EUROBANK ERGASIAS S.A.

CONSOLIDATED PILLAR 3 REPORT

FOR THE YEAR ENDED

31 DECEMBER 2019

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1. Introduction – General Information

Eurobank Ergasias S.A. (the "Bank" or the "Group") is a credit institution based in Greece and is supervised on a stand alone and consolidated basis by the European Central Bank (ECB) and the Bank of Greece (BoG). The Group is one of the four systemic banks in Greece, operating in key banking product and service markets. The Group offers a wide range of financial services to the retail and corporate clients. It has a strategic focus in Greece in fee-generating activities, such as asset management, private banking, equity brokerage, treasury sales, investment banking, leasing, factoring, real estate and trade finance. The Group is also among the leading providers of banking services and credit to SMEs, small businesses and professionals, large corporates and households.

Eurobank has an international presence in six countries outside of Greece, with operations in Bulgaria, Serbia, Cyprus, Luxembourg, United Kingdom and Romania.

Romanian disposal group
In April 2018 the sale of the Romanian disposal group, (Bancpost S.A., ERB Retail Services IFN S.A. and ERB Leasing IFN S.A) which was the major part of the Group's operations in Romania was completed. Further information in relation to the completion of the disposal is provided in the Consolidated Financial Statements note 30.

Acquisition of Piraeus Bank Bulgaria A.D. by Eurobank Bulgaria A.D.
In November 2018, the Bank announced that it has concluded an agreement with Piraeus Bank S.A. for the acquisition of Piraeus Bank Bulgaria A.D., a subsidiary of Piraeus Bank, by Eurobank's subsidiary in Bulgaria, Eurobank Bulgaria A.D. In June 2019, the Transaction was concluded, following the receipt of the relevant regulatory approvals.

In September 2019, the General meeting of the shareholders of Postbank approved the merger of the company with PBB. The merger was completed in November 2019, following the receipt of the relevant regulatory approvals.

Further information is provided in the Consolidated Financial Statements note 23.3.

Merger of Eurobank with Grivalia
On 26 November 2018, the Boards of Directors ("BoD") of the Bank and Grivalia Properties REIC ("Grivalia") announced that they unanimously decided to commence the Merger of the two companies by absorption of Grivalia by Eurobank (the "Merger").

On 7 February 2019, the European Commission (DG Competition) decided that the Merger is in line with Eurobank's commitments and State Aid rules considering that the strengthening of its capital base through the Merger will enable Eurobank to significantly reduce its non-performing loans in the near future.

On 22 February 2019, the BoD of the Bank and Grivalia approved the Draft Merger Agreement for the absorption of Grivalia by the Bank according to the provisions of the Greek Laws 2166/1993 and 2515/1997, as in force as well as the applicable Company Law.

On 5 April 2019, the Extraordinary General Meeting of the shareholders of the Bank resolved, among others, (a) the approval of the Merger of the Bank with Grivalia by absorption of the latter by the former, (b) the approval of the Draft Merger Agreement, as it was approved by the BoD of the merging companies and (c) the increase of the share capital of the Bank by € 197 million.

The Merger was approved on 17 May 2019 by the Ministry of Finance and Development and was registered, on the same day, in the General Commercial Registry. The trading of the 1,523,163,087 new common voting shares of nominal value € 0.23 each was initiated at Athens Exchange on 23 May 2019.

As a result of the Merger, Fairfax group, which before held 18.40% and 54.02% in Eurobank and Grivalia, respectively, becomes the largest shareholder in the merged entity with a 31.27% shareholding as at 31 December 2019. Further information in relation to the completion of the Merger is provided in the Consolidated Financial Statements note 23.2.

NPE Acceleration Plan

In November 2018, the Bank announced its transformation plan, which includes the Merger with Grivalia and the non performing loans' (NPEs) reduction Acceleration Plan comprising the following steps: a) the securitisation of ca. € 2 billion of NPEs, through the issue of senior, mezzanine and junior notes and the sale of the 95% of the above mentioned mezzanine and junior notes to a third party investor resulting to the de-recognition of the respective securitised NPEs from the Bank's balance sheet (project Pillar), b) the securitisation of ca. € 7.5 billion of NPEs, through the issue of senior, mezzanine and junior notes (project Cairo), c) the legal separation of the core and non-core operations of the Bank through the hive-down of the core operations to a new subsidiary, d) the entry of a strategic investor into Financial Planning Services S.A. (FPS), the licensed 100% owned loan servicer of the Bank, including the Bank's Troubled Asset Group, e) the sale of a portion of Cairo mezzanine and junior notes to a third party investor and, f) the contemplated de-recognition of the securitised NPEs through the disposal /distribution of the remaining Cairo mezzanine and junior notes, subject inter alia to corporate and regulatory approvals.

In June 2019, the Bank announced that it has entered into a binding agreement with an international investor for the sale of 95% of the mezzanine and junior notes of the securitization of a residential mortgage loan portfolio of ca. € 2 billion gross book value comprising primarily NPEs (Project Pillar). The Bank retains as at 31 December 2019 a) 100% of the senior notes of carrying amount of € 1,058 million (face value: € 1,044 million), b) 5% of the mezzanine notes of carrying amount of € 4 million (face value: € 15 million) and c) junior notes with issue price of € 1 (initial principal amount of € 645 million).

The capital requirements of the retained notes recognised on 31.12.2019 are calculated under the Securitisation standardised approach, based on Regulation 2017/2401 and relevant ECB decision.

As at 31 December 2019 and taking into account the above transaction, the Group NPEs at amortized cost have been reduced to € 13.0 billion, driving the NPE ratio to 29.2% (31 December 2018: 37%). Further information is provided in the Consolidated Financial Statements notes 2 and 20.

In December 2019, the Bank following the enactment of the asset protection scheme ('APS") law and its decision to opt-in for all the senior notes of the of the Cairo transaction has entered into binding agreement for: a) the sale of 20% of the mezzanine and the minimum required percentage (as per "APS') of junior notes of a securitization of a mixed assets portfolio with a gross book value of ca. € 7.5 billion (Project Cairo) and b) the sale of a majority stake in Financial Planning Services S.A. (FPS), the licensed 100%-owned loan servicer of Eurobank (Project Europe). The above projects are a key component of the Group's frontloaded NPE reduction plan for the achievement of the targeted NPE ratio of ca. 15% in the first quarter of 2020 and a single digit ratio by 2021. Further information is provided in the Consolidated Financial Statements note 34.

Corporate Transformation – Hive down

On 28 June 2019 , the BoD of the Bank ("Demerged Entity") decided the initiation of the hive down process of the banking business sector of Eurobank and its transfer to a new company-credit institution that will be established ("the Beneficiary").

On 31 July 2019, the BoD of the Bank approved the Draft Demerger Deed through the aforementioned hive down and establishment of a new company-credit institution, pursuant to Article 16 of Law 2515/1997 and Articles 57 (3) and 59-74 of Law 4601/2019, as currently in force. In particular, the demerger will involve the hive-down of the banking business sector of Eurobank, to which the assets and the liabilities are included, as described on the transformation balance sheet of the hived-down sector as at 30 June 2019 ("Transformation Date"). All actions that have taken place after the Transformation Date and concern the hived down sector shall be treated as occurring on behalf of the Beneficiary. As of 9 August 2019, the Draft Demerger Deed of the Bank is available on its website as well as the website of the General Commercial Registry.

The Demerged Entity will maintain activities and assets that are not related to the main banking activities but are mainly related to the strategic planning of the administration of non-performing loans and the provision of services to the Group companies and third parties. Furthermore, the Demerged Entity will retain the majority stake of Cairo mezzanine and junior notes, the preferred securities and participations in certain subsidiaries including Be Business Exchanges S.A. and real estate companies related to projects Pillar and Cairo. In case of any assets or liabilities that will not be possible to be transferred, in the context of the above mentioned Draft Demerger Deed, the Demerged Entity will undertake the obligation to collector liquidate the assets in accordance with the Beneficiary's instructions whereas the Beneficiary will undertake the obligation to indemnify the Demerged Entity for the settlement of the liabilities including any arising costs or losses.

Upon the completion of the demerger (i.e. the date of registration with the General Commercial Registry of the relevant approval by the competent Authority), the following shall take place: a) The Beneficiary will be incorporated and the Demerged Entity shall become the shareholder of the Beneficiary by acquiring all the shares issued by the Beneficiary and b) the Beneficiary will substitute the Demerged Entity, by way of universal succession, to all the transferred assets and liabilities, as set out in the transformation balance sheet of the hived down sector and formed up to the completion of the demerger.

On 31 January 2020, the Extraordinary General Meeting of the Bank's shareholders resolved, among others, a) the approval of the aforementioned demerger of Eurobank through sector's hive down and the establishment of a new company-credit institution under the corporate name "Eurobank S.A." b)) the approval of the Draft Demerger Deed as well as the Articles of Association of the Beneficiary, as they were approved by the Bank's BoD and c) the adjustment of the Articles of Association of the Demerged Entity which will cease to be a credit institution by amending its object and corporate name as was also approved by the Bank's BoD.

The completion of the demerger is expected to take place by the end of March 2020, subject to the receipt of the necessary approvals by the competent Authorities. Further information is provided in the Consolidated Financial Statements note 44.

1.1 Regulatory framework

The general Basel III framework is structured around three mutually reinforcing pillars:

- Pillar 1 defines the minimum regulatory capital requirements, based on principles, rules and methods specifying and measuring credit, market and operational risk. These requirements are covered by regulatory own funds, according to the rules and specifications of CRR.
- Pillar 2 addresses the internal processes for assessing overall capital adequacy in relation to risks (Internal Capital Adequacy Assessment Process - ICAAP and Internal Liquidity Assessment Process - ILAAP). Pillar 2 also introduces the Supervisory Review & Evaluation Process (SREP), which assesses the internal capital adequacy of credit institutions.
- Pillar 3 deals with market discipline by developing a set of quantitative and qualitative disclosure requirements, which allow market participants to assess key pieces of information on the scope of application, capital, risk exposures, risk assessment processes and hence the capital adequacy and the internal liquidity adequacy of credit institutions.

According to the CRD IV provisions (with gradual implementation until 2019):

- Minimum Common Equity Tier 1 (CET1) ratio: 4.5%;
- Minimum Tier 1 ratio: 6%;
- Minimum Total Capital ratio: 8%

Furthermore, banks are required to maintain in addition to the Common Equity Tier 1 capital a capital conservation buffer equal to 2.5 % (from 1 January 2019) of their total risk exposure amount calculated.

As a result the minimum ratios which must be met, including the capital conservation buffer and which shall apply from 1 January 2019 are:

- Minimum CET1 capital ratio 7%; and
- Total capital adequacy ratio 10.5%.

Additional capital buffers that CRD IV introduces are the following:

a) Countercyclical buffer. The purpose of this buffer is to counteract the effects of the economic cycle on banks' lending activity, thus making the supply of credit less volatile and possibly even reduce the probability of credit bubbles or crunches. Credit institutions are required under the CRD IV to build up an additional buffer of 0 - 2.5% of CET1 during periods of excess credit growth, according to national circumstances. According to relevant BoG Executive Committee Acts, the countercyclical buffer was set at 0% for 2019.

b) Global systemic institution buffer (G-SIIs). CRD IV includes a mandatory systemic risk buffer of CET1 for banks that are identified by the relevant authority as globally systemically important, which is not applicable to Greek banks.

c) Other systemically important institutions buffer (O-SIIs). On 20.03.2019, European Banking Authority (EBA) published the updated list of O-SIIs in the EU. O-SIIs are those institutions which are deemed systematically relevant in addition to G-SIIs, already identified. This list reflects also the additional capital buffers that the relevant authorities have set for the O-SIIs. The identification of institutions as O-SIIs is based on 2018 data and the list is disclosed on an annual basis, along with the definition of any CET1 capital buffer requirements which may need to be set. In case of higher capital requirements, these become applicable at least one year after the publication of the O-SIIs list, to give institutions enough time to adjust to the new buffer requirements.

   The EBA methodology has been applied to compute the scores for all the institutions operating in Greece using consolidated data. Based on the above scoring system, all Greek O-SIIs are classified in bucket 4 which corresponds to a capital buffer of 1% which will be phased in until 2022. The date of activation was 1 January 2016 and BoG's Executive Committee Act- 151/30.10.2018 set the O-SII buffer for Greek Institutions for the year 2019 at 0.25%.

Regulatory Developments

On 25 February 2019 BCBS published the Minimum capital requirements for market risk. The revised market risk framework will take effect as of 1 January 2022.

The key features of the revised framework are:

- Boundary between the banking book and trading book;
- Introduction of an internal model approach. Targeted changes address the impact of non-modellable risk factors;
- More risk- sensitive standardised approach for better alignment of treatment of foreign currency positions, options and index instruments with the associated risks.

On 17 April 2019, the European Parliament and the Council published the Regulation (EU) 2019/630 amending Regulation (EU) 575/2013 as regards minimum loss coverage for non performing exposures (NPEs).

On the basis of a common definition of non-performing loans, the proposed new rules introduce a "prudential backstop" that is, a minimum loss coverage for the amount banks need to set aside to cover losses caused by future loans that turn to non-performing . Different coverage requirements will apply depending on the classification of the NPEs as "unsecured" or "secured" and whether the collateral is movable or immovable.

The prudential backstop will be applied at an exposure-by-exposure level. For unsecured NPEs, a calendar of three years should apply, while for NPEs secured by immovable collateral and residential loans guaranteed by an eligible protection provider, a calendar of nine years should apply. For other secured NPEs a calendar of seven years should apply in order to build up full coverage.

Insufficient provisions for NPEs will require corresponding deductions from the Bank's CET 1 capital (Pillar 1 measure).

Introduction – General Information

The table below shows the level of minimum loss coverage (in %) which should be applied to exposures from the first until the last day of a given year following its classification as NPE:

At the year	Unsecured	Secured by immovable property	Secured by credit protection	Secured - Export Credit Agencies exposures
1	-	-	-	-
2	-	-	-	-
3	35%	-	-	-
4	100%	25%	25%	-
5		35%	35%	-
6		55%	55%	-
7		70%	80%	-
8		80%	100%	100%
9		85%		
10		100%		

On 7 June 2018, the following were published in the Official Journal of the EU (OJ):

- Regulation (EU) 2019/876 of the European Parliament and of the Council amending the Capital Requirements Regulation as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements (CRR II).
- Directive (EU) 2019/878 of the European Parliament and of the Council amending the Capital Requirements Directive IV as regards exempted entities, financial holding companies, mixed financial holding companies, remuneration, supervisory measures and powers and capital conservation measures (CRD V).

CRR II and CRD V have entered into force on 27 June 2019. The CRR II rules will follow a phased implementation with significant elements entering into force in 2021.

On 16 October 2019 EBA launched a public consultation on the new comprehensive Implementing Technical Standard (ITS) for financial institutions' public disclosure, designed to promote market discipline. The new ITS aim to reinforce market discipline, by increasing consistency and comparability of institutions' public disclosures, and to implement the CRR2 regulatory changes in alignment with the revised Basel Pillar 3 standards.

Single Supervisory Mechanism (SSM)

Pursuant to the proposal of the EU Commission dated 12 September 2012 as regards a Single Supervisory Mechanism (SSM), Council Regulation No 1024/2013 of 15 October 2013 was issued, which conferred specific tasks on the European Central Bank (ECB) concerning policies relating to the prudential supervision of credit institutions. Furthermore, Regulation No 1022/2013 of the European Parliament and of the Council of 22 October 2013 was also issued, amending Regulation No 1093/2010 establishing the EBA as regards the conferral of specific tasks on the ECB pursuant to Council Regulation No 1024/2013.

The Single Supervisory Mechanism (SSM) refers to the system of banking supervision in Europe. It comprises the ECB and the national supervisory authorities of the participating members.

As of November 2014, the ECB directly supervises the largest banks, while the national supervisors continue to monitor the remaining banks. The main task of the ECB and the national supervisors, working closely together within an integrated system, is to check that banks comply with the EU banking rules and tackle problems early on.

The SSM is one of the two pillars of the EU banking union, along with the Single Resolution Mechanism.

Single Rulebook

The Single Rulebook is the foundation of the banking union. The term Single Rulebook was coined in 2009 by the European Council in order to provide a single set of harmonised prudential rules which institutions throughout the EU must comply with. These rules, among other things, lay down capital requirements for banks, ensure better protection for depositors and regulate the prevention and management of bank failures.

Supervisory Review and Evaluation Process (SREP)

Based on Council Regulation 1024/2013, the ECB conducts annually a Supervisory Review and Evaluation Process (SREP), in order to define the prudential requirements of the institutions under its supervision, by defining a total SREP capital requirement.

The key purpose of SREP is to ensure that institutions have adequate arrangements, strategies, processes and mechanisms as well as capital and liquidity to ensure a sound management and coverage of their risks, to which they are or might be exposed, including those revealed by stress testing and risks the institution may pose to the financial system.

The common SREP framework introduced is built around:

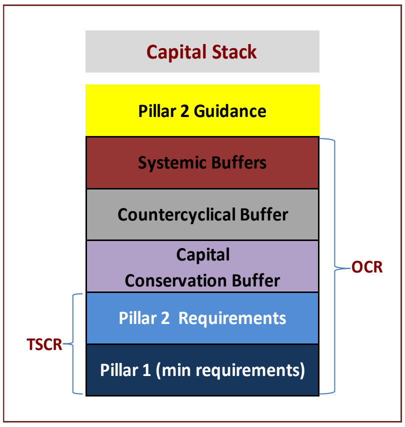
- business model analysis;
- assessment of internal governance and institution-wide control arrangements;
- assessment of risks to capital and adequacy of capital to cover these risks; and
- assessment of risks to liquidity and adequacy of liquidity resources to cover these risks.

The minimum capital adequacy requirements are determined by the ECB following the assessment of the institution's risk profile (through SREP). For 2019 and for 2020, the SREP requirements consist of:

- The minimum required CET1 ratio and the minimum required Total capital adequacy ratio (Total SREP Capital Requirements or TSCR) that the Bank must meet at all times;
- The Overall Capital Requirements (OCR), which include, in addition to the TSCR, the combined buffer requirement, and which in case they are breached, can lead to the trigger of the Maximum Distributable Amount (MDA);
- The Pillar 2 Guidance (P2G), which is an additional capital buffer recommended by the ECB to be kept over and above the Overall Capital Requirements.

Pillar 2 Requirement (P2R)

The Pillar 2 Requirement (P2R) is a capital requirement which applies in addition to and covers risks which are underestimated or not covered by the minimum capital requirements (Pillar 1). P2Rs are binding and breaches can have direct legal consequences for institutions. The P2R is determined via the Supervisory Review and Evaluation Process (SREP). Unlike the P2R, the P2G is not legally binding.



Based on the completion of the SREP decision for the year 2019, the ECB notified that the Bank shall meet, on a consolidated and on an individual basis, a total SREP capital requirement (TSCR) of 11%, which includes Pillar 2 additional own funds requirement (P2R) of 3%.

The P2R must be held in the form of CET1 capital and it must be maintained at all times, in accordance with Article 16(2)(a) of Regulation (EU) No 1024/2013.

2020 EU – wide stress test

An EU - wide stress test has been announced by the European Banking Authority (EBA) was launched in January 2020 to assess the resilience of EU banks to an adverse economic shock. This was initiated and coordinated by the EBA, in close cooperation with the European Systemic Board (ESRB), the competent Authorities (including the Single Supervisory Mechanism – SSM) and the European Central Bank (ECB).

The 2020 EU-wide stress test consisted of two stress-testing exercises – the EBA EU-wide stress test and the ECB SREP stress test – the results of which will be factored into its overall assessment within the 2020 Supervisory Review and Evaluation Process (SREP).

The scope of the 2020 ECB SREP stress test would complement the 2020 EBA EU-wide stress test in order to address those ECB supervised entities which are not included in the 2020 EBA EU-wide stress test. Eurobank would participate in the ECB SREP stress test of 2020.

On 12 March 2020, the EBA decided to postpone the EU-wide stress test exercise to 2021 to mitigate the impact of coronavirus on the EU banking sector and thus allow banks to focus on and ensure continuity of their core operations, including support for their customers. For 2020, the EBA announced that it will carry out an additional EU-wide transparency exercise in order to provide updated information on banks' exposures and asset quality to market participants. In the light of the operational pressure on banks, the ECB stated that it supports the above decision by the EBA and will extend the postponement to all banks subject to the 2020 stress test.

Regulatory initiatives on Internal Models

SSM initiatives - Targeted Review of Internal Models

Targeted Review of Internal Models (TRIM) is an SSM-wide multi-year project (2016-2019) affecting all significant institutions of the Eurozone with approved internal models and has the following key objectives:

- Assess if internal models comply with the applicable regulation, and whether the risk estimates they produce are reliable and comparable;
- Reduce inconsistencies and unwarranted variability when banks use internal models to calculate Risk Weighted Assets (RWAs).

Between the second half of 2016 and the 4th quarter of 2019 the Bank has entered TRIM's execution phase and more specifically:

- The General Topic review;
- The investigation of its internal model for Market Risk;
- The investigation of its internal model for Credit Risk of the exposure class "Retail - Secured by real estate non-SME" (mortgage portfolio).
- The investigation of its credit risk PD models for Corporate exposures under Foundation IRB;

In the 4th quarter of 2019, ECB initiated the review of models (IMI – Internal Model Investigations) for the new production of Retail Lending in line with the ECB Guidance, following an application submitted by the Bank.

EBA initiatives – Definition of default and other Guidelines

EBA recently issued a number of Guidelines and Regulations, to allow comparability and harmonization of risk estimates and RWAs as well as introducing a level playing field. These include among others:

- The implementation of the new Definition of Default including consistent materiality thresholds for credit obligations past due;
- Guidelines on the estimation of risk parameters under the IRB Approach.

Application of new definition of default is expected from January 1, 2021.

Recovery and Resolution of Credit Institutions

On 15 May 2014 the European Parliament and the Council of the European Union adopted the Directive 2014/59 EU establishing a framework for the recovery and resolution of credit institutions and investment firms (the Bank Recovery and Resolution Directive (BRRD)) which entered into force on 2 July 2014. The European Council has recognised that in the Banking Union, bank supervision and resolution need to be exercised uniformly, thus making obvious the need for the establishment of the Single Resolution Mechanism (SRM) and a Single Resolution Fund, (SRF) and in this context, the European Parliament and Council adopted Regulation No 806/2014 (the "SRM Regulation").

The BRRD, which was transposed into Greek law by virtue of Law 4335/2015, relies on a network of national authorities and resolution funds to resolve banks. Pursuant to Law 4335/2015, with respect to Greek credit institutions, the BoG has been designated as the national resolution authority and the Resolution Branch of the Hellenic Deposit and Investment Guarantee Fund (HDIGF) as the national resolution fund.

The SRM Regulation builds on the rulebook on bank resolution set out in the BRRD and establishes the SRM, which complements the SSM and centralizes key competences and resources for managing the failure of any bank in the Euro zone and in other Member States participating in the Banking Union. The SRM Regulation also established the SRB, vested with centralised power for the application of the uniform resolution rules and procedures and the SRF, supporting the SRM. The main objective of the SRM is to ensure that potential future bank failures in the banking union are managed efficiently, with minimal costs to taxpayers and the real economy. The SRB started its work as an independent EU agency on 1 January 2015 and is fully operational since January 2016.

In November 2016, the European Commission submitted legislative proposals to amend, among others, the BRRD and the SRMR. In April 2019, the European Parliament and the Council reached an agreement on these legislative proposals and in June 2019 the Official Journal of the European Union published:

- **Directive (EU) 2019/879** of the European Parliament and of the Council amending Directive 2014/59/EU on loss-absorbing and recapitalisation capacity of credit institutions and investment firms (known as "BRRD2"), and
- **Regulation (EU) 2019/877** of the European Parliament and of the Council amending Regulation (EU) No 806/2014 as regards loss-absorbing and recapitalisation capacity for credit institutions and investment firms (known as "SRMR2").

The SRMR2 will apply from 28 December 2020, while by that date Member States must have transposed the BRRD2 into their national law.

The revised framework brought about changes, among others, in the arrangements relating to the determination and application of the Minimum Requirement for Own funds and Eligible Liabilities (MREL). In that context, the key changes pertain to:

- the allocation of banks into different categories with different requirements to apply to each of these categories;
- the introduction of a Pillar 1 MREL applicable to large and systemically important institutions;
- the establishment of the subordination requirement based on which credit institutions must cover part of the MREL with capital instruments and subordinated MREL-eligible liabilities;
- the introduction of the internal MREL for material subsidiaries of credit institutions;
- the establishment of specific criteria for the determination of the transitional period during which credit institutions must meet the MREL, and

- the introduction of specific measures that resolution authorities and/or supervisory authorities, where relevant, may take in response to the breach of the MREL.

1.2 Implementation of Capital Adequacy framework at Eurobank Group

1.2.1 Credit risk

Eurobank Group (the "Bank" or the "Group") first applied the Basel II framework under the Standardised approach in January 2007 and included the respective risk asset ratio figures in its published financial statements. Until that date the Group had been applying the Basel I rules.

In June 2008, the Group received the approval of BoG to use the Internal Ratings Based (IRB) approach to calculate the capital requirement for credit risk. Therefore, with effect from 1 January 2008 the Group applies:

- The Foundation IRB approach to calculate risk weighted assets for the corporate loans' portfolio of Eurobank Ergasias S.A. in Greece;
- The Advanced IRB for the majority of the retail loans' portfolio of the Bank, i.e. mortgages, small business lending, credit cards and revolving credits in consumer lending;
- From September 2009 the Foundation IRB approach was applied for the corporate loans' portfolio of Eurobank Ergasias Leasing S.A. in Greece;
- From March 2010 the Advanced IRB approach was applied for the Bank's portfolio of personal and car loans.

The implementation of IRB covers 75.0% of the Group's lending portfolio excluding portfolio segments which are immaterial in terms of size and risk profile as well as, permanent exemptions. The Bank is in the process of reviewing the IRB roll out plan taking into account the recently issued draft guidelines, the related internal policy and its business plan. The updated roll out plan will be subject to ECB approval.

From January 1 2018, the equity exposures of the Group, according to article 155 of Regulation (EU) No 575/2013 (Risk weighted exposure amounts for equity exposures), are subject to the IRB treatment.

There is a permanent exemption from the IRB approach, up to 10% of Risk Weighted Assets, for which the Standardised approach is applied. In addition to the exemption of up to 10% of Risk Weighted Assets, permanent exemption has been granted for the following exposure classes as prescribed in the CRD:

- exposures to/or guaranteed by central governments and central banks;
- exposures to/or guaranteed by credit and financial institutions; and
- exposures to administrative bodies and non-commercial undertakings.

The Standardised approach is applied for these exposures.

1.2.2 Market risk

The Bank uses its own internal Value at Risk (VaR) model to calculate capital requirements for market risk in its trading book, for the Bank's activities in Greece. The Bank received the official validation of its model for market risk by the BoG in July 2005. The model is subject to periodic review by the regulator.

In 2011, the Bank updated its models and systems in order to fully comply with the BoG Governor's Act 2646/2011 for the trading book capital. The Bank calculates the capital for stressed VaR and IRC (incremental risk capital charge) since 31.12.2011.

For the measurement of market risk exposure and the calculation of capital requirements for the Bank's subsidiaries in Greece and in International operations, the Standardised approach is applied.

Furthermore, the Bank calculates and monitors the market risk of the banking book for its operations in Greece on a daily basis using the internal VaR model. For its operations abroad, Eurobank applies sensitivity analysis, whereas the VaR methodology is applied on a monthly basis.

1.2.3 Operational risk

Capitalizing on the provisions of Regulation (EU) No 575/2013, the Group uses the Standardised Approach to calculate the Pillar 1 regulatory capital requirements for operational risk for its consolidated operations.

1.3 Scope of Pillar 3

The purpose of Pillar 3 report is to provide updated information the Group's risk management practices, risk assessment processes and regulatory capital adequacy ratios.

Pillar 3 disclosures consist of both qualitative and quantitative information and are provided on a consolidated basis. They have been prepared in accordance with Part 8 of the Capital Requirements Regulation within CRD IV (Regulation 2013/575/EU) and according to the regulatory consolidation framework, which is described in the following section.

In December 2016 EBA published EBA/GL/2016/11 guidelines on revised Pillar 3 disclosures requirements to improve the consistency and comparability of institutions’ regulatory disclosures. These guidelines are applied from 31 December 2017. According to the above guidelines, for templates that require the disclosure for current and previous reporting periods, the previous reporting period is always referred to as the last data disclosed according to the frequency of the template. When the disclosure is being reported for the first time, the data of the previous period is not required

In December 2018 EBA published EBA/GL/2018/10 guidelines, that apply from 31 December 2019 which include enhanced disclosure formats for credit institutions for disclosures related to non-performing exposures, forborne exposures and foreclosed assets. Some templates are applicable to significant credit institutions that have a gross NPL ratio of 5% or above, as is the case for Eurobank.

1.3.1 Location, timing and frequency of disclosures

Pillar 3 disclosures are provided on a quarterly basis, following the relevant recommendation of EBA Guidelines 2016/11, which do not change the approach in the EBA Guidelines 2014/14 but update the list of requirements to be considered for more frequent disclosures.

Pillar 3 disclosures are provided with reference date (corresponding period) the close of the previous quarter and in conjunction with the date of publication of the financial statements. Equivalent disclosures made by the Group under accounting, listing or other requirements are deemed to constitute compliance with the requirements of the aforementioned Regulation (EU) No 575/2013 (Part Eight) taking into consideration any existing relevant implementing Regulations as well as the EBA guidelines.

Pillar 3 disclosures are provided in a designated location on the Bank’s website (www.eurobank.gr/en/group/investor-relations/financial-results) in chronological order and cover both quantitative and qualitative information.

Quantitative information, which is included in the Group’s Consolidated Financial Statements, is also provided at the above location. In this way, the Bank secures easy access of the market participants to continuous and complete information without cross-reference to other locations or media of communication.

The information contained in the Pillar 3 Disclosures has been verified by the Audit Committee.

1.4 Regulatory versus accounting consolidation

1.4.1 Accounting consolidation

The accounting consolidation of the Group is based on the International Financial Reporting Standards (IFRS) and more specifically IFRS 10 Consolidated Financial Statements, IAS 28 Investments in Associates and Joint Ventures and IFRS 11 Joint Arrangements.

Subsidiaries are all entities controlled by the Group. The Group controls an entity when it is exposed, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The Group consolidates an entity only when all the above three elements of control are present.

Power is considered to exist when the Group's existing rights give it the current ability to direct the relevant activities of the entity, i.e. the activities that significantly affect the entity's returns and the Group has the practical ability to exercise those rights. Power over the entity may arise from voting rights granted by equity instruments such as shares or, in other cases, may result from contractual arrangements.

Where voting rights are relevant, the Group is deemed to have control where it holds, directly or indirectly, more than half of the voting rights over an entity, unless there is evidence that another investor has the practical ability to unilaterally direct the relevant activities.

The Group may have power even when it holds less than a majority of the voting rights of the entity through a contractual arrangement with other vote holders, rights arising from other contractual arrangements, substantive potential voting rights, ownership of the largest block of voting rights in a situation where the remaining rights are widely dispersed ('de facto power'), or a combination of the above. In assessing whether the Group has de facto power, it considers all relevant facts and circumstances including the relative size of the Group's holding of voting rights and dispersions of holdings of other vote holders to determine whether the Group has the practical ability to direct the relevant activities.

The Group is exposed or has rights to variable returns from its involvement with an entity when these returns have the potential to vary as a result of the entity's performance.

In assessing whether the Group has the ability to use its power to affect the amount of returns from its involvement with an entity, the Group determines whether in exercising its decision-making rights it is acting as an agent or as a principal. The Group acts as an agent when it is engaged to act on behalf and for the benefit of another party and as a result does not control an entity. Therefore, in such cases, the Group does not consolidate the entity. In making the above assessment, the Group considers the scope of its decision-making authority over the entity, the rights held by other parties, the remuneration to which the Group is entitled from its involvement and its exposure to variability of returns from other interests in that entity.

The Group has interests in certain entities which are structured so that voting rights are not the dominant factor in deciding who controls the entity, such as when any voting rights relate to administrative tasks only and the relevant activities are directed by means of contractual rights. In determining whether the Group has control over such structured entities, it considers the following factors:

- The purpose and design of the entity;
- Whether the Group has certain rights that give it the ability to direct the relevant activities of the entity unilaterally, as a result of existing contractual arrangements that give it the power to govern the entity and direct its activities
- In case another entity is granted decision making rights, the Group assesses whether this entity acts as an agent of the Group or another investor;
- The existence of any special relationships with the entity; and
- The extent of the Group's exposure to variability of returns from its involvement with the entity, including its exposure in the most subordinated securitised notes issued by the entity as well as subordinated loans or other credit enhancements that may be granted to the entity, and if the Group has the power to affect such variability.

The Group reassesses whether or not it controls an entity if facts and circumstances indicate that there are changes to one or more elements of control. This includes circumstances in which the rights held by the Group and intended to be protective in nature become substantive upon a breach of a covenant or default on payments in a borrowing arrangement and lead to the Group having power over the investee.

Subsidiaries are fully consolidated from the date on which control is transferred to the Group and are no longer consolidated from the date that control ceases.

Investments in joint ventures (the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control and, under which, the parties have rights to the net assets of the arrangement) and investments in associates (investments in which the Group has a significant influence, but which it does not control,) are also part of the accounting consolidation scope, but are accounted for using the equity method.

1.4.2 Regulatory consolidation There is no difference between regulatory and accounting consolidation.

ERB Hellas Funding Ltd and ERB Hellas Plc are included in the calculation of the non-consolidated capital requirements and regulatory own funds of the Bank (solo consolidation).

The following table provides information regarding the consolidation method applied for each entity within the accounting and the regulatory scopes of consolidation.

Table 1: EU LI3 – Outline of the differences in the scopes of consolidation

Name of the entity	Method of accounting consolidation	Method of regulatory consolidation	Line of business
Be Business Exchanges S.A. of Business Exchanges Networks and Accounting and Tax Services	Full consolidation	Full consolidation	Business-to-business e-commerce, accounting, tax and sundry services
Eurobank Asset Management Mutual Fund Mngt Company S.A. (2)	Full consolidation	Full consolidation	Mutual fund and asset management
Eurobank Equities Investment Firm Single Member S.A. (2)	Full consolidation	Full consolidation	Capital markets and advisory services
Eurobank Ergasias Leasing Single Member S.A. (2)	Full consolidation	Full consolidation	Leasing
Eurobank Factors Single Member S.A. (2)	Full consolidation	Full consolidation	Factoring
Eurobank FPS Loans and Credits Claim Management S.A.	Full consolidation	Full consolidation	Loans and Credits Claim Management
Hellenic Post Credit S.A.	Full consolidation	Full consolidation	Credit card management and other services
Herald Greece Single Member Real Estate development and services S.A. 1 (2)	Full consolidation	Full consolidation	Real estate
Herald Greece Single Member Real Estate development and services S.A. 2 (2)	Full consolidation	Full consolidation	Real estate
Standard Single Member Real Estate S.A. (2)	Full consolidation	Full consolidation	Real estate
Cloud Hellas Single Member Ktimatiki S.A. (2)	Full consolidation	Full consolidation	Real estate
Piraeus Port Plaza 1 Development S.A.	Full consolidation	Full consolidation	Real estate
Cairo Estate I Single Member S.A.	Full consolidation	Full consolidation	Real estate
Cairo Estate II Single Member S.A.	Full consolidation	Full consolidation	Real estate
Cairo Estate III Single Member S.A.	Full consolidation	Full consolidation	Real estate
Real Estate Management Single Member S.A.	Full consolidation	Full consolidation	Real estate services
Anchor Hellenic Investment Holding Single Member S.A.	Full consolidation	Full consolidation	Real estate
Vouliagmeni Residence Single Member S.A.	Full consolidation	Full consolidation	Real estate
Athinaiki Estate Investments Single Member S.A.	Full consolidation	Full consolidation	Real estate
Eurobank Bulgaria A.D.	Full consolidation	Full consolidation	Banking
IMO 03 E.A.D.	Full consolidation	Full consolidation	Real estate services
IMO Property Investments Sofia E.A.D.	Full consolidation	Full consolidation	Real estate services
ERB Leasing Bulgaria EAD	Full consolidation	Full consolidation	Leasing
ERB Hellas (Cayman Islands) Ltd	Full consolidation	Full consolidation	Special purpose financing vehicle
Berberis Investments Ltd	Full consolidation	Full consolidation	Holding company
ERB Hellas Funding Ltd	Full consolidation	Full consolidation	Special purpose financing vehicle
Eurobank Cyprus Ltd	Full consolidation	Full consolidation	Banking
ERB New Europe Funding III Ltd	Full consolidation	Full consolidation	Finance company
Foramonio Ltd	Full consolidation	Full consolidation	Real estate
NEU 03 Property Holdings Ltd	Full consolidation	Full consolidation	Holding company
NEU Property Holdings Ltd	Full consolidation	Full consolidation	Holding company
Lenevino Holdings Ltd	Full consolidation	Full consolidation	Real estate
Rano Investments Ltd	Full consolidation	Full consolidation	Real estate
Neviko Ventures Ltd	Full consolidation	Full consolidation	Real estate
Staynia Holdings Ltd	Full consolidation	Full consolidation	Real estate
Zivar Investments Ltd	Full consolidation	Full consolidation	Real estate
Amvanero Ltd	Full consolidation	Full consolidation	Real estate
Ragisena Ltd	Full consolidation	Full consolidation	Real estate
Revasono Holdings Ltd	Full consolidation	Full consolidation	Real estate
Volki Investments Ltd	Full consolidation	Full consolidation	Real estate
Eurobank Private Bank Luxembourg S.A.	Full consolidation	Full consolidation	Banking
Eurobank Fund Management Company (Luxembourg) S.A.	Full consolidation	Full consolidation	Fund management
Eurobank Holding (Luxembourg) S.A.	Full consolidation	Full consolidation	Holding company
ERB Lux Immo S.A.	Full consolidation	Full consolidation	Real estate

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Name of the entity	Method of accounting consolidation	Method of regulatory consolidation	Line of business
Grivalia New Europe S.A. [(1)]	Full consolidation	Full consolidation	Real estate
ERB New Europe Funding B.V.	Full consolidation	Full consolidation	Finance company
ERB New Europe Funding II B.V.	Full consolidation	Full consolidation	Finance company
ERB New Europe Holding B.V.	Full consolidation	Full consolidation	Holding company
ERB IT Shared Services S.A.	Full consolidation	Full consolidation	Informatics data processing
Eurobank Finance S.A. [(1)]	Full consolidation	Full consolidation	Investment banking
IMO Property Investments Bucuresti S.A.	Full consolidation	Full consolidation	Real estate services
IMO-II Property Investments S.A.	Full consolidation	Full consolidation	Real estate services
Eliade Tower S.A.	Full consolidation	Full consolidation	Real estate
Retail Development S.A.	Full consolidation	Full consolidation	Real estate
Seferco Development S.A.	Full consolidation	Full consolidation	Real estate
Eurobank A.D. Beograd	Full consolidation	Full consolidation	Banking
ERB Leasing A.D. Beograd [(1)]	Full consolidation	Full consolidation	Leasing
IMO Property Investments A.D. Beograd	Full consolidation	Full consolidation	Real estate services
Reco Real Property A.D. Beograd	Full consolidation	Full consolidation	Real estate
ERB Istanbul Holding A.S.	Full consolidation	Full consolidation	Holding company
ERB Hellas Plc	Full consolidation	Full consolidation	Special purpose financing vehicle
Anaptyxi SME I Plc [(1)]	Full consolidation	Full consolidation	Special purpose financing vehicle
Karta II Plc	Full consolidation	Full consolidation	Special purpose financing vehicle
Themeleion II Mortgage Finance Plc [(1)]	Full consolidation	Full consolidation	Special purpose financing vehicle
Themeleion III Mortgage Finance Plc [(1)]	Full consolidation	Full consolidation	Special purpose financing vehicle
Themeleion IV Mortgage Finance Plc [(1)]	Full consolidation	Full consolidation	Special purpose financing vehicle
Themeleion Mortgage Finance Plc [(1)]	Full consolidation	Full consolidation	Special purpose financing vehicle
Tegea Plc [(1)]	Full consolidation	Full consolidation	Special purpose financing vehicle
Maximus Hellas Designated Activity Company	Full consolidation	Full consolidation	Special purpose financing vehicle
Astarti Designated Activity Company	Full consolidation	Full consolidation	Special purpose financing vehicle
Cairo No. 1 Finance Designated Activity Company	Full consolidation	Full consolidation	Special purpose financing vehicle
Cairo No. 2 Finance Designated Activity Company	Full consolidation	Full consolidation	Special purpose financing vehicle
Cairo No. 3 Finance Designated Activity Company	Full consolidation	Full consolidation	Special purpose financing vehicle
Femion Ltd	Equity consolidation	Equity consolidation	Special purpose investment vehicle
Tefin S.A. [(1)]	Equity consolidation	Equity consolidation	Dealership of vehicles and machinery
Sinda Enterprises Company Ltd	Equity consolidation	Equity consolidation	Special purpose investment vehicle
Singidunum - Buildings d.o.o. Beograd	Equity consolidation	Equity consolidation	Development of building projects
Alpha Investment Property Kefalariou S.A.	Equity consolidation	Equity consolidation	Real estate
Global Finance S.A. [(3)]	Equity consolidation	Equity consolidation	Investment financing
Rosequeens Properties Ltd [(4)]	Equity consolidation	Equity consolidation	Special purpose investment vehicle
Famar S.A. [(1)]	Equity consolidation	Equity consolidation	Holding company
Odyssey GP S.a.r.l.	Equity consolidation	Equity consolidation	Special purpose investment vehicle
Eurolife ERB Insurance Group Holdings S.A. [(3)]	Equity consolidation	Equity consolidation	Holding company
Alpha Investment Property Commercial Stores S.A.	Equity consolidation	Equity consolidation	Real estate
Peirga Kythnou P.C.	Equity consolidation	Equity consolidation	Real estate
Piraeus Port Plaza 2	Equity consolidation	Equity consolidation	Real estate
Piraeus Port Plaza 3	Equity consolidation	Equity consolidation	Real estate
Value Touristiki S.A.	Equity consolidation	Equity consolidation	Real estate
Grivalia Hospitality S.A. [(4)]	Equity consolidation	Equity consolidation	Real estate
Information Systems Impact S.A.	Equity consolidation	Equity consolidation	Information systems services

[(1)] *Entity under liquidation at 31 December 2019.*

[(2)] *In the context of the Greek Law 4548/2018, the legal name of the company has been amended or is in the process of being amended with the inclusion of the term "Single member".*

[(3)] *Eurolife Insurance group (Eurolife ERB Insurance Group Holdings S.A. and its subsidiaries) and Global Finance group (Global Finance S.A. and its subsidiaries) are considered as Group's associates.*

[(4)] *Rosequeens Properties Ltd (including its subsidiary Rosequeens Properties SRL) and Grivalia Hospitality group (Grivalia Hospitality S.A. and its subsidiaries) are considered as Group's joint venture.*

1.5 Impediments to the prompt transfer of capital

Subordinated loans given by the Bank to its subsidiaries, financial institutions operating outside Greece, are subject to local regulations and subsequently restrictions set by local laws and supervisory authorities. The most common of all restrictions is minimum duration (5 to 7 years in most cases) with no possibility of prepayment without prior permission by the respective supervisory authority.

1.6 Compliance with Basel III Pillar 3 disclosures

The Bank has issued an internal "Policy on compliance with Pillar 3 Disclosures" in order to ensure consistent and continuous compliance with the Pillar 3 disclosures requirements, as these have been specified in the existing regulatory framework. Within this framework, the Bank operates as follows:

- Pillar 3 disclosures are provided on a consolidated basis;
- The Bank includes in its disclosures all information deemed necessary to provide users with a clear, complete and accurate view of the Group's structure, capital management, risk management system, unencumbered assets and remuneration policy. During this procedure the Bank also identifies information that is material, confidential and proprietary;
- The Bank has opted to present the full set of Pillar 3 disclosures in a separate document "Consolidated Pillar 3 Report", which is published at least annually on the Bank's website, in conjunction with the date of publication of its financial statements. The Remuneration disclosures are published in a separate document;
- The Bank re-examines the extent and type of information provided at each disclosure date and revises its policy as necessary;
- The Bank assesses the need to publish some or all disclosures more frequently than annually, taking into consideration factors such as scale of operations, range of activities, presence in different countries, involvement in different financial sectors, participation in international financial markets and payment, settlement and clearing systems and paying particular attention to information on own funds, capital requirements, risk exposure and other items prone to rapid change; and
- The Audit Committee of the Bank is responsible to review and assess the process for the preparation of the Pillar 3 report, while the Board of Directors (BoD) of the Bank is responsible to approve it.

The aforementioned responsibilities are equivalent to those in respect of the Bank's Consolidated Financial Statements.

2. Capital Management

The amount and quality of the capital held by the Group is subject to certain rules and guidelines. The composition of the Group's available regulatory capital under Pillar 1 is as follows:

2.1 Regulatory capital – definition

The Pillar 1 regulatory capital of the Group at consolidated level is calculated on the basis of IFRS figures and according to the rules set by Regulation (EU) No 575/2013.

According to the CRR, the available regulatory capital is classified under two main categories: Tier 1 and Tier 2 capital. Tier 1 consists of Common Equity (CET1) and Additional Tier 1 capital.

CET1 capital is composed of ordinary shareholders' equity, and minority interest allowed in consolidated CET1, after the following adjustments:
Addition of:

- 85% of IFRS 9 impact of 2019 (refer to par. 2.1.1 and 2.6)

Deductions of:

- Fair value reserves related to gains or losses of cash flow hedges;
- Gains and losses on market valuation of liabilities designated as fair-value-through-profit-or-loss attributable to own credit risk;
- Goodwill and intangible assets;
- Deferred tax assets that rely on future profitability excluding those arising from temporary differences (unused tax losses);
- Participating interests and subordinated loans (and other capital instruments qualifying as own funds) of more than 10% in not fully consolidated credit or other financial institutions, including insurance companies;
- Loan impairment allowances' shortage compared to IRB measurement of Expected Loss;
- Deferred tax assets arising from temporary differences, which exceed 10% threshold of CET1 capital before certain deductions; and
- The sum of deferred tax asset arising from temporary differences and participating interests and subordinated loans of more than 10% that are less than 10% of CET 1 capital and in total exceed the 17.65% threshold of adjusted CET1 capital.

Expected Losses (EL) derived under Basel III as defined in para 4.9.4 (c).

Tier 1 capital comprises CET1 capital plus Additional Tier 1 capital including preferred securities subject to phase out.
In case deductions of Tier 1 capital exceed positive amounts of Tier 1 capital, then the difference is deducted from CET1 capital.

Tier 2 capital is composed of the following items:

- Long term subordinated liabilities that meet certain regulatory specified criteria;
- General credit risk provisions up to 1.25% of risk weighted assets calculated under standardised approach;
- Positive difference between the sum of loan impairment allowances over the IRB measurement of Expected Losses, up to 0.6% of risk weighted assets calculated under the IRB approach.

In case deductions of Tier 2 capital exceed positive amounts of Tier 2 capital, then the difference is deducted from Tier 1 capital.

2.1.1 IFRS 9 transition rules

Regarding IFRS 9 adoption from 1.1.2018 and according to Regulation (EU) 2017/2395 of the European Parliament and the Council, a five year transition period is introduced, which allows banks to add back to their CET 1 capital 95% of IFRS 9 impact in 2018 and 85%, 70%, 50% and 25% in the subsequent four years.

The Group has elected to apply the phase in approach for mitigating the impact of IFRS 9 transition on the regulatory capital.

2.2 Preferred securities

As at 31 December 2019, the outstanding amount of preferred securities was € 2 million (31 December 2018: € 42 million).

In April 2019, the Board of Directors of ERB Hellas Funding decided to proceed with the redemption of all preferred securities issued. The relevant regulatory announcement of the company's intention was released on 23 April 2019. Accordingly, on 29 May, 21 June and 13 September 2019, a notice for the redemption of series C, B and D preferred securities was given to the holders. The notes were redeemed on 9 July, 2 August and 29 October 2019, respectively.

Based on ECB decision, from April 2019 preferred securities are not classified as Additional Tier 1 capital.

A list of the features of Bank's capital instruments in accordance with Annex III of the Commission Implementing Regulation (EU) No 1423/2013 is found in Appendix 2.

Detailed information regarding Preferred securities can be found in the Consolidated Financial Statements Note 39.

2.3 Reconciliation of Balance Sheets - financial accounting to regulatory scope of consolidation

As noted in section "1.4 Regulatory versus accounting consolidation", there is no difference between regulatory and accounting consolidation. As a result, the table below presents in one column per period the Balance Sheet both as per published financial statements and regulatory consolidation broken down into different risk types. Certain assets and liabilities can be subject to multiple risk frameworks.

Table 2: EU LI1 - Differences between accounting and regulatory scopes of consolidation and the mapping of financial statement categories with regulatory risk categories

		31 December 2019					
			Carrying values of items				
	Ref.	Balance sheet per published financial statements and per regulatory consolidation [1] € million	Subject to the credit risk framework € million	Subject to the CCR framework € million	Subject to the securitisation framework € million	Subject to the market risk framework € million	Not subject to capital requirements or subject to deduction from capital € million
Assets							
Cash and Balances with central banks		4.679	4.629	50	-	-	-
Due from credit institutions		3.007	2.979	2.315	-	-	-
Securities held for trading		110	-	-	-	110	-
Derivative financial instruments		2.262	-	2.262	-	2.262	-
Loans and advances to customers		37.365	36.224	79	1.062	-	-
Investment securities		7.951	7.869	5.612	82	-	-
Investments in associated undertakings		235	235	-	-	-	-
Property, plant and equipment		746	746	-	-	-	-
Investment property		1.184	1.184	-	-	-	-
Goodwill and other intangible assets	*a*	378	-	-	-	-	378
Deferred tax asset		4.766	4.585	-	-	-	181
of which deferred tax assets that rely on future profitability	*b*	2	-	-	-	-	2
of which deferred tax credit		3.820	3.820	-	-		-
of which deferred tax assets arising from temporary differences	*c*	944	765	-	-	-	179
Other assets		2.003	1.990	-	-	-	13
Assets of disposal group classified as held for sale		75	75	-	-	-	-
Total assets		**64.761**	**60.515**	**10.318**	**1.144**	**2.372**	**572**
Liabilities							
Due to central banks		1.900	-	-	-	-	1.900
Due to credit institutions		5.022	-	4.267	-	-	755
Derivative financial instruments		2.726	-	2.726	-	2.726	-
Due to customers		44.841	-	200	-	-	44.641
Debt securities in issue		2.406	-	-	-	-	2.406
Other liabilities		1.191	-	-	-	-	1.191
Liabilities of disposal group classified as held for sale		8	-	-	-	-	8
Total liabilities		**58.094**	**-**	**7.193**	**-**	**2.726**	**50.901**
of which tier 2 instruments	*d*	950	-	-	-	-	950
Equity		-	-	-	-	-	-
Ordinary share capital		852	-	-	-	-	852
Share premium		8.054	-	-	-	-	8.054
Reserves and retained earnings		(2.241)	-	-	-	-	(2.241)
of which cash flow hedge reserves	*e*	(42)	-	-	-	-	(42)
of which own credit risk		-	-	-	-	-	-
Preference shares		-	-	-	-	-	-
Total equity attributable to shareholders of the Bank		**6.665**	**-**	**-**	**-**	**-**	**6.665**
Preferred securities	*f*	2	-	-	-	-	2
Non controlling interests		-	-	-	-	-	-
Total equity	*g*	**6.667**	**-**	**-**	**-**	**-**	**6.667**
Total equity and liabilities		**64.761**	**-**	**7.193**	**-**	**2.726**	**57.568**

Capital Management

		31 December 2018					
			Carrying values of items				
		Balance sheet per published financial statements and per regulatory consolidation [(1)(2)]	Subject to the credit risk framework	Subject to the CCR framework	Subject to the securitisation framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from capital
		€ million	€ million	€ million	€ million	€ million	€ million
Assets							
Cash and Balances with central banks		1.924	1.886	38	-	-	-
Due from credit institutions		2.307	2.239	1.630	-	-	-
Financial instruments at fair value through profit or loss		43	-	-	-	43	-
Derivative financial instruments		1.871	-	1.871	-	1.871	-
Loans and advances to customers		36.232	36.161	71	-	-	-
Investment securities		7.772	7.655	4.853	117	-	-
Investments in associated undertakings		113	113	-	-	-	-
Property, plant and equipment		353	353	-	-	-	-
Investment property		316	316	-	-	-	-
Intangible assets	*a*	183	-	-	-	-	183
Deferred tax asset		4.916	4.651	-	-	-	265
of which deferred tax assets that rely on future profitability excluding those arising from temporary differences	*b*	63	-	-	-		63
of which deferred tax credit		3.927	3.927	-	-	-	-
of which deferred tax assets arising from temporary differences	*c*	926	724	-	-	-	202
Other assets		1.934	1.934	-	-	-	-
Assets of disposal group classified as held for sale		20	20	-	-	-	-
Total assets		57.984	55.328	8.463	117	1.914	448
Liabilities							
Due to central banks		2.050	-	-	-	-	2.050
Due to credit institutions		6.376	-	5.652	-	-	724
Derivative financial instruments		1.893	-	1.893	-	1.893	-
Due to customers		39.083	-	200	-	-	38.883
Debt securities in issue		2.707	-	-	-	-	2.707
Other liabilities		844	-	-	-	-	844
Liabilities of disposal group classified as held for sale		-	-	-	-	-	-
Total liabilities		52.953	-	7.745	-	1.893	45.208
of which tier 2 instruments	*d*	950	-	-	-	-	950
Equity		-	-	-	-	-	-
Ordinary share capital		655	-	-	-	-	655
Share premium		8.055	-	-	-	-	8.055
Reserves and retained earnings		(3.721)	-	-	-	-	(3.721)
of which cash flow hedge reserves	*e*	(37)	-	-	-	-	(37)
of which own credit risk		-	-	-	-	-	-
Preference shares		-	-	-	-	-	-
Total equity attributable to shareholders of the Bank		4.989	-	-	-	-	4.989
Preferred securities	*f*	42	-	-	-	-	42
Non controlling interests	*g*	-	-	-	-	-	-
Total equity	*h*	5.031	-	-	-	-	5.031
Total equity and liabilities		57.984	-	7.745	-	1.893	50.239

[(1)] The amounts shown in column "Balance sheet per published financial statements and per regulatory consolidation" do not equal to the sum of the amounts shown in the remaining columns, as some assets are subject to multiple risk frameworks.
[(2)] The amounts shown in column "Balance sheet per published financial statements and per regulatory consolidation" have not been adjusted following the change in accounting policy to Fair value model for Investment property.

Capital Management

The table below provides a reconciliation of the consolidated regulatory balance sheet to the Exposure at Default (EAD), allocated to different risk frameworks.

Table 3: EU LI2 – Main sources of differences between regulatory exposure amounts and carrying values in financial statements

		31 December 2019				
			Items subject to			
		Total [3] € million	Credit risk framework € million	CCR framework € million	Securitisation framework € million	Market risk framework € million
1	**Assets carrying value amount under the scope of regulatory consolidation (as per template EU LI1) [1]**	**64.189**	**60.515**	**10.318**	**1.144**	**2.372**
2	Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1) [1]	7.193	-	7.193	-	2.726
3	**Total net amount under the regulatory scope of consolidation**	**56.996**	**60.515**	**3.125**	**1.144**	**(354)**
4	Off-balance-sheet amounts [2]	5.262	2.492	-	-	-
5	Differences in valuations	-	-	-	-	-
6	Differences due to different netting rules, other than those already included in row 2	7.275	81	7.193	-	-
7	Differences due to consideration of provisions	6.247	6.244	3	-	-
8	Differences due to prudential filters	-	-	-	-	-
9	Differences due to collateral	3.264	-	3.264	-	-
10	Corresponding amount of credit risk mitigation techniques (CRM)	-	-	-	-	-
11	**Exposure amounts considered for regulatory purposes as at 31 December 2019**	**79.044**	**69.332**	**13.585**	**1.144**	**(354)**

		31 December 2018				
			Items subject to			
		Total [3] € million	Credit risk framework € million	CCR framework € million	Securitisation framework € million	Market risk framework € million
1	Assets carrying value amount under the scope of regulatory consolidation (as per template EU LI1) [1]	57.536	55.328	8.463	117	1.914
2	Liabilities carrying value amount under the regulatory scope of consolidation (as per template EU LI1) [1]	7.745	-	7.745	-	1.893
3	Total net amount under the regulatory scope of consolidation	49.791	55.328	718	117	21
4	Off-balance-sheet amounts [2]	4.648	2.150	-	-	-
5	Differences in valuations	-	-	-	-	-
6	Differences due to different netting rules, other than those already included in row 2	7.797	52	7.745	-	-
7	Differences due to consideration of provisions	7.657	7.654	3	-	-
8	Differences due to prudential filters	-	-	-	-	-
9	Differences due to collateral	2.870	-	2.870	-	-
10	Corresponding amount of credit risk mitigation techniques (CRM)	-	-	-	-	-
11	Exposure amounts considered for regulatory purposes as at 31 December 2018	72.763	65.184	11.336	117	21

(1) Excludes amounts subject to deduction from capital or not subject to regulatory capital requirements.
(2) Amounts shown in the "Total" column, relates to exposures pre-CCF and do not equal to the amount shown in "Credit risk framework" as this is post-CCF.
(3) The amounts shown in column "Total" do not equal to the sum of the amounts shown in the remaining columns, as some assets are subject to multiple risk frameworks.

2.4 Regulatory capital

The table below shows the composition of the Group's regulatory capital as at 31 December 2019, 30 September 2019 and 31 December 2018.

In addition, in Appendix 1 a transitional own fund disclosure template can be found, which presents the components of regulatory capital on transitional and end-point basis as at 31 December 2019 and 2018. The disclosure has been prepared using the format set out in Annex VI of the "Commission Implementing Regulation (EU) No 1423/2013 of 20 December 2013 laying down implementing technical standards with regard to disclosure of own funds requirements for institutions according to Regulation (EU) No 575/2013 of European Parliament and of the Council".

	Ref.	**31 December 2019**	30 September 2019 [1]	31 December 2018
		€ million	€ million	€ million
Total equity	*g*	6.667	6.574	5.031
Less: Preferred securities	*f*	(2)	(21)	(42)
Regulatory adjustments				
Cash flow hedge reserves	*e*	42	49	37
Adjustments due to IFRS 9 transitional arrangements		897	897	1.003
Fixed assets' revaluation reserve		-	-	-
Goodwill and other intangible assets	*a*	(378)	(425)	(183)
of which Goodwill		(161)	(223)	
IRB shortfall of credit risk adjustments to expected losses		(105)	(86)	(63)
Deferred tax assets that rely on future profitability (unused tax losses)	*b*	(2)	(2)	(63)
Deferred tax assets arising from temporary differences (amount above 10% threshold)	*c*	(179)	(198)	(202)
Prudent Valuation Adjustments		(10)	(11)	(9)
Other regulatory adjustments		(13)	(13)	-
Common Equity Tier I capital		**6.917**	6.764	5.509
Preferred Securities subject to phase-out	*f*	-	-	17
Total Tier I capital		**6.917**	6.764	5.526
Tier II capital - subordinated debt	*d*	950	950	950
Fixed assets' revaluation reserve		-	-	-
IRB Excess of impairment allowances over expected losses eligible		97	6	25
Total Regulatory Capital		**7.964**	7.720	6.501
Risk Weighted Assets		**41.407**	41.596	38.849
Ratios				
Common Equity Tier I		**16,7%**	16,3%	14,2%
Tier I		**16,7%**	16,3%	14,2%
Total Capital Adequacy Ratio		**19,2%**	18,6%	16,7%

[1] *Including interim Profits (1/7/2019-30/09/2019) € 56 million.*
[2] *The Group's CET1 as at 31 December 2019, based on the full implementation of the Basel III rules in 2024 (fully loaded CET1), would be 14.6% (30 September 2019: 14.1%).*

Capital Management

As depicted in table above, CET1 ratio has increased during the 4th quarter 2019, mainly due to 4th Q results and the increase in Other Comprehensive Income from the improved GGBs market valuation.
The CET1 ratio is defined as CET1 capital divided by RWAs, the Tier 1 ratio is defined as Tier 1 capital divided by RWAs and Total Capital Adequacy ratio is defined as Total Regulatory Capital divided by RWAs.

As at 31 December 2019, pursuant to the Law 4172/2013, as in force, the Bank’s eligible DTAs/deferred tax credits (DTCs) against the Greek State amounted to € 3,821 million (2018 € 3,927 million). The DTCs will be converted into directly enforceable claims (tax credit) against the Greek State provided that the Bank’s after tax accounting result for the year is a loss. In particular, DTCs are accounted for on: (a) the losses from the Private Sector Involvement (PSI) and the Greek State Debt Buyback Program and (b) on the sum of (i) the unamortized part of the crystallized loan losses from write-offs and disposals, (ii) the accounting debt write-offs and (iii) the remaining accumulated provisions and other losses in general due to credit risk recorded up to 30 June 2015. For further details please refer to Consolidated Financial Statements, Note 13.

According to Regulation (EU) No. 575/2013, article 39, deferred tax assets that can be replaced with a tax credit, shall not be deducted from CET1, but instead be risk weighted by 100%.

The Group has sought to maintain an actively managed capital base to cover risks inherent in the business. The adequacy of the Group's capital is monitored using, among other measures, the rules and ratios established by the Basel Committee on Banking Supervision and adopted by the European Union and the SSM in supervising the Bank.

2.5 IFRS 9 capital impact

Regarding IFRS 9 adoption from 1.1.2018 and according to Regulation (EU) 2017/2395 of the European Parliament and the Council, a five year transition period is introduced, which allows banks to add back to their CET 1 capital 95% of IFRS 9 impact in 2018 and 85%, 70%, 50% and 25% in the subsequent four years. The full impact is expected as of 1 January 2023.

The Group has elected to apply the phase in approach for mitigating the impact of IFRS 9 transition on the regulatory capital.

Table 5: EU IFRS-FL: Template on the comparison of Institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs

	31 December 2019	30 September 2019 [(1)]	30 June 2019	31 March 2019 [(2)]	31 December 2018
Available capital	**€ million**	€ million	€ million	€ million	€ million
Common Equity Tier 1 (CET1) capital	6.917	6.764	6.538	5.317	5.509
Common Equity Tier 1 (CET1) capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	5.998	5.827	5.596	4.346	4.325
Tier 1 capital	6.917	6.764	6.538	5.330	5.526
Tier 1 capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	5.998	5.827	5.596	4.346	4.325
Total capital	7.964	7.720	7.592	6.320	6.501
Total capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	7.050	6.876	6.649	5.399	5.379
Risk weighted assets					
Total risk-weighted assets	41.407	41.596	41.162	39.149	38.849
Total risk-weighted assets as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	41.122	41.314	40.884	38.869	38.354
Capital ratios					
Common Equity Tier 1 (as a percentage of risk exposure amount)	**16,7%**	16,3%	15,9%	13,6%	14,2%
Common Equity Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	**14,6%**	14,1%	13,7%	11,2%	11,3%
Tier 1 (as a percentage of risk exposure amount)	**16,7%**	16,3%	15,9%	13,6%	14,2%
Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	**14,6%**	14,1%	13,7%	11,2%	11,3%
Total capital (as a percentage of risk exposure amount)	**19,2%**	18,6%	18,4%	16,1%	16,7%
Total capital (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	**17,1%**	16,6%	16,3%	13,9%	14,0%
Leverage ratio					
Leverage ratio total exposure measure	68.665	67.441	66.299	60.504	60.267
Leverage ratio	**10,07%**	10,03%	9,86%	8,81%	9,17%
Leverage ratio as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	**8,94%**	8,83%	8,64%	7,19%	7,24%

[(1)] Including interim Profits (1/7/2019-30/09/2019) € 56 million.
[(2)] Including interim Profits (1/1/2019-31/03/2019) € 20 million

2.6 Countercyclical buffer

The Countercyclical buffer (CCyB) will be applied when the authorities deem that lending growth is giving rise to an unacceptable accumulation of systemic risks. This buffer is specifically calculated for each bank or group and consists of the weighted average of percentages of countercyclical buffers applied in regions in which the bank's credit exposures are located.

The table below shows the geographical distribution of the Group's credit exposures relevant for the calculation of its countercyclical capital buffer and the amount of its institution specific countercyclical capital buffer.

	31 December 2019											
	General credit exposures		**Trading book exposure**		**Securitisation exposure**		**Own funds requirements**					
Geographical distribution of credit exposures relevant for the calculation of the countercyclical buffer	**Exposure value for SA**	**Exposure value for IRB**	**Sum of long and short position of trading book**	**Value of trading book exposure for internal models**	**Exposure value for SA**	**Exposure value for IRB**	**of which: General credit exposures**	**of which: trading exposures**	**of which: securitisation exposures**	**Total**	**Own funds requirement weights**	**Counter-cyclical capital buffer rate**
	€ million	**€ million**	**€ million**	**€ million**	**€ million**	**€ million**	**€ million**	**€ million**	**€ million**	**€ million**		
Greece	8.595	32.092	3	-	-	10	1.834	-	1	1.834	0,75	0,00%
Romania	416	-	-	-	-	-	27	-	-	27	0,01	0,00%
Bulgaria	4.124	5	-	-	-	-	237	-	-	237	0,10	0,50%
United Kingdom	172	2	-	-	-	15	11	-	0	12	0,00	1,00%
Cyprus	1.087	7	-	-	-	-	79	-	-	79	0,03	0,00%
Other Countries	2.222	142	-	-	1.062	58	165	-	78	244	0,10	0,33%
Total	**16.616**	**32.248**	**3**	**-**	**1.062**	**83**	**2.353**	**-**	**79**	**2.433**	**1,00**	**0,09%**

	31 December 2018											
	General credit exposures		Trading book exposure		Securitisation exposure		Own funds requirements					
Geographical distribution of credit exposures relevant for the calculation of the countercyclical buffer	Exposure value for SA	Exposure value for IRB	Sum of long and short position of trading book	Value of trading book exposure for internal models	Exposure value for SA	Exposure value for IRB	of which: General credit exposures	of which: trading exposures	of which: securitisation exposures	Total	Own funds requirement weights	Counter-cyclical capital buffer rate
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million		
Greece	7.719	33.848	4	-	-	18	1.795	-	1	1.796	0,81	0,00%
Romania	400	-	-	-	-	-	24	-	-	24	0,01	0,00%
Bulgaria	3.132	4	4	-	-	-	182	-	-	182	0,08	0,00%
United Kingdom	122	1	-	-	-	16	8	-	0	9	0,00	1,00%
Cyprus	906	6	-	-	-	-	65	-	-	65	0,03	0,00%
Other Countries	1.957	50	1	-	-	83	131	-	1	132	0,06	0,00%
Total	14.236	33.909	9	-	-	117	2.205	-	2	2.208	1,00	0,004%

[1] In July and October 2019 the designated Authorities of Ireland, France and Bulgaria announced that their CCyBs were set at 1%, 0.25% and 0.05% respectively.

Amount of institution-specific countercyclical buffer	31 December 2019	31 December 2018
Total risk exposure amount (€ million)	41.407	38.849
Institution specific countercyclical buffer rate	0,09%	0,004%
Institution specific countercyclical buffer requirement (€ million)	36	2

2.7 Supervisory Review and Evaluation Process (SREP) capital requirements

According to the decision of the 2018 Supervisory Review and Evaluation Process performed by the ECB, starting from 1 March 2019 the Bank was required to meet on a consolidated basis a Common Equity Tier 1 ratio of at least 10.25% and a Total Capital Adequacy Ratio of at least 13.75% (Overall Capital Requirements including the Capital Conservation Buffer and the Other Systemically Important Institutions buffer), plus the applicable Countercyclical Capital Buffer (0.09% for the last quarter of 2019 stemming from the exposures in Bulgaria and Ireland).

The table below shows the capital requirements of the Bank for 31 December 2019.

	31 December 2019	
	CET1 Capital Requirements	Total Capital Requirements
Pillar 1 CET1	4,50%	4,50%
Pillar 1 AT1	-	1,50%
Pillar 1 T2	-	2,00%
Minimum regulatory requirement	4,50%	8,00%
Pillar 2 Requirement (P2R)	3,00%	3,00%
Total SREP Capital Requirement (TSCR)	**7,50%**	**11,00%**
Combined Buffer Requirement (CBR)		
Capital conservation buffer (CCoB)	2,50%	2,50%
Countercyclical capital buffer (CCyB)	0,09%	0,09%
Other systemic institutions buffer (O-SII)	0,25%	0,25%
Overall Capital Requirement (OCR)	**10,34%**	**13,84%**

Pillar 2 additional own fund requirement of 3% for 2019, must be held in the form of CET1 capital. The amount of additional own funds required on a consolidated basis is € 1,242 million.

As at 31 December 2019 Eurobank's transitional CET1 ratio and the Total Capital ratio was 16.7% and 19.2% respectively, which exceeded the 2019 transitional minimum requirements of 10.34% and 13.84%.

According to the 2019 SREP decision, for 2020, the Bank is required to meet on a consolidated basis a Common Equity Tier 1 ratio of at least 10.60% and a Total Capital Adequacy Ratio of at least 14.10% (Overall Capital Requirements including Capital Conservation Buffer of 2.5%, Other Systemically Important Institution Buffer of 0.5% and Countercyclical Buffer of 0.1% mainly stemming from the exposures in Bulgaria).

In response to the coronavirus outbreak, on 12 March 2020, the ECB announced a number of measures to ensure that its directly supervised banks can continue to fulfil their role in funding the real economy. Specifically, banks will be allowed, among others, to operate temporarily below the level of capital defined by the Pillar 2 Guidance and the capital conservation buffer (CCB). Banks will also be allowed to partially use capital instruments that do not qualify as CET1 capital, for example Additional Tier 1 or Tier 2 instruments, to meet the Pillar 2 Requirements.

2.8 Capital requirements under Pillar 1

The table below shows the Group's risk weighted assets (RWAs) and capital requirements as at 31 December 2019, 30 September 2019 and 31 December 2018. The minimum capital requirements under Pillar 1 are calculated as 8% of RWAs.

Table 8: EU OV1 – Overview of RWAs

	31 December 2019 RWAs € million	30 September 2019(1) RWAs € million	31 December 2018 RWAs € million	**31 December 2019 Minimum capital requirements € million**
Credit risk (excluding CCR)	**33.805**	33.739	32.574	**2.705**
Of which the standardised approach	17.046	17.357	15.442	1.364
Of which the foundation IRB (FIRB) approach	9.082	8.852	8.243	727
Of which the advanced IRB (AIRB) approach	7.185	7.115	8.596	575
Of which equity IRB under the simple risk-weighted approach or the IMA	492	415	293	39
Counterparty Credit Risk	**615**	685	575	**49**
Of which mark to market	140	176	111	11
Of which original exposure	-	-	-	-
Of which the standardised approach	395	415	387	32
Of which internal model method (IMM)	-	-	-	-
Of which risk exposure amount for contributions to the default fund of a CCP	-	-	-	-
Of which CVA	80	94	77	6
Settlement risk	-	-	-	-
Securitisation exposures in the banking book (after the cap)	**984**	1.054	18	**79**
Of which IRB approach	12	14	18	1
Of which IRB supervisory formula approach (SFA)	-	-	-	-
Of which internal assessment approach (IAA)	-	-	-	-
Of which standardised approach	972	1.040	-	78
Market risk	**984**	1.019	855	**79**
Of which the standardised approach	315	249	197	25
Of which IMA	669	770	658	53
Large exposures	-	-	-	-
Operational risk	**3.077**	3.175	3.175	**246**
Of which basic indicator approach	-	-	-	-
Of which standardised approach	3.077	3.175	3.175	246
Of which advanced measurement approach	-	-	-	-
Amounts below the thresholds for deduction (subject to 250% risk weight)	**1.942**	1.924	1.652	**155**
Floor adjustment	-	-	-	-
Total	**41.407**	**41.596**	38.849	**3.313**

(1) The decrease of the RWAs in Advanced IRB and the increase of the RWAs in the Securitisation standardised approach compared to 31 December 2018 is due to the transaction of Pillar securitisation. The capital requirements of the loans up to 30.6.2019 were calculated under the IRB approach, whereas the retained notes recognised on 30.9.2019 were calculated under the Securitisation standardised approach, based on Regulation 2017/2401 and relevant ECB decision.

(2) Total RWAs have decreased, compared to 30 September 2019, mainly as a result of operational risk RWAs.

The table below shows the Bank's significant investments in insurance holding companies and financial sector entities which are not deducted from CET 1 because the total investment does not exceed the 10% of the aggregate amount of CET1 before certain deductions.

INS1 – Non deducted participation in insurance undertakings

	31 December 2019 € million	31 December 2018 € million
Holdings of own funds instruments of a financial sector entity where the institution has a significant investment not deducted from own funds (before risk-weighting)	145	89
Total RWAs	**363**	223

2.9 Internal Capital Adequacy Assessment Process (ICAAP)

ICAAP aims to identify and assess risks that are inherent in the Group's business model, determine their materiality and allocation at an entity and Group level, evaluate risk monitoring and risk mitigation processes and quantify the relevant internal capital charge where appropriate so as to ensure the ongoing capital adequacy of the Group versus its risk profile.

To accomplish these objectives, the ICAAP leverages upon and integrates the Group's well-established activities on risk, capital and performance management, including in particular planning and monitoring, while also continuously refining its approach to ensure high standards of capital assessment and management.

Oversight and ultimate responsibility for the ICAAP lies with the BoD, which has assumed a leading role in developing a risk conscious organization and maintaining the Group's risk management at high levels of sophistication. The BoD's vision and guidance are distilled in the Group's risk appetite framework, which describes the risk boundaries within which the Group is willing to operate. Prior to its approval, the BoD and the senior management discuss and challenge the ICAAP in an effective way.

Moreover, acting as an evaluation mechanism of the Group's entire risk management framework, an integral component of ICAAP is the identification, assessment and quantification of current and emerging risks in terms of their materiality at Group level, thus allowing the organization to focus its resources and management attention to those risks that could potentially threaten its business or capital standing and ensuring that all material risks are properly managed and monitored.

Material risks are evaluated qualitatively and quantitatively, as appropriate. The aggregation of the individual capital charges comprises the Group's total internal capital requirement, meaning the amount of capital the Group needs to hold for the purpose of absorbing unexpected losses deriving from its risk profile.

All categories of material risks are appropriately managed and the relevant frameworks are regularly evaluated in order to identify ways of strengthening the risk management structure, enhance existing policies, establish new mitigation techniques and improve the internal calculation of capital requirements. Risk and capital management responsibility, including compliance with regulatory requirements and corporate policies, lies with the Group's senior management.

The Group uses the regulatory capital requirements ("Pillar 1 required capital") as a starting point for the internal determination of its capital requirements, adjusting for additional capital where appropriate. "Internal capital" better represents the Group's risk profile, compared to regulatory capital, since it takes into account a wider range of risks and utilizes more sophisticated calculation approaches. This approach allows the Group to leverage its advanced risk measurement infrastructure.

Regular scenario-based simulations and stress tests are also used in order to assess specific risks as well as the overall risk profile. Stress tests can be classified as follows:

- Risk specific stress tests, where particular risk factors, exposures or portfolios are stressed at a range of severities in order to assess individual risk impacts and threshold effects;
- Integrated stress tests across risks, which evaluate the resilience of the Group's capital position to adverse economic conditions, in case of a systemic deterioration of the business environment in a macroeconomic downturn;
- Reverse stress tests, which assess the resilience of the Group's capital position to specific adverse circumstances starting from the identification of the pre-defined outcome (e.g. points at which an institution business model becomes unviable, or at which the institution can be considered as failing or likely to fail in the meaning of Article 32 of Directive 2014/59/EU) and then exploring scenarios and circumstances that might cause this outcome to occur.

The Group also develops forecasts on capital consumption and availability and integrates them into the strategic planning process so as to optimize capital return and allocation, whilst maintaining adequate capital levels. The results of the stress tests are utilised during the capital planning process to ensure that the contingency plans in place are adequate if stressed conditions materialize and to produce a set of plausible action plans to mitigate the impact of the stress scenario.

The Group maintains adequate pre-provision earnings in the medium term and robust risk management practices which along with the capital actions already executed or underway, allow the Group to meet both regulatory and internal capital requirements. As a result, the Group will be in a position to support the risk profile of its balance sheet and its business operations going forward, even under further adverse conditions, should they materialize.

2.10 Internal Liquidity Adequacy Assessment Process (ILAAP)

ILAAP is the internal process for the identification, measurement, management and monitoring of liquidity as implemented by the institution according to Article 86 of Directive 2013/36/EU.

The Group's ILAAP covers the following areas:

- Liquidity and funding risk management framework: identification of the functions/units and management committees responsible for the policy making, management, control, monitoring and reporting of liquidity and funding risk;
- Description of the liquidity and funding risks: comprehensive description of the liquidity and funding risks that the Group faces taking into account the current macro-economic environment as long as country-specific and idiosyncratic factors;
- Liquidity risk monitoring process and stress testing: detailed description of the processes, tools and reports that the Group uses for the monitoring and the control of liquidity risk, with particular emphasis on the following: stress test analysis, liquidity buffer analysis, liquidity & funding indicators;
- Contingency funding plan and liquidity & funding strategy: description of the contingency funding plan and the liquidity and funding strategy;
- Information on strategy regarding liquidity buffers and collateral management;
- Information of cost benefit allocation mechanism;
- Information on intraday liquidity risk management.

3. Risk management overview

3.1 Risk management objectives and policies

The Group acknowledges that taking risks is an integral part of its operations in order to achieve its business objectives. Therefore, the Group's management sets adequate mechanisms to identify those risks at an early stage and assesses their potential impact on the achievement of these objectives.

Due to the fact that economic, industry, regulatory and operating conditions will continue to change, risk management mechanisms are set (and evolve) in a manner that enables the Group to identify and deal with the risks associated with those changes. The Bank's structure, internal procedures and existing control mechanisms ensure both the independence principle and the exercise of sufficient supervision.

Group's management considers effective risk management as a top priority, as well as a major competitive advantage, for the organization. As such, the Group has allocated significant resources for upgrading its policies, methods and infrastructure, in order to ensure compliance with the regulatory requirements, as set out in the EU and Greek legislative acts, the legal acts of the ECB and the European Commission, the guidelines of the EBA and of the Basel Committee for Banking Supervision and the best international banking practices. The Group implements a well- structured credit approval process, independent credit reviews and effective risk management policies for credit, market, liquidity and operational risk, both in Greece and in each country of its international operations. The risk management policies implemented by the Bank and its subsidiaries are reviewed annually.

The Group Risk and Capital Strategy, which has been formally documented, outlines the Group's overall direction regarding risk and capital management issues, the risk management mission and objectives, risk definitions, risk management principles, risk appetite framework, risk governance framework, strategic objectives and key initiatives for the improvement of the risk management framework in place.

The Board Risk Committee (BRC) is a committee of the BoD and its task is to assist the BoD to ensure that the Group has a well-defined risk and capital strategy in line with its business plan and adequate risk appetite.

The BRC assesses the Group's risk profile, monitors compliance with the approved risk appetite and risk tolerance levels and ensures that the Group has developed an appropriate risk management framework with appropriate methodologies, modeling tools, data sources and sufficient and competent staff to identify, assess, monitor and mitigate risks.

The BRC updates the Board of Directors on risk management issues and recommends the future risk management strategy. It consists of three independent non-executive directors and two non-executive directors, including the representative of the HFSF, and meets on a monthly basis and reports to the BoD on a quarterly basis and on ad hoc instances. During 2019 the BRC met thirteen (13) times.

The Management Risk Committee (MRC) is a management committee, established by the CEO in 2016. It operates as an advisory committee to the BRC.

The main responsibility of the MRC is to oversee the risk management framework of the Group. As part of its responsibility, the MRC facilitates reporting to the Board Risk Committee on the range of risk-related topics under its purview. The MRC ensures that material risks are identified and promptly escalated to the BRC and that the necessary policies and procedures are in place to prudently manage risks and to comply with regulatory requirements. Additionally, the MRC determines appropriate management actions which submitted to the BRC for discussion or approval.

The Group's Risk Management General Division, which is headed by the Group Chief Risk Officer (GCRO), is independent from the business units and has full responsibility for the monitoring, measurement and the management of credit, market, operational and liquidity risks of the Group. It comprises of the Group Credit General Division, the Group Credit Control Sector, the Group Credit Risk Capital Adequacy Control Sector, the Group Market & Counterparty Risk Sector, the Group Operational Risk Sector, the Group Model Validation & Governance Sector, the Group Risk Management Strategy Planning and Operations Unit and the Supervisory Relations & Resolution Planning Division (with dual reporting also to Group CFO).

3.2 Risk appetite framework

The maximum amount of risk which the Group is willing to assume in the pursuit of its strategic objectives is articulated via a set of quantitative and qualitative statements for specific risk types, including specific tolerance levels as described in the Group's Risk Appetite Framework. The main objectives that determine the risk appetite refer to the compliance with regulatory requirements, the safeguard of the Group's ability to smoothly continue its activities, and the achievement of a balance of strong capital adequacy with high returns on equity..

Risk appetite is clearly communicated throughout the Group, determines risk culture and forms the basis on which risk policies and risk limits are established at Group, business and regional level.

The Group's Risk Appetite Framework comprises the following components:
- Risk Bearing Capacity – this reflects the maximum amount of risk the Group can assume given any regulatory, operating, capital base or liquidity constraints and other obligations;
- Risk Appetite – this reflects the maximum level of risk that the Group is willing to assume (seek, accept or tolerate) in pursuit of its strategic and business objectives. Risk Tolerance reflects the degree of management's acceptance of current risk exposure levels, applicable to certain non-financial risks (e.g. operational risk) which are not actively taken but are tolerated;
- Risk Limits – these reflect limiting values placed on specific measures designed to prevent risk exposures from exceeding predefined risk appetite thresholds.

The risk appetite is structured as a series of qualitative and quantitative statements that cover the following broad risk categories:
- Capital adequacy and leverage
- Credit risk and asset quality
- Market risk
- Interest Rate risk in the Banking Book (IRRBB)
- Liquidity risk
- Operational risk
- Earnings risk
- Country risk
- Business risk
- Strategic risk
- Reputational risk

The Risk Appetite Framework is appropriately documented and revisited at least on an annual basis. The BRC reviews and approves the risk appetite statements and thresholds at least on an annual basis to ensure compliance with the regulatory requirements and the Bank's risk appetite in the prevailing business environment. Setting risk appetite aims to ensure that risk is proactively managed to the level desired and approved by the BRC. Senior management has the responsibility to monitor and manage risk exposures in order to remain within risk appetite levels and to ensure an appropriate level of risk is assumed to achieve business objectives. In addition, appropriate arrangements have been put in place for the regular monitoring of the risk appetite indicators. The Group has established a standardised, regular flow of information, based on its Management Information Systems, that ensures the timely and accurate monitoring of the indicators' levels. Also, clear escalation requirements are in place in case of limit breaches, in order to enable appropriate actions.

3.3 Types of risk

The Group is exposed to various types of risk that are managed at various levels of the organization.
The most important types of risk are:
- credit risk;
- market and liquidity risk;
- operational risk.

The individual risk types are defined in the subsequent sections.

3.4 Organization

The risk management functions of the BRC are performed by the GCRO and risk management sectors, which cover the following areas:

- Credit risk;
- Market, Counterparty and Liquidity risk;
- Operational risk.

Group Chief Risk Officer (GCRO)

Credit Risk	Market, Counterparty & Liquidity Risk	Operational Risk
• Basel III IRB approach compliance for significant part of Group loan portfolios; • Advanced IRB for all retail portfolios (consumer, mortgage, small business) and Foundation IRB for Corporate; • Independent and centralised approval system; • Systematic follow up of credits; • Differentiated credit scoring system for consumer and small business banking, full financial and sectorial analysis for corporates based on independent credit rating; • Disciplined provisioning policy (wholesale) and statistical portfolio behaviour (retail); • Regular and ad hoc reporting to Senior Management (Executive Board Committee, BoD, BRC) regarding progress of portfolios and evolution of provisions.	• First Greek bank with complete and validated market risk management system by local regulator (BoG), which covers both trading and banking books; • Compliance with new CRD IV rules for Trading book (stressed VaR and IRC); • All market risks monitored daily against approved VaR limits; • VaR methodology used for business decisions; • Considerable stress testing development for non normal market conditions, results monitored on a continuous basis; • Liquidity ratios and liquidity stress test LCR is calculated and monitored on a monthly basis; • Daily monitoring of credit risk of derivatives' positions using PFE methodology; • The operation and the monitoring of credit risk mitigation contracts (ISDA/CSA, GMRA) is done on a daily basis through an appropriate tool; • Country risk, Counterparty and Issuer Risk monitored daily on a Group level through a centralised counterparty risk monitoring tool; • CVA modelling; • International operations: market risk for all International subsidiaries managed centrally in Greece; • Interest rate risk in the Banking Book is monitored at least on a monthly basis.	• Standardised Approach for Eurobank's consolidated operations; • Documented and functioning operational risk framework & risk management system implemented Group-wide; • Risk & Control Self Assessment program (RCSA); • Operational risk events collection; • Key Risk Indicator (KRI) set-up & monitoring; • Operational risk scenario analysis; • Operational risk reporting (internal & external); • A number of operational risk mitigation programs underway throughout the Group; • Center of competence for counter–fraud activity, coordinating & monitoring respective initiatives.

4. Credit Risk

4.1 Definition of credit risk

Credit risk is the risk that a counterparty will be unable to fulfill its payment obligations in full when due. Credit risk also includes country risk and settlement risk.

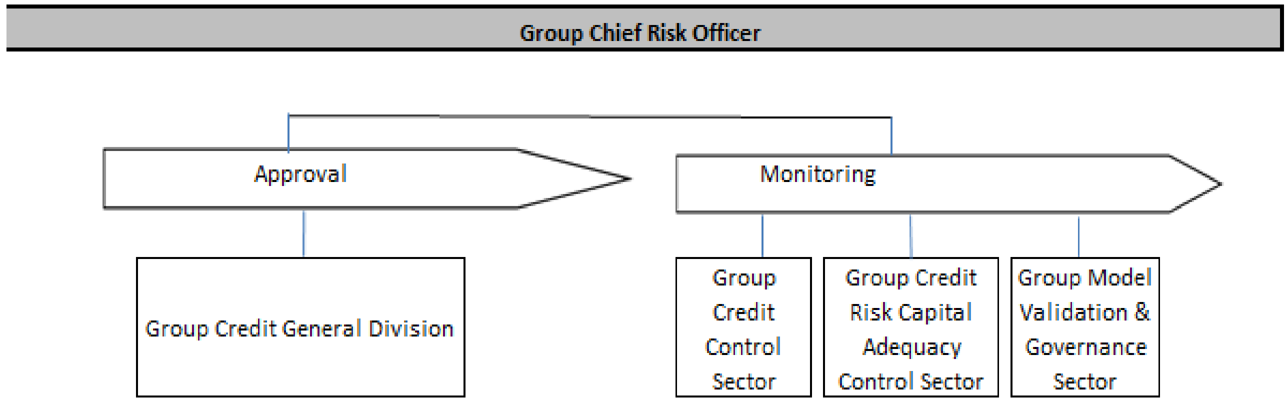
Country risk is the risk of losses arising from economic difficulties or political unrest in a country, including the risk of losses following nationalization, expropriation and debt restructuring.

Settlement risk is the risk arising when payments are settled, for example for trades in financial instruments, including derivatives and currency transactions. The risk arises when the Group remits payments before it can ascertain that the counterparties' payments have been received.

Credit risk arises principally from the wholesale and retail lending activities of the Group, including from credit enhancement provided, such as financial guarantees and letters of credit. The Group is also exposed to credit risk arising from other activities such as investments in debt securities, trading activities, capital markets and settlement activities. Taking into account that credit risk is the principal risk the Group is exposed to, it is very closely managed and is monitored by centralised dedicated risk units, reporting to the GCRO.

4.2 Credit risk organization and processes

4.2.1 Credit risk organization



The diagram above depicts the organizational structure of credit risk of the Bank. The functions of each sector are described below.

The organization of the credit risk divisions of the Group's subsidiary banks in International operations (Bulgaria, Serbia, Cyprus, Luxembourg) also follows the model of the Bank depicted above. The Risk Executive of each subsidiary bank reports directly to GCRO.

4.2.2 Credit approval process

The credit approval and credit review processes are centralised both in Greece and in the International operations. The segregation of duties ensures independence among executives responsible for the customer relationship, the approval process and the loan disbursement, as well as monitoring of the loan during its lifecycle.

The credit approval process in Corporate Banking is centralised through establishment of Credit Committees with escalating Credit Approval Levels, in order to manage the corporate credit risk. Main Committees of the Bank are considered to be the following:

- Credit Committees (Central and Local) authorised to approve new financing, renewals or amendments in the existing credit limits, in accordance with their approval authority level, depending on total limit amount and customer risk category (i.e. high, medium or low), as well as the value and type of security;
- Special Handling Credit Committees authorised to approve credit requests and take actions for distressed clients;
- International Credit Committees (Regional & Country) established for credit underwriting to wholesale borrowers for the Group's international Bank subsidiaries, authorised to approve new limits, renewals or amendments to existing limits, in accordance with their approval authority level, depending on total customer exposure and customer risk category (i.e. high, medium or low), as well as the value and type of security; and
- International Special Handling Committees established for handling distressed wholesale borrowers of the Group's international Bank subsidiaries.

The Credit Committees meet on a weekly basis or more frequently, if needed.

Group Credit General Division (GCGD)

The main responsibilities of the GCGD of the Risk Management General Division are:

- Review and evaluation of credit requests of:
  - Domestic large and medium scale corporate entities of every risk category;
  - Specialised units such as Shipping Structured Finance; and
  - Retail sector's customers (small business and individual banking) above a predetermined threshold.
- Issuance of an independent risk opinion for each credit request, which includes:
  - Assessment of the customer credit profile based on the qualitative and quantitative risk factors identified (market, operations, structural and financial);
  - A focused sector analysis; and
  - Recommendations to structure a bankable, well-secured and well-controlled transaction.
- Review and confirmation of the ratings of each separate borrower, to reflect the risks acknowledged;
- Participation with voting rights in all credit committees, as per credit approval procedures (except for Special Handling Committee I - no voting rights);
- Active participation in all external/regulatory audits of the Bank;
- Preparation of specialised reports to Management on a regular basis, with regards to Top 25 biggest Borrower groups and statistics on the new approved financings;
- Safeguard compliance of the Lending Units with specialised policies (such as SPPI/, assessment of individual customers for impairment review purposes , environmental and social policy); and
- Provision of specialised knowledge, expertise and support to other divisions of the Bank, in relation to operational and credit procedures, security policies, new lending products and restructuring schemes.

The GCGD through its specialized International Credit Sector (ICS) is also responsible to actively participate in the design, implementation and review of the credit underwriting function for the wholesale portfolio of the International Subsidiaries. Moreover, ICS advises and supports Risk Divisions of the International Subsidiaries.
In this context, ICS is responsible for the implementation, among others, of the below activities:

- Participation with voting right in all International Committees (Regional and Special Handling);
- Participation in the sessions of Special Handling Monitoring Committees which monitor and decide on the strategy of problematic corporate relationships with loan outstanding exceeding a certain threshold, that is jointly set by ICS and Country TAG;
- Advice on best practices to the Credit Risk Units of international subsidiaries and implementation of Group Risk's credit related special projects such as acquisition and /or sale of wholesale portfolio; and
- In cooperation with Group Credit Control Sector (GCCS), it conducts field reviews regarding the quality of the loan portfolio and specific loan segments.

The Group's International subsidiaries in Bulgaria, Serbia, Cyprus and Luxembourg apply the same credit risk management structure and control procedures as the Bank and report directly to the Group Chief Risk Officer. Risk management policies and processes are approved and monitored by the credit risk divisions of the Bank ensuring that group guidelines are in place and credit risk strategy is uniformly applied across the Group.

4.2.3 Credit risk monitoring

Group Credit Control Sector

The quality of the Group's loan portfolio (corporate & retail) both in Greece and abroad is monitored and assessed by the Group Credit Control Sector (GCCS). The Sector is part of the 2nd line of defence and operates independently from all the business units of the Bank and reports directly to the GCRO.

The main activities of Group Credit Control Sector are:

- Continually monitor and assess the quality of Group's loan portfolio and inform Management accordingly;
- Formulate Group's credit policies and present to Board Risk Committee for approval;
- Advise on EBA classifications during the sessions of various credit committees;
- Continually monitor regulatory developments and propose policy updates when necessary;
- Assess consistency in underwriting and compliance to Credit Policies;
- Support various corporate rating systems and maintain the Bank's Early Warning System for Corporate Borrowers;
- Conduct field reviews and prepare written reports to management on the quality of loan portfolios for all the lending units of the Group;
- Oversee the credit control departments of the International Subsidiaries;
- Participate in various Group committees and advise on credit related matters. Products & Services Committee;
- Regularly monitor asset quality, prepare informative memos and report on a monthly/quarterly basis to MRC, BRC;
- Develop credit impairment policies for Group's total portfolio in line with IFRS 9 standards;
- Assure on the accuracy and adequacy of provision levels;
- Assess the effectiveness of forbearance measures and the achievement of NPE's reduction budget;
- Prepare key supervisory disclosures;

Group Credit Risk Capital Adequacy Control Sector

The Group Credit Risk Capital Adequacy Control Sector's principal aim is to control, measure and monitor the capital requirements arising from the Bank's loan portfolio along with the relevant reporting to Management and Regulators (ECB/SSM); to develop and maintain the credit risk models for the Bank's loan portfolio; to measure the credit risk parameters (PD, LGD, EAD) for the loan portfolio for calculating capital requirements and IFRS9 provisions and to coordinate the stress testing exercises for the loan portfolios at Group Level. The Sector reports directly to GCRO.

The main activities of Group Credit Risk Capital Adequacy Control Sector are:

- Implementation of the IRB roll-out plan of the Group;
- Development, implementation and update of IRB models of Probability of Default (PD), Loss Given Default (LGD) and Exposure at Default (EAD) for evaluating credit risk;
- Development, implementation and monitoring of forecasting models linking macroeconomic factors with credit quality (e.g. forecasted 1yr PD, lifetime PD metrics etc) for the loan portfolios of the Group for IFRS9 and Stress Testing purposes;
- Measurement and monitoring of risk parameters (PD, LGD, EAD) for the purposes of capital adequacy calculations, as well as, for provisioning purposes;
- Reviewing the grouping of lending exposures and ensuring their homogeneity under IFRS standard;
- Re-assessing and re-developing the significant increase in credit risk (SICR) threshold under the IFRS9 standard;
- Monthly capital adequacy calculations (Pillar I) and preparation of relevant management, as well as, regulatory reports (COREPs, STE reports) on a quarterly basis;

- Performing stress tests, both internal and external (EBA/SSM), under the dynamic and static Balance Sheet approach, and maintaining the credit risk stress testing infrastructure;
- Preparation of credit risk analyses for the loan book of the Group for Internal Capital Adequacy Assessment (ICAAP) / Pillar II purposes;
- Preparation of Basel Pillar III disclosures for credit risk;
- Participation in the preparation of the Bank's Business plan, the NPE TAG Plan and the Recovery plan of the Group in relation to asset quality and capital requirements for the loan book (projected impairments projected RWAs and expected losses, excess/shortfall);
- Support the Business Units in the use of credit risk models in business decisions and the development and usage of risk related metrics such as Risk Adjusted Pricing, Risk Adjusted Return on Capital (RAROC) etc;
- Participation in several TAG related projects in terms of development of the "loss budget", risk assessment/impact of various programmes and new products, sensitivity scenarios;
- Monitoring of the regulatory framework in relation to the IRB framework performing impact assessment (e.g. QIS, benchmarking etc.), initiating and managing relevant projects;
- Monitor and guide International on credit risk related ICAAP, stress testing and other regulatory credit risk related issues, based on Group standards. Review of local credit risk stress test exercises;
- Regular reporting to the GCRO, to the Management Risk Committee and to the Board Risk Committee on the following topics: risk models performance, risk parameters (PD, LGD, EAD), updates on regulatory changes and impact assessment, credit risk analysis and stress testing.

Group Model Validation and Governance Sector

The Group Model Validation and Governance Sector was established in September 2018, with key mandates:
- the initiation of a comprehensive model governance and validation framework, and
- the independent validation of the technical and operational completeness of all models used by the Group and their parameters, as well as their compliance with the provisions of the regulatory framework.

In more detail, the tasks of the Sector are outlined as follows:
- Prepare and update the Group's Models Framework (to include model definition, roles involved per model, model classification principles and methodology, model validation principles, materiality classifications and thresholds, models' registry governance, etc.);
- Establish and update the Group's Models Registry;
- Review models' classification, in accordance with the methodology provided in the Group Models Framework;
- Prepare and update the Group Models Validation Framework, while providing support to Group's subsidiaries in its implementation;
- Monitor changes in ECB guidelines on models' validation;
- Propose and escalate for approval the quantitative thresholds, in order to assess the results of the validation tests;
- Conduct model validation tests in alignment with the Group Model Validation Framework and regulatory requirements;
- Prepare detailed reports of the model valuation results according to the specific requirements of the model validated, if any, which are communicated to BRC on an annual basis along with any related proposed remediation plan;
- Disseminate models' validation test results within the Group's BRC or MRC following reporting to Group CRO, as appropriate;
- Prepare action plan for remediation actions, if any, as a result of the model validation tests implemented, and escalate the plan for its approval by the appropriate Management Authority;
- Participate in the approval process of new models for assessing ratings' system accuracy and suitability; and
- Monitor industry practices on the development and use of models as well as related ECB guidelines and restrictions.

The Group structures the levels of credit risk it undertakes by placing limits on the amount of risk accepted in relation to one borrower, or groups of borrowers and to industry segments. The exposure to any one borrower including banks and brokers is further restricted by sub limits covering on and off-balance sheet exposures and daily delivery risk limits in relation to trading items such as forward foreign exchange contracts.

Such risks are monitored on a revolving basis and are subject to an annual or more frequent review. Risk concentrations are monitored regularly and reported to the BRC.

4.2.4 Troubled Assets Management

The Bank utilizes a robust and interactive governance model for the management of troubled assets, which strengthens the Bank's borrower centric approach, through remedial management demarcation of the Business Units. The target is to reinstate customers' solvency, reduce overall handling costs for delinquent accounts and improve the portfolio profitability by maintaining low portfolio delinquency rates and facilitating negotiations with delinquent customers. This approach is supported by a combination of experienced personnel and statistical analysis, which highlights the trends and the high risk areas.

Following the publication of the BoG Executive Committee's Act No.42/30.05.2014 and its amendments that details the supervisory directives for the administration of exposures in arrears and non-performing loans, the Bank has responsibly proceeded with a number of initiatives to adopt the regulatory requirements and empower the management of troubled assets. In particular, the Bank transformed its troubled assets operating model into a vertical organizational structure through the establishment of the Troubled Assets Committee (TAC) and Troubled Assets Group General Division (TAG).
A Troubled Assets Committee has been established at top management level, chaired by Senior Advisor Group Risk and reporting to the BRC. The TAC's propositions and reports are also submitted to the Group Chief Risk Officer, who expresses his opinion on the effectiveness of the troubled assets management strategy to the Board of Directors by submitting the relevant report to the Board Risk Committee.

The Troubled Assets Committee (TAC) has been established in order to provide strategic guidance and monitoring of the troubled assets of Eurobank ensuring independence from business and compliance with the requirements of BoG Act 42/30.5.2014.

The main responsibilities of the Troubled Assets Committee are the following:

- Process centrally all the internal reports regarding troubled assets management under the provisions of BoG Acts 42/30.05.2014 and its amendments;
- Approve the available forbearance, resolution and closure solutions by loan sub-portfolio and monitor their performance through suitable key performance indicators (KPIs);
- Define criteria to assess the sustainability of credit and collateral workout solutions (design and use of "decision trees");
- Determine the parameters and the range of responsibilities of the bodies and officers involved in the assessment of viability and sustainability of the proposed modifications and the subsequent monitoring of their implementation;
- Design, monitor and assess pilot modification programs (in cooperation with other business units);
- Evaluate proposals for the sale of the Bank's distressed assets portfolio, as well as for the potential provision of services of managing troubled assets of third parties; and
- Supervise and provide guidance and know-how to the respective troubled assets units of the Bank's subsidiaries abroad.

In order to fully and effectively manage borrowers that are in early arrears, non-performing or in permanent delinquency status the Bank established the Troubled Assets Group Division (TAG) with a direct reporting line to the Chief Executive Officer. The Deputy CEO and Executive member of the Board of Directors is specifically entrusted with the close monitoring of the troubled assets management strategy. The TAG is the overall responsible body for the management of Group's troubled assets portfolio for the whole process, from the pre-delinquency status in case of high risk exposures up to legal workout. It comprises the Retail Remedial General Division, the Corporate Remedial General Division, the Collaterals Recovery Sector, the TAG Business Planning Sector, the TAG Risk Management & Business Policies Sector, the TAG Operational Risk Management Sector and the Business Improvement Program Management Sector.

The target of the operating model is to reinstate customers' solvency, reduce overall handling costs for delinquent accounts and improve the portfolio profitability by maintaining low portfolio delinquency rates and facilitating negotiations with delinquent customers. In order to ensure the efficient management of the troubled assets portfolio, more than 2,500 full-time equivalent employees are involved in NPLs management operations across the Issuer, of whom c.a 1,200 are dedicated professionals within the various TAG operating units.

TAG, by employing best-in-class strategies, tools, technical resources and human capital, aims to significantly contribute to the Group's profitability, in a socially responsible manner.

The key principles that govern Troubled Assets management are described below:

- Preserve the clear demarcation line between business units and troubled assets management;
- Ensure direct top management involvement in troubled assets management and close monitoring of the respective portfolio;
- Deploy a sound credit workout strategy through innovative propositions that will lead to viable solutions, ensuring a consistent approach for managing troubled assets across portfolios;
- Engineer improvements in monitoring and offering targeted solutions by segmenting delinquent borrowers and tailoring the remedial and workout approach to specific segment;
- Prevent non-performing loans formation through early intervention and clear definition of primary financial objectives of troubled assets;
- Monitor the loan delinquency statistics, as well as define targeted risk mitigating actions to ensure portfolio risk reduction;
- Target maximization of borrowers who return to current status through modifications or collections;
- Monitor losses related to troubled assets; and
- Define criteria to assess the sustainability of proposed forbearance or resolution and closure measures and design decision trees.

The Financial Planning Services (FPS) Subsidiary

The Bank's subsidiary Financial Planning Services (FPS) was established in 2006 and transformed into a Servicer Company under the L4354/2015 in Q1 2017,is fully dedicated to the remedial management of Retail products in all stages of the loan remedial cycle.

FPS ensures that internal and external collection resources are focused and allocated appropriately and efficiently. The installation of a customised collections management system and an automated dialer has enhanced the operational efficiency of collections.

Moreover, FPS is responsible for:

- The implementation of the Retail Remedial strategy and policies (as approved by the TAC)
- Delinquent borrowers communication according to L3758 that sets the frame of its responsibilities and the Bank's call center) in order to provide extrajudicial notification or propose loan modifications by negotiation of time and type of debts repayment;
- Remedial channels' coordination;
- Delinquent borrowers' performance monitoring;
- Pre-legal and legal actions.

Collateral Recovery Sector

Collaterals Recovery Sector (CRS) is a centralized unit with direct report to the Troubled Assets Group Head, responsible for managing forced liquidations and claim announcement. It is a dedicated "auction house" with a special focus on developing best-in-class auction expertise, accelerating the forced liquidations execution and the collection of the auctions proceeds and reassuring the announcement of Bank's claims in auctions.

4.2.5 Recent developments

According to the Hellenic Statistical Authority (ELSTAT), the 2019 real GDP was at 1.9% from 1.9% in 2018, 1.5% in 2017 and -0.2% in 2016. According to European Commission's Winter 2020 Forecasts (February 2020) the 2019 and 2020, the real GDP growth rate is expected at 2.4%. Consumption and exports of goods and services (including tourism) constitute the main drivers of growth in 2019. According to the 2020 Budget real GDP growth rate in 2020 is expected at 2.8%.

On the fiscal front, according to the 2020 Budget, the primary surplus for 2019 is estimated at 3.7% of GDP from 4.2% of GDP in 2018. The respective primary surplus for 2020 is at 3.6% of GDP. According to the 5th Review of the Enhanced Surveillance for Greece (February 26 2020), the 2019 primary surplus is estimated at 4.0% of GDP. The aforementioned figures were above the 3.5% threshold required by the Enhanced Surveillance scheme. According to the 2020 Budget, public debt for 2019 and 2020 is expected at 173.3% and 167.8% of GDP respectively from 181.2% of GDP in 2018. The achievement of sustainable primary surpluses, at the level of 3.5% of GDP up to the end of 2022 with a gradual decrease to 2.2% of GDP afterwards, constitutes a necessary condition for the achievement of debt sustainability.

Conditions in the domestic labour market continued to improve throughout 2019. According to ELSTAT unemployment was at 16.3% in December 2019 from 18.5% in December 2018, a difference of 11.5 ppts compared to its peak of 27.8% in September 2013. For the 12-month period of 2019 unemployment and employment growth averaged 17.3% and 2.1% respectively from 19.4% and 2.0% in the 11-month period of 2018. According to European Commission's Autumn 2019 Forecasts (February 2020) 2020 unemployment rate is expected at 15.4%.

Finally, according to the Bank of Greece, the stock of NPLs in the Greek Banking Sector was at € 71.2 billion or 42.1% of total loans in the third quarter of 2019 from € 81.8 billion or 45.4% of total loans at the end of 2018. All the 4 systemic Banks have submitted their NPE strategy and targets to SSM for the three-year period 2019-2021. The full abolition of the capital controls in September 2019 together with the upcoming implementation of the Hercules asset protection scheme for the reduction of the stock of NPLs, improved the confidence towards the Greek banking sector. As a result, according to the Bank of Greece, private sector deposits were at € 143.1 billion at the end of December 2019 registering an annual increase of 6.4%.

4.3 Credit risk reporting

Group Credit Control and Group Credit Risk Capital Adequacy Sectors regularly prepare a detailed analysis of information to quantify, monitor and evaluate risks, as well as provide support to implement the BRC risk management decisions. It has a fixed reporting cycle to ensure that the relevant management bodies and the Board Risk Committee, are updated on an ongoing basis on the developments in the credit portfolio.

The principal risk reports submitted to the relevant management bodies, on a quarterly basis, deal with the following topics:

The quality of the Group's portfolio:	Analysis of provisions for impairment and losses by business unit. Portfolio breakdowns and evolution by rating category, size, delinquency, industry, tenor, vintage and collateralization etc.
Large exposures:	- An overview of the twenty five (25) largest exposures (for Greece and International subsidiaries). -The largest problematic and non performing exposures (o/s balances, collaterals, provisions).
Forborne loans evolution	Analysis by portfolio, delinquency status; re-default statistics on a vintage basis; impairment levels and evolution over time.

The Bank's risk management models and parameters:	Update on the use of risk models, including risk parameters applied and the key results of the models' validation.
	Update on capital adequacy.
	Stress testing scenarios.

In addition, there are reports which are prepared on a monthly basis, in order to inform the relevant management bodies on the evolution of each business area's balances, delinquencies and provisions (impairment charges).

4.4 Credit exposures

The following table presents the Group's total and average values of on and off-balance sheet exposures, after impairments and before any credit risk mitigation (CRM) and any credit conversion factor (CCF), as at 31 December 2019 and 2018.

Table 10: EU CRB-B - Total and average net amount of exposures

	2019		2018	
	Net value of exposures € million	Average net exposures € million	Net value of exposures € million	Average net exposures € million
Central governments or central banks	-	-	-	-
Institutions	-	-	-	-
Corporates [1]	12.877	12.110	11.692	11.646
- Corporates (Foundation IRB approach)	12.554	11.795	11.374	11.335
- Retail exposures that exceed € 1 million (Advanced IRB approach)	323	315	318	311
Of which: Specialised lending	2.998	2.662	2.346	2.201
Of which: SMEs	4.190	4.254	4.247	4.392
Retail [1]	14.656	15.242	16.064	16.038
Secured by real estate property	9.802	10.312	10.970	10.958
SMEs	3.006	2.971	2.942	2.923
Non-SMEs	6.796	7.342	8.028	8.035
Qualifying revolving	2.124	2.152	2.204	2.209
Other retail	2.730	2.778	2.890	2.871
SMEs	1.542	1.531	1.559	1.546
Non-SMEs	1.188	1.247	1.331	1.325
Equity	221	176	124	97
Asset backed securities	82	100	117	126
Total IRB approach	**27.836**	**27.628**	27.997	27.907
Central governments or central banks [3]	19.545	17.410	15.824	15.536
Regional governments or local authorities	47	50	55	61
Public sector entities	707	713	726	543
Multilateral development banks	115	114	122	64
International organisations	199	199	453	327
Institutions [4]	12.449	12.790	10.315	10.161
Corporates [1]	5.959	5.610	5.100	4.791
Of which: SMEs	711	675	777	750
Retail	3.275	3.233	3.152	3.342
Of which: SMEs	718	698	640	633
Secured by mortgages on immovable property	4.042	4.082	3.845	3.958
Of which: SMEs	227	238	184	192
Exposures in default	1.390	1.516	1.575	1.772
Items associated with particularly high risk	255	206	139	35
Covered bonds	182	174	162	153
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-
Collective investments undertakings	-	-	-	14
Equity exposures	145	132	89	121
Other exposures [5]	3.658	3.331	2.229	2.254
Securitisations [2]	1.062	535	-	-
Total standardised approach	**53.030**	**50.095**	43.786	43.132
Total	**80.866**	**77.723**	71.783	71.039

(1) The increase of the exposures in Corporate portfolio compared to 2018 is mainly due to the expansion in new lending volumes and the Piraeus Bank Bulgaria A.D consolidation. The decrease in Retail A-IRB Exposures compared to 2018 is due to the securitization of mortgage backed exposures (i.e Pillar transaction) and write offs.

(2) The increase of the exposures in the Securitisation standardised approach compared to 2018 is due to the securitisation of mortgage backed exposures (Pillar transaction).

(3) The increase in Central governments or central banks compared to 2018, is mainly due to the increased position on repos and in nostros with Central banks.

(4) The increase in Institutions compared to 2018, is mainly due to the increase of the market repos and the increase of margin accounts posted on derivative transactions under CSA agreements.

(5) The increase in Other exposures is mainly due to the Grivalia merger.

(6) Exposures with counterparties are included in the table.

4.4.1 Geographical and industry analysis

The following table presents the geographical breakdown of the net value of exposures as at 31 December 2019 and 2018.

Table 11: EU CRB-C – Geographical breakdown of exposures

	31 December 2019						
	Net values						
	Greece	Romania	Bulgaria [1]	United Kingdom	Cyprus	Other countries [2]	Total
	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Central governments or central banks	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	-	-
Corporates	12.877	-	-	-	-	-	**12.877**
- Corporates (Foundation IRB approach)	12.554	-	-	-	-	-	**12.554**
- Retail exposures that exceed € 1 million (Advanced IRB approach)	323	-	-	-	-	-	**323**
Of which: Specialised lending	2.998	-	-	-	-	-	**2.998**
Of which: SMEs	4.190	-	-	-	-	-	**4.190**
Retail	14.656	-	-	-	-	-	**14.656**
Secured by real estate property	9.802	-	-	-	-	-	**9.802**
SMEs	3.006	-	-	-	-	-	**3.006**
Non-SMEs	6.796	-	-	-	-	-	**6.796**
Qualifying revolving	2.124	-	-	-	-	-	**2.124**
Other retail	2.730	-	-	-	-	-	**2.730**
SMEs	1.542	-	-	-	-	-	**1.542**
Non-SMEs	1.188	-	-	-	-	-	**1.188**
Equity	65	-	5	2	7	142	**221**
Asset backed securities	10	-	-	15	-	57	**82**
Total IRB approach	**27.608**	**-**	**5**	**17**	**7**	**199**	**27.836**
Central governments or central banks	12.806	74	866	-	1.496	4.303	**19.545**
Regional governments or local authorities	46	-	1	-	-	-	**47**
Public sector entities	707	-	-	-	-	-	**707**
Multilateral development banks	-	-	-	5	-	110	**115**
International organisations	-	-	-	-	-	199	**199**
Institutions	160	37	18	6.796	1	5.437	**12.449**
Corporates	986	2	1.806	137	1.170	1.858	**5.959**
Retail	1.291	15	1.125	16	267	561	**3.275**
Secured by mortgages on immovable property	2.251	131	1.269	59	128	204	**4.042**
Exposures in default	1.061	116	150	1	24	38	**1.390**
Items associated with particularly high risk	10	-	106	6	71	62	**255**
Covered bonds	82	-	-	-	-	100	**182**
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	**-**
Collective investments undertakings	-	-	-	-	-	-	**-**
Equity exposures	145	-	-	-	-	-	**145**
Other exposures	3.030	152	275	5	43	153	**3.658**
Securitisations [2]	-	-	-	-	-	1.062	**1.062**
Total standardised approach	**22.575**	**527**	**5.616**	**7.025**	**3.200**	**13.025**	**53.030**
Total	**50.183**	**527**	**5.621**	**7.042**	**3.207**	**13.224**	**80.866**

Credit Risk

	31 December 2018						
	Net values						
	Greece € million	Romania € million	Bulgaria € million	United Kingdom € million	Cyprus € million	Other countries € million	Total € million
Central governments or central banks	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	-	-
Corporates	11.692	-	-	-	-	-	11.692
- Corporates (Foundation IRB approach)	11.374	-	-	-	-	-	11.374
- Retail exposures that exceed € 1 million (Advanced IRB approach)	318	-	-	-	-	-	318
Of which: Specialised lending	2.346	-	-	-	-	-	2.346
Of which: SMEs	4.247	-	-	-	-	-	4.247
Retail	16.064	-	-	-	-	-	16.064
Secured by real estate property	10.970	-	-	-	-	-	10.970
SMEs	2.942	-	-	-	-	-	2.942
Non-SMEs	8.028	-	-	-	-	-	8.028
Qualifying revolving	2.204	-	-	-	-	-	2.204
Other retail	2.890	-	-	-	-	-	2.890
SMEs	1.559	-	-	-	-	-	1.559
Non-SMEs	1.331	-	-	-	-	-	1.331
Equity	63	-	4	1	6	50	124
Asset backed securities	18	-	-	16	-	83	117
Total IRB approach	27.837	-	4	17	6	133	27.997
Central governments or central banks	9.200	61	580	-	1.280	4.703	15.824
Regional governments or local authorities	54	-	1	-	-	-	55
Public sector entities	726	-	-	-	-	-	726
Multilateral development banks	-	-	-	5	-	117	122
International organisations	-	-	-	-	-	453	453
Institutions	377	50	-	6.768	110	3.010	10.315
Corporates	1.162	-	1.304	98	926	1.610	5.100
Retail	1.446	21	889	12	259	525	3.152
Secured by mortgages on immovable property	2.305	161	941	41	122	275	3.845
Exposures in default	1.193	112	185	-	33	52	1.575
Items associated with particularly high risk	2	-	52	-	75	10	139
Covered bonds	61	-	-	-	-	101	162
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-
Collective investments undertakings	-	-	-	-	-	-	-
Equity exposures	89	-	-	-	-	-	89
Other exposures	1.748	106	239	6	26	104	2.229
Total standardised approach	18.363	511	4.191	6.930	2.831	10.960	43.786
Total	46.200	511	4.195	6.947	2.837	11.093	71.783

[1] *The increase in Bulgaria exposures compared to 2018 is mainly due to the Piraeus Bank Bulgaria A.D consolidation.*
[2] *The increase in Other Countries compared to 2018, is mainly due to the increase of the market repos and the increase of margin accounts posted on derivative transactions under CSA agreements and the Pillar securitisation.*
[3] *Exposures with counterparties are included in the table.*

The following table shows a breakdown by industry sector as at 31 December 2019 and 2018.

Table 12: EU CRB-D - Concentration of exposures by industry or counterparty types

(€ million)

	31 December 2019																			
	Net values																			
	Agriculture, forestry and fishing	Mining and quaring	Manufacturing	Electricity, gas, steam and air conditioning supply	Construction	Wholesale and retail trade	Transport and storage	Accomodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Human health services and social work activities	Arts, entertainment and recration	Other services [2]	Households	Central Banks & Central Governments	Financial and Insurance activities	Total
Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Corporates	178	64	2.390	637	961	2.343	1.858	1.435	267	876	136	165	692	629	103	-	-	143	**12.877**
Retail	76	10	457	8	365	1.677	213	376	66	35	739	61	109	38	304	10.107	-	15	**14.656**
Equity	-	-	-	-	-	4	-	-	2	90	-	-	-	5	39	-	-	81	**221**
Asset backed securities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	-	-	-	**82**
Total IRB approach	**254**	**74**	**2.847**	**645**	**1.326**	**4.024**	**2.071**	**1.811**	**335**	**1.001**	**875**	**226**	**801**	**672**	**528**	**10.107**	**-**	**239**	**27.836**
Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	-	19.513	-	**19.545**
Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47	-	-	-	**47**
Public sector entities [(1)]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	707	-	**707**
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115	-	-	-	**115**
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	199	-	**199**
Institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.449	**12.449**
Corporates	68	142	970	263	326	1.142	502	503	148	378	107	41	40	50	325	77	-	877	**5.959**
Retail	35	5	115	5	81	220	42	29	14	40	39	20	10	5	51	2.536	-	28	**3.275**
Secured by mortgages on immovable property	7	1	48	6	86	127	31	83	4	210	34	8	13	4	125	3.233	-	22	**4.042**
Exposures in default	7	2	33	10	46	70	15	19	5	15	12	2	2	2	66	1.072	-	12	**1.390**
Items associated with particularly high risk	-	-	2	-	75	4	1	6	-	108	16	10	-	-	1	3	-	29	**255**
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	82	**182**
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Collective investments undertakings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	145	**145**
Other exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	**21**
Total standardised approach	**117**	**150**	**1.168**	**284**	**614**	**1.563**	**591**	**640**	**171**	**751**	**208**	**81**	**65**	**61**	**783**	**6.921**	**20.519**	**13.644**	**48.331**
Total	**371**	**224**	**4.015**	**929**	**1.940**	**5.587**	**2.662**	**2.451**	**506**	**1.752**	**1.083**	**307**	**866**	**733**	**1.311**	**17.028**	**20.519**	**13.883**	**76.167**

Credit Risk

(€ million)

	31 December 2018																		
	Net values																		
	Agriculture, forestry and fishing	Mining and quaring	Manufacturing	Electricity, gas, steam and air conditioning supply	Construction	Wholesale and retail trade	Transport and storage	Accomodation and food service activities	Information and communication	Real estate activities	Professional, scientific and technical activities	Administrative and support service activities	Human health services and social work activities	Arts, entertainment and recration	Other services [2]	Households	Central Banks & Central Governments	Financial and Insurance activities	Total
Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Corporates	165	68	2.252	591	998	2.410	1.349	1.376	190	919	257	134	181	299	121	9	-	373	11.692
Retail	71	10	452	9	360	1.659	208	356	66	33	755	55	110	39	298	11.569	-	14	16.064
Equity	1	-	-	2	2	6	-	-	6	21	-	-	-	5	26	-	-	55	124
Asset backed securities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117	-	-	-	117
Total IRB approach	237	78	2.704	602	1.360	4.075	1.557	1.732	262	973	1.012	189	291	343	562	11.578	-	442	27.997
Central governments or central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	15.816	-	15.824
Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	-	-	-	55
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	717	-	726
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122	-	-	-	122
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	453	-	-	-	453
Institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.315	10.315
Corporates	65	178	830	286	271	932	424	450	179	418	47	10	26	15	293	82	-	594	5.100
Retail	26	4	82	5	78	192	38	27	12	57	39	20	8	5	43	2.504	-	12	3.152
Secured by mortgages on immovable property	4	-	39	-	84	104	19	89	3	195	17	10	13	5	12	3.230	-	21	3.845
Exposures in default	15	2	47	12	41	94	17	15	3	22	14	3	2	2	29	1.241	-	16	1.575
Items associated with particularly high risk	-	-	1	-	28	3	2	6	-	86	2	3	-	-	2	4	-	2	139
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	101	61	162
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collective investments undertakings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89	89
Other exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	-	-	17
Total standardised approach	110	184	999	303	502	1.325	500	587	197	778	119	46	49	27	1.043	7.061	16.634	11.110	41.574
Total	347	262	3.703	905	1.862	5.400	2.057	2.319	459	1.751	1.131	235	340	370	1.605	18.639	16.634	11.552	69.571

(1) Other services include Water supply, Public administration and defence compulsory social security, Education, Food & Beverages, and Industrial.
(2) The table above does not include securitisations, fixed assets, other assets and cash.
(3) Exposures with counterparties are included in the table.

4.4.2 Maturity analysis

The following table presents a breakdown of net exposures by residual maturity and exposure classes as at 31 December 2019 and 2018.

Table 13: EU CRB-E – Maturity analysis of exposures

	31 December 2019					
	Net exposure value					
	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
	€ million	€ million	€ million	€ million	€ million	€ million
Central governments or central banks	-	-	-	-	-	**-**
Institutions	-	-	-	-	-	**-**
Corporates	-	3.824	4.324	3.391	49	**11.588**
Retail	-	560	912	9.593	1.549	**12.614**
Equity	-	-	-	-	221	**221**
Asset backed securities	-	-	-	82	-	**82**
Total IRB approach	**-**	**4.384**	**5.236**	**13.066**	**1.819**	**24.505**
Central governments or central banks	-	8.876	947	5.096	4.626	**19.545**
Regional governments or local authorities	-	-	11	35	-	**46**
Public sector entities	-	-	-	-	707	**707**
Multilateral development banks	-	73	42	-	-	**115**
International organisations	-	25	174	-	-	**199**
Institutions	-	9.854	113	2.339	49	**12.355**
Corporates	-	4.536	111	193	-	**4.840**
Retail	-	169	465	1.950	31	**2.615**
Secured by mortgages on immovable property	-	35	241	3.753	-	**4.029**
Exposures in default	-	296	156	930	1	**1.383**
Items associated with particularly high risk	-	212	-	-	-	**212**
Covered bonds	-	38	44	100	-	**182**
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	**-**
Collective investments undertakings	-	-	-	-	-	**-**
Equity exposures	-	-	-	-	145	**145**
Other exposures	444	92	-	-	3.122	**3.658**
Total standardised approach	**444**	**24.206**	**2.304**	**14.396**	**8.681**	**50.031**
Total	**444**	**28.590**	**7.540**	**27.462**	**10.500**	**74.536**

	31 December 2018					
	Net exposure value					
	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
	€ million	€ million	€ million	€ million	€ million	€ million
Central governments or central banks	-	-	-	-	-	-
Institutions	-	-	-	-	-	-
Corporates	-	4.189	3.840	2.843	43	10.915
Retail	-	280	2.075	9.671	1.848	13.874
Equity	-	-	-	-	124	124
Asset backed securities	-	-	-	117	-	117
Total IRB approach	-	4.469	5.915	12.631	2.015	25.030
Central governments or central banks	-	5.456	1.992	3.669	4.707	15.824
Regional governments or local authorities	-	-	9	45	-	54
Public sector entities	-	8	-	-	718	726
Multilateral development banks	-	59	63	-	-	122
International organisations	-	-	453	-	-	453
Institutions	-	8.518	103	1.562	51	10.234
Corporates	-	3.750	295	86	-	4.131
Retail	-	158	466	1.890	27	2.541
Secured by mortgages on immovable property	-	16	300	3.515	-	3.831
Exposures in default	-	261	184	1.122	1	1.568
Items associated with particularly high risk	-	137	-	-	-	137
Covered bonds	-	-	61	101	-	162
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-
Collective investments undertakings	-	-	-	-	-	-
Equity exposures	-	-	-	-	89	89
Other exposures	426	77	-	-	1.726	2.229
Total standardised approach	426	18.440	3.926	11.990	7.319	42.101
Total	426	22.909	9.841	24.621	9.334	67.131

(1) *The table above does not include securitisations and Off Balance Sheet items*
(2) *Exposures with counterparties are included in the table.*

4.5 Credit quality of financial assets

The Group recognizes allowance for expected credit losses (ECL) that reflect changes in credit quality since initial recognition to financial assets that are measured at AC and FVOCI, including loans, securitised notes issued by special purpose vehicles established by the Group, lease receivables, debt securities, financial guarantee contracts, and loan commitments.

a. Definitions

Loans and advances to customers, including securitised notes issued by special purpose entities established by the Group, carried at amortised cost are classified depending on how ECL is measured.

Accordingly, loans reported as non-impaired include loans for which a ‘12-month ECL allowance’ is recognised as they exhibit no significant increase in credit risk since initial recognition and loans for which a ‘Lifetime ECL allowance’ is recognised as they exhibit a significant increase in credit risk since initial recognition but are not considered to be in default.

Credit impaired loans category includes loans that are considered to be in default, for which a loss allowance equal to 'Lifetime ECL' is recognised and loans classified as 'Purchased or originated credit impaired' (POCI) which are always measured on the basis of ECL.

Regulatory definitions
'Default exposures', in line with the regulatory definition of default as adopted by the Group, include material exposures that are past due more than 90 days, exposures that are assessed by Group as unlikely to pay as well as those that are assessed for impairment individually and carry an individual impairment allowance.

'Non-performing exposures' as currently monitored and reported by the Group, in line with the guidelines set by the European Banking Authority (EBA Implementing Technical Standards), include material exposures that are in arrears for more than 90 days or assessed as unlikely to pay, impaired exposures under individual or collective impairment assessment, exposures categorized as defaulted for regulatory purposes, as well as forborne non performing exposures.

'Unlikely to pay' category refers to exposures where a borrower's ability to repay his credit obligations in full without realization of collateral is assessed as unlikely, regardless the existence of any past due amounts or the number of days past due.

b. Impairment indicators

To determine the risk of default, the Group applies a default definition for accounting purposes, which is consistent with the European Banking Authority (EBA) definition for non-performing exposure. The accounting definition of default is consistent with the one used for internal credit risk management purposes.
A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of that exposure have occurred:

- The borrower faces a significant difficulty in meeting his financial obligations;
- There has been a breach of contract, such as a default or past due event;
- The Group, for economic or contractual reasons relating to the borrower's financial difficulty, has granted to the borrower a concession(s) that the Group would not otherwise consider;
- There is a probability that the borrower will enter bankruptcy or other financial re-organization;
- For Purchased or originated credit impaired (POCI) financial assets, a purchase or origination at a deep discount that reflects incurred credit losses is considered a detrimental event. The Group assesses the deep discount criterion following a principle -based approach with the aim to incorporate all reasonable and supportable information which reflects market conditions that exist at the time of the assessment.

For debt securities, the Group determines the risk of default using an internal credit rating scale. The Group considers debt securities as credit impaired if the internal credit rating of the issuer/counterparty corresponds to a rating equivalent to "C" (Moody's rating scale) or the external rating of the issuer/counterparty at the reporting date is equivalent to "C" (Moody's rating scale) and the internal rating is not available.

For further details please refer to Consolidated Financial Statements, Note 2.

c. Impairment assessment

Determining whether a loss allowance should be based on 12-month expected credit losses or lifetime expected credit losses depends on whether there has been a significant increase in credit risk (SICR) of the financial assets, issued loan commitments and financial guarantee contracts, since initial recognition.

The assessment of loss allowance is performed either on an individual basis or on a collective basis for groups of similar items with homogeneous credit risk characteristics. The Group applies the same principles for assessing significant increase in credit risk (SICR) since initial recognition when estimating ECLs on a collective or on an individual basis.

The Group segments its lending exposures on the basis of shared credit risk characteristics for the purposes of both assessing significant increase in credit risk and measuring loan loss allowance on a collective basis. The different segments aim to capture differences in PDs and in the rates of recovery in the event of default.

The shared credit risk characteristics used for the segmentation of exposures include several elements such as: instrument type, portfolio type, asset class, product type, industry, originating entity, credit risk rating, remaining term to maturity, geographical location of the borrower, value of collateral to the financial asset, forbearance status and days in arrears.

The Group identifies individually significant exposures and performs the ECL measurement based on borrower specific information for both retail and wholesale portfolios. This measurement is performed at a borrower level, hence the criteria are defined at this level, while both qualitative and quantitative factors are taken into consideration including forward looking information.

For the remaining retail and wholesale exposures, ECL are measured on a collective basis. This incorporates borrower specific information, collective historical experience of losses and forward-looking information. For debt securities and securitised notes issued by special purpose entities established by the Group, the measurement of impairment losses is performed on an individual basis.

d. Impairment measurement

The measurement of ECL is an unbiased probability-weighted average estimate of credit losses that reflects the time value of money, determined by evaluating a range of possible outcomes. A credit loss is the difference between the cash flows that are due to the Group in accordance with the contractual terms of the instrument and the cash flows that the Group expects to receive (i.e. cash shortfalls) discounted at the original effective interest rate (EIR) of the same instrument, or the credit-adjusted EIR in case of purchased or originated credit impaired assets (POCI). In measuring ECL, information about past events, current conditions and reasonable and supportable forecasts of future conditions are considered. For undrawn commitments, ECLs are calculated as the present value of the difference between the contractual cash flows due if the commitment was drawn down and the expected cash flows while for financial guarantees ECLs are measured as the expected payments to reimburse the holder less any amounts that the Group expects to receive.

The Group estimates expected cash shortfalls, which reflect the cash flows expected from all possible sources, including collateral and other credit enhancements that are part of the contractual terms and are not recognised separately. In case of a collateralized financial instrument, the estimated expected cash flows related to the collateral reflect the amount and timing of cash flows that are expected from liquidation less the discounted costs of obtaining and selling the collateral, irrespective of whether liquidation is probable.

ECL are calculated over the maximum contractual period over which the Group is exposed to credit risk, which is determined based on the substantive terms of the instrument, or in case of revolving credit facilities, by taking into consideration factors such as the Group's expected credit risk management actions to mitigate credit risk and past practice.

Receivables from customers arising from the Group's activities other than lending, are presented under Other Assets and are typically short term. Therefore, considering that usually there is no significant financing component, the loss allowance for such financial assets is measured at an amount equal to the lifetime expected credit losses under the simplified approach.

ECL key inputs

The ECL calculations are based on the term structures of the probability of default (PD), the loss given default (LGD), the exposure at default (EAD) and other input parameters such as the credit conversion factor (CCF) and the prepayment rate. Generally, the Group derives these parameters from internally developed statistical models and observed point-in-time and historical data, leveraging the existing infrastructure development for the regulatory framework and risk management practices.

The PD, LGD and EAD used for accounting purposes may differ from those used for regulatory purposes. For the purposes of IFRS 9 impairment measurement, PD is a point-in-time estimate whereas for regulatory purposes PD is a 'through-the-cycle' estimate. In addition, LGD and EAD for regulatory purposes are based on loss severity experienced during economic downturn conditions, while for impairment purposes, LGD and EAD reflect an unbiased and probability-weighted amount.

The following table presents a breakdown of their defaulted and non-defaulted exposures by exposure classes as at 31 December 2019 and 30 June 2019.

Table 14: EU CR1-A – Credit quality of exposures by exposure class and instrument

	31 December 2019						
	Gross carrying values of						
	Defaulted exposures € million	Non-defaulted exposures € million	Specific credit risk adjustment € million	General credit risk adjustment € million	Accumulated write-offs[6] € million	Credit risk adjustment charges 1/1-31/12/2019 € million	Net values € million
Central governments or central banks	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	-	-
Corporates [2]	4.684	10.884	2.691	-	480	151	12.877
Of which: Specialised lending	582	2.747	331	-	63	(17)	2.998
Of which: SMEs	3.317	2.790	1.917	-	341	201	4.190
Retail [3]	5.536	12.388	3.268	-	279	423	14.656
Secured by real estate property	4.265	7.711	2.174	-	166	248	9.802
SMEs	2.156	1.823	973	-	85	10	3.006
Non-SMEs	2.108	5.888	1.200	-	81	237	6.796
Qualifying revolving	333	2.137	346	-	54	93	2.124
Other retail	939	2.539	748	-	59	83	2.730
SMEs	564	1.457	479	-	38	37	1.542
Non-SMEs	374	1.083	269	-	21	46	1.188
Equity	-	221	-	-	-	-	221
Asset backed securities	-	82	-	-	-	-	82
Total IRB approach	**10.220**	**23.575**	**5.959**	**-**	**759**	**574**	**27.836**
Central governments or central banks [4]	-	19.547	2	-	-	35	19.545
Regional governments or local authorities	1	48	1	-	-	-	47
Public sector entities	19	707	-	-	-	-	707
Multilateral development banks	-	115	-	-	-	-	115
International organisations	-	199	-	-	-	-	199
Institutions	1	12.462	13	-	-	-	12.449
Corporates	159	5.972	13	-	-	24	5.959
Of which: SMEs	74	714	3	-	-	-	711
Retail	1.158	3.368	93	-	-	(78)	3.275
Of which: SMEs	140	727	9	-	-	15	718
Secured by mortgages on immovable property	839	4.055	13	-	-	38	4.042
Of which: SMEs	57	229	2	-	-	-	227
Exposures in default	*2.177*	-	787	-	314	66	1.390
Items associated with particularly high risk	37	270	15	-	10	-	255
Covered bonds	-	182	-	-	-	-	182
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-
Collective investments undertakings	-	-	-	-	-	-	-
Equity exposures	-	145	-	-	-	-	145
Other exposures	-	3.658	-	-	-	-	3.658
Securitisations [5]		1.062					1.062
Total standardised approach	**2.214**	**51.790**	**937**	**-**	**324**	**85**	**53.030**
Total	**12.434**	**75.365**	**6.896**	**-**	**1.083**	**659**	**80.866**
Of which: Loans to banks and customers	12.332	35.976	6.831	-	1.083	659	41.477
Of which: Debt Securities	-	7.580	2	-	-	-	7.578
Of which: Off-balance sheet exposures	102	5.225	59	-	-	-	5.268

Credit Risk

	30 June 2019						
	Gross carrying values of						
	Defaulted exposures € million	Non-defaulted exposures € million	Specific credit risk adjustment € million	General credit risk adjustment € million	Accumulated write-offs(5) € million	Credit risk adjustment charges 1/1-30/06/2019 € million	Net values € million
Central governments or central banks	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	-	-
Corporates	5.319	9.405	2.994	-	180	58	11.730
Of which: Specialised lending	641	2.231	377	-	24	(6)	2.495
Of which: SMEs	3.644	2.746	2.066	-	132	79	4.324
Retail	7.426	12.533	4.204	-	82	268	15.755
Secured by real estate property	5.865	7.925	2.983	-	48	160	10.807
SMEs	2.219	1.820	1.058	-	20	1	2.981
Non-SMEs	3.645	6.106	1.925	-	28	159	7.826
Qualifying revolving	367	2.088	314	-	20	22	2.141
Other retail	1.193	2.523	907	-	13	86	2.809
SMEs	598	1.430	521	-	11	52	1.507
Non-SMEs	596	1.091	386	-	2	35	1.301
Equity	-	182	-	-	-	-	182
Asset backed securities	-	107	-	-	-	-	107
Total IRB approach	12.745	22.227	7.198	-	262	326	27.774
Central governments or central banks	-	16.896	30	-	-	2	16.866
Regional governments or local authorities	1	51	1	-	-	-	50
Public sector entities	19	709	-	-	-	-	709
Multilateral development banks	-	100	-	-	-	-	100
International organisations	-	199	-	-	-	-	199
Institutions	-	12.627	13	-	-	-	12.614
Corporates	258	5.616	8	-	-	12	5.608
Of which: SMEs	111	744	2	-	-	1	742
Retail	1.387	3.372	157	-	-	(36)	3.215
Of which: SMEs	172	706	9	-	-	5	697
Secured by mortgages on immovable property	912	4.282	16	-	-	27	4.266
Of which: SMEs	47	270	2	-	-	-	268
Exposures in default (1)	*2.577*	-	985	-	58	19	1.592
Items associated with particularly high risk	42	251	22	-	-	-	229
Covered bonds	-	171	-	-	-	-	171
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-
Collective investments undertakings	-	-	-	-	-	-	-
Equity exposures	-	126	-	-	-	-	126
Other exposures	-	3.547	-	-	-	-	3.547
Total standardised approach	2.619	47.947	1.232	-	58	24	49.292
Total	15.364	70.174	8.430	-	320	350	77.066
Of which: Loans to banks and customers	15.264	34.324	8.345	-	320	350	41.243
Of which: Debt Securities	-	7.036	30	-	-	-	7.006
Of which: Off-balance sheet exposures	100	4.691	51	-	-	-	4.740

(1) Includes subtotal of gross carrying values of all other asset classes and is not added in "Total standardised approach".
(2) The increase in performing Corporate exposures under IRB compared to 30 June 2019 is mainly due to expansion in new lending volumes. The decrease in the defaulted Corporate exposures under IRB is due to write-offs, due to improving quality of portfolio and sales.
(3) The decrease in Retail defaulted exposures under IRB compared to 30 June 2019 is due to the securitization of mortgage backed exposures (i.e. Pillar transaction) and write offs.
(4) The increase in Central governments or central banks compared to 30 June 2019, is mainly due to the increased position on repos and in nostros with central banks.
(5) The increase of the exposures in the Securitisation standardised approach compared to 30 June 2019 is due to Pillar transaction.
(6) Presents the cumulative write offs within the year.

The following table presents the movement in the provision on loans and advances to customers from 1 July 2019 to 31 December 2019 according to the Consolidated Financial Statements.

Table 15: EU CR2-A – Changes in the stock of general and specific risk adjustments

	31 December 2019	
	Accumulated specific credit risk adjustment € million	Accumulated general credit risk adjustment € million
Opening balance as at 1 July 2019	7.735	-
Transfer of ECL allowance for off balance sheet items	-	-
Increases due to amounts set aside for estimated loan losses during the period	281	-
Decreases due to amounts reversed for estimated loan losses during the period	(45)	-
Decreases due to amounts taken against accumulated credit risk adjustments (write offs)	(763)	-
Transfers between credit risk adjustments	-	-
Impact of exchange rate differences	20	-
Business combinations, including acquisitions and disposals of subsidiaries	-	-
NPV unwinding	(101)	-
Recoveries of amounts previously written off	29	-
Other adjustments	(57)	-
Closing balance as at 31 December 2019	**7.099**	**-**
Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	-	-
Specific credit risk adjustments directly recorded to the statement of profit or loss	-	-

The following table shows the changes in the stock of defaulted and impaired loans and debt securities from 1 July to 31 December 2019.

Table 16: EU CR2-B – Changes in the stock of defaulted and impaired loans and debt securities

	31 December 2019
	Gross carrying value defaulted exposures € million
Opening balance as at 1 July 2019	**15.264**
Loans and debt securities that have defaulted or impaired since the last reporting period	274
Returned to non-defaulted status	(548)
Amounts written off	(763)
Other changes[(1)]	(1.895)
Closing balance as at 31 December 2019	**12.332**

[(1)] *The "Other changes" include derecognition adjustments mainly due to securitiasations (i.e. Pillar transaction) as well as sales of non-performing exposures (corporate).*

The following table presents an overview of the quality of forborne exposures as at 31 December 2019 and 30 June 2019.

Table 17: Credit quality of forborne exposures

	31 December 2019							
	Gross carrying amount/nominal amount with forbearance measures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collaterals received and financial guarantees received on forborne exposures	
		Non-performing forborne						
	Performing forborne € million	€ million	Of which defaulted € million	Of which impaired € million	On performing forborne exposures € million	On non-performing forborne exposures € million	€ million	Of which: Collateral and financial guarantees received on non-performing exposures with forbearance measures € million
Loans and advances	4.158	3.379	2.759	3.306	(311)	(1.413)	4.770	1.697
Central banks	-	-	-	-	-	-	-	-
General governments	-	-	-	-	-	-	-	-
Credit institutions	-	-	-	-	-	-	-	-
Other financial corporations	22	57	57	57	(1)	(32)	42	23
Non-financial corporations	1.574	1.755	1.582	1.682	(138)	(668)	2.093	965
Households	2.562	1.567	1.120	1.567	(172)	(713)	2.635	709
Debt Securities	-	-	-	-	-	-	-	-
Loan commitments given	-	-	-	-	-	-	-	-
Total	**4.158**	**3.379**	**2.759**	**3.306**	**(311)**	**(1.413)**	**4.770**	**1.697**

	30 June 2019							
	Gross carrying amount/nominal amount with forbearance measures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collaterals received and financial guarantees received on forborne exposures	
		Non-performing forborne						
	Performing forborne € million	€ million	Of which defaulted € million	Of which impaired € million	On performing forborne exposures € million	On non-performing forborne exposures € million	€ million	Of which: Collateral and financial guarantees received on non-performing exposures with forbearance measures € million
Loans and advances	4.574	3.931	3.175	3.849	(470)	(1.406)	5.469	2.159
Central banks	-	-	-	-	-	-	-	-
General governments	-	-	-	-	-	-	-	-
Credit institutions	-	-	-	-	-	-	-	-
Other financial corporations	12	59	59	59	-	(28)	36	28
Non-financial corporations	1.753	2.113	1.858	2.031	(218)	(718)	2.454	1.215
Households	2.809	1.759	1.258	1.759	(252)	(660)	2.979	916
Debt Securities	-	-	-	-	-	-	-	-
Loan commitments given	-	-	-	-	-	-	-	-
Total	4.574	3.931	3.175	3.849	(470)	(1.406)	5.469	2.159

Credit Risk

The following template provides an overview of credit quality of non performing exposures as at 31 December 2019 and 30 June 2019.

Table 18: Credit quality of performing and non-performing exposures by past due days

	31 December 2019									
	Gross carrying amount/nominal amoumt									
	Performing exposures			Non-performing exposures						
		Not past due or Past due <= 30 days	Past due >30 days <= 90 days		Unlikely to pay that are not past-due or past-due <=90 days	Past due > 90 days <=180 days	Past due > 180 days <=1 year	Past due > 1 year < = 5 year	Past due > 5 years	Of which defaulted
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Loans and advances	**38.720**	**38.116**	**604**	**13.031**	**2.474**	**397**	**336**	**4.321**	**5.503**	**12.376**
Central banks	4.198	4.198	-	-	-	-	-	-	-	-
General governments	57	57	-	2	-	-	-	-	2	2
Credit institutions	1.655	1.655	-	-	-	-	-	-	-	-
Other financial corporations	3.403	3.387	16	151	31	17	10	34	59	151
Non-financial corporations	16.533	16.306	227	7.735	1.448	211	161	2.813	3.102	7.530
of which SMEs	7.007	6.854	153	6.255	903	114	116	2.336	2.787	6.098
Households	12.874	12.513	361	5.143	995	169	165	1.474	2.340	4.693
Debt Securities	**7.831**	**7.831**	-	-	-	-	-	-	-	-
Central banks	-	-	-	-	-	-	-	-	-	-
General governments	6.819	6.819	-	-	-	-	-	-	-	-
Credit institutions	378	378	-	-	-	-	-	-	-	-
Other financial corporations	82	82	-	-	-	-	-	-	-	-
Non-financial corporations	552	552	-	-	-	-	-	-	-	-
Off-balance sheet exposures	**5.461**			**106**						**102**
Central banks	-			-						-
General governments	264			19						19
Credit institutions	76			-						-
Other financial corporations	141			3						3
Non-financial corporations	3.126			83						79
Households	1.854			1						1
Total	**52.012**	**45.947**	**604**	**13.137**	**2.474**	**397**	**336**	**4.321**	**5.503**	**12.478**

	30 June 2019									
	Gross carrying amount/nominal amoumt									
	Performing exposures			Non-performing exposures						
		Not past due or Past due <= 30 days	Past due >30 days <= 90 days		Unlikely to pay that are not past-due or past-due <=90 days	Past due > 90 days <=180 days	Past due > 180 days <=1 year	Past due > 1 year < = 5 year	Past due > 5 years	Of which defaulted
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Loans and advances	35.219	34.570	649	14.382	3.079	446	310	4.820	5.727	13.623
Central banks	2.900	2.900	-	-	-	-	-	-	-	-
General governments	61	61	-	1	-	-	-	-	1	1
Credit institutions	1.866	1.866	-	-	-	-	-	-	-	-
Other financial corporations	2.103	2.084	19	178	40	9	2	34	93	178
Non-financial corporations [1]	15.538	15.336	202	8.599	1.892	226	121	3.102	3.258	8.343
of which SMEs	7.232	7.070	162	6.659	1.042	159	95	2.481	2.882	6.423
Households [2]	12.751	12.323	428	5.604	1.147	211	187	1.684	2.375	5.101
Debt Securities	7.048	7.048	-	-	-	-	-	-	-	-
Central banks	-	-	-	-	-	-	-	-	-	-
General governments	6.263	6.263	-	-	-	-	-	-	-	-
Credit institutions	280	280	-	-	-	-	-	-	-	-
Other financial corporations	112	112	-	-	-	-	-	-	-	-
Non-financial corporations	393	393	-	-	-	-	-	-	-	-
Off-balance sheet exposures	4.921			107						107
Central banks	-			-						-
General governments	260			19						19
Credit institutions	73			-						-
Other financial corporations	94			3						3
Non-financial corporations	2.651			84						84
Households	1.843			1						1
Total	47.188	41.618	649	14.489	3.079	446	310	4.820	5.727	13.730

Credit Risk

The following templates provide an overview of the credit quality of non-performing exposures and related impairments, provisions and valuation adjustments by portfolio and exposure class, by geography and by industry as at 31 December 2019 and 30 June 2019.

Table 19: Performing and non-performing exposures and related provisions

	31 December 2019													
	Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Collaterals and financial guarantees received	
	Performing exposures			Non-performing exposures			Performing exposures - Accumulated impairment and provisions			Non-performing exposures - Accumulated impairment, accumulated negative changes in fair value due credit			On performing exposures	On non - performing exposures
	€ million	of which: stage 1 € million	of which: stage 2 € million	€ million	of which: stage 2 € million	of which: stage 3 € million	€ million	of which: stage 1 € million	of which: stage 2 € million	€ million	of which: stage 2 € million	of which: stage 3 € million	€ million	€ million
Loans and advances	**38.720**	**32.470**	**6.250**	**13.031**	**-**	**13.032**	**(543)**	**(137)**	**(407)**	**(6.607)**	**-**	**(6.606)**	**20.696**	**5.475**
Central banks	4.198	4.198	-	-	-	-	-	-	-	-	-	-	-	-
General governments	57	54	3	2	-	2	(1)	(1)	-	(1)	-	(1)	3	-
Credit institutions	1.655	1.655	-	-	-	-	(1)	(1)	-	-	-	-	-	-
Other financial corporations	3.403	3.343	60	151	-	151	(3)	(1)	(2)	(100)	-	(100)	1.922	33
Non-financial corporations	16.533	13.865	2.668	7.735	-	7.736	(270)	(84)	(187)	(3.944)	-	(3.943)	9.775	3.264
Of which: SMEs	7.007	5.285	1.722	6.255	-	6.255	(186)	(42)	(144)	(3.230)	-	(3.230)	4.867	2.595
Households	12.874	9.355	3.519	5.143	-	5.143	(268)	(50)	(218)	(2.562)	-	(2.562)	8.996	2.178
Debt Securities	**7.831**	**7.831**	**-**	**-**	**-**	**-**	**(12)**	**(12)**	**-**	**-**	**-**	**-**	**-**	**-**
Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General governments	6.819	6.819	-	-	-	-	(8)	(8)	-	-	-	-	-	-
Credit institutions	378	378	-	-	-	-	(2)	(2)	-	-	-	-	-	-
Other financial corporations	82	82	-	-	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	552	552	-	-	-	-	(2)	(2)	-	-	-	-	-	-
Off-balance sheet exposures	**5.461**	**5.177**	**284**	**106**	**-**	**106**	**(68)**	**(66)**	**(1)**	**(37)**	**-**	**(37)**	**902**	**9**
Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General governments	264	264	-	19	-	19	(42)	(41)	-	(18)	-	(18)	-	-
Credit institutions	76	76	-	-	-	-	-	-	-	-	-	-	-	-
Other financial corporations	141	70	71	3	-	3	-	-	-	-	-	-	79	-
Non-financial corporations	3.126	2.993	133	83	-	83	(8)	(7)	(1)	(19)	-	(19)	784	9
Households	1.854	1.774	80	1	-	1	(18)	(18)	-	-	-	-	39	-
Total	**52.012**	**45.478**	**6.534**	**13.137**	**-**	**13.138**	**(623)**	**(215)**	**(408)**	**(6.644)**	**-**	**(6.643)**	**21.598**	**5.484**

	30 June 2019													
	Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Collaterals and financial guarantees received	
	Performing exposures			Non-performing exposures			Performing exposures - Accumulated impairment and provisions			Non-performing exposures - Accumulated impairment, accumulated negative changes in fair value due credit risk and			On performing exposures	On non - performing exposures
	€ million	of which: stage 1 € million	of which: stage 2 € million	€ million	of which: stage 2 € million	of which: stage 3 € million	€ million	of which: stage 1 € million	of which: stage 2 € million	€ million	of which: stage 2 € million	of which: stage 3 € million	€ million	€ million
Loans and advances	35.219	28.345	6.874	14.382	-	14.382	(777)	(145)	(632)	(7.015)	-	(7.015)	18.813	6.017
Central banks	2.900	2.900	-	-	-	-	-	-	-	-	-	-	-	-
General governments	61	60	1	1	-	1	(1)	(1)	-	(1)	-	(1)	4	-
Credit institutions	1.866	1.866	-	-	-	-	(1)	(1)	-	-	-	-	-	-
Other financial corporations	2.103	1.970	133	178	-	178	(6)	(1)	(5)	(119)	-	(119)	728	38
Non-financial corporations	15.538	12.353	3.185	8.599	-	8.599	(384)	(67)	(317)	(4.244)	-	(4.244)	9.231	3.600
Of which: SMEs	7.232	5.130	2.102	6.659	-	6.659	(299)	(36)	(263)	(3.309)	-	(3.309)	4.778	2.752
Households	12.751	9.196	3.555	5.604	-	5.604	(385)	(75)	(310)	(2.651)	-	(2.651)	8.850	2.379
Debt Securities	7.048	6.069	979	-	-	-	(48)	(13)	(35)	-	-	-	-	-
Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General governments	6.263	5.284	979	-	-	-	(45)	(10)	(35)	-	-	-	-	-
Credit institutions	280	280	-	-	-	-	(1)	(1)	-	-	-	-	-	-
Other financial corporations	112	112	-	-	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	393	393	-	-	-	-	(2)	(2)	-	-	-	-	-	-
Off-balance sheet exposures	4.921	4.770	151	107	-	107	(55)	(54)	(1)	(42)	-	(42)	590	5
Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General governments	260	260	-	19	-	19	(42)	(42)	-	(18)	-	(18)	-	-
Credit institutions	73	73	-	-	-	-	-	-	-	-	-	-	-	-
Other financial corporations	94	77	17	3	-	3	-	-	-	-	-	-	11	-
Non-financial corporations	2.651	2.536	115	84	-	84	(7)	(6)	(1)	(24)	-	(24)	561	5
Households	1.843	1.824	19	1	-	1	(6)	(6)	-	-	-	-	18	-
Total	47.188	39.184	8.004	14.489	-	14.489	(880)	(212)	(668)	(7.057)	-	(7.057)	19.403	6.022

Table 20: Quality of Non-performing exposures by geography

	31 December 2019						
	Gross carrying/nominal amount						
		of which: non-performing		of which: subject to impairment	Accumulated impairment	Provisions on off-balance sheet commitments and financial guarantees given	Accumulated negative changes in fair value due to credit risk on non-performing exposures
			of which defaulted				
	€ million	€ million	€ million	€ million	€ million	€ million	€ million
On balance sheet exposures	**59.582**	**13.031**	**12.376**	**59.470**	**(7.111)**		**(51)**
Greece	41.144	12.097	11.546	41.081	(6.623)		(33)
Romania	480	172	144	459	(17)		(18)
Bulgaria	4.659	323	247	4.659	(157)		-
United Kingdom	1.832	4	4	1.832	(2)		-
Cyprus	2.825	174	174	2.825	(133)		-
Other countries	8.642	261	261	8.614	(179)		-
Off balance sheet exposures	**5.567**	**106**	**102**			**(105)**	
Greece	3.701	100	97			(103)	
Romania	-	-	-			-	
Bulgaria	800	2	2			-	
United Kingdom	24	-	-			-	
Cyprus	518	-	-			(1)	
Other countries	524	4	3			(1)	
Total	**65.149**	**13.137**	**12.478**	**59.470**	**(7.111)**	**(105)**	**(51)**

	30 June 2019						
	Gross carrying/nominal amount						
		of which: non-performing		of which: subject to impairment	Accumulated impairment	Provisions on off-balance sheet commitments and financial guarantees given	Accumulated negative changes in fair value due to credit risk on non-performing exposures
			of which defaulted				
	€ million	€ million	€ million	€ million	€ million	€ million	€ million
On balance sheet exposures	56.649	14.382	13.623	56.533	(7.784)		(56)
Greece	39.446	13.246	12.562	39.378	(7.192)		(38)
Romania	479	165	136	458	(20)		(18)
Bulgaria	4.452	415	368	4.452	(178)		-
United Kingdom	1.748	2	2	1.748	(1)		-
Cyprus	3.375	215	215	3.375	(164)		-
Other countries	7.149	339	340	7.122	(229)		-
Off balance sheet exposures	5.028	107	107			(97)	
Greece	3.350	99	99			(96)	
Romania	2	-	-			-	
Bulgaria	802	4	4			(1)	
United Kingdom	33	-	-			-	
Cyprus	449	1	1			-	
Other countries	392	3	3			-	
Total	61.677	14.489	13.730	56.533	(7.784)	(97)	(56)

Table 21: Credit quality of loans and advances by industry

	31 December 2019					
	Gross carrying/nominal amount					
		of which: non-performing		of which loans and advances subject to impairment	Accumulated impairment	Accumulated negative changes in fair value due to credit risk on non-performing exposures
			of which defaulted			
	€ million	€ million	€ million	€ million	€ million	€ million
Agriculture, forestry and fishing	393	101	98	393	(54)	-
Mining and quarrying	196	47	46	196	(29)	-
Manufacturing	4.142	1.078	1.056	4.142	(607)	-
Electricity, gas, steam and air conditioning supply	770	23	23	766	(17)	-
Water supply	54	5	4	54	(3)	-
Construction	1.890	947	918	1.868	(509)	(7)
Wholesale and retail trade	6.204	2.461	2.391	6.183	(1.365)	(14)
Transport and storage	2.593	405	398	2.580	(227)	-
Accommodation and food service activities	2.479	641	628	2.479	(249)	-
Information and communication	363	141	139	347	(82)	(11)
Financial and insurance activities	22	12	12	22	(7)	-
Real estate activities	1.765	538	517	1.744	(274)	(18)
Professional, scientific and technical activities	1.379	808	787	1.379	(436)	-
Administrative and support service activities	263	53	52	263	(31)	-
Public administration and defense, compulsory social security	2	1	1	2	-	-
Education	62	33	32	62	(13)	-
Human health services and social work activities	485	98	95	477	(58)	(1)
Arts, entertainment and recreation	712	67	65	712	(43)	-
Other services	494	276	268	495	(159)	-
Total	**24.268**	**7.735**	**7.530**	**24.164**	**(4.163)**	**(51)**

	30 June 2019					
	Gross carrying/nominal amount					
		of which: non-performing		of which loans and advances subject to impairment	Accumulated impairment	Accumulated negative changes in fair value due to credit risk on non-performing exposures
			of which defaulted			
	€ million	€ million	€ million	€ million	€ million	€ million
Agriculture, forestry and fishing	380	198	194	372	(67)	(4)
Mining and quarrying	213	48	48	213	(30)	-
Manufacturing	4.094	1.173	1.145	4.094	(637)	-
Electricity, gas, steam and air conditioning supply	765	27	27	765	(20)	-
Water supply	59	10	9	59	(7)	-
Construction	1.904	1.024	999	1.882	(546)	(8)
Wholesale and retail trade	6.360	2.657	2.573	6.339	(1.448)	(14)
Transport and storage	2.325	436	426	2.311	(249)	-
Accommodation and food service activities	2.526	727	705	2.526	(299)	-
Information and communication	381	177	176	364	(109)	(12)
Financial and insurance activities	23	13	13	23	(8)	-
Real estate activities	1.952	619	595	1.931	(314)	(17)
Professional, scientific and technical activities	1.551	903	871	1.551	(506)	-
Administrative and support service activities	254	62	61	254	(34)	-
Public administration and defense, compulsory social security	3	1	1	3	-	-
Education	64	35	33	64	(15)	-
Human health services and social work activities	371	108	103	363	(65)	(1)
Arts, entertainment and recreation	375	77	75	375	(41)	-
Other services	537	304	289	537	(177)	-
Total	**24.137**	**8.599**	**8.343**	**24.026**	**(4.572)**	**(56)**

The following table provides an overview of the credit quality of loans and advances to non-financial corporations as at 31 December 2019.

Table 22: Quality of forbearance

	31 December 2019
	Gross carrying amount of forborne exposures
	€ million
Loans and advances that have been forborne more than twice	1.684
Non-performing forborne loans and advances that failed to meet the non-performing exit criteria	1.813

The following table provides an analysis of collateral valuation and other information on loans and advances as at 31 December 2019.

Table 23: Collateral valuation - Loans and advances

	31 December 2019											
	Loans and advances											
		Performing		Non Performing								
						Past due > 90 days						
			of which past due > 30 days <= 90 days		Unlikely to pay that are not past due or past due <=90 days		of which Past due > 90 days <= 180 days	of which Past due > 180 days <= 1 year	of which Past due > 1 year <= 2 years	of which Past due > 2 years <= 5 years	of which Past due > 5 years <= 7 years	of which Past due > 7 years
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Gross carrying amount	**51.751**	**38.720**	**604**	**13.031**	**2.474**	**10.557**	**397**	**336**	**1.978**	**2.343**	**2.592**	**2.911**
Of which: secured	32.657	22.957	473	9.700	2.006	7.694	286	244	1.268	1.864	1.956	2.076
Of which: secured with immovable property	20.651	12.217	-	8.434	1.674	6.760	-	-	-	-	-	-
of which: instruments with LTV higher than 60% and lower or equal to 80%	3.810	3.084		726	230	496						
of which: instruments with LTV higher than 80% and lower or equal to 100%	4.964	3.273		1.691	382	1.309						
of which: instruments with LTV higher than 100%	11.877	5.860		6.017	1.062	4.955						
Accumulated impairment for secured assets	**(7.151)**	**(544)**	**(36)**	**(6.607)**	**(927)**	**(5.680)**	**(164)**	**(153)**	**(1.101)**	**(1.233)**	**(1.236)**	**(1.793)**
Collateral												
of which value capped at the value of exposure	25.696	20.339	426	5.357	1.292	4.065	185	152	732	961	1.150	885
of which immovable property	18.697	13.725	328	4.972	1.123	3.849	166	139	658	924	1.130	832
Financial guarantees received	**474**	**356**	**5**	**118**	**9**	**109**	**1**	**1**	**6**	**21**	**54**	**26**

The following table provides an overview of the movements (inflows and outflows) of non performing loans and advances as at 31 December 2019.

Table 24: Changes in the stock of non-performing loans and advances

	31 December 2019	
	Gross carrying amount € million	Related net acumulated recoveries € million
Initial stock of non-performing loans and advances	16.734	
Inflows to non performing portfolios	1.758	
Outflows from non performing portfolios	(5.461)	
Outflow to performing portfolio	(1.457)	
Outflow due to loan repayment, partial or total	(420)	
Outflow due to collateral liquidations	(222)	(69)
Outflow due to taking possession of collateral	(156)	(85)
Outflow due to sale of instruments	(145)	(33)
Outflow due to risk transfers	(1.759)	-
Outflows due to write-off	(847)	
Outflow due to Other Situations	(447)	
Outflow due to reclassification as held for sale	(8)	
Final stock of non-performing loans and advances	**13.031**	

The following table provides an overview of foreclosed assets obtained from non performing exposures as at 31 December 2019.

Table 25: Collateral obtained by taking possession and execution processes

	31 December 2019	
	Collateral obtained by taking possession	
	Value at initial recognition € million	Accumulated negative changes € million
Property Plant and Equipment (PP&E)	-	-
Other than Property Plant and Equipment	771	(212)
Residential immovable property	241	(56)
Commercial Immovable property	481	(155)
Movable property (auto, shipping, etc.)	-	-
Equity and debt instruments	22	-
Other	27	(1)
Total	**771**	**(212)**

The following table provides an overview of collateral obtained by taking possession by type, by time since date of foreclosure as at 31 December 2019.

Table 26: Collateral obtained by taking possession and execution processes – Vintage breakdown

	31 December 2019											
	Debt balance reduction		Total collateral obtained by taking possession									
					Foreclosed <= 2 years		Foreclosed >= 2 years <= 5 years		Foreclosed > 5 years		Of which: Non-current assets held-for-sale	
	Gross carrying amount € million	Accumulated negative changes € million	Value at initial recognition € million	Accumulated negative changes € million	Value at initial recognition € million	Accumulated negative changes € million	Value at initial recognition € million	Accumulated negative changes € million	Value at initial recognition € million	Accumulated negative changes € million	Value at initial recognition € million	Accumulated negative changes € million
Collateral obtained by taking possession classified as Property Plant and Equipment (PP&E)	-	-	-	-								
Collateral obtained by taking possession other than classified Property Plant and Equipment	-	-	771	(212)	359	(16)	41	(6)	370	(191)	9	(2)
Residential immovable property	-	-	241	(56)	94	(3)	14	(2)	132	(52)	6	(2)
Commercial Immovable property	-	-	481	(155)	244	(13)	27	(4)	210	(138)	3	-
Movable property (auto, shipping, etc.)	-	-	-	-	-	-	-	-	-	-	-	-
Equity and debt instruments	-	-	22	-	21	-	-	-	1	-	-	-
Other	-	-	27	(1)	-	-	-	-	27	(1)	-	-
Total	**-**	**-**	**771**	**(212)**	**359**	**(16)**	**41**	**(6)**	**370**	**(191)**	**9**	**(2)**

4.6 Standardised approach

The Group applies the Standardised approach for all subsidiaries exposures and for a part of the Bank's retail loans. Moreover, the Standardised approach is applied for credit exposures with sovereign and institutional counterparties, as well as with corporate bond issuers, for which a permanent exemption has been granted by the BoG.

Credit ratings are retrieved from External Credit Assessment Institutions (ECAIs), such as Moody's or Standard & Poor's or Fitch. In the cases where more than one rating is available, the second better rating is used.

ECAIs are not used for loans' portfolios directly, but only in cases when they are guaranteed by central governments or institutions (risk substitution). In such a case the ECAIs used are the same as the ones described above.

In the case of corporate bond issues, the corresponding issue rating by these agencies is used. In case that an issue rating is not available, rating for other issues by the same issuer can be used, if: (a) the corporate bond under review has equal or better seniority with these rated bonds or (b) the resulting risk weight is lower than the applicable risk weight of unrated bonds.

The table below presents Standardised exposures on two different basis (before CCF and CRM and after CCF and CRM) as at 31 December 2019 and 30 June 2019.

Table 27: EU CR4 – Standardised approach – Credit risk exposure and CRM effects

	31 December 2019					
	Exposures before CCF and CRM		Exposures post CCF and CRM		RWAs and RWA density	
Exposure classes	On Balance sheet amount € million	Off Balance sheet amount € million	On Balance sheet amount € million	Off Balance sheet amount € million	RWAs € million	RWA density %
Central governments or central banks	15.290	-	15.625	-	5.686	36,4%
Regional government or local authorities	46	1	43	-	10	23,3%
Public sector entities	707	-	707	-	394	55,7%
Multilateral development banks	112	-	112	-	1	0,9%
International organisations	199	-	199	-	-	0,0%
Institutions	3.251	94	3.335	71	353	10,4%
Corporates	4.759	1.119	3.975	297	4.067	95,2%
Retail	2.614	660	2.494	130	1.888	72,0%
Secured by mortgages on immovable property	4.029	13	4.029	9	1.479	36,6%
Exposures in default	1.383	7	1.380	6	1.434	103,5%
Higher-risk categories	212	43	208	6	321	0,0%
Covered bonds	182	-	182	-	40	22,0%
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	0,0%
Collective investment undertakings	-	-	-	-	-	0,0%
Equity	145	-	145	-	363	250,3%
Other items	3.657	-	3.658	-	2.952	80,7%
Total	**36.586**	**1.937**	**36.092**	**519**	**18.988**	**51,9%**

Credit Risk

	30 June 2019					
	Exposures before CCF and CRM		Exposures post CCF and CRM		RWAs and RWA density	
Exposure classes	On Balance sheet amount € million	Off Balance sheet amount € million	On Balance sheet amount € million	Off Balance sheet amount € million	RWAs € million	RWA density %
Central governments or central banks	13.460	-	13.765	-	5.847	42,5%
Regional government or local authorities	50	1	44	-	9	20,5%
Public sector entities	709	-	709	-	709	100,0%
Multilateral development banks	97	-	97	-	1	0
International organisations	199	-	199	-	-	0,0%
Institutions	3.286	92	3.373	79	339	9,8%
Corporates	4.463	1.053	3.705	260	3.787	95,5%
Retail	2.573	640	2.466	130	1.872	72,1%
Secured by mortgages on immovable property	4.251	15	4.251	12	1.577	37,0%
Exposures in default	1.586	6	1.581	5	1.652	104,2%
Higher-risk categories	175	54	173	3	264	0,0%
Covered bonds	171	-	171	-	34	19,9%
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	0,0%
Collective investment undertakings	-	-	-	-	-	0,0%
Equity	126	-	126	-	316	250,8%
Other items	3.547	-	3.548	-	2.904	81,8%
Total	34.693	1.861	34.208	489	19.311	55,7%

[1] Exposures with counterparties are not included in the table.
[2] The table above does not include securitisations,

Credit Risk

Table 28: EU CR5 – Standardised approach

The table below presents the credit exposures post conversion factor and post risk mitigation techniques (i.e. collaterals), broken down to different credit quality steps as at 31 December 2019 and 30 June 2019:

Exposure classes	Supervisory risk weightings - 31 December 2019																	
	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Others	deducted	Total	Of which unrated
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Central governments or central banks	10.311	-	-	103	110	-	48	-	-	3.927	-	631	-	-	495	-	15.625	4.660
Regional government or local authorities	-	-	-	-	42	-	-	-	-	1	-	-	-	-	-	-	43	43
Public sector entities	-	-	-	-	392	-	-	-	-	315	-	-	-	-	-	-	707	707
Multilateral development banks	107	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	112	-
International organisations	199	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	199	-
Institutions	2.074	224	-	-	826	-	207	-	-	65	10	-	-	-	-	-	3.406	580
Corporates	-	-	-	-	41	-	70	-	-	4.161	-	-	-	-	-	-	4.272	3.926
Retail	-	-	-	-	-	-	-	-	2.624	-	-	-	-	-	-	-	2.624	2.623
Secured by mortgages on immovable property	-	-	-	-	-	3.441	597	-	-	-	-	-	-	-		-	4.038	4.038
Exposures in default	-	-	-	-	-	-	-	-	-	1.289	97	-	-	-	-	-	1.386	1.386
Higher-risk categories	-	-	-	-	-	-	-	-	-	-	214	-	-	-	-	-	214	206
Covered bonds	-	-	-	100	38	-	44	-	-		-	-	-	-	-	-	182	-
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collective investment undertakings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity	-	-	-	-	-	-	-	-	-	-	-	145	-		-	-	145	145
Other items	682	-	-	-	28	-	-	-	-	2.948	-	-	-	-	-	-	3.658	3.658
Total	**13.373**	**224**	**-**	**203**	**1.482**	**3.441**	**966**	**-**	**2.624**	**12.706**	**321**	**776**	**-**	**-**	**495**	**-**	**36.611**	**21.972**

Credit Risk

Exposure classes	Supervisory risk weightings - 30 June 2019																	
	0%	2%	4%	10%	20%	35%	50%	70%	75%	100%	150%	250%	370%	1250%	Others	deducted	Total	Of which unrated
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Central governments or central banks	8.299	-	-	103	96	-	59	-	-	4.191	-	597	-	-	420	-	13.765	4.725
Regional government or local authorities	-	-	-	-	44	-	-	-	-	-	-	-	-	-	-	-	44	44
Public sector entities	-	-	-	-	-	-	-	-	-	709	-	-	-	-	-	-	709	709
Multilateral development banks	92	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	97	-
International organisations	199	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	199	-
Institutions	2.084	194	-	-	944	-	171	-	-	55	4	-	-	-	-	-	3.452	538
Corporates	-	-	-	-	40	-	9	-	-	3.916	-	-	-	-	-	-	3.965	3.607
Retail	-	-	-	-	-	-	-	-	2.596	-	-	-	-	-	-	-	2.596	2.597
Secured by mortgages on immovable property	-	-	-	-	-	3.505	758	-	-	-	-	-	-	-		-	4.263	4.263
Exposures in default	-	-	-	-	-	-	-	-	-	1.455	131	-	-	-	-	-	1.586	1.586
Higher-risk categories	-	-	-	-	-	-	-	-	-	-	176	-	-	-	-	-	176	168
Covered bonds	-	-	-	100	38	-	33	-	-		-	-	-	-	-	-	171	-
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Collective investment undertakings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity	-	-	-	-	-	-	-	-	-	-	-	126	-		-	-	126	126
Other items	621	-	-	-	27	-	-	-	-	2.900	-	-	-	-	-	-	3.548	3.547
Total	11.295	194	-	203	1.194	3.505	1.030	-	2.596	13.226	311	723	-	-	420	-	34.697	21.910

[1] Exposures with counterparties are not included in the table.

Credit exposures shown in the above table do not include goodwill, intangible assets and deferred tax which are deducted from regulatory own funds.

4.7 Internal Ratings Based (IRB) approach

4.7.1 Exposures subject to IRB approach

Eurobank Group (the "Bank" or the "Group") first applied the Basel II framework under the Standardised approach in January 2007 and included the respective risk asset ratio figures in its published financial statements. Until that date the Group had been applying the Basel I rules.

In June 2008, the Group received the approval of BoG to use the Internal Ratings Based (IRB) approach to calculate the capital requirement for credit risk. Therefore, with effect from 1 January 2008 the Group applies:

- The Foundation IRB approach to calculate risk weighted assets for the corporate loans' portfolio of Eurobank Ergasias S.A. in Greece;
- The Advanced IRB for the majority of the retail loans' portfolio of the Bank, i.e. mortgages, small business lending, credit cards and revolving credits in consumer lending;
- From September 2009 the Foundation IRB approach was applied for the corporate loans' portfolio of Eurobank Ergasias Leasing S.A. in Greece;
- From March 2010 the Advanced IRB approach was applied for the Bank's portfolio of personal and car loans.

The implementation of IRB covers 75% of the Group's lending portfolio excluding portfolio segments which are immaterial in terms of size and risk profile as well as, permanent exemptions. The reduction in the coverage ratio vis a vis 31 December 2018 (78.4%) is attributed to the securitization of mortgage-backed exposures under A-IRB methodology (i.e. Pillar transaction). The Bank is in the process of reviewing the IRB roll out plan taking into account the recently issued draft guidelines and its business plan. The updated roll out plan will be subject to ECB approval.

	2019 € million	2018 € million
Credit risk (pursuant IRB Approach)		
- Corporate exposures (Foundation IRB approach) and specialised lending (Slotting methodology)	14.610	14.232
- Retail exposures that exceed € 1 million (Advanced IRB approach)	403	396
Retail exposures	-	-
- Secured by immovable property - non SME	7.996	9.831
- Qualifying revolving retail exposures	1.970	2.026
- SME exposures	5.233	5.255
- Other retail exposures	1.457	1.719
Equity	221	124
Asset backed securities	82	117
Credit risk total, IRB approach	**31.972**	33.700

4.7.2 Risk classifications

The Bank's risk classifications can be divided into the following main categories:

- rating of large corporate and medium size customers; and
- credit scores assigned to retail customers.

(a) Rating of large corporate and medium size customers

The Bank has decided upon the differentiation of rating models for corporate banking, in order to better reflect the risk for customers with different characteristics. Hence, rating models are employed for a number of general, as well as specific customer segments:

- **Traditional corporate lending:**
  - Moody's Risk Advisor (MRA).
  - Internal credit rating for those customers that cannot be rated by MRA.

MRA is a rating system that aggregates quantitative and qualitative information on individual obligors to perform the assessment of their creditworthiness and determine the credit rating for the obligor. It takes into account the company's financial performance, its cash flows, industry sector trends, peers' performance, as well as qualitative assessment of management, the company's status, market and industry structural factors. MRA is used for the assessment of all legal entities with full accountancy tax books irrespective of their legal form and is calibrated on the Greek corporate environment.

Certain types of companies cannot be analysed with MRA due to the special characteristics of their financial statements such as insurance companies, state-owned organizations, brokerage firms and start ups. In such cases an internal credit rating system is applied. It is an expert judgment borrower rating system and, similarly to MRA, it combines quantitative and qualitative assessment criteria (such as size, years in business, credit history, industry sector etc.).

Customers are classified with respect to their credit worthiness to 11 Borrower rating categories. Categories 1 to 3 correspond to low risk customers, whereas categories 4 to 6 to customers with medium credit risk. Categories 7 to 9 apply to customers with higher risk who are monitored more closely. Categories 10 and 11 apply to non-performing exposures and write offs respectively.

In addition, the Bank performs an overall assessment of corporate customers, based both on the borrower rating of the obligors (MRA or ICR) and the collaterals and guarantees referred to in its approved credit limit, using a 14 grade rating scale. Credit exposure is subject to detailed reviews by the appropriate approval level of the Bank based on the respective transactional rating (TR). Low risk corporate customers are reviewed at least once a year, whereas higher risk customers are reviewed either on a semi-annual (watchlist) or quarterly basis (substandard and distressed).

• **Specialised lending (shipping, real estate and project finance):** slotting methodology

For the specialised lending portfolios i.e. the primary source of repayment of the obligation is the income generated by the asset(s), rather than the independent capacity of the commercial enterprise, the Bank utilizes the Slotting Method by adapting and refining the CRD criteria to the Bank's risk practices. Customers falling in the specialised lending category (shipping, real estate and project finance) are classified in 5 categories: strong, good, satisfactory, weak and default. Each of the 5 categories is associated with a specific risk weight and EL percentage.

The fundamental standards underlying the Group's centralis8ed loan approval and rating processes are to review the global exposure of the customer and to use the 'four-eyes' principle, which requires each credit limit/rating to be evaluated by more than one individual. Ratings are approved by Credit Committees according to the level of exposure involved and each committee has its own specific approval limit. Ratings of customers whose exposure exceed Credit Committees' thresholds are reviewed by the Group's Central Committee. The Credit Committees are composed of senior managers from different business units, as well as from risk management and each committee has its own independent chairman.

As a general rule, each corporate customer is rated separately. For major corporate customers – where it is customary to assign a rating based on the customer's affiliation to a group or parent company – the rating of the parent company is transferred to the subsidiaries, if the Group believes that the parent company can and will guarantee the fulfilment of the obligations of its subsidiaries.

The rating systems described above are an integral part of the Corporate Banking decision making and risk management processes:

- the credit approval process, both at the origination and review process;
- the calculation of Economic Value Added (EVA) and risk-adjusted pricing; and
- the quality assessment of issuers of cheques prior to their pledge as collateral.

(b) Credit scores assigned to retail customers

The Bank assigns credit scores to its retail customers using a number of statistically based models both at origination and an ongoing basis through behavioral scorecards. Those models have been developed to predict, on the basis of available information, the probability of default (PD), loss given default (LGD) and exposure at default (EAD). They cover the entire spectrum of retail products (Credit Cards, Consumer Lending unsecured revolving credits, Car loans, Personal loans, Mortgages and Small Business Loans).

The models were developed based on the Bank's historical data and credit bureau data. Behavioral scores are calculated automatically on a monthly basis, thus ensuring that credit risk assessments are up to date.

The models are used in the credit approval process, in credit limit management, as well as in the collections' process for the prioritization of the accounts in terms of handling. Furthermore, the models have been often used for the risk segmentation of the customers. They are also utilised for risk based pricing in particular segments or new products introduced as well as in the calculation of the Economic Value Added (EVA) and Risk Adjusted Return On Capital (RaRoC) measures.

All of the above processes are centralised and based on the 'four-eyes' principle.

Retail exposures are grouped into homogeneous pools (refer to credit risk measurement in paragraph 4.9.4(f)).

4.7.3 Rating process and models' monitoring

The Bank considers the process and periodic review of credit policy implementation to be of critical importance, as they enable both the integration of the latest market information and analysis into the decision process and ensure the necessary uniformity in the face of the customer. Accordingly, a comprehensive credit policy manual is utilised on the extension and monitoring of credit, detailing the guiding principles, as well as specific rules relating to lending policies.

The credit rating process is also monitored independently by the Group Credit Control Sector via post approval control and evaluation of all credit portfolios through field reviews (case by case) for corporate lending.

Group Credit Risk Capital Adequacy Control Sector monitors the capacity of the rating models and the associated risk parameters on PD, LGD and EAD on an on going basis.

The Group Model Validation & Governance Sector is performing independent annual validations of the IRB models. The scope of the Sector is to:

- Establish and monitor the governance framework for the models used by the Group;
- Perform an independent validation of significant models used by the Group, in order to ensure that the results produced are correct, cover fully business needs, as well as that the methodologies and tools applied are in alignment with industry standards and the corresponding regulatory requirements; and
- Maintain the Group model's registry.

The Bank's validation policy follows a procedure that complies with international best practices and regulatory requirements. The Bank verifies the validity of the rating models and scoring systems on an annual basis and the validation includes both quantitative and qualitative aspects.

The quantitative validation includes statistical tests relating to the following:

- Model stability reports such as population stability, comparison of actual and expected score distributions and characteristic analysis;
- Discriminatory power of rating models i.e. the ability to distinguish default risk on a relative basis;
- Accuracy/backtesting, i.e. comparison of ex ante probabilities of default and other risk parameters and ex post observed default/loss/credit exposure as defined for regulatory purposes level.

The validation of risk parameters is based on historical in house data utilising confidence intervals or market data/benchmarks, where such benchmarks exist. The qualitative assessment includes the use of the models, data, model design, structures and processes underlying the rating systems. In addition to the annual validation of the models, the Bank has established a quarterly monitoring procedure to assess the significance of any changes.

Validation procedures are documented and regularly reviewed and reported to the BRC. Group Internal Audit also independently reviews the validation process annually.

4.7.4 Credit risk measurement

The credit risk framework is articulated around two measures: expected loss (EL) and unexpected loss (UL) for credit risk.

- EL is the expected annual credit loss as defined in paragraph (c) below;
- UL is defined as the volatility (or one standard deviation) of annual losses. If losses always equaled their expected levels then there would be no uncertainty. UL outlines the risk arising from volatility in loss levels and thus in earnings.

The core credit risk parameters included in the estimation of expected loss, unexpected loss and credit RWAs are: Probability of Default (PD), Loss Given Default (LGD), credit exposure as defined for regulatory purposes (EAD) and Effective Maturity (M).

(a) Probability of Default (PD)

The PD represents the probability that a customer will default on his credit obligation within the next 12 months. The definition of default used by the Bank is consistent with the requirements of the CRD and BoG.

The Bank's historical default data have been used in developing PD estimates. For each grade or pool, the long term average default rate expanding over a 10 years period is used as reference when assessing the PD values.

Under the Bank's validation framework, models are validated at least annually. This back testing is performed in order to timely identify possible misalignments of the model or possible reverse trends of the PDs. In this way, the Bank reassures that the PDs used are representative of the portfolios' quality and no underestimation underlies the information disclosed.

(b) Loss Given Default (LGD)

LGD represents the loss on an exposure after a customer defaults. It is expressed as a percentage of the exposure that the Bank expects to lose at the point of default.

The first step in the development process of behavioral LGD models or segments for the Retail portfolios of the Bank was to calculate realised (historical) LGD for a significant number of years starting before 2000. Data was collected and realised losses were calculated taking into account the concept of economic loss. To calculate historical LGD values for retail exposures, the workout LGD method was employed.

The statistical modeling technique employed for the development of behavioral LGD models for consumer lending was Stepwise Linear Regression. This technique is used to first select the most predictive characteristics and then to determine the weights for each variable. For the remaining portfolios the segmentation approach was used for estimating the LGD, based on material loss drivers.

When determining the final parameter, the Bank allows for uncertainty in the data and also applies an additional margin for economic downturn, by reference to external data.

For corporate lending which is under Foundation IRB, the supervisory LGD parameters are applied.

(c) Credit exposure as defined for regulatory purposes (EAD)

For estimating credit exposures for regulatory purposes, future draw downs are taken into account through the use of Credit Conversion Factors (CCFs).

This is meaningful only for products with a risk of drawings that is loan commitments, credit cards and the like, as ordinary loans do not involve a risk of future drawings. Conversion factors are influenced by the Bank's ability to identify slow paying borrowers at an early stage and reduce their access to additional drawings.

CCF estimates for the retail portfolios of the Bank are based on the Bank's historical data. As in the LGD estimation, the Bank employed statistical modeling techniques for consumer lending products (credit cards and open line) and for small business revolving and overdraft facilities, based on key drivers.

It is noted that in some cases credit exposure as defined for regulatory purposes is observed to be lower than the current balance outstanding. In these cases a capping has been applied at the pool design stage and credit exposure as defined for regulatory purposes has been set to equal current balance outstanding, as stipulated by CRD, thus allowing for an additional margin of conservatism.

For corporate lending which is under Foundation IRB, the supervisory CCF parameters are applied.

(d) Effective Maturity (M)

For corporate lending which is under Foundation IRB, the supervisory parameter is applied (i.e. 2.5 years).

(e) Pools (retail asset classes)

For retail lending portfolios, after building the models, ratings have been defined for the risk parameters (PD, LGD and CCF) with the purpose of smoothing out fluctuations by score in the development sample and help the derivation of statistically reliable estimates of the relationship between the score and PD, LGD and CCF, respectively.

The functional relationship between the score and the risk parameter was used to create a harmonised rating scale of PD, LGD and CCF across all retail portfolios. For example, the harmonised PD Rating 1 corresponds to the same PD range regardless of unit, product or scorecard in use.

Rated exposures have been assigned into particular pools, each containing groups of sufficiently homogenous exposures to allow for accurate and consistent estimation of loss characteristics at pool level.

Pools' setting for the retail lending portfolios was driven by a number of segmentation variables (product, financial status, time on books, current delinquency status, etc.), as well as the score. All these provide for a meaningful differentiation of risk as the score is based on the assessment of numerous variables (borrower and transaction characteristics).

Back testing and comparison analysis with external data, where available, are conducted at least annually to validate the risk parameters' estimations and pools, as described in rating process and models' monitoring in paragraph 4.8.2.

The Group has received approval for using the internal rating models and all detailed validations of the parameters were submitted to and reviewed by the regulator, as part of the IRB approval process and also as part of the ongoing supervisory monitoring. Annual validation results and actions taken (redevelopment or refit of scorecards; calibration of risk parameters of PD, LGD and EAD) are also independently reviewed by Internal Audit as part of the annual recurring Basel III compliance audit in accordance with BoG Governor's Act 2577. During 2019, the Bank has performed all required adjustments and re-calibrations and incorporated in the capital calculations revised through the cycle (TTC) risk parameters to reflect the macroeconomic environment and loss severities affecting the portfolios leveraging up to date performance.

4.7.5 Exposures subject to IRB approach

The following tables present the back testing results for the PD parameter for the full spectrum of the models applied in both Retail and Corporate portfolios. The purpose of the back testing is to identify deviations between the PDs produced by the internal models and actual default rates observed. It is noted that the PDs presented below are calibrated to the long run average default rate thus they may deviate from the observed one year default rates.

Table 30: EU CR9 – IRB approach – Backtesting of PD per exposure class as at 31 December 2019 and 2018.

31 December 2019									
					Number of obligors				
Exposure class	PD range %	External rating equivalent	Weighted average PD %	Arithmetic average PD by obligors %	End of previous year	End of the year	Defaulted obligors in the year	% Defaulted accounts in the year %	Average historical annual default rate %
Corporates									
Other	0,03% - 99.99%	-	1,9%	2,4%	508	468	14	2,8%	3,6%
SMEs	0,03% - 99.99%	-	7,3%	7,3%	1.779	1.737	50	2,8%	7,8%
Total Foundation IRB	**0,03% - 99.99%**	**-**	**3,7%**	**6,2%**	**2.287**	**2.205**	**64**	**2,8%**	**7,2%**

31 December 2018									
					Number of obligors				
Exposure class	PD range %	External rating equivalent	Weighted average PD %	Arithmetic average PD by obligors %	End of previous year	End of the year	Defaulted obligors in the year	% Defaulted accounts in the year %	Average historical annual default rate %
Corporates									
Other	0,03% - 99,99%	-	2,3%	3,0%	534	508	19	3,6%	3,6%
SMEs	0,03% - 99,99%	-	6,1%	6,8%	1.993	1.779	79	4,0%	7,9%
Total Foundation IRB	0,03% - 99,99%	-	3,6%	6,0%	2.527	2.287	98	3,9%	7,4%

31 December 2019										
					Number of accounts					
Exposure class	PD range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	End of previous year	End of the year	Defaulted obligors in the year	% Defaulted accounts in the year	Average historical annual default rate
	%		%	%				%	%
Secured by immovable property non-SME retail exposures	0,46% - 99.99%	-	15,9%	16,2%	108.449	111.987	10.590	9,8%	12,7%
Qualifying revolving retail exposures	0,03% - 99.99%	-	2,0%	1,1%	858.860	871.356	11.814	1,4%	6,9%
Retail exposures-Other non- SME	0,03% - 99.99%	-	14,1%	6,6%	94.481	98.995	4.039	4,3%	7,8%
Retail SME[1]	0,03% - 99.99%	-	23,0%	20,0%	51.076	51.560	6.007	11,8%	18,4%
Total Advanced IRB	**0,03% - 99.99%**	**-**	**15,3%**	**3,9%**	**1.112.866**	**1.133.898**	**32.450**	**2,9%**	**8,1%**

31 December 2018									
					Number of accounts				
Exposure class	PD range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	End of previous year	End of the year	Defaulted obligors in the year	% Defaulted accounts in the year	Average historical annual default rate
	%		%	%				%	%
Secured by immovable property non-SME retail exposures	0,47% - 99,99%	-	15,6%	17,7%	109.915	108.449	13.148	12,0%	12,7%
Qualifying revolving retail exposures	0,03% - 99,99%	-	2,1%	1,2%	853.301	858.860	12.930	1,5%	7,0%
Retail exposures-Other non- SME	0,03% - 99,99%	-	14,4%	7,6%	87.764	94.481	4.383	5,0%	8,1%
Retail SME[1]	0,03% - 99,99%	-	21,4%	20,2%	52.265	51.076	7.028	13,4%	18,4%
Total Advanced IRB	0,03% - 99,99%	-	14,5%	4,2%	1.103.245	1.112.866	37.489	3,4%	8,2%

(1) This exposure class includes the following three regulatory classes: Retail exposures that exceed €1mil, Retail exposures – Other SME, Retail exposures – secured by immovable property SME

Note: Average historical annual default rate represents the average annual default rate of the period 2006-2018 i.e. the calibrated through the cycle PDs used in the RWAs calculation.

Overall, the weighted average PDs have been calibrated in an economic cycle spanning from early 2006 and including the performance of the distressed financial period of the Greek economy up to and including December 2018. Long average PDs are higher than the annual default rate of 2019 (as presented in the column "% Defaulted accounts in the year"), where the macro economic environment is improving.

The default rate is following a decreasing trend from 3.9% in 2018 to 2.8% in 2019 for Corporate and from 3.4% in 2018 to to 2.9% in 2019 for the Retail, reflecting the improving quality of the loan portfolio.

4.7.6 Risk profile of exposures subject to IRB approach

The following table presents exposure classes broken down by PD band as at 31 December 2019 and 30 June 2019:

Table 31: EU CR6 – IRB approach – Credit risk exposures by exposure class and PD range

	31 December 2019											
Corporate exposures (Foundation IRB) PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity yrs	RWAs € million	RWA density %	EL € million	Value adjust-ments and provisions € million
0.00 to <0.15	1.014	58	92,5%	1.068	0,1%	112	44,3%	4	278	26,0%	-	2
0.15 to <0.25	1.173	276	58,4%	1.334	0,2%	223	43,8%	2	607	45,5%	1	3
0.25 to <0.50	1	1	84,5%	2	0,3%	89	24,4%	-	1	29,6%	-	-
0.50 to <0.75	743	156	58,8%	835	0,7%	90	42,9%	3	686	82,2%	3	3
0.75 to <2.50	1.516	286	66,4%	1.706	1,4%	560	41,4%	3	1.567	91,8%	10	11
2.50 to <10.00	1.711	147	75,9%	1.819	5,8%	697	40,8%	3	2.466	135,6%	42	34
10.00 to <100.00	762	47	82,7%	799	17,6%	417	39,2%	5	1.402	175,4%	55	57
100.00 (Default)	3.801	76	64,3%	3.791	100,0%	3.537	41,6%	2	-	0,0%	1.576	2.122
Sub-total	**10.721**	**1.047**	**66,6%**	**11.354**	**35,8%**	**5.725**	**41,9%**	**3**	**7.007**	**61,7%**	**1.687**	**2.232**
				Average PD for non defaulted	*3,7%*							
Total all Foundation IRB	**10.721**	**1.047**	**66,6%**	**11.354**	**35,8%**	**5.725**	**41,9%**	**3**	**7.007**	**61,7%**	**1.687**	**2.232**

	31 December 2019											
Retail exposures that exceed € 1 million (Advanced IRB) PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity [(2)] yrs	RWAs € million	RWA density %	EL € million	Value adjust-ments and provisions € million
0.00 to <0.15	1	1	0,0%	1	0,0%	2	2,2%	4	-	0,3%	-	-
0.15 to <0.25	10	7	28,6%	10	0,2%	17	22,7%	3	1	13,9%	-	-
0.25 to <0.50	-	-	-	-	-	-	-	N/A	-	-	-	-
0.50 to <0.75	-	-	-	-	-	-	-	N/A	-	-	-	-
0.75 to <2.50	31	26	16,8%	31	1,6%	52	19,4%	4	10	31,1%	-	-
2.50 to <10.00	81	6	12,1%	79	5,7%	81	20,4%	10	41	52,5%	1	3
10.00 to <100.00	59	6	8,9%	59	29,2%	65	24,2%	11	56	95,5%	4	4
100.00 (Default)	225	-	-	223	100,0%	178	55,6%	11	52	23,3%	121	123
Sub-total	**407**	**46**	**16,6%**	**403**	**61,0%**	**395**	**40,4%**	**10**	**160**	**39,7%**	**126**	**130**
				Average PD for non defaulted	*12,4%*							

Credit Risk

Secured by immovable property non-SME retail exposures	31 December 2019											
PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity [2] yrs	RWAs € million	RWA density %	EL € million	Value adjustments and provisions € million
0.00 to <0.15	-	-	-	-	0,0%	-	-	N/A	-	-	-	-
0.15 to <0.25	-	-	-	-	0,0%	-	-	N/A	-	-	-	-
0.25 to <0.50	61	12	100,0%	73	0,4%	888	5,8%	N/A	3	4,1%	-	-
0.50 to <0.75	559	0,07	100,0%	559	0,5%	8.893	9,9%	N/A	46	8,2%	-	3
0.75 to <2.50	2.515	4	100,0%	2.519	1,4%	34.210	13,2%	N/A	550	21,8%	5	64
2.50 to <10.00	904	2	100,0%	906	4,7%	14.807	15,8%	N/A	479	52,9%	7	35
10.00 to <100.00	1.832	0,01	100,0%	1.832	35,9%	34.610	24,2%	N/A	2.250	122,8%	156	183
100.00 (Default)	2.108	0,07	100,0%	2.108	100,0%	23.141	49,6%	N/A	1.192	56,5%	1.001	915
Sub-total	**7.979**	**18**	**100,0%**	**7.997**	**35,6%**	**116.549**	**25,3%**	**N/A**	**4.520**	**56,5%**	**1.169**	**1.200**
				Average PD for non defaulted	*12,5%*							

Qualifying revolving retail exposures	31 December 2019											
PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity [2] yrs	RWAs € million	RWA density %	EL € million	Value adjustments and provisions € million
0.00 to <0.15	112	813	64,0%	632	0,1%	415.141	68,8%	N/A	20	3,1%	-	13
0.15 to <0.25	41	190	85,1%	202	0,2%	52.735	68,5%	N/A	14	6,8%	-	4
0.25 to <0.50	72	180	58,4%	177	0,4%	102.159	74,1%	N/A	26	14,5%	1	4
0.50 to <0.75	58	88	73,5%	122	0,7%	56.342	78,9%	N/A	29	23,6%	1	3
0.75 to <2.50	177	120	57,1%	246	1,4%	78.388	79,5%	N/A	103	41,9%	3	6
2.50 to <10.00	178	48	49,5%	202	5,4%	70.832	78,8%	N/A	211	104,7%	9	6
10.00 to <100.00	53	8	41,3%	56	23,1%	13.110	75,3%	N/A	106	190,5%	10	4
100.00 (Default)	332	0,17	0,0%	333	100,0%	60.059	91,9%	N/A	27	8,1%	304	306
Sub-total	**1.023**	**1.447**	**65,4%**	**1.970**	**18,4%**	**848.766**	**76,3%**	**N/A**	**536**	**27,2%**	**328**	**346**

SME retail exposures	31 December 2019											
PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity [2] yrs	RWAs € million	RWA density %	EL € million	Value adjustments and provisions € million
0.00 to <0.15	0,07	-	-	0,07	0,1%	3	46,9%	N/A		-	-	-
0.15 to <0.25	-	-	-	-	0,0%	-	0,0%	N/A	-	0,0%	-	-
0.25 to <0.50	-	-	-	-	-	-	-	N/A	-	-	-	-
0.50 to <0.75	9	4	1,6%	9	0,5%	135	46,9%	N/A	3	28,7%	-	1
0.75 to <2.50	305	278	15,2%	248	1,8%	6.632	32,0%	N/A	80	32,4%	1	4
2.50 to <10.00	402	179	10,5%	341	5,2%	11.983	34,4%	N/A	141	41,3%	6	11
10.00 to <100.00	231	49	5,8%	224	34,8%	9.400	43,1%	N/A	168	75,1%	34	32
100.00 (Default)	564	-	-	534	100,0%	24.995	80,3%	N/A	28	5,2%	416	431
Sub-total	**1.511**	**510**	**12,6%**	**1.356**	**46,7%**	**53.148**	**53,5%**	**N/A**	**420**	**31,0%**	**457**	**479**
				Average PD for non defaulted	*12,2%*							

Credit Risk

Other non-SME retail exposures PD range	31 December 2019 Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity (2) yrs	RWAs € million	RWA density %	EL € million	Value adjustments and provisions € million
0.00 to <0.15	0,007	0,05	44,6%	0,03	0,03%	4	86,3%	N/A	-	9,1%	-	-
0.15 to <0.25	-	-	0,0%	-	-	-	-	N/A	-	-	-	-
0.25 to <0.50	119	1	100,0%	120	0,5%	18.837	57,2%	N/A	51	42,2%	-	-
0.50 to <0.75	124	0,06	100,0%	124	0,6%	7.289	37,3%	N/A	40	32,1%	-	1
0.75 to <2.50	383	1	100,0%	384	1,4%	40.095	38,3%	N/A	176	45,9%	2	11
2.50 to <10.00	180	-	91,4%	180	4,7%	18.212	36,6%	N/A	102	56,8%	3	8
10.00 to <100.00	274	0,07	100,0%	274	36,6%	41.455	31,6%	N/A	193	70,5%	31	29
100.00 (Default)	375	-	-	375	100,0%	18.793	65,0%	N/A	154	41,1%	236	220
Sub-total	**1.455**	**2**	**98,2%**	**1.457**	**33,6%**	**144.685**	**45,2%**	**N/A**	**716**	**49,1%**	**272**	**269**
				Average PD for non defaulted	*10,7%*							

Retail exposures - Secured by immovable property SME PD range	31 December 2019 Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity (2) yrs	RWAs € million	RWA density %	EL € million	Value adjustments and provisions € million
0.00 to <0.15	-	-	-	-	-	-	-	N/A	-	-	-	-
0.15 to <0.25	-	-	-	-	-	-	-	N/A	-	-	-	-
0.25 to <0.50	-	-	-	-	-	-	-	N/A	-	-	-	-
0.50 to <0.75	-	-	-	-	-	-	-	N/A	-	-	-	-
0.75 to <2.50	68	34	19,4%	73	1,8%	904	14,4%	N/A	11	14,5%	-	-
2.50 to <10.00	810	35	22,0%	811	6,4%	8.159	14,8%	N/A	150	18,5%	8	28
10.00 to <100.00	863	12	10,1%	863	40,1%	8.826	19,1%	N/A	295	34,2%	67	92
100.00 (Default)	2.157	-	-	2.130	100,0%	26.490	44,9%	N/A	377	17,7%	930	853
Sub-total	**3.898**	**81**	**19,1%**	**3.877**	**65,3%**	**44.379**	**32,3%**	**N/A**	**833**	**21,5%**	**1.005**	**973**
				Average PD for non defaulted	*22,9%*							
Total all Advanced IRB	**16.273**	**2.105**	**50,1%**	**17.060**	**41,7%**	**1.207.922**	**37,1%**	**10**	**7.185**	**42,1%**	**3.357**	**3.397**
				Average PD for non defaulted	*12,4%*							

Corporate exposures (Foundation IRB) PD range	30 June 2019 Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity yrs	RWAs € million	RWA density %	EL € million	Value adjustments and provisions € million
0.00 to <0.15	725	158	64,6%	827	0,1%	117	44,3%	4	192	23,2%	-	-
0.15 to <0.25	519	39	82,7%	551	0,2%	209	42,2%	3	226	41,1%	-	1
0.25 to <0.50	1	1	82,7%	2	0,3%	81	25,3%	1	1	30,7%	-	-
0.50 to <0.75	798	126	77,6%	896	0,7%	88	42,8%	3	732	81,7%	3	3
0.75 to <2.50	1.805	106	73,6%	1.883	1,4%	556	42,1%	3	1.744	92,6%	11	12
2.50 to <10.00	1.898	153	82,0%	2.022	5,8%	734	40,9%	3	2.762	136,6%	48	59
10.00 to <100.00	580	36	82,5%	607	18,6%	431	39,6%	4	1.034	170,4%	45	63
100.00 (Default)	4.366	77	64,0%	4.356	100,0%	3.413	41,7%	2	-	0,0%	1.819	2.347
Sub-total	10.692	696	74,1%	11.144	42,4%	5.629	41,8%	3	6.691	60,0%	1.926	2.485
				Average PD for non defaulted	*3,9%*							

Total all Foundation IRB	10.692	696	74,1%	11.144	42,4%	5.629	41,8%	3	6.691	60,0%	1.926	2.485

Credit Risk

Retail exposures that exceed € 1 million (Advanced IRB)	30 June 2019											
PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity (2) yrs	RWAs € million	RWA density %	EL € million	Value adjust-ments and provisions € million
0.00 to <0.15	1	1	10,0%	1	0,0%	2	10,6%	5	-	1,2%	-	-
0.15 to <0.25	7	7	13,2%	6	0,2%	12	26,3%	4	1	17,5%	-	-
0.25 to <0.50	-	-	-	-	-	-	-	N/A	-	-	-	-
0.50 to <0.75	-	-	-	-	-	-	-	N/A	-	-	-	-
0.75 to <2.50	26	19	13,4%	25	1,6%	51	20,7%	4	9	34,1%	-	-
2.50 to <10.00	75	8	25,3%	74	5,5%	84	19,1%	9	35	48,2%	1	5
10.00 to <100.00	65	6	11,8%	66	33,3%	70	25,3%	12	65	98,8%	5	10
100.00 (Default)	233	-	-	231	100,0%	183	57,2%	11	-	0,0%	133	115
Sub-total	407	41	15,4%	403	63,9%	402	42,2%	10	110	27,3%	139	130
				Average PD for non defaulted	*15,3%*							

Secured by immovable property non-SME retail exposures	30 June 2019											
PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity (2) yrs	RWAs € million	RWA density %	EL € million	Value adjust-ments and provisions € million
0.00 to <0.15	-	-	-	-	0,0%	-	-	N/A	-	-	-	-
0.15 to <0.25	-	-	-	-	0,0%	-	-	N/A	-	-	-	-
0.25 to <0.50	46	7	100,0%	53	0,4%	648	5,7%	N/A	2	4,0%	-	-
0.50 to <0.75	508	-	-	509	0,5%	6.968	11,7%	N/A	49	9,7%	-	4
0.75 to <2.50	2.448	3	100,0%	2.451	1,4%	34.312	14,2%	N/A	580	23,6%	5	49
2.50 to <10.00	930	1	100,0%	931	4,7%	15.002	17,1%	N/A	536	57,5%	8	35
10.00 to <100.00	2.162	-	100,0%	2.162	38,9%	39.382	25,7%	N/A	2.724	126,0%	214	199
100.00 (Default)	3.646	-	-	3.644	100,0%	47.118	45,0%	N/A	2.007	55,1%	1.641	1.638
Sub-total	9.740	11	100,0%	9.750	46,8%	143.430	28,4%	N/A	5.898	60,5%	1.868	1.925
				Average PD for non defaulted	*15,1%*							

Qualifying revolving retail exposures	30 June 2019											
PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity (2) yrs	RWAs € million	RWA density %	EL € million	Value adjust-ments and provisions € million
0.00 to <0.15	78	825	63,5%	601	0,1%	414.379	67,1%	N/A	18	3,0%	-	4
0.15 to <0.25	31	185	83,6%	186	0,2%	50.078	67,3%	N/A	12	6,7%	-	1
0.25 to <0.50	61	176	55,7%	160	0,4%	100.793	73,2%	N/A	23	14,3%	-	1
0.50 to <0.75	50	91	70,9%	114	0,7%	56.723	78,3%	N/A	27	23,2%	1	1
0.75 to <2.50	172	120	53,6%	236	1,4%	76.197	79,1%	N/A	99	41,9%	3	2
2.50 to <10.00	182	50	46,0%	205	5,5%	70.225	78,7%	N/A	215	105,2%	9	3
10.00 to <100.00	58	10	37,4%	62	22,8%	14.270	75,2%	N/A	118	190,2%	11	7
100.00 (Default)	366	-	-	366	100,0%	59.360	86,7%	N/A	71	19,4%	311	295
Sub-total	998	1.457	64,0%	1.930	20,6%	842.025	75,0%	N/A	583	30,2%	335	314
				Average PD for non defaulted	*2,0%*							

Credit Risk

SME retail exposures	30 June 2019											
PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity [(2)] yrs	RWAs € million	RWA density %	EL € million	Value adjust-ments and provisions € million
0.00 to <0.15	-	-	-	-	0,1%	3	46,9%	N/A		-	-	-
0.15 to <0.25	-	-	-	-	0,0%	-	0,0%	N/A	-	0,0%	-	-
0.25 to <0.50	-	-	-	-	-	-	0,0%	N/A	-	-	-	-
0.50 to <0.75	9	4	1,5%	9	0,5%	136	46,9%	N/A	3	28,7%	-	-
0.75 to <2.50	249	303	14,1%	215	1,8%	6.324	32,0%	N/A	69	32,3%	1	1
2.50 to <10.00	378	185	10,3%	326	5,1%	11.480	33,9%	N/A	133	40,7%	6	18
10.00 to <100.00	249	53	5,8%	241	37,4%	9.852	43,3%	N/A	179	74,7%	39	57
100.00 (Default)	598	-	-	566	100,0%	25.520	77,6%	N/A	-	0,0%	441	445
Sub-total	1.483	545	11,9%	1.357	49,9%	53.315	53,6%	N/A	384	28,3%	487	521
	Average PD for non defaulted				*14,0%*							

Other non-SME retail exposures	30 June 2019											
PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity [(2)] yrs	RWAs € million	RWA density %	EL € million	Value adjust-ments and provisions € million
0.00 to <0.15	-	-	-	-	0,1%	4	75,7%	N/A	-	0,0%	-	-
0.15 to <0.25	-	-	-	-	-	-	-	N/A	-	-	-	-
0.25 to <0.50	108	1	0,5%	109	0,5%	17.391	58,5%	N/A	47	43,0%	-	1
0.50 to <0.75	126	-	-	126	0,6%	6.895	34,9%	N/A	38	29,9%	-	1
0.75 to <2.50	357	2	0,0%	359	1,4%	37.830	38,6%	N/A	167	46,5%	2	10
2.50 to <10.00	170	-	2,2%	170	4,9%	18.330	39,9%	N/A	106	62,2%	3	12
10.00 to <100.00	326	-	-	327	39,3%	43.087	32,7%	N/A	231	70,9%	42	37
100.00 (Default)	597	-	-	596	100,0%	23.883	58,8%	N/A	270	45,3%	350	326
Sub-total	1.684	3	0,5%	1.687	43,8%	147.420	45,7%	N/A	859	50,9%	397	387
	Average PD for non defaulted				*13,1%*							

Retail exposures - Secured by immovable property SME	30 June 2019											
PD range	Original on-balance-sheet gross exposures € million	Off-balance-sheet exposures pre-CCF € million	Average CCF %	EAD post CRM and post CCF € million	Average PD %	Number of obligors	Average LGD %	Average maturity [(2)] yrs	RWAs € million	RWA density %	EL € million	Value adjust-ments and provisions € million
0.00 to <0.15	-	-	-	-	-	-	-	N/A	-	-	-	-
0.15 to <0.25	-	-	-	-	-	-	-	N/A	-	-	-	-
0.25 to <0.50	-	-	-	-	-	-	-	N/A	-	-	-	-
0.50 to <0.75	-	-	-	-	-	-	-	N/A	-	-	-	-
0.75 to <2.50	60	39	17,8%	66	1,8%	867	14,8%	N/A	10	14,9%	-	-
2.50 to <10.00	774	33	22,5%	775	6,3%	7.469	15,0%	N/A	144	18,6%	8	51
10.00 to <100.00	898	16	7,0%	897	45,2%	9.192	19,4%	N/A	296	33,0%	81	124
100.00 (Default)	2.219	-	-	2.191	100,0%	26.797	44,6%	N/A	-	0,0%	975	883
Sub-total	3.951	88	17,6%	3.929	67,4%	44.325	32,5%	N/A	450	11,5%	1.064	1.058
	Average PD for non defaulted				*26,2%*							
Total all Advanced IRB	18.263	2.145	48,0%	19.056	48,7%	1.230.917	37,6%	10	8.284	43,5%	4.290	4.335
	Average PD for non defaulted				*14,7%*							

Note:
1. PD refers to the PD calibrated Through the Cycle (TtC) and LGD refers to downturn LGD, both used for the calculation of RWAs.
2. Average maturity is presented only in the exposure classes where it is required for the RWAs calculation.
3. In contrast with CoReps where the number of accounts are presented for Retail portfolios, the above tables depict the number of obligors in each asset class and PD band. If an obligor has multiple loans classified in more than one category, then the obligor is reported multiple times.

The main developments in the IRB portfolio, during the second half of 2019, were the following:
Foundation IRB

- The risk profile of the non-defaulted corporate portfolio has been slightly improved (weighted average Through the Cycle - TtC PD from 3.9% in June 2019 to 3.7% in December 2019).

Advanced IRB

- The risk profile of the non-defaulted retail portfolio has been improved across asset classes. Specifically, the Secured by immovable property non-SME TtC PD decreased from 15.1% in June 2019 to 12.5% in December 2019, the Other non-SME from 13.1% to 10.7% the Retail SME from 14.0% to 12.2% and the Qualifying Revolving from 2.0% to 1.8%.

The table below presents the specialised lending credit exposures (shipping, real estate and project finance) broken down by supervisory risk categories and remaining maturities as at 31 December 2019 and 30 June 2019:

Table 32: EU CR10 – IRB (specialised lending)

		31 December 2019					
		Specialised lending					
Regulatory categories	Remaining maturity	On balance sheet amount € million	Off balance sheet amount € million	Risk weight	Exposure amount € million	RWAs € million	Expected losses € million
Strong	Less than 2.5 years	134	39	50%	171	85	-
	Equal to or more than 2.5 years	1.001	103	70%	1.053	737	4
Good	Less than 2.5 years	133	5	70%	138	96	1
	Equal to or more than 2.5 years	774	63	90%	807	725	6
Satisfactory	Less than 2.5 years	78	-	115%	78	90	2
	Equal to or more than 2.5 years	285	5	115%	287	330	8
Weak	Less than 2.5 years	1	-	250%	1	4	-
	Equal to or more than 2.5 years	3	-	250%	3	8	-
Default	Less than 2.5 years	370	1	0%	370	-	186
	Equal to or more than 2.5 years	208	4	0%	209	-	105
Total	**Less than 2.5 years**	**716**	**45**		**758**	**275**	**189**
	Equal to or more than 2.5 years	**2.271**	**175**		**2.359**	**1.800**	**123**

		30 June 2019					
		Specialised lending					
Regulatory categories	Remaining maturity	On balance sheet amount € million	Off balance sheet amount € million	Risk weight	Exposure amount € million	RWAs € million	Expected losses € million
Strong	Less than 2.5 years	41	6	50%	45	22	-
	Equal to or more than 2.5 years	831	17	70%	840	588	3
Good	Less than 2.5 years	226	1	70%	226	159	1
	Equal to or more than 2.5 years	590	41	90%	611	549	5
Satisfactory	Less than 2.5 years	36	-	115%	36	42	1
	Equal to or more than 2.5 years	339	3	115%	340	391	10
Weak	Less than 2.5 years	11	-	250%	11	27	1
	Equal to or more than 2.5 years	3	-	250%	3	8	-
Default	Less than 2.5 years	380	1	0%	381	-	190
	Equal to or more than 2.5 years	260	-	0%	260	-	130
Total	Less than 2.5 years	694	8		699	250	193
	Equal to or more than 2.5 years	2.023	61		2.054	1.536	148

The risk profile of the non-defaulted specialised lending portfolio has been further improved within the second half of 2018 (EL 0.9% as at 31 December 2019 vis a vis EL of 1.0% as at 30 June 2019). The following table shows the main changes in capital requirements of credit risk exposures under the IRB approach from 30 September 2019 to 31 December 2019:

Table 33: EU CR8 – RWA flow statements of credit risk exposures under the IRB approach

	31 December 2019	
	RWA amounts € million	Capital requirements € million
RWAs as at 30 September 2019	15.967	1.276
Asset size	94	8
Asset quality	(252)	(20)
Model updates	-	-
Methodology and policy	485	39
Acquisitions and disposals	-	-
Foreign exchange movements	(30)	(3)
Other	3	-
RWAs as at 31 December 2019	**16.267**	**1.300**

Asset size: Under this item the changes in RWAs due to the changes in EAD are reported. These changes can be due to new originations or repayments of the loans.
Asset quality: The changes to the RWAs due to the borrower risk (i.e. rating grade migration) are reported under this item.
Model updates: The changes to the RWAs due to updates in risk parameters following the annual validation process or regulatory reviews.
Methodology and policy: Under this item, the changes in RWAs for defaulted exposures are presented. In line with the positive evolutions in the Greek macro-environment and the recent developments in the legal framework, the Bank has re-assessed the appropriate ELbe estimates by examining the most appropriate macro coefficients that affect ELbe.
Foreign exchange movements: The changes to the RWAs due to the foreign currency translation movements are reported.
Other: Under this item the changes in RWAs due to other factors that are used in the calculation of RWAs are reported. These, for example, include changes in total sales of the corporate borrowers and maturity of exposures.

The increase in RWAs in the last quarter of 2019 is due to the net effect of a) accumulated RWAs for defaulted Retail SME exposures and b) the new production of Corporate exposures which were counterbalanced by the improvement in the quality of the portfolio as depicted under "Asset quality" in the table above.

The following table presents the equity exposures, broken down by risk weights as at 31 December 2019 and 30 June 2019.

Table 34: EU CR10 – IRB (equities)

	31 December 2019					
	Equities under the simple risk-weighted approach					
	On balance sheet amount € million	Off balance sheet amount € million	Risk weight	Exposure amount € million	RWAs € million	Capital requirements € million
Categories						
Exchange-traded equity exposures	166	-	190%	166	315	25
Private equity exposures	34	-	290%	34	99	8
Other equity exposures	21	-	370%	21	78	6
Total	**221**	**-**		**221**	**492**	**39**

	30 June 2019					
	Equities under the simple risk-weighted approach					
	On balance sheet amount € million	Off balance sheet amount € million	Risk weight	Exposure amount € million	RWAs € million	Capital requirements € million
Categories						
Exchange-traded equity exposures	140	-	190%	140	267	21
Private equity exposures	24	-	290%	24	70	6
Other equity exposures	18	-	370%	18	67	5
Total	182	-		182	404	32

4.8 Credit risk mitigation

A key component of the Group's business strategy is to reduce risk by utilizing various risk mitigating techniques. The most important risk mitigating means are collaterals' pledges, guarantees and netting arrangements in master agreements for derivatives.

4.8.1 Types of collateral commonly accepted by the Bank

Internal policies include specific instructions for the collateral types that could be accepted:

- Residential real estate (e.g., houses, apartments, vacation homes etc.);
- Commercial real estate (e.g., commercial stores, industrial premises etc.);
- Land (e.g., urban, agricultural, other;
- Receivables (trade debtors) and post dated cheques;
- Financial collaterals, (e.g., cash collateral, listed shares, listed bonds and other specific securities accepted);
- Guarantees and letters of support;
- Insurance contracts; and
- Movable assets (e.g., machinery and equipment, vehicles and vessels.

A specific coverage ratio is pre-requisite upon approval and on ongoing basis for each collateral type, specified in the credit policy manual.

For Treasury exposures (i.e. repos, reverse repos, derivatives, etc.) the Group accepts only cash or liquid bonds as collaterals.

4.8.2 Valuation principles of collateral

For loan products, the valuation principle for collateral is regarded as a conservative approach, taking long term market value and volatility into account when defining the maximum collateral ratio. Valuation and hence eligibility is based on the following principles:

- Market value is assessed; markets must be liquid, quoted prices must be available and the collateral is expected to be liquidated within a reasonable time frame;
- A reduction of the collateral value is considered if the type, location or characteristics (such as deterioration and obsolescence) of the asset indicate uncertainty regarding the sustainability of the market value;
- Forced sale principle; assessment of market value or the collateral value must reflect that realization of collateral in a distressed situation is initiated by the Bank;
- No collateral value is assigned if a pledge is not legally enforceable.

In the context of supervisory guidelines and in order to manage effectively the real estate portfolio that has been accepted as collateral, the Bank has set out rules governing the type of initial valuation and the frequency of revaluation for the assessment of the commercial value of real estate collaterals.

Both the type of immovable property and its specific features, as well as other characteristics of the credit facility (e.g. forborne status, default, etc.), constitute the main criteria for the frequency and type of revaluation.

The valuation of the real estate properties is conducted by independent qualified appraisers (individuals or legal entities or employees of legal entities), who possess the necessary qualifications, ability and experience to execute a valuation. The Bank has an approved list of independent and qualified appraisers, which can perform valuations. However, the Bank has agreed that first priority for all its real estate collateral valuations will be given to Cerved Property Services (CPS) Immovable property collateral should be valued, adhering to European and international standards and specifically European Valuation Standards EVS-2016 (Blue Book) and the Royal Institute of Chartered Surveyors (RICS).

After two sequential updated individual valuations (as those are defined in the next section) of the same immovable property, the appraiser should rotate (either to a different independent valuator or to a different independent appraisal provider).

The initial valuation of real estate assets for the purposes of granting a new credit facility or refinancing existing credit facilities, is being conducted in all cases through the property's physical inspection by fully matching legal and technical documentation with the property (cases of forced prenotation are excluded). The valuation will take into account all required regarding technical and legal soundness of the Real Estate property.. The valuation must precede the disbursement of the credit.

In cases of forced prenotation, a property physical inspection will be carried out within 30 days of its registration.
Real estate properties revaluations can be carried out as described below:

<u>Through Property Physical Inspection:</u>

In order to conduct a property physical inspection, all supporting documents should be collected (such as property title, topographical plan, floor plans).

The valuation will be carried out with external and/or internal inspection of the property. The Current Market Value and the Final Market Value will be estimated. In the case of completed properties these two values will be equal, while for cases of unfinished buildings they are different.

If during the inspection it is identified that the property has undergone changes regarding its surface (without changes in the perimeter or changes that do not affect the existing horizontal properties), the property to be assessed after the submission of required/mandatory documents. The revaluation is done by either EPS or another appraiser approved by the Bank, if deemed necessary. All appraisers must be certified.

Without Physical Property Inspection (Desktop):
Revaluation is carried out without physical property inspection (desktop) and is conducted based on certain assumptions. It applies only to finished properties for which there is relevant description on the submitted property title provided that an initial valuation has been performed via the physical inspection method.

The following table summarizes the revaluation policy for the Retail lending portfolios.

Immovable Assets (RRE & CRE)				
		Loan Exposure (€)		
		0-300k	301k-1,000k	>1,000k
EBA Status	**Non Performing (NPE & NPF)**	• Index Annually	• Without property inspection (Desktop) annually, as long as the loan is classified as NP.	• With property inspection Annually
	Performing (PE & PF)	• Index Annually	• Index Annually	• With property inspection Annually
	PE -> NPE (including denounced)	• The annual Index valuation will be in effect	Desktop valuation is required to take place in the period up to the impairment review and within max two (2) months from reclassification, unless a valuation has taken place during the last 6 months.	• Physical Inspection valuation is required to take place in the period up to the impairment review and within max two (2) months from reclassification, unless a valuation has taken place during the last 6 months.

Special types of immovable assets (hotels, shopping centers, medical diagnostic centers, fitness/beauty centers, legally permissible building height) should be revaluated through Desktop annually and every two years with Physical Inspection.

The following table summarizes the revaluation policy for the Wholesale lending portfolios.

<table>
<tr><th>EBA Status</th><th colspan="12">Immovable Assets</th></tr>
<tr><td rowspan="4">CPF Performing (PE, PF &)</td><td colspan="12">Loan Exposure (in € '000)</td></tr>
<tr><td colspan="6"><= € 1.000</td><td colspan="6">> € 1.000</td></tr>
<tr><td colspan="3">Residential Real Estate</td><td colspan="3">Commercial Real Estate</td><td colspan="3">Residential Real Estate</td><td colspan="3">Commercial Real Estate</td></tr>
<tr><td colspan="3">Every 3 years as below:
• Physical inspection every 3 years
• In-between years with Index</td><td colspan="3">Every Year as below:
• Physical inspection every 2 years.
• In-between years Index or desktop for special types [1]</td><td colspan="3">Every 3 years as below:
• Physical inspection every 3 years.
• In-between years with desktop</td><td colspan="3">Every Year as below:
• Physical inspection every 2 years.
• In-between years with desktop</td></tr>
<tr><td rowspan="3">Performing →
Non-Performing (including denounced)</td><td colspan="12">Loan Exposure (in € '000) - All types of Immovable Assets</td></tr>
<tr><td colspan="4"><= € 300</td><td colspan="4">€ 300<>= € 1,000</td><td colspan="4">> € 1,000</td></tr>
<tr><td colspan="4">Index.
For special types [1] a Desktop in the period up to the impairment review and within max two (2) months from reclassification unless a valuation has taken place during the last 6 months</td><td colspan="4">Desktop valuation in the period up to the impairment review and within max two (2) months from reclassification unless a valuation has taken place during the last 6 months.</td><td colspan="4">Physical inspection valuation in the period up to the impairment review and within max two (2) months from reclassification unless a valuation has taken place during the last 6 months.</td></tr>
<tr><td rowspan="3">Non-Performing (NPE & NPF)</td><td colspan="12">Loan Exposure (in € '000) - All types of Immovable Assets</td></tr>
<tr><td colspan="6">0 - € 300</td><td colspan="6">> € 300</td></tr>
<tr><td colspan="6">• Every year with Index
• For special types [1] with Desktop annually.</td><td colspan="6">Every year as below:
• Physical inspection every 2 years.
• In-between years Desktop</td></tr>
</table>

[1] *Special Types: Hotels, shopping centers, medical diagnostic centers, fitness/beauty centers, legally permissible building height.*

The Bank uses two separate indices for the indexation of residential and commercial real estate collaterals respectively.

Residential Real Estate Index (PropIndex):

In 2006, the Bank initiated a project in collaboration with other banks in Greece to develop a real estate property index (PropIndex) for residential properties. The methodology, which was developed by an independent specialised statistical company, has been approved by the BoG and its use enables a dynamic monitoring of residential property values and market trends, on an annual basis.

Commercial Real Estate Index:

For commercial real estate valuations, Eurobank uses the CRE Index. This index is derived through a combination of **CPS & BoG CRE indices** and is provided annually by CPS.

The index is based on internationally accepted methodology and constitutes a tool for the statistical monitoring of possible changes of the values of the commercial properties as well as for the trends in the particular market. This index is updated on an annual basis.

Other collaterals:

To ensure the quality of post-dated cheques accepted as collateral, the Bank has developed a pre-screening system, which takes into account a number of criteria and risk parameters, so as to evaluate their eligibility. Furthermore, the post-dated cheques' valuation is monitored weekly through the use of advanced statistical reports and monthly through detailed information regarding recoverability of cheques, referrals and bounced cheques, per issuer broken down by business unit (corporate and small business banking).

In case of reverse repos, the bonds received as collateral are evaluated on a daily basis by the official valuation system. All these are monitored via credit exposure measurement system that takes into account the specific characteristics of every contract.

4.8.3 Collateral policy and documentation

For loan products, Group instructions emphasize that practices followed are timely and prudent in order to ensure that collateral items are controlled by the Group's entities and that the loan and pledge agreement, as well as the collateral is legally enforceable. Therefore, the Group's entities hold the right to liquidate collateral in the event of the obligor's financial distress and can claim and control cash proceeds from a liquidation process.

The Group uses to a large extent standard loan and pledge agreements, ensuring legal enforceability.

The application of CSA (Credit Support Annex) and GMRA (Global Master Repurchase Agreements) contracts determines the cash that should be paid or received in case of derivatives and repos contracts.

4.8.4 Guarantees and credit derivatives

The guarantees used as credit risk mitigation by the Group are largely issued by central and regional governments in the countries in which it operates. The Public Fund for very small businesses (ETEAN) and similar funds, banks and insurance companies are also important guarantors of credit risk.

The Bank enters into credit derivative transactions with both retail and investment banks. The lowest counterparty rating is A, whereas the average counterparty rating is AA (Standard & Poor's rating scale).

Only eligible providers of guarantees and credit derivatives can be recognised in the Standardised and Foundation IRB approach for credit risk. All central governments, regional governments and institutions are eligible. Guarantees issued by corporate entities can only be taken into account if their rating corresponds to A- (Standard & Poor's rating scale) or better.

The table below shows guarantees received broken down by primary type of guarantee as at 31 December 2019 and 2018.

	2019 € million	2018 € million
Guarantees issued by Central Banks or Central Governments	365	332
Guarantees issued by Banks	89	67
	454	399

The table below shows the impact of the credit derivatives used as mitigation techniques in RWAs as at 31 December 2019 and 30 June 2019.

Table 36: EU CR7 – IRB approach – Effect on the RWAs of credit derivatives used as CRM techniques

	31 December 2019		30 June 2019	
	Pre-credit derivatives RWAs € million	Actual RWAs € million	Pre-credit derivatives RWAs € million	Actual RWAs € million
Exposures under FIRB				
Central governments and central banks	-	-	-	-
Institutions	-	-	-	-
Total corporates	9.198	9.198	8.571	8.571
Corporates – SMEs	2.732	2.732	2.660	2.660
Corporates – Specialised lending	2.179	2.179	1.864	1.864
Corporates – Other	4.287	4.287	4.047	4.047
Exposures under AIRB				
Central governments and central banks	-	-	-	-
Institutions	-	-	-	-
Corporates – SMEs	160	160	110	110
Corporates – Specialised lending	-	-	-	-
Corporates – Other	-	-	-	-
Retail – Secured by real estate SMEs	833	833	450	450
Retail – Secured by real estate non-SMEs	4.520	4.520	5.897	5.897
Retail – Qualifying revolving	536	536	583	583
Retail – Other SMEs	420	420	384	384
Retail – Other non-SMEs	716	716	859	859
Equity IRB	492	492	404	404
Other non credit obligation assets	12	12	16	16
Total	**16.887**	**16.887**	17.274	17.274

[(1)] *Securitisation positions are not included in the above table.*

4.8.5 Netting agreements

To reduce the exposure towards single counterparties, risk mitigation techniques are used. The most common is the use of closeout netting agreements (usually based on standardised ISDA contracts), which allow the bank to net positive and negative replacement values in the event of default of the counterparty.

Furthermore, the Bank also applies margin agreements (CSAs) in case of counterparties. Thus, collateral is paid or received on a daily basis to cover current exposure. In case of repos and reverse repos the Bank applies netting and daily margining using standardised GMRA contracts.

The Bank already implements the framework for clearing transactions through central counterparty (CCP). Additionally, the Bank is in a position to apply the regulatory framework for transactions not cleared through central counterparty.

4.8.6 Concentration risk on collaterals

For credit exposures, the most commonly accepted collaterals for credit risk mitigation purposes are real estate assets. Consumer loans are not collateralised, except for car loans where the Bank retains ownership until full loan repayment. Mortgage loans are fully collateralised with residential real estate properties.

The Bank does not undertake significant market or credit risk on collaterals of Treasury transactions. In case of cash collateral in foreign currency transactions, the Bank manages the respective foreign exchange exposure accordingly.

Furthermore since the Bank uses GMRAs for the risk mitigation of repos and reverse repos, the market risk exposure is minimal. In case of reverse repo transactions the Bank generally accepts high quality government issues as collaterals. The collateral amount on corporate bonds is immaterial.

4.8.7 Analysis of collaterals

The following table shows the volume of unsecured and secured exposures including all collateral, financial guarantees and credit derivatives used as credit risk mitigants and are eligible under the respective regulatory approach as at 31 December 2019 and 30 June 2019.

Table 37: EU CR3 – CRM techniques – Overview

	31 December 2019				
	Exposures unsecured – Carrying amount	Exposures to be secured	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
	€ million	€ million	€ million	€ million	€ million
Total loans to banks and customers	20.654	20.823	18.002	449	-
Total debt securities	7.578	-	-	-	-
Total exposures	**28.232**	**20.823**	**18.002**	**449**	**-**
Of which defaulted	1.274	4.919	4.235	122	-

	30 June 2019				
	Exposures unsecured – Carrying amount	Exposures to be secured	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
	€ million	€ million	€ million	€ million	€ million
Total loans to banks and customers	18.778	22.465	19.117	432	-
Total debt securities	7.006	-	-	-	-
Total exposures	25.784	22.465	19.117	432	-
Of which defaulted	1.621	6.174	5.100	126	-

Note:
- The value of collaterals and the amount of financial guarantees shown above are the allocated values.
- Financial collaterals are presented after regulatory haircuts.
- For real estate properties the lower between the market value and the pledged amount is considered.
- The decrease in collateralized exposures is due to the securitization of the mortgage backed exposures (i.e. Pillar transaction).

4.9 Asset Backed Securities

4.9.1 Bank's objectives and role

The Group, as part of its funding activity, enters into securitization transactions of various classes of loans (corporate, small and medium enterprise, mortgage, consumer loans, credit card and bond loans), which generally result in the transfer of the above assets to structured entities (securitization vehicles), which, in turn issue debt securities held by investors and the Group's entities. The Group monitors the credit quality of the securitizations' underlying loans, as well as the credit ratings of the debt instruments issued, when applicable, and provides either credit enhancements to the securitization vehicles and/or transfers new loans to the pool of their underlying assets, whenever necessary, in accordance with the terms of the relevant contractual arrangements in force.

Moreover, the Group in the context of its non-performing loans (NPEs) reduction acceleration plan launched in November 2018 entered into the securitization of various classes of NPEs through the issue of senior, mezzanine and junior notes.

4.9.2 Methodology for risk weightings

For the purchased securities exposures the Bank applies the Ratings Based Approach (RBA) for the risk weighting of asset backed securities. According to this approach the risk weight factor that applies is a function of the rating and seniority of the security.

4.9.3 Accounting policies

A structured entity is an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity, such as when any voting rights relate to administrative tasks only and the relevant activities are directed by means of contractual arrangements. A structured entity often has restricted activities, a narrow well-defined objective, insufficient equity to permit it to finance its activities without subordinated financial support and financing in the form of multiple contractually linked instruments to investors that create concentrations of credit or other risks.

An interest in a structured entity refers to contractual and non-contractual involvement that exposes the Group to variability of returns from the performance of the structured entity.

Structured entities may be established by the Group or by a third party and are consolidated when the substance of the relationship is such that the structured entities are controlled by the Group. In determining whether the Group has control over such structured entities, it considers the following factors:

- The purpose and design of the entity;
- Whether the Group has certain rights that give it the ability to direct the relevant activities of the entity unilaterally, as a result of existing contractual arrangements that give it the power to govern the entity and direct its activities; In case another entity is granted decision making rights, the Group assesses whether this entity acts as an agent of the Group or another investor;
- The existence of any special relationships with the entity; and
- The extent of the Group's exposure to variability of returns from its involvement with the entity, including its exposure in the most subordinated securitised notes issued by the entity as well as subordinated loans or other credit enhancements that may be granted to the entity, and if the Group has the power to affect such variability.

As a result of the consolidation assessment performed, the Group has involvement with both consolidated and unconsolidated structured entities.

In the case of securitization transactions established by the Group, in order to assess whether the risks and rewards of the securitised assets has been transferred, the Group considers the structure of each securitization transaction including its exposure to the more subordinated tranches of the notes issued and/or credit enhancements provided to the structured entities, as well as the securitization's contractual terms that may indicate that the Group retains control of the underlying assets.

For more information about asset backed securities refer to Consolidated Financial Statements Note 25.

4.9.4 Securitised exposures

The following table presents the risk weights of the purchased securitised exposures of the Group, based on the IRB approach, as at 31 December 2019 and 30 June 2019:

	31 December 2019																
	Exposure values (by RW bands)					Exposure values (by RW bands)				RWA (by regulatoty approach)				Capital charge after the cap			
Total exposures	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%
Traditional securitisation	74	8	-	-	-	82	-	-	-	12	-	-	-	1	-	-	-
Of which securitisation	74	8	-	-	-	82	-	-	-	12	-	-	-	1	-	-	-
Of which retail underlying	72	8	-	-	-	80	-	-	-	12	-	-	-	1	-	-	-
Of which wholesale	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Of which re-securitisation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Synthetic securitisation																	
Of which securitisation																	
Of which retail underlying																	
Of which wholesale																	
Of which re-securitisation																	
Of which senior																	
Of which non-senior																	

	30 June 2019																
	Exposure values (by RW bands)					Exposure values (by RW bands)				RWA (by regulatoty approach)				Capital charge after the cap			
Total exposures	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to 1250% RW	1250% RW	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%	IRB RBA (including IAA)	IRB SFA	SA/SSFA	1250%
Traditional securitisation	98	9	-	-	-	107	-	-	-	16	-	-	-	1	-	-	-
Of which securitisation	98	9	-	-	-	107	-	-	-	16	-	-	-	1	-	-	-
Of which retail underlying	96	9	-	-	-	105	-	-	-	15	-	-	-	1	-	-	-
Of which wholesale	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Of which re-securitisation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Of which senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Of which non-senior	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Synthetic securitisation																	
Of which securitisation																	
Of which retail underlying																	
Of which wholesale																	
Of which re-securitisation																	
Of which senior																	
Of which non-senior																	

For securitization exposures the Group uses one or more of the following external rating agencies: Moody's, Standard & Poor's and Fitch (refer to par. 4.6).

5. Market Risk

5.1 Definition and policies

5.1.1 Risk strategy

Objectives for market and counterparty risk control and supervision

Risk is at the core of the Eurobank's business. The objectives for the Bank's market and counterparty risk control and supervision are to:

- protect the Bank against unforeseen market and counterparty related losses and contribute to earnings stability through the independent identification, assessment and understanding of the market risks inherent in the business;
- align the Bank organisational structure and management processes with regulatory requirements and international best practices;
- set minimum standards for controlling market and counterparty risks;
- develop transparent, objective and consistent market and counterparty risk information as the basis for sound decision-making;
- establish a structure that will allow the Bank to link business strategy and operations with the objectives for risk control and supervision;
- safeguard adherence to the Group's Risk Appetite limits.

The Bank is developing processes to measure performance on a risk-adjusted basis and allocate capital accordingly with the objectives to maximise earnings potential.

Risk Definitions

Sources of market and counterparty risks

Market risk is the risk of potential financial loss due to an adverse change in market variables. As noted elsewhere in the document, the Bank is exposed to five types of market risk:

- Interest-rate risk;
- Equity price risk;
- Foreign exchange risk;
- Commodities price risk; and
- Implied Volatilities of the above.

Counterparty risk is the risk of potential financial loss stemming from a counterparty's inability to meet his financial obligations in the context of a market instrument. It includes:

- Issuer risk for debt securities traded in the financial markets;
- Counterparty credit risk for derivatives (interbank and corporate);
- Counterparty credit risk for interbank activities (placings, repos, etc).

Effects of market and counterparty Risks

The Bank is potentially exposed to market risks through all of its assets, liabilities and off-balance sheet positions, in both Treasury and all other portfolios.

Changes in market variables can affect the ERB financial condition in three ways:

- the earnings effect - the impact of changes in market rates on cash flow;
- the economic value, or net worth, of ERB, which is equal to the present value of all of its expected net future cash flows discounted to their present value to reflect market rates. Changes in market variables will impact the economic value of ERB assets, liabilities and off-balance sheet positions and therefore its economic value;

- the Potential Future Exposure (PFE) effect – the impact of changes in market risk variables to counterparty exposure and subsequent increase of counterparty credit risk faced by the Bank.

The purpose of the Bank's market risk control and supervision structure is to control and monitor the effect of market risks on earnings, economic value and potential exposure.

Similarly, the Bank is potentially exposed to counterparty risks through all of its assets and off-balance sheet positions, in both Treasury and all other portfolios. Counterparty credit-worthiness affects the economic value, or net worth, of ERB, which is equal to the present value of all of its expected net future cash flows discounted to their present value to reflect market rates.

5.1.2 Market and Counterparty Risk Governance Structure

Board Risk Committee (BRC)

The Board Risk Committee (BRC) of Eurobank Ergasias S.A. and its subsidiaries (the Group) is a committee of the Board of Directors (BoD) and its purpose is to assist the BoD in discharging its oversight responsibility relating Credit, Market and Operational Risks.

In the context of market and counterparty Risks, the BRC:

- Ensures that the Group has a well-defined market and counterparty Risk strategy and risk appetite in line with its business/restructuring plan and that the risk appetite in question is articulated in a set of qualitative and quantitative statements, limits and an appropriate measurement methodology;
- Ensures that the Group has developed an appropriate market and counterparty Risk management framework which is embedded in the decision making process (e.g. new products introduction, risk adjusted pricing, risk adjusted performance measures and capital allocation) throughout the organization and its subsidiaries;
- Reviews relevant policies and procedures;
- Ensures that the Group has the appropriate modeling tools, data sources and sufficient and competent staff needed to identify, assess, monitor and mitigate risks;
- Reviews on a regular basis the adequacy of relevant measures and controls;
- Reviews and assesses, through regular reporting by the Group Market and Counterparty Risk Sector (GMCRS), the Bank's and Group's risk profile and effectiveness of its risk management policies;
- Monitor Business Units' implementation of and compliance with Group market and counterparty Risk Policies and Procedures;
- Ensures that appropriate stress tests are performed, at least on an annual basis, in relation to all major Group risks;
- Provides a point of escalation in case of relevant limit breaches.

Group Chief Risk Officer (GCRO)

In the context of market risks, the GCRO oversees the implementation of the market risk policies approves and signs off:

- Sources and assumptions underlying the valuation of all securities and derivatives;
- Credit Valuation Adjustment (CVA) calculation methodologies;
- Assumptions underlying the VaR calculation implementation.

Group Market and Counterparty Risk Sector (GMCRS)

GMCRS is an independent unit of the Bank under the Group Chief Risk Officer. In the context of market and counterparty risks, the GMCRS performs two key functions within the Group:

- The sole, independent valuation of all derivatives and debt securities held in Eurobank Ergasias S.A. and its subsidiary Banks;
- The identification, measurement and reporting of all market and counterparty risks within the Group.

The pricing and risk measurement methodologies of GMCRS are approved by the CRO and are audited by internal and external auditors on a regular basis.

In the context of market and counterparty risks, the Bank's GMCRS is responsible for:

- Maintaining market and counterparty Risk policies (including policies for the management and monitoring of the Interest Rate Risk in the Banking Book) and procedures appropriate to the chosen business and risk profile;
- Identifying and assessing all market and counterparty Risks on the ERB Group balance sheet;
- Monitoring Global Markets and other key Business Unit activities from a market risk perspective;
- Evaluating all Treasury securities and derivatives;
- Ensuring compliance with regulatory requirements as they relate to market and counterparty risk;
- Calculating Capital Adequacy requirements for market and counterparty risk (following the approval of the internal model from BoG in July 2005) and conducting regular reporting to the SSM;
- Ensuring compliance with the risk limits and appetite set by the Management;
- Monitoring and reporting the limit utilization to the Management and the BRC. This includes escalation of limit breaches or significant market risk issues;
- Reviewing new products (Loans, Deposits and investment products) from a market and counterparty risk perspective;
- Expanding market and counterparty risk infrastructure and processes to conform to international best practices;
- Reviewing market and counterparty risk policies on an annual basis.

Country Risk Committees (CRCs)

Country Risk Committees are risk committees held individually for each of our subsidiary banks in Bulgaria, Serbia and Cyprus. Participation includes both local bank and Head Office representation, including the GCRO; the committees are chaired by senior staff of the Head Office Risk Management Division.

In the context of market risks, the committees examine limit utilizations and grant approvals for limit modifications in the Interest Rate Gap and FX notional equivalent measures.

Global Markets Credit Committee (GMCC)

The Global Markets Credit Committee, jointly held by Group Risk and Global Markets, is the body responsible for the review of the Group's debt securities positions.

The Committee examines all debt securities, regardless of issuer, held in any Business Unit within the ERB Group (including both the Global Markets and Treasury General Division and the International Subsidiaries) and proceeds to decide on the following matters:

- To retain or discard corporate debt securities rated below investment grade;
- To place debt securities on watch list, classified by currency of denomination, country, ownership, tenor, degree of liquidity, sector, issuer, issuer type (Corporate or State), rating or any combination chosen. Criteria for this action may include, but are not limited to, sudden or significant economic, political, structural force major changes or increasing price volatility and credit rating changes.

5.1.3 Risk Measurement and Reporting

Market and counterparty risk measurement

This section defines the scope of the risk measurement system, in terms of positions and risk factors and sets out the standards by which market and counterparty risks are measured.

Scope of risk measurement system

All positions within the Group that are exposed to market and counterparty risks must be included within the risk measurement system. The scope of the application encompasses all units of the Group with significant market risk exposure. This includes, but is not limited to:

- ERB Athens and its subsidiaries (Equities, ERB Factoring, etc.);
- All banking businesses of our international operations;
- Associated SPVs;

Regarding market risk, the risk measurement system measures risk in the valuation of all Group's positions (securities, derivatives, core banking items) regardless of accounting treatment (FVTPL, FVOCI, AC) arising from exposure to the following market risk factors:

- FX rates;
- interest rates - including credit spreads;
- equity prices;
- commodity prices;
- market implied volatilities of the above.

Regarding counterparty risk, the risk measurement system compares notional amounts for each counterparty classification with the established limits and aggregation rules.

Risk measures

The Bank

- uses risk measures that enable them to monitor compliance with limits agreed at Group level;
- assesses the validity of assumptions used and exactness of the underlying methodologies in terms of the usefulness of the resulting risk measures for risk control and ultimately performance measurement;
- documents the methodologies and assumptions used.

The Bank has in place a number of market and counterparty risk measures, to ensure that it is protected in both "normal" and "stressed" market conditions. These measures are monitored by GMCRS.

The list of applicable risk measures, monitored by GMCRS is as follows:

- Value at Risk (VaR);
- Interest rate gap;
- Net Interest Income (NII) sensitivity;
- Foreign Exchange equivalent positions;
- Potential Future Exposure;
- Exposure to the Greek Sovereign State;
- Total Country exposure;
- Exposure to Financial Institutions;
- Exposure to non-financial corporates (international) and RMBSs;
- Exposure to non-financial corporates (domestic).

5.2 Internal model - Value at Risk (VaR) model & Credit Risk (IRC)

Since 2005 the Bank is validated by the Competent Authorities to employ the internal model method (IMM) in the calculation of regulatory capital for the trading positions of its activities in Greece. As a general rule, the trading book definition for regulatory purposes follows the respective positions' accounting treatment – i.e. the booking of a position with a Fair Value through P&L (FVPL) accounting treatment automatically signifies that the position is included in the trading book. It should be noted that all FX exposure, whether it resides in the Bank's trading or banking book, or is associated with the Bank's participations in its international subsidiaries (structural FX position), is also treated under the internal model framework.

The validation extends to the following risk types:

- General market risk (i.e. the risk associated with the movements of FX rates, interest rates, equity indices and implied volatilities);
- Specific market risk (i.e. the risk associated with the movements of credit spreads & individual equities); and
- Credit migration and default event risk; the capital associated with this type of risk in the trading book is called "Incremental Risk Charge" (IRC).

The key metric monitored by the Bank's internal models of market risk is that of Value at Risk (VaR). VaR is a statistical risk measure of the maximum loss that the Bank may, under normal market conditions, incur over a certain period of time with a certain confidence level. For example, a 99% 1 day VaR of € 1 million means that there is a 99% probability that the Bank will not lose more than € 1 million within the next day.

VaR calculation is carried out via Monte Carlo simulation, centered around the Bank's core risk engine (MSCI Risk Manager). On a daily basis, through an, automated and closely monitored process, the risk engine retrieves both the Bank's positions and the relevant market data. Volatilities and correlations are estimated from historical data time series, using an Exponentially Weighted Moving Average (EWMA) methodology. The key parameters of the EWMA (i.e. the length of observation period and the value of the decay constant λ) are specified by the user. The Monte Carlo run produces simulated scenarios of market parameters with the desired statistical properties. For each scenario, each position is fully repriced, enabling the simulation to cover all types of nonlinear and option risks. The pricing model diversifies general and specific risk and each separate risk type is being estimated on a standalone basis; however, the total VaR figure equals their diversified aggregate. As described above, the internal model covers the following risk types:

- Interest rate risk: the risk of losses because of changes in interest rates;
- Foreign exchange risk: the risk of losses on foreign currency positions because of changes in exchange rates;
- Equity risk: the risk of losses because of changes in equity prices**,** equity indices and mutual funds;
- Commodity risk: the risk of losses because of changes in commodity prices;
- Volatility risk: the risk of losses on option positions because of changes in implied volatility levels;
- Inflation risk: the risk of losses of inflation linked positions because of changes in the break-even inflation levels.

The Bank employs internal models both for regulatory reporting and capital requirement calculation and for internal monitoring and management reporting of market risks. The principles underlying the two applications are similar; however, differences in the implementation exist, as shown by the summary table below:

Internal Model implementation for regulatory purposes:

Scope:	Greece, Trading book & FX
Metric monitored:	Value at Risk (VaR)
Confidence level:	99%
Holding period:	10 days (scaled up by the squared root of 10 from 1 day primary VaR calculation)
Methodology:	Monte Carlo
Observation parameters:	1 year, unweighted observations
Number of scenarios:	5000

Internal Model implementation for Management reporting purposes:

Scope:	Group, Trading book, Amortised Cost FX & loans and deposits
Metric monitored:	Value at Risk (VaR)
Confidence level:	99%
Holding period:	10 days (scaled up by the squared root of 10 at the risk factor level)
Methodology:	Monte Carlo
Observation parameters:	6 months, EWMA parameter λ = 0.94
Number of scenarios:	2000

Since VaR constitutes an integral part of the Group's market risk control regime, VaR limits have been established for all (trading and non-trading portfolio) operations and actual exposure is reviewed daily by management.

Since 31.12.2011 the Bank has additionally implemented the Stressed VaR (SvaR) and Incremental Risk Charge (IRC) using the internal model as requested by Basel 2.5 framework.

Stressed VaR (SVaR) is calculated under the same assumptions as VaR (same positions / portfolios, same pricing functions, same methodology, same number of MC scenarios (5,000), same decay factor for the volatility estimate) with the only difference being the time window ("stressed period") that is used to provide the relevant volatilities. The stressed period is defined as the period for which the total VaR of the portfolio is being maximised; it should be noted that this does not mean that the stressed period also maximizes each separate risk type. The stressed period is currently re-estimated on a quarterly basis, but in case of material changes in the portfolio's composition, the calculation might be performed on an ad hoc basis.

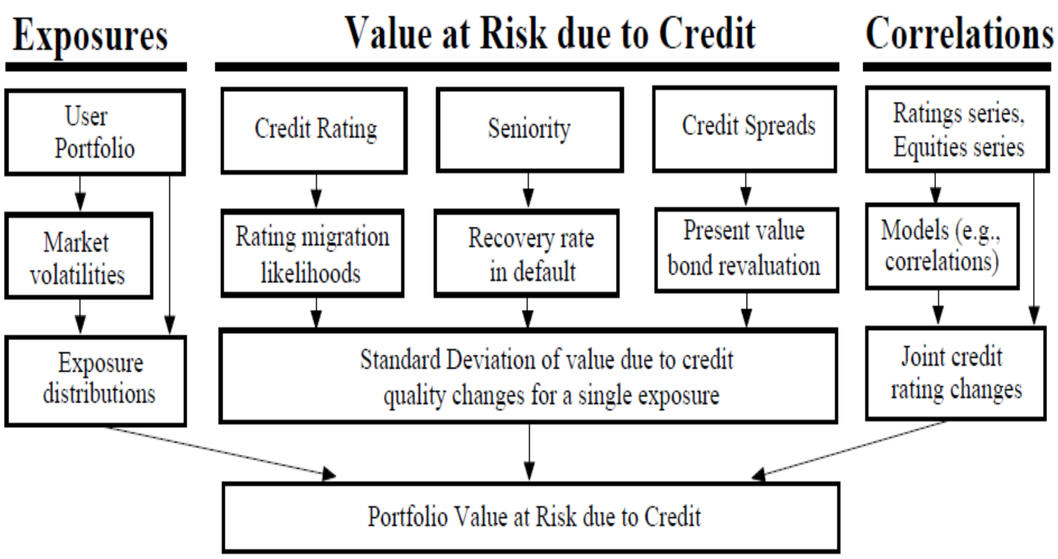
The Bank's exposure to implied volatilities is immaterial. Furthermore, the bank does not carry any proprietary positions on commodities.

IRC is computed on all fixed income positions in Bank's trading activities in Greece including CDS and bond futures. It estimates the default & migration risk of the trading book portfolio, using Monte Carlo simulation, to a 99.9% confidence level over a one year holding period. The model was approved by BoG on 17.5.2012.

For the calculation of IRC the Bank uses the CreditMetrics methodology. CreditMetrics is a methodology for assessing portfolio risk due to changes in market value caused by changes in obligor credit quality (rating migrations) or default. The methodology provides the framework for the calculation of expected losses and of unexpected losses (the economic capital) which is the capital charge for credit risk in the trading book (or the incremental risk charge, IRC). CreditMetrics assesses risk within the full context of a portfolio. It addresses the correlation between default and migration events across obligors. This allows to directly calculating the diversification benefits and the effect of over-concentrations across the portfolio.

CreditMetrics looks to a horizon which is user defined and constructs a distribution of the portfolio values which are based on a user defined number of simulated credit outcomes (rating migrations and defaults). Each credit quality migration is weighted by its likelihood (which is derived from a transition matrix). Each outcome has an estimate of change in value (given by either credit spreads in case of migrations or assumptions which are based on historical studies for the recovery rates in case of default).

The framework can be summarised in the diagram below:



The modelling approach is based on a transition matrix based model.

Transition matrices are downloaded into Credit Metrics automatically and consist of the matrices as provided by Moody's, S&P & Fitch.

The Gaussian copula distribution is used as the model for the estimation of correlations between the obligors.

The Bank applies a 1 year Liquidity Horizon for IRC calculations.
This decision is based on the following criteria:

- the trading book portfolio remains limited on size during all the years after the approval of the IRC model;
- the trading book portfolio remains concentrated on GGBs and Greek corporates, without significant changes in its composition through the year.

The Bank applies a validation procedure for the Market Risk Internal Models and the IRC.

The following list represents the main tasks of the established validation process for the Market Risk Internal Model:
A1) general review of regulatory capital, positions and asset dynamics;
A2) confirmation that the appropriate scaling laws are employed in the calculations;
A3) confirmation that the correct models of asset dynamics are employed in the Interest Rate simulation;
A4) qualitative analysis on backtesting results to confirm that number of exceptions is within the limits of statistical tolerance.

The following list represents the main tasks of the established validation process for the IRC model:
A1) confirmation that the appropriate set of input market data is used;
A2) confirmation that the input market data are correct, relevant and up to date;
A3) confirmation that unrated obligors are handled correctly;
A4) confirmation that the set of position data is correct and reconciled with other sources;
A5) confirmation that the set of assumptions is reasonable and it is based on supportive analysis;
A6) confirmation that the results are reasonable and can be approximated or be explained through reasonability tests;
A7) confirmation of the PD assumptions;
A8) confirmation of the RR assumptions;
A9) review and confirmation of the approach that is used for risks not in the IRC model;
A10) review of the results of the sensitivity analysis on critical variables (PD, RR, R2, correlation).
The following two tables summarise the components of the capital requirement, under the IMM approach applied by the Bank.

Table 39: EU MR2-A – Market risk under the IMA

		31 December 2019		30 June 2019	
		RWAs	Capital requirements	RWAs	Capital requirements
		€ million	€ million	€ million	€ million
1	**VaR (higher of values a and b)**				
(a)	Previous day's VaR (Article 365(1) of the CRR (VaRt-1))	47	4	21	2
(b)	Average of the daily VaR (Article 365(1)) of the CRR on each of the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with Article 366 of the CRR	131	11	88	7
2	**SVaR (higher of values a and b)**	-	-	-	-
(a)	Latest SVaR (Article 365(2) of the CRR (SVaRt-1))	123	10	107	9
(b)	Average of the SVaR (Article 365(2) of the CRR) during the preceding 60 business days (SVaRavg) x multiplication factor (ms) (Article 366 of the CRR)	430	34	323	26
3	Incremental Risk Charge -IRC (higher of values a and b)	-	-	-	-
(a)	Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR	102	8	216	17
(b)	Average of the IRC number over the preceding 12 weeks	106	9	106	8
4	**Comprehensive risk measure (higher of values a, b and**	-	-	-	-
(a)	Most recent risk number for the correlation trading portfolio (Article 377 of the CRR)	-	-	-	-
(b)	Average of the risk number for the correlation trading portfolio over the preceding 12 weeks	-	-	-	-
(C)	8% of the own funds requirement in the standardised approach on the most recent risk number for the correlation trading portfolio (Article 338(4) of the CRR)	-	-	-	-
5	**Other**	-	-	-	-
6	**Total**	**669**	**53**	626	50

Table 40: EU MR2-B – RWA flow statements of market risk exposures under the IMA from 30 September 2019 to 31 December 2019.

	31 December 2019						
	VaR € million	Stressed VaR € million	IRC € million	Comprehensive risk measure € million	Other € million	Total RWAs € million	Total capital requirements € million
RWAs at 1 October 2019	113	446	211	-	-	770	62
Regulatory adjustment	-	-	-	-	-	-	-
RWAs at the previous quarter-end (end of the day)	113	446	211	-	-	770	62
Movement in risk levels	19	(16)	(104)	-	-	(101)	(9)
Model updates/changes	-	-	-	-	-	-	-
Methodology and policy	-	-	-	-	-	-	-
Acquisitions and disposals	-	-	-	-	-	-	-
Foreign exchange movements	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
RWAs at the end of the reporting period (end of the day)	132	430	107	-	-	669	53
Regulatory adjustment	-	-	-	-	-	-	-
RWAs at 31 December 2019	**132**	**430**	**107**	**-**	**-**	**669**	**53**

The table below shows the values resulting from the different types of internal models approved to use for computing the regulatory capital charge as at 31 December 2019 and 30 June 2019.

Table 41: EU MR3 – IMA values for trading portfolios

	31 December 2019 € million	30 June 2019 € million
VaR (10 day 99%)		
Maximum value	4	3
Average value	3	2
Minimum value	2	1
Period end	4	2
SVaR (10 day 99%)		
Maximum value	11	9
Average value	10	9
Minimum value	10	8
Period end	10	9
IRC (99.9%)		
Maximum value	19	18
Average value	15	10
Minimum value	9	6
Period end	9	17
Comprehensive risk capital charge (99.9%)		
Maximum value	-	-
Average value	-	-
Minimum value	-	-
Period end	-	-

5.2.1 Stress testing

VaR models are designed to measure market risk under normal market environment. It is assumed that any changes in the risk factors follow a normal distribution. Given that the VaR approach does not cover extreme market conditions, the Group has been applying stress tests, to simulate the effect of many standard deviation movements of risk factors and the breakdown of historical correlations.

The main types of stress tests performed are subjective stress tests, where the portfolios are exposed to scenarios for risk factors that are deemed particularly relevant (depreciation of foreign currencies, yield curves parallel shifts, long term steepening, long term flattening, 10σ upward shift, credit spread increase, equities prices reduction and implied volatilities adverse moves).

Stress tests that are applied to the IRC modelling parameters consist of:

- Sensitivity on the percentage on systematic factor
- Sensitivity on pair-wise obligor correlation
- Sensitivity on PDs
- Sensitivity on LGDs

5.2.2 Back testing

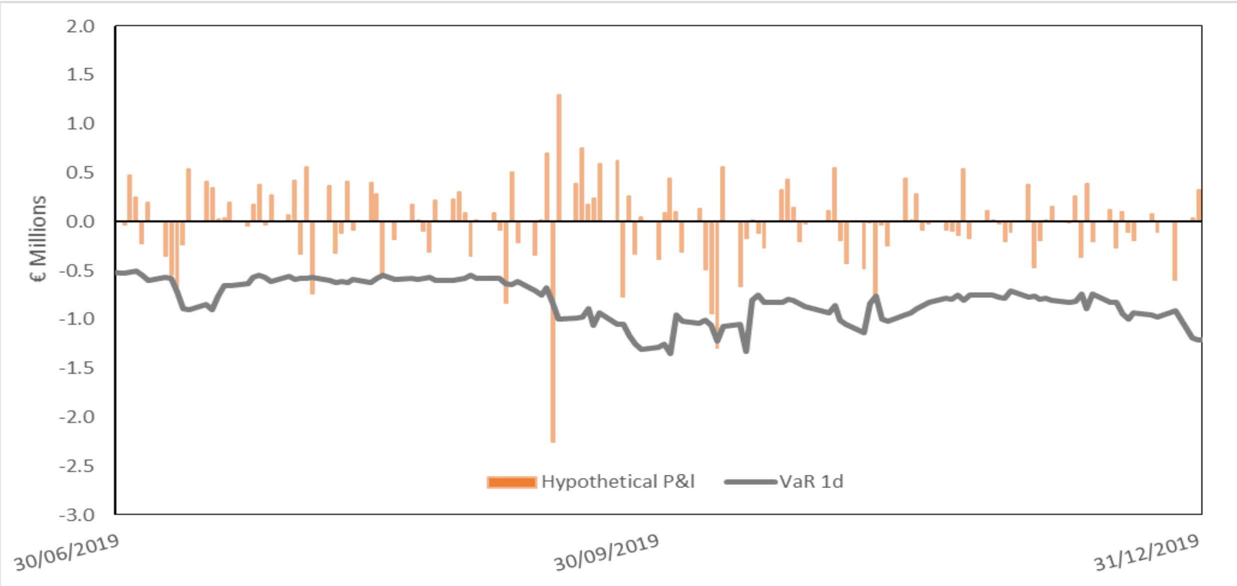
The Bank employs back testing controls in order to test the calibration and predictive capabilities of its internal risk assessment model. Back testing is applied through comparison of daily VaR readings, estimated at a 99% confidence level, to the portfolio’s value changes. Two types of Back testing are being defined. In the first one, the Hypothetical, the portfolio changes are produced within the risk engine under the same assumptions as VaR and SVaR, i.e. the same positions, the same pricing functions and the same Market Data. In the second type, the Actual, the portfolio changes are calculated by the front office system of the Bank, using the same pricing functions and pricing quotes and Market Data that are used in the Bank’s official accounting entries.

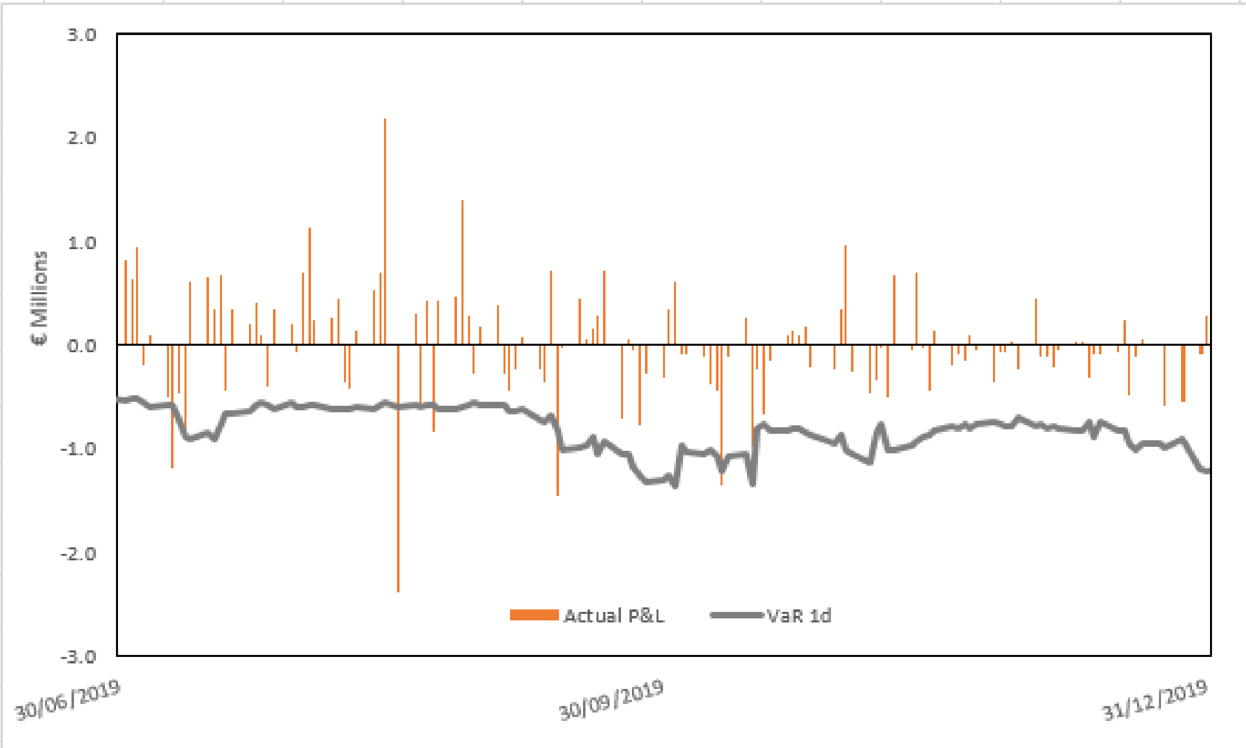
Back testing for H2 2019 has revealed, as shown in the graphs below, five (5) exceptions out of a total of 128 working days, when comparing the VaR forecast to both the Hypothetical as well as the Actual P&L. Totally as of 2019, back testing has revealed six (6) exceptions out of 250 working days, when comparing the VaR forecast to both the Hypothetical as well as Actual P&L. According to the regulatory framework, this number of exceptions results to a multiplier equal to 3.5 (yellow zone) for capital adequacy calculations for market risk.

These exceptions (H2 2019) are analysed as follows:

- The exceptions of 9th of July, 16th of August and 22nd of August are attributed to the movements of EUR Swap rates (Actual P&L);
- The exception of 2nd of August is attributed to the movements of USD and EUR Swap rates (Hypothetical P&L);
- The exceptions of 4th of September and 6th of November are attributed to the movements of EUR Swap rates (Hypothetical P&L);
- The exceptions of 12th of September are attributed to the movements of EUR Swap rates (Hypothetical and Actual P&L);
- The exceptions of 10th of October are attributed to the movements of USD and EUR Swap rates (Hypothetical and Actual P&L).

Table 42: EU MR4 – Comparison of VaR estimates with gains/losses





5.3 Standardised approach for market risk

The Bank uses the Standardised approach for the measurement of market risk exposure and capital requirements of its subsidiaries in Greece and in International operations. The following table summarizes the capital requirements for market risk per risk factor, based on the Standardised approach, as at 31 December 2019 and 30 June 2019.

Table 43: EU MR1 – Market risk under the standardised approach

	31 December 2019		30 June 2019	
	RWAs	Capital requirements	RWAs	Capital requirements
	€ million	€ million	€ million	€ million
Outright products				
Interest rate risk (general and specific)	2	-	2	-
Equity risk (general and specific)	6	-	9	1
Foreign exchange risk	307	25	229	18
Commodity risk	-	-	-	-
Options				
Simplified approach	-	-	-	-
Delta-plus method	-	-	-	-
Scenario approach	-	-	-	-
Securitisation (specific risk)	-	-	-	-
Total	**315**	**25**	240	19

5.4 Equity exposures not included in the trading book

The Group may make an irrevocable election to designate an equity instrument at fair value through other comprehensive income (FVOCI). This designation, if elected, is made at initial recognition and on an instrument by instrument basis. Gains and losses on these instruments, including when de-recognised, are recorded in other comprehensive income (OCI) and are not subsequently reclassified to the income statement. Dividends received are recorded in the income statement.

Equity instruments measured at fair value through profit or loss (FVTPL) are initially recorded at fair value and any unrealized gains or losses arising due to changes in fair value are included in the income statement.

The following table presents equity holdings of non trading book portfolio and included in regulatory exposures as at 31 December 2019 and 2018:

	2019 € million	2018 € million
Held for:		
Strategic investments	23	17
Equity investments for capital appreciation	108	83
Total	**131**	100
Listed	14	20
Non-listed	50	39
Other (MF & other type of funds)	67	41
Total	**131**	100

5.5 Interest rate risk not included in the trading book

The Bank calculates and monitors the interest rate risk of the banking book for the Bank's operations in Greece, Luxembourg and Cyprus on a daily basis, using the internal VaR model. For the International operations (Bulgaria, Serbia) the Group applies sensitivity analysis and is preparing to implement the VaR methodology.

The system takes into account all assets, liabilities and off balance sheet items, which are sensitive to interest rates. The interest rate exposure is calculated using the contractual maturity dates or the next repricing dates in case of floating rate instruments. This is also applied to lending instruments, where no prepayment adjustments are made since this type of risk is immaterial. The major part of non-maturity accounts has a short term repricing structure and therefore treated accordingly.

Between 2019 and 2018 the average interest rate VaR for a 99% confidence level and a holding period of 1 day for Greece, Cyprus and Luxembourg, has increased to € 41 million due to the volatility observed in the Sovereign Spreads and the Swap rates.

	2019	2018
	€ million	€ million
Interest rate VaR of the banking book[1]	40	35
Total interest rate VaR (trading and banking book[1])	41	35

[1] *Interest rate volatility applied to all portfolios. Credit spread volatility applied to Trading and FVOCI positions*

Furthermore, the Bank calculates sensitivity on interest rates applying 100 bps parallel shifts on interest rates. It should be noted, that the sensitivity analysis is based on a full revaluation of all the Banking Book items (i.e. FVPL, FVOCI, along with AC positions, which are booked at historical cost, are included). Thus, the increase of the securities' portfolio Market Value, due to the significant decrease of the credit spreads in 2019, is taken into account and therefore, increases the revaluation effect under the applied scenario.

The following table presents sensitivity analysis by currency for the Bank as at 31 December 2019 and 2018:

2019	**TOTAL**	**EUR**	**CHF**	**JPY**	**PLN**	**RON**	**TRY**	**USD**	**OTHERS**
	€ million	**€ million**	**€ million**	**€ million**	**€ million**	**€ million**	**€ million**	**€ million**	**€ million**
Interest rate risk (banking book):	**(200)**	(190)	(7)	-	-	-	-	(3)	-
+100 bps parallel shift		-	-	-	-	-	-	-	-
Interest rate risk (trading and banking book):	**(237)**	(223)	(7)	-	-	-	-	(7)	-
+100 bps parallel shift		-	-	-	-	-	-	-	-

2018	TOTAL	EUR	CHF	JPY	PLN	RON	TRY	USD	OTHERS
	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Interest rate risk (banking book):	(43)	(33)	(6)	-	-	-	-	(4)	-
+100 bps parallel shift		-	-	-	-	-	-	-	-
Interest rate risk (trading and banking book):	(57)	(42)	(6)	-	-	-	-	(9)	-
+100 bps parallel shift		-	-	-	-	-	-	-	-

The following table presents the sensitivity analysis for interest rate sensitive position of the banking book in the major International subsidiaries (Bulgaria, Serbia) as at 31 December 2019 and 2018, by applying a 100bps upward parallel shifts:

	31 December 2019		
	Sensitivity trading book € million	Sensitivity banking book € million	Total sensitivity € million
Bulgaria	-	(7)	(7)
Serbia	5	-	5

	31 December 2018		
	Sensitivity trading book € million	Sensitivity banking book € million	Total sensitivity € million
Bulgaria	-	(6)	(5)
Serbia	5	-	5

6. Counterparty risk

6.1 Definition, Governance and Policies

Counterparty risk is the risk that a counterparty in an off balance sheet transaction (i.e. derivative transaction) defaults prior to maturity and the Bank has a claim over the counterparty (the market value of the contract is positive for the Bank). The governance and the policies for the counterparty risk are described in one section (section 5.1) that provides details for the governance and policies that the Bank applies together for the market and the counterparty risk.

6.2 Mitigation of counterparty risk

To reduce the exposure towards single counterparties, risk mitigation techniques are used. The most common is the use of closeout netting agreements (usually based on standardised ISDA contracts), which allow the bank to net positive and negative replacement values in the event of default of the counterparty.

Furthermore, the Bank also applies margin agreements (CSAs) in case of counterparties. Thus, collateral is paid or received on a daily basis to cover current exposure. In case of repos and reverse repos the Bank applies netting and daily margining using standardised GMRA contracts.

6.3 Counterparty risk monitoring

The current exposure for counterparty risk at 31 December 2019 and 2018 is presented in the table below:

	31 December 2019				
	Current exposure before netting € million	Current exposure after netting € million	Netting effect € million	Collateral received / (paid) € million	Total exposure after netting and margin collateral € million
Contracts under ISDA and CSA (derivatives)	2.180	1.581	599	34	8
Contracts under GMRA (repos and reverse repos)	1.042	1.005	37	20	986
Other contracts (derivatives and repos outside ISDA and CSA, GMRA)	119	119	-	-	119
Total	**3.341**	**2.705**	**636**	**54**	**1.113**

	31 December 2018				
	Current exposure before netting € million	Current exposure after netting € million	Netting effect € million	Collateral received / (paid) € million	Total exposure after netting and margin collateral € million
Contracts under ISDA and CSA (derivatives)	1.777	1.252	525	96	50
Contracts under GMRA (repos and reverse repos)	1.609	1.608	1	15	1.594
Other contracts (derivatives and repos outside ISDA and CSA, GMRA)	67	67	-	-	67
Total	3.453	2.927	526	111	1.711

Notes:
1. Netting and collateral posting is applied per counterparty only for contracts under ISDA, CSA or GMRA.
2. Repo and reverse repos with central banks (Bank of Greece, European Central Bank, etc.) are excluded.
3. In case of exposure calculation on transactions under GMRA, haircuts are taken into account and increase the exposure.
4. In case of exposure calculation on transactions under CSA threshold & independent amounts are taken into account and increase the exposure.
5. In the "Collateral received / (paid)" column we include Greek Treasury bills received as collateral through the CSA signed with Public Debt Management Agency (PDMA).

6.4 Wrong way risk

The Bank prevents the initiation of derivative transactions in cases that the value of the underlying instrument is highly correlated with the credit quality of the counterparty.

6.5 Implications under rating downgrade

The Bank's financial collateral agreements (CSAs covering derivative transactions) with other banks contain in some cases rating triggers. For these agreements, the minimum exposure level (threshold amount) for further posting of collateral will be lowered in case of a downgrading. Given the Bank's current rating, the additional effect is immaterial.

6.6 Credit derivatives

As of 31 December 2019 the Group held a small position on credit default swaps (bought protection € 40 million Notional, sold protection € 40 million Notional). The underlying is in both cases, credit indices. As of 30 June 2019 the Group held a number of positions bought protection € 378 million Notional, mainly against exposure to financial institutions.

The Bank does not have any brokerage activity in this market. Furthermore, the Bank does not hedge its loan portfolio with CDSs as this market in Greece is not developed.

Table 49: EU CCR6 – Credit derivatives exposures

	31 December 2019		
	Credit derivative hedges		
	Protection bought € million	Protection sold € million	Other credit derivatives € million
Notionals			
Single-name credit default swaps	-	-	-
Index credit default swaps	40	40	-
Total return swaps	-	-	-
Credit options	-	-	-
Other credit derivatives	-	-	-
Total notionals	**40**	**40**	**-**
Fair values			
Positive fair value (asset)	-	1	-
Negative fair value (liability)	1	-	-

	30 June 2019		
	Credit derivative hedges		
	Protection bought € million	Protection sold € million	Other credit derivatives € million
Notionals			
Single-name credit default swaps	378	-	-
Index credit default swaps	-	-	-
Total return swaps	-	-	-
Credit options	-	-	-
Other credit derivatives	-	-	-
Total notionals	378	-	-
Fair values			
Positive fair value (asset)	-	-	-
Negative fair value (liability)	2	-	-

6.7 Counterparty risk based on the calculation methodology employed

The following table shows the exposure to counterparty risk based on the calculation methodology employed as at 31 December 2019 and 30 June 2019.

Table 50: EU CCR1 – Analysis of CCR exposure by approach

	31 December 2019						
	Notional € million	Replacement cost/current market value € million	Potential future credit € million	EEPE € million	Multiplier € million	EAD post CRM € million	RWAs € million
Mark to market		1.680	218			1.891	139
Original exposure							
Standardised approach							
IMM (for derivatives and SFTs)							
Of which securities financing transactions							
Of which derivatives and long settlement transactions							
Of which from contractual cross- product netting							
Financial collateral simple method (for SFTs)							
Financial collateral comprehensive method (for SFTs)						2.683	395
VaR for SFTs							
Total		**1.680**	**218**			**4.574**	**534**

	30 June 2019						
	Notional	Replacement cost/current market value	Potential future credit exposure	EEPE	Multiplier	EAD post CRM	RWAs
	€ million	€ million	€ million	€ million	€ million	€ million	€ million
Mark to market		1.717	240			1.897	122
Original exposure							
Standardised approach							
IMM (for derivatives and SFTs)							
Of which securities financing transactions							
Of which derivatives and long settlement transactions							
Of which from contractual cross- product netting							
Financial collateral simple method (for SFTs)							
Financial collateral comprehensive method (for SFTs)						2.485	414
VaR for SFTs							
Total		1.717	240			4.382	536

6.8 CVA capital charge

The following table shows the CVA capital charge which is calculated through the standardised approach as at 31 December 2019 and 30 June 2019.

Table 51: EU CCR2 – CVA capital charge

	31 December 2019		30 June 2019	
	Exposure value	**RWAs**	Exposure value	RWAs
	€ million	**€ million**	€ million	€ million
Total portfolios subject to the advanced method	-	-	-	-
(i) VaR component (including the 3× multiplier)	-	-	-	-
(ii) SVaR component (including the 3× multiplier)	-	-	-	-
All portfolios subject to the standardised method	110	80	130	92
Based on the original exposure method	-	-	-	-
Total subject to the CVA capital charge	**110**	**80**	130	92

6.9 Exposures to CCPs

The following table shows the exposures to CCPs and the corresponding RWAs as at 31 December 2019 and 30 June 2019.

Table 52: EU CCR8 – Exposures to CCPs

	31 December 2019		30 June 2019	
	EAD post CRM	**RWAs**	EAD post CRM	RWAs
	€ million	**€ million**	€ million	€ million
Exposures to QCCPs (total)	**56**	**1**	51	1
Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	56	1	51	1
(i) OTC derivatives	56	1	51	1
(ii) Exchange-traded derivatives	-	-	-	-
(iii) SFTs	-	-	-	-
(iv) Netting sets where cross-product netting has been approved	-	-	-	-
Segregated initial margin	-		-	
Non-segregated initial margin	-	-	-	-
Prefunded default fund contributions	-	-	-	-
Alternative calculation of own funds requirements for exposures		-		-
Exposures to non-QCCPs (total)	-	-	-	-
Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which	-	-	-	-
(i) OTC derivatives	-	-	-	-
(ii) Exchange-traded derivatives	-	-	-	-
(iii) SFTs	-	-	-	-
(iv) Netting sets where cross-product netting has been approved	-	-	-	-
Segregated initial margin	-		-	
Non-segregated initial margin	-	-	-	-
Prefunded default fund contributions	-	-	-	-
Unfunded default fund contributions	-	-	-	-

6.10 Standardised approach – CCR exposures by regulatory portfolio and risk

The following table shows the CCR exposures by regulatory portfolio and risk as at 31 December 2019 and 30 June 2019.

Table 53: EU CCR3 – Standardised approach – CCR exposures by regulatory portfolio and risk

	31 December 2019												
	Risk weight											**Total**	**Of which unrated**
Exposure classes	**0%**	**2%**	**4%**	**10%**	**20%**	**50%**	**70%**	**75%**	**100%**	**150%**	**Others**	**€ million**	**€ million**
Central governments or central banks	2.355	-	-	-	-	-	-	-	-	-	-	2.355	-
Regional government or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	3	-	-	-	-	-	-	-	-	-	-	3	-
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	-	56	-	-	2.073	1	-	-	-	-	-	2.130	-
Corporates	-	-	-	-	-	-	-	-	2	-	-	2	2
Retail	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-
Other items	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2.358**	**56**	**-**	**-**	**2.073**	**1**	**-**	**-**	**2**	**-**	**-**	**4.490**	**2**

	30 June 2019												
	Risk weight											Total	unrated
Exposure classes	0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Others	€ million	€ million
Central governments or central banks	2.156	-	-	-	-	-	-	-	-	-	-	2.156	-
Regional government or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	2	-	-	-	-	-	-	-	-	-	-	2	-
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	-	51	-	-	2.069	49	-	-	-	-	-	2.169	12
Corporates	-	-	-	-	-	-	-	-	4	-	-	4	2
Retail	-	-	-	-	-	-	-	1	-	-	-	1	-
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-
Other items	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.158	51	-	-	2.069	49	-	1	4	-	-	4.332	14

6.11 IRB approach – CCR exposures by portfolio and PD scale

The following table shows the CCR exposures by portfolio and PD scale as at 31 December 2019 and 30 June 2019.

Table 54: EU CCR4 – IRB approach – CCR exposures by portfolio and PD scale

		31 December 2019						
	PD scale	**EAD post CRM**	**Average PD**	**Number of Obligors**	**Average LGD**	**Average maturity**	**RWAs**	**RWA density**
		€ million	**%**		**%**	**yrs**	**€ million**	**%**
IRB Foundation Exposures to Corporates	0.00 to <0.15	5	0,0%	10	45,0%	3	1	15,6%
	0.15 to <0.25	1	0,2%	8	45,0%	3	-	46,0%
	0.25 to <0.50	-	0,0%	-	45,0%	3	-	0,0%
	0.50 to <0.75	8	0,6%	16	45,0%	3	5	78,7%
	0.75 to <2.50	2	1,5%	25	45,0%	3	3	109,0%
	0.75 to <2.50	1	5,5%	18	45,0%	3	1	158,4%
	10.00 to <100.00	1	27,3%	22	45,0%	3	3	212,7%
	100.00 (Default)	-	0,0%	-	45,0%	3	-	0,0%
	Subtotal	**18**	**2,6%**	**99**	**45,0%**	**3**	**13**	**75,9%**
	Total all Foundation IRB	**18**	**2,6%**	**99**	**45,0%**	**3**	**13**	**75,9%**

		30 June 2019						
	PD scale	EAD post CRM	Average PD	Number of Obligors	Average LGD	Average maturity	RWAs	RWA density
		€ million	%		%	yrs	€ million	%
IRB Foundation Exposures to Corporates	0.00 to <0.15	3	0,0%	11	45,0%	3	-	17,3%
	0.15 to <0.25	1	0,2%	11	45,0%	3	-	47,3%
	0.25 to <0.50	-	0,0%	-	45,0%	3	-	0,0%
	0.50 to <0.75	3	0,7%	12	45,0%	3	2	86,3%
	0.75 to <2.50	5	1,8%	29	45,0%	3	7	115,7%
	0.75 to <2.50	1	6,6%	19	45,0%	3	1	167,6%
	10.00 to <100.00	2	27,7%	19	45,0%	3	5	212,7%
	100.00 (Default)	-	100,0%	1	45,0%	3	-	0,0%
	Subtotal	15	2,8%	102	45,0%	3	15	105,5%
	Total all Foundation IRB	15	2,8%	102	45,0%	3	15	105,5%

6.12 RWA flow statements of CCR exposures under IMM

Table EU CCR7 – RWA flow statements of CCR exposures under the IMM is not included as the Bank does not use an internal model for the calculation of the RWAs of CCR exposures.

6.13 Impact of netting and collateral held on exposure values

The following table shows the Impact of netting and collateral held on exposure values as at 31 December 2019 and 30 June 2019.

Table 55: EU CCR5-A – Impact of netting and collateral held on exposure values

	31 December 2019				
	Gross positive fair value or net carrying amount € million	Netting benefits € million	Netted current credit exposure € million	Collateral held € million	Net credit exposure € million
Derivatives	2.300	599	1.700	34	127
SFTs	1.043	37	1.005	20	986
Cross-product netting	-	-	-	-	-
Total	**3.343**	**636**	**2.705**	**54**	**1.113**

	30 June 2019				
	Gross positive fair value or net carrying amount € million	Netting benefits € million	Netted current credit exposure € million	Collateral held € million	Net credit exposure € million
Derivatives	2.389	672	1.717	(392)	115
SFTs	1.625	45	1.602	163	1.440
Cross-product netting	-	-	-	-	-
Total	4.014	717	3.319	(229)	1.555

6.14 Composition of collateral for exposures to CCR

The following table shows the Composition of collateral for exposures to CCR, at 31 December 2019 and 30 June 2019.

Table 56: EU CCR5-B – Composition of collateral for exposures to CCR

	31 December 2019					
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted
	Segregated € million	Unsegregated € million	Segregated € million	Unsegregated € million	€ million	€ million
Cash-domestic currency	-	12	-	2.247	28	13
Cash-other currencies	-	-	-	5	7	-
Domestic sovereign debt	-	2.015	-	-	-	-
Other sovereign debt	-	-	-	-	-	-
Government agency debt	-	-	-	-	-	-
Corporate bonds	-	-	-	-	-	-
Equity securities	-	-	-	-	-	-
Other collateral	-	-	-	-	-	-
Total	**-**	**2.027**	**-**	**2.252**	**35**	**13**

	30 June 2019					
	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received	Fair value of posted collateral
	Segregated € million	Unsegregated € million	Segregated € million	Unsegregated € million	€ million	€ million
Cash-domestic currency	-	32	-	2.247	12	4
Cash-other currencies	-	-	-	67	7	-
Domestic sovereign debt	-	1.584	-	-	-	-
Other sovereign debt	-	-	-	-	-	-
Government agency debt	-	-	-	-	-	-
Corporate bonds	-	-	-	-	-	-
Equity securities	-	-	-	-	-	-
Other collateral	-	-	-	-	-	-
Total	-	1.616	-	2.314	19	4

7. Operational Risk

7.1 Governance

Operational risk is embedded in every business activity undertaken by the Group. The primary goal of operational risk management is to ensure the integrity of the Group's operations and its reputation by mitigating its impact. However, by nature, it cannot be fully eliminated. To best manage operational risk, the Group has established a formal Operational Risk Management Framework to define its approach to identifying, assessing, managing, monitoring and reporting operational risk.

Governance responsibility for operational risk management stems from the Board of Directors (BoD) through the Executive Board and Senior Management to the Heads and staff of every business unit. The BoD establishes the mechanisms by which the Group manages operational risk by setting the tone and expectations from the top and delegating authority. The Board Risk Committee (BRC) and the Audit Committee (AC) monitor the operational risk level and profile of the Group including the level of operational losses, their frequency and severity.

The Group Chief Risk Officer is responsible for the operational risk related initiative and ensures implementation of the Operational Risk Management Framework. The Group Chief Risk Officer has the overall responsibility and oversight of the Operational Risk Units in the countries that the Bank operates. The Operational Risk Committee is a management committee that assesses the operational risks arising from the activities of the Group, ensures that each business entity has appropriate policies and procedures for the control of its operational risk and that prompt corrective action is taken whenever a high risk area is identified.

Group Operational Risk Sector (GORS) is responsible for establishing and maintaining the Group's Operational Risk Management Framework and for operational risk oversight. An Operational Risk Unit operates in every subsidiary of the Group, being responsible for implementing the Group's operational risk framework. GORS is responsible for:

- Defining the methodology for the identification, assessment and reporting of operational risk;
- Implementing regulatory requirements and Group guidelines;
- Monitoring the operational risk level and profile and reporting thereon to the BRC; and
- Defining and applying the methodology for the calculation of the regulatory capital charge for operational risk.

The Heads of each business and functional unit (risk owners) have the primary responsibility for the day-to-day management of operational risk arising in their units and for the adherence to relevant controls. To this end, every business unit:

- Identifies, evaluates and monitors its operational risks and implements risk mitigation controls and techniques;
- Assesses the efficiency of control mechanism;
- Reports all relevant issues; and
- Has access to and uses the common methods and tools introduced by the GORS, in order to facilitate the identification, evaluation and monitoring of operational risk.

An OpRisk Partner is assigned in each business unit and is responsible for coordinating the internal operational risk management efforts of the business unit while acting as a liaison to Group Operational Risk Sector and the local Operational Risk Unit. Certain business units have established a dedicated Anti-Fraud Unit or Function, according to the fraud risk to which their operations are exposed. Their main objective is to continuously identify fraud risks and to undertake all appropriate actions in addressing and mitigating those risks in a timely manner.

7.2 Operational risk management framework

The Group Operational Risk Framework is built on four elements:

- Principles
- Governance and Organization
- Processes
- Infrastructure

Operational Risk

The operational risk management framework and related policies are designed to:

- To align Bank's organization and processes with best international banking practices;
- Introduce risk identification quantification and monitoring processes such as risk and control self-assessment, key risk indicators, historic risk events collection and scenario analysis;
- Establish a common definition and consistent approach for operational risk to enable common identification and aggregation of operational risk across the Bank;
- Establish a proactive operational risk management culture across our business, linking business operations with the objectives of risk control;
- Establish comprehensive and integrated operational risk reporting;
- Adhere to the Group guidelines and meet local regulatory requirements and practices relating to operational risk of the jurisdictions in which Eurobank operates;
- Achieve a competitive advantage in terms of operational risk management through risk-based decision making; and
- Leverage international knowledge and good practices on operational risk management.

Operational risk processes consist of risk identification, assessment (including measurement and valuation), control management, risk mitigation, risk reporting and performance improvement. These processes are supported by and implemented with the operational risk tools/methods, which are the following:

- **Risk & Control Self-Assessment (RCSA)**
  RCSA is a team-based technique aiming to identify, assess and ultimately mitigate operational risk. Its outcome is a portfolio of operational risks per business unit, summarised into operational risk profiles. Business units assess operational risks, evaluate the effectiveness of controls in place, assess whether identified risks are within business risk appetite tolerance levels and establish specific action plans to mitigate the assessed exposure.
- **Key Risk Indicators (KRIs)**
  KRIs are metrics based on historical data and are relevant to specific and measurable activities indicating operational risk exposures. KRIs are quantifiable and expressed as an amount, a percentage or a ratio, assigned to specific operational risks and linked with risk tolerance.
- **Operational Risk Events**
  Operational Risk Events are identified and reported with the purpose of populating the internal operational risk events database. Operational risk events are classified according to their owner, cause, risk category, impact, business function and business line.
- **Operational Risk Scenarios**
  Operational Risk Scenario analysis assesses the exposure to a range of significant operational risks through the examination of extreme or catastrophic yet plausible future events. Scenarios take into account the current and projected business, economic, social and geo-political environment.
- **Operational Risk Reporting**
  Operational risk reports are produced for internal and regulatory purposes.
- **Operational Risk Management and Mitigation**
  The primary strategy utilised by the Group to control its exposure to operational risk is the maintenance of an effective control environment. In addition, the Group implements specific risk mitigation activities for key operational risks, including fraud, outsourcing, cyber risk and business disruption risks. Finally, risk transfer mechanisms are in place in the form of the Group's insurance policies, bought through the London Market, covering its operations.
- **Operational Risk Culture**
  Operational Risk Culture encompasses employee risk awareness as well as the attitude and behavior of employees to the taking of appropriate risk and the adherence to controls. A strong Operational Risk Culture underpins all operational risk management activity. The Group continuously seeks to improve its Operational Risk Culture.
- **Fraud Risk Management**

Fraud risk management constitutes a major commitment of the Group to mitigate fraud risk and reduce fraud losses.

7.3 Operational risk capital requirements calculation

As required by Basel III for the use of the Standardised Approach, the Group's business activities have been divided into eight business lines and the annualised gross operating income for 2017, 2018 and 2019 is calculated for each business line. The required business line beta factors are then applied to the relevant business line gross operating income, to establish the required regulatory capital per business line; with these numbers summed together to establish the overall Pillar 1 regulatory capital requirements for operational risk.

8. Asset Encumbrance

8.1 Information on importance of encumbrance

The Bank uses the following main types of encumbrance:

i) secured funding through Eurosystem (ECB's Main Refinancing Operations (MRO)/Targeted Long Term Refinancing Operations (TLTRO)), for this funding the Bank mainly uses as collateral: own issued retained Covered Bonds, eligible loans and other eligible debt securities;
ii) secured funding with interbank counterparties backed with retained own covered bonds, GGBs, Greek Corporate & foreign sovereign bonds and own securitisations (the senior tranches);
iii) covered bonds issuance backed with mortgage loans, sold to international and domestic investors; and
iv)securitisations issuance backed with loans sold to international and domestic investors.

By the end of 2019 the Group's secured funding from Eurosystem sources (ECB's MRO/TLTRO) increased by € 0.65 billion versus 30 June 2019, from € 1.25 billion in June 2019 to € 1.9 billion in December 2019 mainly due to the increase of funding through TLTRO.

The encumbrance of assets and the encumbrance of assets received by the group as collateral is a centralised function and it is implemented by Eurobank, Greece.

The level of secured funding (repos with foreign counterparties) in subsidiaries is immaterial.

As of end of year 2019 the over-collateralization ((market value over funding value) in case of secured funding through repos and ECB was 16% and 24% respectively.

For the interbank secured funding (repos), the Bank uses the standard terms of the GMRA (Global Master Repurchase Agreement). According to this contract, the exposure between the Bank and its counterparty is calculated on a daily basis and collateral is posted to or received by the counterparty so that the exposure remains almost zero.

8.2 Assets

	31 December 2019							
	Carrying amount of encumbered assets		Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets	
	€ million	of which notionally eligible EHQLA and HQLA	€ million	of which notionally eligible EHQLA and HQLA	€ million	of which notionally eligible EHQLA and HQLA	€ million	of which notionally eligible EHQLA and HQLA
Equity instruments	2	-	-	-	169	-	169	-
Debt securities	3.862	3.677	3.479	3.255	3.441	3.107	3.441	3.118
Other assets	10.045	-		-	45.219	-		-

	30 June 2019							
	Carrying amount of encumbered assets		Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets	
	€ million	of which notionally eligible EHQLA and HQLA	€ million	of which notionally eligible EHQLA and HQLA	€ million	of which notionally eligible EHQLA and HQLA	€ million	of which notionally eligible EHQLA and HQLA
Equity instruments	4	-	-	-	172	-	172	-
Debt securities	3.872	3.693	3.535	3.356	3.168	2.865	3.183	2.880
Other assets	9.935	-		-	45.245	-		-

(1) 31 December 2019 disclosures are reported using median values (rolling quarterly medians over the previous 12 months) whereas 30 June 2019 disclosures are reported using actual End of Quarter values.

8.3 Collateral received

	31 December 2019			
	Fair value of encumbered collateral received or own debt securities issued		Fair value of collateral received or own debt securities issued available	
	€ million	of which notionally eligible EHQLA and HQLA	€ million	of which notionally eligible EHQLA and HQLA
Equity instruments	-	-	-	-
Debt securities	2.358	2.358	785	785
Other collateral received	-	-	-	-
Own debt securities issued other than own covered bonds or ABSs	-	-	-	-

	30 June 2019			
	Fair value of encumbered collateral received or own debt securities issued		Fair value of collateral received or own debt securities issued available	
	€ million	of which notionally eligible EHQLA and HQLA	€ million	of which notionally eligible EHQLA and HQLA
Equity instruments	-	-	-	-
Debt securities	2.344	2.344	50	50
Other collateral received	-	-	-	-
Own debt securities issued other than own covered bonds or ABSs	-	-	-	-

(1) 31 December 2019 disclosures are reported using median values (rolling quarterly medians over the previous 12 months) whereas 30 June 2019 disclosures are reported using actual End of Quarter values.

8.4 Encumbered assets/collateral received and associated liabilities

	31 December 2019	
	Matching liabilities, contingent liabilities or securities lent **€ million**	**Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered** **€ million**
Carrying amount of selected financial liabilities	11.290	15.604

	30 June 2019	
	Matching liabilities, contingent liabilities or securities lent € million	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered € million
Carrying amount of selected financial liabilities	11.063	15.703

[1] 31 December 2019 disclosures are reported using median values (rolling quarterly medians over the previous 12 months) whereas 30 June 2019 disclosures are reported using actual End of Quarter values.

9. Leverage Ratio

The new regulatory framework has introduced the leverage ratio as a non-risk based measure which is intended to restrict the build-up of excessive leverage from on and off balance sheet items in the banking sector.

The leverage ratio is defined as Tier 1 capital divided by the total exposure measure.

The bank submits to the regulatory authorities the leverage ratio on quarterly basis and monitors the level and the factors that affect the ratio.

The level of the leverage ratio with reference date 31.12.2019 on consolidated basis was at 10.07% (30.09.2019: 9.90%), according to the transitional definition of Tier 1 capital, significantly over the 3% minimum threshold applied by the competent authorities.

In the table below, the detailed disclosures on the Group's leverage ratio are presented with reference date 31 December 2019 and 30 September 2019.

Summary reconciliation of accountng assets and leverage ratio exposures

	31 December 2019 € million	30 September 2019 € million
Total assets as per published financial statements	64.758	64.026
Adjustment for entities which are consolidated for accountng puroses but are outside the scope of regulatory consolidation	-	-
Adjustment for fiduciary assets recognised on the balance sheet pursuant to the applicable accounting frameworkbut excluded from the leverage ratio exposure measure to article 429(11)of Regulation (EU)NO 575/2013	-	-
Adjustments for derivative financial instruments	(306)	(481)
Adjustments for securities financing transactions	1.523	2.019
Adjustment for off-balance sheet items (ie conversion to credit equivalent amounts of off-balance sheet exposures)	1.836	1.602
(Adjustment for intragroup exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (7) of Regulation (EU) No 575/2013)	-	-
(Adjustment for exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (14) of Regulation (EU) No 575/2013)	-	-
Other adjustments	854	559
Total leverage ratio exposure	**68.665**	67.726

Leverage Ratio

Leverage ratio common disclosure

	31 December 2019	30 September 2019 [1]
	CRR leverage ratio exposures	CRR leverage ratio exposures
	€ million	€ million
On - balance sheet exposures (excluding derivatives and SFT's)		
On-balance sheet items (excluding derivatives and SFT's, but including collateral)	63.423	61.912
Asset amounts deducted in determining Tier I capital	(73)	(48)
Total on-balance sheet exposures (excluding derivatives and SFT's)	**63.350**	61.864
Derivative exposures		
Replacement cost associated with derivatives transactions	1.683	1.958
Add-on amounts for PPE associated with derivatives transactions	274	283
Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the applicable accounting framework	-	-
(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	-	-
(Exempted CCP leg of client-cleared trade exposures)	-	-
Adjusted effective notional amount of written credit derivatives	-	-
(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	-	-
Total derivative exposures	**1.957**	2.241
Securities financing transaction exposures		
Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	-	-
(Netted amounts of cash payables and cash receivables of gross SFT assets)	-	-
Counterparty credit risk exposure for SFT assets	1.523	2.019
Derogation for SFTs: Counterparty credit risk exposure in accordance with Article 429b (4) and 222 of Regulation (EU) No 575/2013	-	-
Agent transaction exposures	-	-
(Exempted CCP leg of client-cleared SFT exposure)	-	-
Total securities financing transaction exposures	**1.523**	2.019
Off-balance sheet exposures		
Off-balance sheet exposures of gross notional amount	5.133	4.685
Adjustments for conversion to credit equivalent amounts[1]	(3.297)	(3.083)
Total off-balance sheet exposures	**1.836**	1.602
Exempted exposures in accordance with CRR Article 429 (7) and (14) (on and off balance		
(Exemption of intragroup exposures (solo basis) in accordance with Article 429(7) of Regulation (EU) No 575/2013 (on and off balance sheet))	-	-
(Exposures exempted in accordance with Article 429 (14) of Regulation (EU) No 575/2013 (on and off balance sheet))	-	-
Capital and Total Exposures		-
Tier I capital	6.917	6.702
Total leverage ratio exposures	68.665	67.726
Leverage Ratio		
Leverage Ratio	**10,07%**	9,90%
Choise on transitional arrangements and amount of derecognised fidiciary items	-	-
Choice on transitional arrangements for the definition of capital measure	**Transitional**	Transitional
Amounts of derecognised fiduciary items in accordance with the Article 429(11) of Regulation (EU) NO 575/2013		

[1] *Total off-balance sheet items exposures presented in accordance with Article 111 (1) of Regulation (EU) No 575/2013 (standardised approach).*

Split-up on balance sheet exposures (excluding derivatives and SFT's)

	31 December 2019	30 September 2019
	CRR leverage ratio exposures € million	CRR leverage ratio exposures € million
Total on-balance sheet exposures (excluding derivatives and SFT'S) of which:	63.423	61.912
Trading book exposures	-	-
Banking book exposures of which:	63.423	61.912
Covered bonds	182	172
Exposures treated as sovereigns	16.690	15.261
Exposures to regional goverments,MOB, international organisations and PSE NOT treates as sovereigns	-	-
Institutions	3.335	3.942
Secured by mortgages of immovable properties	11.321	11.393
Retail exposures	5.016	4.857
Corporate	14.116	13.225
Exposure in default	7.383	7.780
Other exposures (eg equity, securitisations and other non-credit obligation assets)	5.380	5.283

10. Liquidity Risk

The Group is exposed on a daily basis to events that affect the level of its available cash resources due to deposits withdrawals, maturity of medium or long term notes and maturity of secured or unsecured funding (interbank repos and money market takings), loan draw-downs and forfeiture of guarantees. Furthermore, margin calls on secured funding transactions (with ECB and the market) and on risk mitigation contracts (CSAs, GMRAs) result in liquidity exposure. The Group maintains cash resources to meet all of these needs. The Board Risk Committee (BRC) sets liquidity limits to ensure that sufficient funds are available to meet such contingencies.

Past experience shows that liquidity requirements to support calls under guarantees and standby letters of credit are considerably less than the amount of the commitment. This is also the case with credit commitments where the outstanding contractual amount to extend credit does not necessarily represent future cash requirements, as many of these commitments will expire or terminate without being funded.

The matching and controlled mismatching of the maturities and interest rates of assets and liabilities is fundamental to the management of the Group. It is unusual for banks to be completely matched, as transacted business is often of uncertain term and of different types. An unmatched position potentially enhances profitability, but also increases the risk of losses.

The maturities of assets and liabilities and the ability to replace, at an acceptable cost, interest bearing liabilities as they mature, are important factors in assessing the liquidity of the Group.

Liquidity Risk Management Framework

The Group's Liquidity Risk Management Policy defines the following supervisory and control structure:

(a) BRC's role is to approve all strategic liquidity risk management decisions and monitor the quantitative and qualitative aspects of liquidity risk;
(b) Group Assets and Liabilities Committee has the mandate to form and implement the liquidity policies and guidelines in conformity with Group's risk appetite and to review at least monthly the overall liquidity position of the Group;
(c) Group Treasury is responsible for the implementation of the Group's liquidity strategy, the daily management of the Group's liquidity and for the preparation and monitoring of the Group's liquidity budget;
(d) Global Market and Counterparty Risk Sector is responsible for the measuring, monitoring and reporting of the liquidity risk of the Group.

The Bank as per ECB, EBA & BoG directives applies risk management policies, processes and controls regarding, Asset Encumbrance / Liquidity Buffers and Collateral Management, Contingency Funding Plan (CFP), Intraday Liquidity Risk Management and Liquidity Stress Tests. These policies, processes and controls along with the liquidity governance are described in the ILAAP (Internal Liquidity Adequacy Assessment Process).

These policies, processes and controls are applicable in the specific Greek macro-economic environment, Banks' business model and market conditions on wholesale funding.

Liquidity Buffer

The Group holds a diversified portfolio of cash and high liquid assets to support payment obligations and contingent deposit withdrawals in a stressed market environment. The Group's assets held for managing liquidity risk comprise of:
(a) Cash and balances with central banks;
(b) Eligible bonds and other financial assets for collateral purposes;
(c) Interbank placings maturing within one month.

The unutilised assets, containing highly liquid and central banks eligible assets, provide a contingent liquidity reserve of € 17.4 billion as at 31 December 2019 (2018: € 13.0 billion). In addition the Group holds other types of highly liquid assets, as defined by the regulator, amounting to € 1.5 billion (cash value) (2018: € 1.3 billion). It should be noted that the major part of ECB's available collateral of € 3.5 billion (cash value) (2018: € 2.6 billion) is held by Group's subsidiaries for which temporary local regulatory restrictions are applied and currently limit the level of its transferability between group entities.

The credibility of the Greek banking system was further improved following the positive developments in the macroeconomic environment during 2019, improving the liquidity conditions of the Greek banks. In this context, the Bank has eliminated its reliance from ELA already from the early days of 2019 (January 2019). Furthermore, the Bank increased the long-term funding from the ECB entering into the new TLTRO III from the Q4 2019 (ECB funding increased from €1.5 billion – o/w €1.25 billion TLTRO - as of YE 2018 to €1.9 billion as of YE 2019 - which consists entirely from TLTRO funding). Moreover, inflows mainly from deposits significantly contributed to the formation of HQLAs buffer and to the significant increase of the Liquidity Coverage Ratio (LCR) within 2019 both on solo and on group level.

More specifically, the main cash flows for the FY 2019 period are presented below:

- Increase in deposits + € 5.8 billion;

Outflows due to CSA / GMRA movements -€ 0.7 billion

- **LCR calculations**

LCR as of YE 2019 is equal to 80.15% on a solo level and equal to 96.61% on a group level. The Bank, as per the latest (FY 2019) Funding plan and LCR restoration plan, projects that the full restoration of LCR to a level above the minimum regulatory threshold (100%), both on a solo and on group level, will be realized within 2020.

Appendix 1: Transitional Own Funds disclosure

		31 December 2019 Current period € million	31 December 2019 Full impact € million
Common Equity Tier 1 (CET1) Capital: instruments and reserves			
1	Capital instruments and the related share premium accounts	8.906	8.906
2	Retained earnings	(11.054)	(11.054)
3	Accumulated other comprehensive income (and other reserves, to include unrealised gains and losses under the applicable accounting standards)	8.813	8.813
	Public sector capital injections grandfathered until 1 January 2018	-	-
5	Minority interests (amount allowed in consolidated CET1)	-	-
6	**Common Equity Tier 1 (CET1) capital before regulatory adjustments**	**6.665**	**6.665**
Common Equity Tier 1 (CET1) capital: regulatory adjustments			
7	Additional value adjustments due to the prudent valuation (negative amount)	(10)	(10)
8	Intangible assets (net of related tax liability) (negative amount)	(378)	(378)
9	Part of interim or year-end profit not eligible	-	-
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability where the conditions in Article 38 (3) are met) (negative amount)	(2)	(2)
11	Fair value reserves related to gains or losses on cash flow hedges	42	42
12	Negative amounts resulting from the calculation of expected loss amounts	(105)	(2)
14	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	-	-
16	Direct and indirect holdings by an institution of own CET1 instruments (negative amount)	-	-
20	Adjustments due to IFRS 9 transitional arrangements	897	-
21	Deferred tax assets arising from temporary differences (amount above 10% threshold, net of related tax liability where the conditions in art. 38 (3) are met) (negative amount)	(179)	(304)
22	Amount exceeding the 15% threshold (negative amount)	-	-
23	of which: direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities	-	-
24	Value adjustments due to the Irrevocable payment commitments	(13)	(13)
25	of which: deferred tax assets arising from temporary differences	-	-
25a	Losses for the current financial year (negative amount)	-	-
25b	Foreseeable tax charges relating to CET1 items (negative amount)	-	-
26b	Amount to be deducted from or added to Common Equity Tier 1 capital with regard to additional filters and deductions required pre CRR	-	
	Of which: difference from revaluation reserves of fixed assets	-	
27	Qualifying AT1 deductions that exceed the AT1 capital of the institution (negative amount)	-	
28	**Total regulatory adjustments to Common equity Tier 1 (CET1)**	**252**	**(667)**
29	**Common Equity Tier 1 (CET1) capital**	**6.917**	**5.998**
Additional Tier 1 (AT1) capital: instruments			
33	Amount of qualifying items referred to in Article 484 (4) and the related share premium accounts subject to phase out from AT1	-	-
36	**Additional Tier 1 (AT1) capital instruments before regulatory adjustments**	**-**	**-**
Additional Tier 1 (AT1) capital: regulatory adjustments			
41a	Residual amounts deducted from Additional Tier 1 capital with regard to deduction from Common Equity Tier 1 capital during the transitional period pursuant to article 472 of Regulation (EU) No 575/2013	-	-
	Of which: goodwill and intangible assets (net of related tax liability)	-	-
	Of which: shortfall of provision to expected losses	-	-
43	**Total regulatory adjustments to Additional Tier 1 (AT1) capital**	**-**	**-**
44	**Additional Tier 1 (AT1) capital**	**-**	**-**
45	**Tier 1 capital (T1 = CET1 + AT1)**	**6.917**	**5.998**

Appendix 1: Transitional own funds disclosure

		31 December 2019 Current period € million	31 December 2019 Full impact € million
Tier 2 (T2) capital: instruments and provisions			
46	Capital instruments and the related share premium accounts	950	950
47	Amount of qualifying items referred to in Article 484 (5) and the related share premium accounts subject to phase out from T2	-	-
50	Credit risk adjustments	97	102
51	**Tier 2 (T2) capital before regulatory adjustments**	**1.047**	**1.052**
Tier 2 (T2) capital: regulatory adjustments			
56a	Residual amounts deducted from Tier 2 capital with regard to deduction from Common Equity Tier 1 capital during the transitional period pursuant to article 472 of Regulation (EU) No 575/2013	-	-
	Of which shortfall of provision to expected losses	-	-
56c	Amount to be deducted from or added to Tier 2 capital with regard to additional filters and deductions required pre-CRR	-	-
	Of which: difference from revaluation reserves of fixed assets	-	-
57	**Total regulatory adjustments to Tier 2 (T2) capital**	**-**	**-**
58	**Tier 2 (T2) capital**	**1.047**	**1.052**
59	**Total Capital (TC = T1 + T2)**	**7.964**	**7.050**
60	**Total risk weighted assets**	**41.407**	**41.122**
Capital ratios and buffers			
61	Common Equity Tier 1	**16,7%**	14,6%
62	Tier 1	**16,7%**	14,6%
63	Total capital	**19,2%**	17,1%
68	Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	**11,2%**	**9,1%**
Amounts below the thresholds for deduction (before risk weighting)			
72	Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions	72	72
73	Direct and indirect holdings by the institution of CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	145	145
75	Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability where the conditions in 38 (3) are met)	710	630
Applicable caps on the inclusion of provisions on Tier 2			
76	Credit risk adjustments included in T2 in respect of exposures subject to standardized approach (prior to the application of the cap)	-	-
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach	243	243
78	Credit risk adjustments included in T2 in respect of exposures subject to internal ratings-based approach (prior to the application of the cap)	97	102
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	102	102
Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2013 and 1 Jan 2022)			
80	Current cap on CET1 instruments subject to phase out arrangements	-	-
81	Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)	-	-
82	Current cap on AT1 instruments subject to phase out arrangements	-	-
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)	-	-
84	Current cap on T2 instruments subject to phase out arrangements	-	-
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)	-	-

Appendix 2: Capital instruments' main features disclosure

				SERIES A
1	Issuer	**Eurobank Ergasias S.A.**	**EUROBANK ERGASIAS S.A.**	**ERB Hellas Funding LTD**
2	Unique identifier	GRS323003012	ISIN Code: XS1752439411	DE000A0DZVJ6
3	Governing law(s) of the instrument	Greek	English law, with the exception of Condition 3B *(Status-Subordinated Instruments)* and Condition 22 *(Bank Holders' Agent)* which are governed by the laws of the Hellenic Republic and Regulation No.575/2013 (CRR) and Condition 23 (Acknowledgement of Statutory Loss Absorption Powers).	The Preferred Securities will be governed by, and construed in accordance with Jersey law. The Guarantee will be governed by, and construed in accordance with, English law, save that the provisions concerning the ranking of the Guarantee and the rights upon liquidation, each as described above, will be governed by, and construed in accordance with, Greek law.
	Regulatory treatment			
4	Transitional CRR rules	Common Equity Tier 1	Tier2	Additional Tier 1
5	Post- transitional CRR rules	Common Equity Tier 1	Tier2	Ineligible
6	Eligible at solo/(sub-) consolidated/solo & (sub-) consolidated	Solo & Consolidated	Solo and Consolidated	Solo & Consolidated
7	Instrument type (types to be specified by each jurisdiction)	Ordinary shares	Tier 2 Subordinated Capital Instrument (Art.63 of the CRR)	Additional Tier 1
8	Amount recognised in regulatory capital as at 31 December 2019	€ 853.1 million	N/A - The instruments were Issued in January 2018	€ 1 million
9	Nominal amount of instrument	€ 0.23 per ordinary share (at date) / € 853.1 million	950.000.000	€ 1.604.000
9a	Issue price	-	100%	100%
9b	Redemption price	-	Redemption at par (100 per cent of nominal amount) together with interest accrued up to (but excluding) the date of redemption	100%
10	Accounting classification	Shareholders Equity	Liability - amortised cost	Equity
11	Original date of issuance	Various	17 January 2018	18 March 2005
12	Perpetual or dated	Perpetual	Dated	Perpetual
13	Original maturity date	-	17 January 2028	No maturity
14	Issuer call subject to prior supervisory approval	NA	Yes	Yes
15	Optional call date, contingent call dates and redemption amount	NA	First date of call: 17 January 2023. The instruments have also a Tax and Capital Disqualification Event call (Art.78(4) of CRR).In both cases, the instruments may be redeemed in whole but not in part. Redemption at par together with interest accrued.	First call date 18 March 2010 at 100%
16	Subsequent call dates, if applicable	NA	Optional subsequent call dates: Any day after 17 January 2023.Tax and Capital Disqualification Event call : at any time	Annually
	Coupon / dividends	NA		
17	Fixed or floating dividend/coupon	NA	Fixed	Fixed to floating
18	Coupon rate and any related index	NA	6,41%	6,75% to 03/07 ; thereafter 10yr €csm +12,5bp. Max coupon = 8%
19	Existence of a dividend stopper	NA	No	No
20a	Fully discretionary, partially discretionary or mandatory (in terms of timing)	Partially discretionary	Mandatory	Partially discretionary . Dividend Pusher (Compulsory Payments for each Series)
20b	Fully discretionary, partially discretionary or mandatory (in terms of amount)	Partially discretionary	Mandatory	Mandatory
21	Existence of step up or other incentive to redeem	No	No	No
22	Noncumulative or cumulative	Non cumulative	Noncumulative	Non cumulative
23	Convertible or non-convertible	Non convertible	Non-convertible	Non convertible
24	If convertible, conversion trigger(s)	NA	N/A	N/A
25	If convertible, fully or partially	NA	N/A	N/A
26	If convertible, conversion rate	NA	N/A	N/A
27	If convertible, mandatory or optional conversion	NA	N/A	N/A
28	If convertible, specify instrument type convertible into	NA	N/A	N/A
29	If convertible, specify issuer of instrument it converts into	NA	N/A	N/A
30	Write-down features	No	Yes	No
31	If write-down, write-down trigger(s)	NA	Statutory & Condition 23 (Acknowledgement of Statutory Loss Absorption Powers) , Bank of Greece	N/A
32	If write-down, full or partial	NA	Fully or partially	N/A
33	If write-down, permanent or temporary	NA	Permanent	N/A
34	If temporary write-down, description of write-up mechanism	NA	N/A	N/A
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Additional Tier I	Immediately subordinate to the claims of Senior Creditors (as defined in Condition 3B)	Lower Tier II
36	Non-compliant transitioned features	No	No	Yes
37	If yes, specify non-compliant features	N/A	N/A	Upon the occurance of a trigger event, the principal amount can not be written down
	Terms and Conditions	https://www.eurobank.gr/-/media/eurobank/omilos/poioi-eimaste/etairiki-diakubernisi/katastatiko/katastatiko-en.pdf?la=en	https://www.eurobank.gr/-/media/eurobank/omilos/enimerosi-ependuton/enimerosi-metoxon-eurobank/pistotikoi-titloi/programma-euro-medium-term-note/enimerotiko-deltio12-1-18.pdf	