the CRD covers areas of the current CRD where EU provisions need to be transposed by Member States in a way suitable to their respective.

**Common Equity Tier 1-** own funds need to be able to fully, immediately and unconditionally absorb losses, since they are the highest quality capital.

**Off-Balance Sheet Exposures-** They are included in the computation of the bank’s credit risk capital charge through the use of credit conversion factors.

**Market Risk Capital under VaR model-** Banks calculating Market risk capital under VaR have to add a component reflecting losses under stressed conditions. One of the latest amendments of BASEL III package was the inclusion of a Stressed VaR component in the Market risk capital charge.

**Capital Conversion Buffer requirement-** This buffer is required to all those banks in the scope of the Basel Accord, and not only those who represent a high systematic risk.

**Risk-Weighted Assets-** Is a banking term that refers to an asset classification system that is used to determine the Minimum Capital Requirement that Banks should keep as a reserve to reduce the risk of insolvency. Banks face the risk of loan borrowers defaulting or investments flatlining and maintaining a minimum amount of capital helps to mitigate the risk.

**Credit Quality Steps-CQS** <https://www.eba.europa.eu/sites/default/documents/files/documents/10180/16166/9b891d16-3bf0-4c39-8f6d-82b9cbf49788/4%20Ausust%202006_Mapping.pdf?retry=1)->

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Denotes a Standardized indicator of credit risk that is recognized in the European Union.

1 is the Highest quality and 6 the lowest quality.

CQS are related to CREDIT and to Rating agencies, so better that the grade, lower the CQS.

CQS1- The rated entity has extremely/ Very strong capacity to meets it’s financial commitments and is subject to minimal credit risk.

CQS2- The rated entity has strong capacity to meet its financial commitments and is subject to low credit risk but is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than rated entities in CQS 1.

CQS3- The rated entity has adequate capacity to meet its financial commitments and is subject to moderate credit risk. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the entity to meet its financial commitments.

CQS4- The rated Entity has the capacity to meet its financial commitments but is subject to substantial credit risk. It faces major ongoing uncertainties and exposure to adverse business, financial, or economic conditions, which could lead to the rated entity inadequate capacity to meet financial obligations.

CQS5 and CQS6 refers to B- and junk bonds, so high credit risk.

Summing up, as CQS increases the Percentage of the face value required as RWA should also increase, because it represents bigger risk, and so, the bank should detain capacity to pay immediately, throughout the Minimum Capital Requirement.

Example: Face value for all is 100 million

|  |  |  |
| --- | --- | --- |
| Description | RWA | Capital Requirement, always 8% of RWA |
| NON-EU Central Government with CQS 2 (if EU=0%) | 100\*20%= 20 M | 20M\*8%=1,6M |
| Bank with CQS3, established on a Country whose central government has a CQS2 (Rated) | 100\*50%= 50M | 50M\*8%=4M |
| Corporation with CQS5 | 100\*150%=150M | 150M\*8%=12M |
| Large portfolio of loans to SME, where each individual exposure is lower than 1M | 100\*75%=75M | 75M\*8%=6M |
| Large portfolio of mortgages secured by residential properties | 100\*35%=35M | 35M\*8% |

**Main components of the economic Balance Sheet of an Insurer**

**Investments-** Generally, it is the most sizeable part of the Assets side of the Balance sheet. Solvency II requires that items be valued on a fair value basis, i.e., the value by which they can be transferred to a knowledgeable and willing third party.

**Reinsurance recoverables-** Placed in the Asset side of the Balance sheet, it recognizes the part of the gross insurance claims that are allocated to reinsurers, according to the rules set in reinsurance treaties in force. This item is valued following the same methodology as the best estimate of technical provisions. A deduction needs to be applied afterwards, to recognize the expected losses due to default of the reinsurer.

**Technical Provisions-** it’s the most sizeable part of the Liabilities. It reflects the number of claims and expenses that the insurer will have to pay due to claims outstanding and to future claims stemming from policies in force. The calculation is based on splitting 2 components, the best estimate, and the risk margin. The best estimate corresponds to the expected present value of all relevant cash-in and out-flows, discounted using the risk-free interest rate term structure, and the risk margin reflects the additional amount needed so the insurance portfolio is attractive enough to be transferred to another insurer, should financial problems occur.

**Basic Own Funds-** It can be split in 2 parts: The excess of assets over liabilities and financial eligibilities that have sufficiently strong loss-absorbing capacity. While the excess of assets over liabilities is simply given by the difference between all assets and all liabilities of the economic balance sheet, the eligible financial liabilities comprise generally subordinated debt instruments issued by the insurer that satisfy the requirements to be consider as Tier 1,2 or 3.

**Capital Conversion Buffer-** The main objective is to avoid erosion of bank’s capital through generous distribution of its earnings in the form of dividends, share repurchase program and staff compensation. Thus, the banks are required, on a permanent basis, to hold an additional buffer up to 2.5% of their total exposure, to be met with Common Equity Tier 1 capital and through retention of earnings. When a bank breaches the buffer, automatic safeguards apply to limit the amount of dividend and bonus payments that could be done.

**Countercyclical capital Buffer-** Was designed to counter pro-cyclicality in the financial system, more precisely, to dampen excessive growth of credit in the economy. Banks should hold an extra buffer of Capital when cyclical systematic risks are believed to increase, in order to be used during periods of stress, when losses materialize. The size of the buffer is set quarterly at national level, and may vary between 0% and 2.5%, and it should be covered by Common Equity Tier 1 capital items.

**European Systemic risk board**- Has no direct supervisory powers. It is responsible for macroprudential oversight, i.e., monitoring of the financial sector to identify emerging risks. Is part of the European System of financial supervision (ESFS).

**Maturity of Subordinated loans-** From a prudential point of view, own fund items of higher maturity are available to absorb losses during a longer time period.

**European Insurance and Occupational Pensions Authority interest rate-** The methodology used to derive the interest rate term structure, used to discount insurance liabilities, produces volatile rates in the shorter maturities and stable rates for longer maturities. The short-term part of the curve is based on the market prices of financial instruments while the long end is fixed by the ultimate forward rate assumption.

**General risk vs. Specific risk-** A fall on the prices of the S&P500 index should be considered a general risk in the Market risk Basel III framework, because this one captures the systematic risk of the equity Market, so it cannot be diversified. In order to be specific risk, the Basel III framework regards about the idiosyncratic risk, i.e., risk of individual stocks.

**Solvency Capital Requirements-** Establishes the minimum amount of eligible own funds that an insurer needs to hold to carry on its business with the ability to withstand large, unexpected shocks. It is sophisticated calculation that considers all the quantifiable risks to which the insurer is exposed in both the assets and liabilities side of the balance sheet. It targets the V@R with 99.5% Confidence level based on 1 year, of the aggregated loss distribution. It can be calculated using a standard formula calibrated at European level or using full or partial internal models, subjected to supervisor approval. The SCR standard formula has a modular structure, with the calculation of capital charges per individual types of risk aggregation using linear correlation matrices. On the other hand, internal models have greater modelling freedom and flexibility provided as they satisfy a number of tests and standards.

**Minimum Capital Requirements**

Under Basel III, the minimum capital adequacy ratio that banks must maintain is 8%. The capital adequacy ratio measures a bank’s capital in relation to its risk weighted assets. Is the capital demanded by the regulators, it’s the amount a bank must hold to operate. If the value goes beneath the MCR, regulators may not allow the company to take on new business. It should be view under 3 perspectives.

**Regulatory view-** A regulators principal concern is that there is sufficient capital to buffer a bank against large losses so that deposits are not at risk, with possibility of further disruption in the financial system being minimized.

**Economic View-** Is the MCR underlying risks of the Banks assets and operations. Its going concern, whereby, a bank is in continual operation, and it is only concerned with holding enough capital to ensure its survival. Was originally developed by banks as a tool for capital allocation and performance assessment. If this theory holds in practice, banks will have a conflict of interests in producing low estimates to minimize its capital holding. Also, each bank has internal models to calculate it, so it cannot be standardized, and so makes regulation difficult.

**Rating Agency View-** Is the minimum capital that a bank must hold to meet a certain credit rating. Total Tier ratio is a crucial input to the mechanism in which rating agencies use to assess a bank’s capital adequacy and its subsequent credit rating. As credit ratings provide important signals on a bank’s financial strength, they can have significant downstream impact on a bank’s ability to raise funds, and also the cost at which the funds are raised.

**Trading Book-** Comprises all positions in financial instruments and commodities held by the bank with trading intent or to hedge positions held with trading intent. The Trading Book exposures are measured at market values and subject to the short term volatility of the relevant market prices. The capital requirements applicable are market risks-position risk, currency risk and commodities risk.

**Banking Book-** is a term for assets on a Bank’s balance sheet that are expected to be held to maturity, usually consisting of costumer loans and deposits from retail and corporate customers.

**Interest rate risk on Banking Book (IRRBB)-** refers to the current or perspective risk to the bank’s capital and earnings arising from adverse moments in interest rates that affect the banks banking book positions. When interest rates change, the present value and timing of future cash flows change.

**Guidelines from regulators-** In justified cases, national supervisors may decide to deviate from the guidelines issued by the European Banking Authority, European Securities Market authority and European Insurance and occupational Pensions Authority. These guidelines are subject to the comply-or-explain mechanism, meaning that national supervisors have the possibility to follow them or not, if they provide a justification that have sufficiently good reasons for that.

**Calculation of technical provisions-** Insurers should include in the calculation of the best estimate of technical provisions the value of benefits promised to policyholders, but not yet guaranteed. All expected benefits, irrespective of being guaranteed or not at the valuation date, should be included on the calculus of the best estimator of technical provisions.

**Breach on the coverage of SCR**- Insurers must inform within a 3 month period, every time that a breach occurs, or may occur, and then they need to submit a plan for supervisory approval, recover within 6 months, with a possibility of plus 3 months. Upon the occurrence of an exceptionally adverse event, affecting a significant part of the market, and following a declaration by EIOPA, the supervisor may extend the recovery period up to 7 years.

**Breach on the coverage of MCR**- Insurers must inform the supervisor immediately after they observe a breach or the risk of breach in the following 3 months, they need to submit a short term financing plan for supervisory approval.

**Ancillary own funds**- Are off balance sheet exposures, representing commitments that the insurer may call in the future. Thus, as no monies are available at present, the quality of those commitments needs to be assessed by the supervisor. They can only be Tier 2 and 3, despite High quality.

**Deviations from SCR-** Insurers should assess the deviation between the SCR and their effective risk profile at least once a year. Such assessment is part of the Own Risk and Solvency Assessment exercise, required once a year.

**Credit Conversion Factors-** Measure the degree of credit risk of the bank’s off-balance sheet exposures. When calculating the capital requirements for credit risk, the off-balance sheet exposures are converted to credit risk equivalents using credit conversion factors.

**Maximum Exposure to Counterparty-** a 10% Tier 1 equivalent exposure to a single counterparty, is considered a “Large exposure”, yet allowed. It is only prohibited to have an exposure to a single counterparty of 25% of Tier1 capital.

**G-SII Buffer-** is required from banks that are G-SII and one of the criteria for a bank to qualify as a G-SII is to have significant cross-border activity.

**European systemic Risk Board (ESRB)-** Responsible for Macroprudential Supervision, aimed to preserve the financial stability at European Level. It was the power to issue warnings when identifies significant risks to financial stability and recommendations for remedial actions.

**Banking Union**- Mandatory for all member states, and voluntary for EU countries outside the Euro. Main objectives are to break the vicious cycle between sovereigns and banks and to deepen the integration of the banking system through centralized supervision and resolution of banks. The 3 main pillars are the Single Supervisory Mechanism, the Single resolution Mechanism and European deposit insurance Mechanism (Still missing).

**envisory Mechanism**

The European Central Bank (ECB) is the banking supervisor for all banks in the Euro area, but only from Euro Countries. Supervises directly significant banks, and indirectly less significant banks, with the help of competent national authorities.

The criteria that define if a bank is significant or not is:

***Size-*** Total value of assets exceeds €30 billion.

***Economic Importance-*** For a specific country or to the Union as a whole.

***Cross-Border activities***- The total value of its assets exceeds 5 billion and the ratio Asset/Liabilities is above 20%.

***Direct Public financial assistance-*** It has requested or received funding from the European Stability mechanism or the European Financial Stability Facility.

**Single Resolution Mechanism**

It aims to ensure the orderly resolution of failing banks with minimal costs for taxpayers and to the real economy, to be managed through a Single Resolution Board and Single resolution fund.

The resolution of a bank occurs when the bank is failing or likely to fail, there are no supervisory or private sector measures thar can restore the bank to viability within a reasonable timeframe and when resolution is necessary for the Public Interest.

The four types of resolutions are:

***Sale of Business-*** Permits the total or partial disposal of an entity’s assets, liabilities or share to a private purchaser.

***Bridge Bank-*** part or all assets, liabilities and shares are transferred to a controller temporary entity.

***Asset separation-*** Assets can be transferred to an asset management vehicle.

***Bail-in***- Equity and debt can be written down and converted, placing the burden on the shareholders and creditors of a bank, rather than on the public.

**Single resolution fund**

Has the objective of finance the application of resolution tools and the exercise of the resolution powers of Single resolution Board.

May be used to cover the losses or to recapitalize the entity only after shareholders and creditors have first borne losses ( Bail-in of at least 8% of total liabilities plus own funds) and to a maximum of 5% of total liabilities plus own funds.

**European deposit Insurance Schemes (EDIS)**

Banks deposits up to 100.000€ are guaranteed saved by each country through national-based Deposit Guarantee Schemes (DGS). As the DGS could be vulnerable to Shocks and not able to pay, the EDIS would ensure equal protection of deposits through the Banking union regardless of the Member State. The target number of deposits to be Guarantee is about 0.8% of all deposits.

***Phase 1 Reinsurance-*** DGS could access EDIS funds only after exhausting their resources. EDIS will provide excess of resource up to a certain level.

***Phase 2 Co-Insurance***- EDIS contribute from first euro of loss. The share contributed by EDIS would start at a low level and progressively increase.

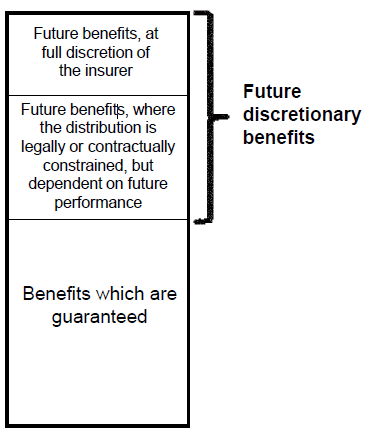
***Phase 3 Full insurance-*** By gradually increasing the share of risk that EDIS assumes up to 100%, EDIS will fully insure the DGS.

Principal concerns are related to the design of the system (Phases), the Timing of setting up the System, Legacy issues and Moral hazard risks. Probably it will be assumed a Hybrid model.

**Solvency II-** Enhance protection of policyholders and beneficiaries, promote a risk-based calculation with all the functions of the Insurer, increase the sensitivity of the capital measures to the risks that the insurer is effectively exposed. It is generally converged into the International Financial Reporting Standards (IFRS) although differences exist. Not all the valuation methods set out in IFRS are accepted by Solvency

**Pilar 1-** Quantitative requirements, Assets are measured and valued at market value, and liabilities are measured in a consistent manner.

**Life and Non-life Technical Provisions-** the future discretionary benefits should be expressed is a proper manner.

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Descrição gerada automaticamente

**Liabilities Segmentation-** Should be Segmented by Homogenous risk Groups (HRB). Those are defined by the insurer, and Line of Business (LoB) corresponds to the minimum level of segmentation. The goal is to obtain a valuation as accurate as possible.

**Risk free interest rate term Structure-** Cash flows are discounted using Risk free for a given currency. Volatility adjustment is an add-on to the risk-free rate in situations of high volatility of financial markets. Matching adjustments is an add-on the risk-free rates used to discount certain types of liabilities, where a cashflow matching between assets and liabilities is in place and assets are held till maturity.

**Cost of capital Rate (CoC)-** is for all insurers equal, at the value of **6%,** and it is calibrated to reflect the spread over the risk-free rate for a BBB-rated entity looking for market funding. If RM equals Risk Margin:

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**Allocation-** The risk margin is calculated for the entire business and should be latter divided by each LoB.

**Eligibility-** Prudential limits are in place to ensure a minimum level of quality for the own funds. In order to cover the SCR, Tier 1 is subject to a minimum of 50% of SCR, and Tier 3 to a maximum of 15% of SCR. To cover MCR, only basic own funds classified in Tier 1 and 2 are allowed and Tier 1 is subject to a minimum of 80% of the MCR. Finally, restricted Tier 1, cannot represent more than 20% of Tier 1.

**Supervisory ladder of intervention-** is the Gap between the MCR and SCR. Actions of the supervisor should be proportional to the relative size of the shortfall.

**8 risk modules**- Operational Risk, Adjustment for the loss absorbing capacity of technical provisions and deferred taxes, intangibles asset’s risk, market risk, counterparty default risk, life underwriting risk, non-life underwriting risk and Health underwriting risk. VaR is calculated on a 99.5% confidence level over a 1-year time horizon.

**Methodology of capital requirements-** Several capital charges are given by the variation (loss) of the basic own funds (BOF) following a shock event. The risk of Diversification always assumes a negative value. Regarding Health obligations, in SCR they are treated by themselves, in MCR they are not discriminated.

**Management of Investments**- Insurers should only invest in financial instruments whose risks they can identify, measure, monitor, manage, control and report. Assets covering technical provisions should be invested in the best interest of policyholders. The use of derivatives is only allowed for hedging and efficient portfolio management purposes.

**Own Risk and Solvency Assessment (ORSA)-** Insurers should at least annually, conduct a self-assessment exercise of its solvency position and risk profile. The main components are the Overall Solvency Needs, the Compliance and Deviation of the Risk Profile.

**Capital add-on-** it is a measure aimed to correct the SCR, in order to restore the same level of protection of policyholders and beneficiaries. Imposition should be reviewed at least annually and removed when the issues have been solved.

**Supervisory Review Process-** The main objective is to protect policyholders and beneficiaries of insurance contracts. The supervisor should consider the impact of its decision on the stability of the financial system and the potential pro-cyclical effects. The SRP includes 3 subprocesses, the risk assessment framework, the detailed review, and supervisory measures.

**Pilar III**- Transparency reporting and public disclosure, aim to promote transparency, market discipline and consistency of information. Allow policyholders and Stakeholders to make informed decisions, based on the capacity and efficiency of the insurer to monitor and manage the risks and the financial and solvency position of the Insurer.

**Basel III changes from Basel II**- Strengthening the quality, consistency and transparency of own funds, Revision of Capital Requirements, Capital Buffers, Leverage Ratio, Liquidity requirements, Additional requirements for systemically important banks. The rules apply to all internationally active Banks. In Europe, the Capital requirements derivatives and regulation applies to all banks and investment firms, despite their size.

**BASEL III Pillars**

Pillar 1- eligible capital and risk-based capital requirements

Pilar 2- Supervisory review and evaluation Process. Risk management and internal control.

Pilar 3- Market discipline. Public disclosure requirements.

**Own funds Requirements-** Minimum amount of own funds that banks should observe at all times, relative to RWA. CET1>= 4.5%; Tier1>=6%; Total Capital >=8%; Cooke ratio >=8%.

**Retail Portfolio**- Exposures to a significant number of individuals or SME with similar characteristics and subject to maximum individual amounts of 1M€.

**Expected Loss**- Probability of Default\* Loss Given Default\* Exposure ate Default, If the provisions are higher than EL, the difference may be added to be eligible own funds, otherwise the difference should be deducted to the eligible own funds.

**Traditional Securitization-** operation where there is an economic and legal transfer of the risk exposures to an entity (Special purpose Vehicle) which proceeds to the issue of securities, not representing obligations of the ceding institution.

**Synthetic Securitization-** Operation where the division into tranches is carried out through the use of credit derivatives or guarantees, where the risk exposures are not taken out of the ceding institution. The importance is in the economic substance of the operation rather than in the legal form.

**General Market Risk**-Maturity and Duration method. In both methods the capital charge is given by the sum of 4 components, the net short or long position in the whole trading book, a small proportion of the matched positions in each time band, a larger proportion of the matched positions across different time-bands and a net charge for positions in options.

**Revised Standardized approach-** Sensitivities-based method, Residual risk add-on and Default risk capital requirement.

**Large Exposure Requirement-** Aims to prevent idiosyncratic risk from losses due to failure of individual counterparties. Complements the capital requirements as these implicitly assume no concentration risk. If above 10%, large exposure, if above 25% illegal to the same individual or party.

Capital Buffer



**O-SII Buffer-** Size, interconnectedness with the financial system, importance for the economy of the EU or Member State, cross-border activity. Varies between 0% and 2% of the RWA and is used to cover CET1 own funds. The buffer is subject to annual review by the competent authorities.

**Systemic Risk Buffer-** May be set at national level is aimed to prevent and mitigate systemic risks of a long-term not cyclical nature. Is used to cover CET1 own funds, may be applied to all banks or to one or more subsets of banks in the country. Is subject to review by the competent authorities at least every 2 years.

**Leverage ratio**- Simple measured (not risk-based) to serve as a backstop. Aims to assess the adequacy of the capital levels of the bank relative to an exposure measure reflecting the size of the bank, without any filter, weight, or risk mitigant. It should be greater then 3% and the total of exposures is given by the sum of all on and off balance sheet exposures, derivatives and securities financing transaction exposures.