ING Group
Additional Pillar III Report 2019

Additional Pillar III Report

amounts in millions of euros, unless stated otherwise

Navigation map

The index below enables the readers to track the main risk items through the various risk disclosures.

Risk management

Credit risk

Market risk

Funding and liquidity risk

Non-financial risk

Compliance risk

Model risk

Business risk

Introduction

Basis of disclosure

The information in this report relates to ING Groep N.V. and all of its subsidiaries (hereafter ING Group). There are no differences between the scope of consolidation for prudential purposes and the scope of consolidation for accounting purposes as reported in the annual accounts in Note 1 'Accounting policies', Note 48 'Principal subsidiaries, investments in associates and joint ventures' and Note 49 'Structured entities'.

Assurance/validity

The Pillar III disclosures have been subject to ING Group's internal control assessments and validation mechanisms, to ensure compliance with laws and regulations. The Disclosure Committee (DisCom), responsible for all ING Group disclosures, assesses the accuracy of the content before reporting their conclusions to the Audit Committee (AC) for review and submission to the Supervisory Board for final approval. This report has not been audited by ING Group's external auditor.

Regulatory framework

In 2010, the Basel III framework was adopted and consequently translated in the European Union (EU) into regulation through the Capital Requirement Regulation (CRR) and Capital Requirement Directive IV (CRD IV). The CRR is binding for all EU member states and became effective per 1 January 2014.

The Basel Committee's framework is based on three pillars. Pillar I on minimum capital requirements, which defines the rules for the calculation of credit, market and operational risk. Pillar II is about Supervisory Review and Evaluation Process (SREP), which requires banks to undertake an internal capital adequacy assessment process (ICAAP) to identify and assess risks, also those not included in Pillar I, and maintain sufficient capital to face these risks, and an internal liquidity adequacy assessment process (ILAAP) focusing on maintaining sufficient liquidity (and funding) risk management. Pillar III is on market discipline and transparency, requiring disclosures to allow investors and other market participants to understand the risk profiles of individual banks.

ING Group prepares the Pillar III report in accordance with the CRR and CRD IV. ING Group's 'Additional Pillar III Report' contains disclosures for regulatory capital requirements, credit risk, including counterparty credit risk, securitisations and other non-credit obligation assets (ONCOA), market risk, liquidity risk, non-financial risk and compliance risk. Furthermore, the report discusses regulatory exposures and risk weighted assets.

The Pillar III report is published on an annual basis. However, some capital requirements as laid down in Article 438 of the CRR as well as information on risk exposure or other items prone to rapid change are disclosed on a quarterly or semi-annual basis. Some subsidiaries publish information on capital and solvency on their websites or annual reports pursuant to local regulatory requirements.

Developments in disclosure requirements

CRR II/CRD V

On 16 April 2019, the European Parliament (EP) approved the final agreement on a package of reforms proposed by EC to strengthen the resilience and resolvability of European banks. The package of reforms comprises among other amendments to the Capital Requirements Regulation and Directive (CRR/CRD) and especially to Part Eight (disclosure requirements) of CRR.

For disclosures, the Commission proposed targeted amendments to ensure better alignment with international standards. In particular, new disclosure requirements are proposed for TLAC, counterparty credit risk, market risk and liquidity requirements. Further, the EBA is mandated to develop uniform disclosure formats to enhance comparability, and ING's management is required to verify and sign-off on compliance with disclosure requirements and the adherence to internal policies on disclosure.

Draft ITS of institutions' public disclosures of the information referred to in Titles II and III of Part Eight of Regulation (EU) No 575/2013

These new comprehensive ITS for financial institutions' public disclosure provide a complete Pillar 3 disclosure framework that seeks to facilitate its implementation by institutions and to improve clarity for users of this information. These ITS are designed to promote market discipline by moving from a silo-based approach, with different disclosure policy products, to an all-inclusive ITS. It also implements regulatory changes introduced by the CRR2 and aligns the disclosure framework with international standards.

Draft ITS on disclosure and reporting of MREL and TLAC

In November 2019, the EBA launched a public consultation on the draft ITS on disclosure and reporting of the minimum requirement for own funds and eligible liabilities (MREL) and the total loss absorbency requirement (TLAC). This is the first time that the EBA introduces harmonised reporting and disclosure requirements for MREL and TLAC. These draft ITS follow an integrated approach and, in the case of disclosures, are aligned with the Basel Pillar 3 standards. The integrated approach aims to optimise efficiency by institutions when complying with their disclosure and reporting obligations, to facilitate the use of information by authorities and market participants, and to promote market discipline. These draft ITS have been developed in accordance with articles 430 and 434a of CRR2, which mandate the EBA to specify uniform reporting templates and disclosure formats.

This consultation paper is one of the deliverables presented in the EBA Roadmap on the risk reduction measures package, which explains the EBA Pillar 3 strategy to implement a comprehensive disclosure framework with the aim to become the EU-wide Pillar 3 hub and the EBA pathway for a more efficient and proportionate supervisory reporting.

EBA's roadmap on the risk reduction measures package

In November 2019, the EBA published a set of roadmaps outlining its approach and timelines for delivering the mandates stemming from the Risk Reduction Measures Package adopted by the Council of the EU and the European Parliament on 20 May 2019. One of the focus areas in these mandates is disclosure where the EBA aims to become the EU-wide Pillar 3 hub following the completion of the European Centralised Infrastructure for Supervisory Data (EUCLID) project.

The key targets of this strategy are among others :

- optimisation of the Pillar 3 policy framework by providing a single comprehensive package and thus improving clarity for users of information,
- promotion of market discipline further by increasing the consistency and comparability of the information disclosed by institutions,
- to increase the efficiency of institutions' disclosures and reduce costs via technology through the integration of quantitative data of Pillar 3 with supervisory reporting and
- to promote the awareness of external stakeholders of the relevance of the role of institutions in the transition to a green economy.

EBA guidelines on disclosure of non-performing and forborne exposures

In December 2018, the EBA published its final Guidelines on disclosure of non- performing and forborne exposures. The disclosure will allow market participants and stakeholders to have a better picture of the quality of the banks' assets, the main features of their non-performing and forborne exposures, and in the case of more troubled banks, the distribution of the problematic assets and the value of the collateral backing those assets.

The Guidelines set enhanced disclosure requirements and uniform disclosure formats applicable to credit institutions' public disclosure of information regarding non-performing exposures, forborne exposures and foreclosed assets. The proportionality principle applies to these Guidelines and is based on the significance of the credit institution and the level of non-performing loans. Therefore, the Guidelines include a set of common templates applicable to all banks and a set of additional templates applicable only to significant credit institutions with a gross NPL ratio at a level of 5% or above.

The aim of the Guidelines is to foster transparency, providing meaningful information to market participants on the quality of credit institutions' assets, and to address any potential asymmetries of information in a consistent and comparable way. In addition, for those credit institutions with a gross NPL ratio at or above 5%, the Guidelines aim at providing a better insight of the distribution and features of the institutions' problematic assets, the quality and value of the collaterals backing them and the efficiency of the institution's recovery function.

Navigation map

The table below "Disclosure index EBA guidelines and ITS "indicates where the templates from EBA applicable for ING are located in the Pillar III report and/or the annual report:

Disclosure index EBA guidelines and ITS

Public disclosure of return on assets (ROA)

The CRD IV requires ING Group to disclose information on its return on assets. ING Group has decided to calculate ROA based on underlying results and average assets derived from quarter-end assets to align it with the other indicators. The underlying ROA represents profit as a percentage of average total assets. In 2019, the underlying ROA decreased at 0.54% (in 2018: 0.62%).

Capital requirements

Economic and Regulatory Capital

Economic Capital (EC) and Regulatory Capital (RC) are the main sources of capital allocation within ING. Both of these capital metrics are used to determine the amount of capital that a transaction or business unit requires to support the economic and regulatory-based risks it faces. The concept of EC differs from RC in the sense that RC is the mandatory amount of capital that is defined under Pillar I while EC is the best estimate of Pillar II capital that ING uses internally to manage its own risk. EC is a non-accounting measure that is inherently subject to dynamic changes and updated as a result of ING's portfolio mix and general market developments. ING continuously recalibrates the underlying assumptions behind its EC model which may have an impact on the values of EC going forward. ING has started in 2019 with the implementation of the new EC Framework, for which the key design principles were adopted in November 2018. These design principles as well as an increased role of EC in business planning and decision making will be implemented in the next years.

EC is defined as the amount of capital that a transaction or business unit requires in order to support the economic risks it takes. EC focuses on the bank activities on an ING Bank consolidated level and is therefore only available per that scope. In general, EC is measured as the unexpected loss above the expected loss at a given confidence level. The EC calculation is used as part of the CRR/CRD IV Pillar II Internal Capital Adequacy Assessment Process (ICAAP) and is subject to the Supervisory Review and Evaluation Process (SREP) that is performed regularly by the supervisor.

The following fundamental principles and definitions have been established for the model:

- ING Bank uses a one-sided confidence level of 99.90% and a one-year time horizon to calculate EC;
- It is assumed that all currently known measurable sources of risk are included;
- The best estimate risk assumptions are as objective as possible and to the extend possible based on statistical analysis;
- The EC calculations reflect known embedded options and the influence of customer behaviour in banking products;
- The EC calculations are on a before tax basis and do not consider the effect of regulatory requirements on capital levels; and
- The framework does not include any franchise value of the business, discretionary management intervention or future business volumes and margins.

Capital Adequacy Rules – CRR/CRD IV

The rules for required Regulatory Capital or Capital adequacy are based on the guidelines developed by the Basel Committee on Banking Supervision (The Basel Committee) and the European Union regulation and directives.

The rules express the regulators' and legislators' opinion on how much capital a bank and other regulated credit institutions must retain in relation to the size and the type of risks it is taking, expressed in the form of Risk-Weighted Assets. The most important part of the capital base is the shareholders' equity. In addition to equity, the institution may issue certain liabilities such as Tier 1 and Tier 2 instruments to be included in the capital base. The legal minimum requirement (excluding buffers) stipulates that the capital base must correspond to at least 8% of the Risk-Weighted Assets (RWA).

The table below presents an overview of the Minimum capital requirements and the RWA at year-end 2019 per risk type and method of calculation. The largest part of the RWA is related to credit risk (80%), primarily to the portfolio with calculations based on the Advanced Internal Ratings Based (AIRB) approach. More information on credit RWA is given in the chapter "Credit risk".

EU OV1: ING Group Regulatory capital requirements

	RWA		Minimum capital requirements
	2019	2018	2019
Credit risk (excluding counterparty credit risk) (CCR)	**262,715**	**252,992**	**21,017**
Of which standardised approach (SA)	26,919	25,726	2,154
Of which internal rating-based (IRB) approach	234,610	223,412	18,769
Of which Equity IRB under the simple risk-weight or the internal models approach	1,185	3,853	95
Counterparty credit risk (CCR)	**9,050**	**9,419**	**724**
Of which Marked to market	8,009	8,372	641
of which standardised approach for counterparty credit risk	307	250	25
Of which risk exposure amount for contributions to the default fund of a CCP	184	245	15
Of which CVA	550	552	44
Settlement risk			
Securitisation exposures in banking book (after cap)	**1,059**	**728**	**85**
Of which IRB approach (RBA)	1,059	728	85
Market risk	**5,564**	**6,509**	**445**
Of which standardised approach (SA)	14	1,131	1
Of which internal model approaches (IMA)	5,550	5,378	444
Large exposures			
Operational risk	**38,061**	**35,522**	**3,045**
Of which Advanced Measurement Approach	38,061	35,522	3,045
Amounts below the thresholds for deduction (subject to 250% risk weight)	**9,966**	**8,979**	**797**
Floor adjustment			
Total	**326,414**	**314,149**	**26,113**

The amount of RWA increased in 2019 with EUR 12.3 billion to EUR 326.4 billion. This increase is mainly driven by the EUR 9.8 billion increase in Credit RWA. In the fourth quarter of 2019 ING included already EUR 13.2 billion as part of the expected supervisory impact on RWA. Excluding this expected supervisory impact, Credit RWA decreased by EUR 4.4 billion. Operational RWA increased in 2019 with EUR 2.5 billion to EUR 38.1 billion, mainly caused by an update on the weights of own risk scenarios and external loss data. RWA for counterparty credit risk and market risk slightly decreased.

ING Group Regulatory Capital flow statement	2019	2018*	
	CRR/CRD IV	CRR/CRD IV phased-in	CRR/CRD IV fully loaded
Common Equity Tier 1 capital			
Opening amount	45,443	45,581	45,550
Profit included in CET1 capital	2,092	2,057	2,057
Adjustment prudential filters own credit risk	134	-210	-207
Change in goodwill and intangibles	-13	-720	-381
Change in revaluation reserves	-385	-819	-1,549
Change in minority interests, counting as Common Equity Tier 1 capital	31	45	28
Other	250	-442	-56
Closing amount	**47,552**	**45,493**	**45,443**
Additional Tier 1 capital			
Opening amount	5,387	4,745	5,179
Change in AT 1 instruments	1,577	202	202
CRR/CRD IV phased-in adjustments (excl. significant investments in FIs)		433	
Change in minority interests, counting as Additional Tier 1 capital	2	6	6
Closing amount	**6,966**	**5,385**	**5,387**
Tier 2 capital			
Opening amount	7,112	7,085	8,569
Change in Tier 2 instruments	695	-2,839	-2,839
CRR/CRD IV phased-in adjustments (excl. significant investments in FIs)		94	
Haircut on externally placed Tier 2 instruments by subsidiaries	-14	2,560	1,364
Change in minority interests, counting as Tier 2 capital	-8	21	18
Closing amount	**7,784**	**6,922**	**7,112**
Total Regulatory Capital	**62,303**	**57,801**	**57,943**

* 2018 was the last year of phasing-in capital deductions and prudential filters under CRR

As per 31 December 2019, the total amount of available distributable items following the CRD IV definition increased to EUR 45,479 million, compared to EUR 43,314 million in 2018.

ING Group available distributable items according to the CRR/CRD IV	2019	2018
Share premium	17,078	17,050
Other reserves	28,052	25,704
Legal and Statutory reserves	3,999	3,597
Non distributable	-8,398	-7,700
	40,732	**38,650**
Accrued interest expenses on own fund instruments at year-end	147	121
Distributable items excluding unappropriated result for the year	**40,879**	**38,771**
Unappropriated result for the year	4,601	4,543
Total available distributable items	**45,479**	**43,314**

Capital position

As of 1 January 2014, the CRR/CRD IV capital rules entered into force. According to CRR/CRD IV capital adequacy rules, the Common Equity Tier 1 ratio has to be at least 4.5%, the Tier 1 ratio at least 6% and the total capital ratio at least 8% of all risk-weighted assets.

The capital position table reflects own funds according to the CRR/CRD IV rules. As in 2019 the CRR/CRD IV phase-in period ended, the table shows the current CRR/CRD IV positions according to the full implementation. However, the comparative numbers contain 2019 end-state rules and the 2018 rules.

ING Group's Common Equity Tier 1 ratio at year-end 2019 of 14.57% is well in excess of the 11.83% common equity Tier 1 requirement for ING Group in 2019. This requirement is the sum of (i) 4.5% Pillar 1 requirement (ii) 1.75% Pillar 2 requirement, being the European Central Bank's (ECB) decision on the 2017 Supervisory Review and Evaluation Process (SREP) (iii) the 2.5% capital conservation buffer, (iv) the 3% Systemic Risk Buffer (SRB), which has been set separately for Dutch systemic banks by the DNB as macro-prudential supervisor and (v) 0.08% for the countercyclical buffer. With a 14.57% Group CET1 ratio as at 31 December 2019, ING is compliant with this CET1 requirement that is expected to increase to 11.99% in 2020 as countercyclical buffer requirements increase.

ING Group Capital position

	2019	2018*	
	2019 rules	2018 rules	2019 rules
	(CRR/CRD IV)	(CRR/CRD IV phased in)	(CRR/CRD IV fully loaded)
Shareholders' equity	**53,769**	**50,932**	**50,932**
Regulatory adjustments:			
Minority interests, counting as Common equity Tier 1	201	141	170
Goodwill and intangibles deducted from Tier 1[1]	-2,089	-2,075	-2,075
Provision shortfall	-459	-491	-491
Revaluation reserve cash flow hedge	-1,208	-604	-604
Prudent valuation adjustment	-13	-14	-14
Irrevocable Payment Commitment (IPC)	-262	-178	-178
Prudential filters:			
Own credit risk	114	-8	-8
Defined benefit remeasurement (IAS19R)		79	
Net defined benefit pension fund assets	-605	-446	-446
Deferred tax assets	-128	-101	-101
Own credit risk adjustments to derivatives (DVA)	-16	-27	-27
Interim profit not included in CET1 capital	-1,754	-1,712	-1,712
Available capital - Common equity Tier 1	**47,552**	**45,493**	**45,443**
Subordinated loans qualifying as Tier 1 capital[2]	6,916	5,339	5,339
Minority interests, counting as Additional Tier 1 capital	51	46	48
Available capital - Tier 1	**54,519**	**50,878**	**50,831**
Supplementary capital - Tier 2[2]	8,888	8,248	8,248
Haircut on externally placed Tier 2 instruments by subsidiaries	-1,146	-1,376	-1,187
Minority interests, counting as Tier 2 capital	43	51	51
BIS capital	**62,303**	**57,801**	**57,943**
Risk-weighted assets	**326,414**	**314,149**	**314,149**
Common Equity Tier 1 ratio	**14.57%**	**14.48%**	**14.47%**
Tier 1 ratio	**16.70%**	**16.20%**	**16.18%**
Total capital ratio	**19.09%**	**18.40%**	**18.44%**

* 2018 was the last year of phasing-in capital deductions and prudential filters under CRR
1 Intangibles: mainly capitalised software.
2 Assuming that non CRR/CRD IV eligible Tier 1 and Tier 2 capital will be replaced by CRR/CRD IV eligible equivalents before they stop to meet the CRR/CRD IV grandfathering conditions. Future Tier 2 instruments will be issued by ING Groep N.V..

Countercyclical buffer

As only a few countries have set a countercyclical buffer rate larger than zero and ING Group's exposures in these countries is relatively small, the resulting countercyclical buffer is also small: 0.081% at the end of 2019. See below for an overview of the exposure distribution for the most relevant countries (having a share larger than 1% and/or having in place or announced a countercyclical buffer rate larger than 0%).

Countercyclical buffer

	General credit exposures		Trading book exposures	Securitisation exposures		Own fund requirements					
2019	Exposure value for SA	Exposure value for IRB[1]	Value of trading book exposures for internal models	Exposure value for SA	Exposure value for IRB	of which: General credit exposures	of which: Trading book exposures	of which: Securitisation exposures	Total	Own funds requirements weights	Countercyclical capital buffer rate
Netherlands	3,026	200,390		284	409	3,331	4	5	**3,339**	18.70%	
Belgium	1,053	93,733				2,747	1		**2,747**	15.38%	
Germany	333	104,223	87	489	3,063	2,133	2	24	**2,159**	12.09%	
United States	1	97,041		885	855	1,473	8	35	**1,516**	8.49%	
Poland	14,207	14,936	2			1,243			**1,243**	6.96%	
Spain	3,846	22,500	13		5	614	3		**617**	3.45%	
Australia	3,398	42,559	9	1	2	610	1		**611**	3.42%	
United Kingdom	61	28,761		58	199	539	3	3	**544**	3.05%	1.00%
France	2,156	23,914		200	205	508	3	4	**515**	2.88%	0.25%
Italy	1,722	15,333			10	484	2		**486**	2.72%	
Turkey	5,172	2,560	21			451	2		**453**	2.53%	
Luxembourg	158	16,763		601	423	423	2	11	**436**	2.44%	
Romania	3,732	2,384	4			274	1		**275**	1.54%	
Russian Federation		4,730	77			252	5		**257**	1.44%	
Switzerland	32	15,180				249	2		**251**	1.41%	
Brazil		3,294				182			**183**	1.02%	
Hong Kong	57	8,860	4			154			**154**	0.86%	2.00%
Ireland	1	14,794		140	23	88		2	**90**	0.50%	1.00%
Sweden		3,032				58			**59**	0.33%	2.50%
Czechia	5	1,284	2			39			**39**	0.22%	1.50%
Norway		2,681				37			**37**	0.21%	2.50%
Slovakia		907				28			**28**	0.16%	1.50%
Denmark	5	2,078				23			**23**	0.13%	1.00%
Bulgaria		570				21			**21**	0.12%	0.50%
Iceland		20				1			**1**	0.00%	1.75%
Lithuania		2							**0**	0.00%	1.00%
Other countries	731	79,999	116	94	62	1,759	13	2	**1,774**	9.94%	
Total	**39,695**	**802,530**	**335**	**2,752**	**5,258**	**17,721**	**52**	**85**	**17,858**	**100.00%**	**0.081%**

1 Increase in exposure value for IRB is due to BMG netting cancelation.

Amount of institution-specific CCyB

	2019
Total RWA	326,414
Weighted countercyclical buffer rate	0.081%
Countercyclical buffer requirement	**264.4**

Table comment

Countercyclical buffer

2018	General credit exposures		Trading book exposures	Securitisation exposures	Own fund requirements					
	Exposure value for SA	Exposure value for IRB	Value of trading book exposures for internal models	Exposure value for IRB	of which: General credit exposures	of which: Trading book exposures	of which: Securitisation exposures	Total	Own funds requirements weights	Counter-cyclical capital buffer rate
Netherlands	3,189	185,498		728	3,537	1	5	**3,543**	19.59%	
Belgium	1,050	88,558			2,732	1		**2,733**	15.11%	
Germany	341	97,838		3,964	2,035	1	26	**2,061**	11.40%	
United States	10	41,795		1,270	1,640	3	10	**1,653**	9.14%	
Poland	11,638	14,182	10		1,127	1		**1,127**	6.23%	
Italy	1,820	17,633			607			**607**	3.36%	
Spain	3,301	20,734	10	427	594	1	3	**598**	3.31%	
Turkey	6,775	2,905	57		537	2		**540**	2.98%	
France	150	13,488		213	504	1	2	**507**	2.81%	
United Kingdom	41	13,310		238	491	1	1	**494**	2.73%	1.00%
Australia	2,922	39,249	7	4	458			**459**	2.54%	
Luxembourg	183	17,246		858	423	2	9	**433**	2.40%	
Switzerland	5	10,343			287	1		**288**	1.59%	
Romania	3,348	2,322	0		254			**254**	1.40%	
Russian Federation	0	4,374	42		227	2		**229**	1.27%	
Hong Kong	57	6,181	1		135			**135**	0.75%	1.88%
Ireland	1	2,706		25	77			**77**	0.43%	-
Sweden		1,802			66	1		**66**	0.37%	2.00%
Czechia	3	1,391	2		43			**43**	0.24%	1.00%
Denmark	5	940			28			**28**	0.15%	
Slovakia		879			27			**27**	0.15%	1.25%
Norway		2,278		8	24			**25**	0.14%	2.000%
Bulgaria		469	2		20			**20**	0.11%	
Iceland		11						**0**	0.00%	1.250%
Lithuania		0						**0**	0.00%	0.500%
Greenland		0						**0**	0.00%	
Faroe Islands		0						**0**	0.00%	
Other countries	434	61,140	185	232	2,121	13	1	**2,135**	11.81%	
Total	**35,274**	**647,274**	**317**	**7,966**	**17,996**	**29**	**58**	**18,084**	**100.00%**	**0.056%**

Amount of institution-specific CCyB

	2018
Total RWA	314,149
Weighted countercyclical buffer rate	0.056%
Countercyclical buffer requirement	**174.7**

Own funds

The CRR requires ING Group to disclose information on own funds in a specific format that was provided in the EBA Implementation Technical Standards. The EBA templates Annex I, II and Annex VI are disclosed as part of the “Additional Pillar 3 disclosures” excel file on the corporate website ing.com. http://www.ing.com/About-us/Annual-Reporting-Suite.htm

Leverage ratio

The leverage ratio is a CRR/CRD IV measure indicating the level of the Tier 1 Capital compared to the total exposure. Its aim is to assess the risk of excessive leverage of the institution. In line with the regulatory requirements, ING Group will use the specific EBA templates as basis for the presentation of its Leverage ratio. These EBA templates reflect the Leverage ratio as calculated under the Leverage ratio Delegated Act which was introduced in October 2014. The Final Draft Implementing Technical Standards (ITS) on disclosure of the leverage ratio have been approved by the European Commission and published in the EU Official Journal early 2016. The official reporting of the Delegated Act Leverage ratio to the ECB has commenced per September 2016. The fully loaded leverage ratio of ING Group based on the Delegated Act, and with notional cash pooling grossed is 4.6% at 31 December 2019.

Summary reconciliation of accounting assets and leverage ratio exposures

		2019 CRR/CRD IV	2018* CRR/CRD IV phased in	2018* CRR/CRD IV fully loaded
		Applicable amounts	Applicable amounts	Applicable amounts
1	Total assets as per published financial statements	891,744	887,030	887,030
4	Adjustments for derivative financial instruments[1]	7,460	3,234	3,234
5	Adjustments for securities financing transactions 'SFTs'	13,404	13,090	13,090
6	Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	81,510	79,751	79,751
7	Other adjustments[1]	192,223	181,179	181,100
8	**Total leverage ratio exposure**	**1,186,340**	**1,164,283**	**1,164,204**

* 2018 was the last year of phasing-in capital deductions and prudential filters under CRR
1 The adjustment for Receivables for cash variation margin provided in derivatives transactions has been included in the line Other adjustments.

Group leverage ratio common disclosure

		2019	2018*	2018*
		CRR/CRD IV	CRR/CRD IV phased in	CRR/CRD IV fully loaded
		CRR leverage ratio exposures	CRR leverage ratio exposures	CRR leverage ratio exposures
On-balance sheet exposures (excluding derivatives and SFTs)				
1	On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	1,013,265	972,346	972,346
2	(Asset amounts deducted in determining Tier 1 capital)	-4,435	-3,689	-3,768
3	**Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)**	**1,008,829**	**968,657**	**968,578**
Derivative exposures				
4	Replacement cost associated with all derivatives transactions (i.e. net of eligible cash variation margin)	10,792	7,880	7,880
5	Add-on amounts for PFE associated with all derivatives transactions (mark-to-market method)	19,321	18,676	18,676
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	-8,891	-8,137	-8,137
9	Adjusted effective notional amount of written credit derivatives	13,100	13,529	13,529
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	-11,802	-12,076	-12,076
11	**Total derivative exposures**	**22,520**	**19,872**	**19,872**
Securities financing transaction exposures				
12	Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	80,622	101,473	101,473
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	-20,545	-18,560	-18,560
14	Counterparty credit risk exposure for SFT assets	13,404	13,090	13,090
16	**Total securities financing transaction exposures**	**73,481**	**96,004**	**96,004**
Other off-balance sheet exposures				
17	Off-balance sheet exposures at gross notional amount	-240,970	-247,012	-247,012
18	(Adjustments for conversion to credit equivalent amounts)	-159,460	-167,261	-167,261
19	**Other off-balance sheet exposures**	**81,510**	**79,751**	**79,751**
Capital and total exposures				
20	Tier 1 capital[1]	54,519	50,878	50,831
21	**Total leverage ratio exposures**	**1,186,340**	**1,164,283**	**1,164,204**
Leverage ratio				
22	**Leverage ratio**	**4.6%**	**4.4%**	**4.4%**
Choice on transitional arrangements and amount of derecognised fiduciary items				
EU-23	Choice on transitional arrangements for the definition of the capital measure		Transitional	Fully phased in

* 2018 was the last year of phasing-in capital deductions and prudential filters under CRR
1 Please note that Tier 1 Capital per December 2019 includes grandfathered hybrids to an amount of EUR 1,604 million (2018: EUR 2,506 million)

Disclosure on qualitative items		
1	Description of the processes used to manage the risk of excessive leverage	ING follows the leverage ratio on a monthly basis and takes it into account when taking certain securitisation and/or Tier 1 issuance/redemption decisions.
2	Description of the factors that had an impact on the leverage ratio during the period to which the disclosed leverage ratio refers	The leverage ratio improved as total exposure growth (+1.9%) was outpaced by Tier 1 capital growth (+7.2%). The latter was mainly the result of profit retention and the net issuance of EUR 1.6 billion Additional Tier 1 capital.

TLAC

Following the publication of the CRR II on 28 June 2019, TLAC requirements entered into force. Globally Systemic Important Institutions (G-SIIs), including ING Group, are required to hold own funds and eligible liabilities of at least the highest of 16% of RWA and 6% of the Leverage Ratio Exposure Amount (LREA). This requirement will increase to 18% of RWA and 6.75% of LREA as per 1 January 2022.

In addition, after the incorporation of the CRD V in Dutch law, required to take place before year-end 2020, and after the leverage ratio buffer requirement becomes applicable, the capital used to meet the combined buffer requirement and leverage ratio buffer requirement cannot also be used to meet TLAC. This effectively results in 'fully-loaded' TLAC requirements of 23.7% of RWA and 7.25% of LREA as per January 2022.

The CRR II requires ING Group to disclose information on TLAC, among others (i) the TLAC ratios and its components and (ii) the composition of own funds and eligible liabilities, their maturity and their main features. Contrary to other Pillar III disclosure requirements, the EBA has not issued detailed disclosure formats for TLAC yet but the formats are expected to be published before 28 June 2020 in line with the mandate as stipulated in the CRR II.

The disclosures on TLAC ratios and its components can be found in the table below and for the composition of own funds and eligible liabilities, ING has added a template with "Other TLAC eligible instruments' main features" to complement the template on own funds. Both templates are disclosed as part of the "Additional Pillar 3 disclosures" excel file on the corporate website ing.com. http://www.ing.com/About-us/Annual-Reporting-Suite.htm.

ING Group TLAC surplus	2019
Regulatory capital elements of TLAC and adjustments	
Common Equity Tier 1 capital (CET1)	47,552
AT1 instruments eligible under the TLAC framework	6,966
T2 instruments eligible under the TLAC framework	7,784
TLAC arising from regulatory capital	**62,303**
Non-regulatory capital elements of TLAC	
External TLAC instruments issued directly by the bank and subordinated to excluded liabilities	23,686
TLAC arising from non-regulatory capital instruments before adjustments	**23,686**
Non-regulatory capital elements of TLAC: adjustments	
TLAC before deductions	**85,989**
Deductions of investments in own other TLAC liabilities	-79
TLAC after deductions	**85,910**
Risk-weighted assets and leverage exposure measure for TLAC purposes	
Total risk-weighted assets adjusted as permitted under the TLAC regime	326,414
Leverage exposure measure	1,186,340
TLAC ratios and buffers	
TLAC requirement (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime)	16.00%
TLAC (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime)	26.32%
TLAC requirement (as a percentage of leverage exposure)	6.00%
TLAC (as a percentage of leverage exposure)	7.24%
TLAC surplus	**14,730**

Credit Risk

Basis and scope of presentation

In the credit risk section of Pillar III, data included in the tables are related to ING's credit risk resulting from Lending (both on- and off-balance), Money Market activities, Investment Risks, Securities Financing and Derivatives. The Securities Financing and Derivatives portfolios are presented separately in the counterparty credit risk section.

The amounts presented in this section relate to amounts used for credit risk management purposes, which follow ING's internal interpretation of the definitions as prescribed under CRR/CRD IV. Therefore, the numbers can be different from the accounting numbers as reported in the annual accounts under IFRS-EU. An example is the treatment of ONCOA (Other Non-Credit Obligation Assets) items – while the accounting numbers include ONCOA, they are excluded from the credit risk section of Pillar III.

The majority of the tables included in this section are based on gross or net carrying value. The gross carrying value refers to the original exposure pre-credit conversion factors for the on- and off-balance sheet items. The net carrying value corresponds to the original exposure (on- and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

READ is the Regulatory Exposure at Default (READ) and credit risk weighted assets (RWA) under the CRR/CRD IV definitions. READ is the sum of the on-balance and off-balance sheet: Lending, Investment, Money Market and counterparty activities plus an estimated portion of the unused credit facilities extended to the obligor. The amounts associated with Investment and Lending activities are based on the original amount invested less repayments.

Figures for Derivatives and Securities Financing are based on the Current Exposure Method, which is equal to the marked-to-market value of the underlying trades plus a (regulatory defined) 'add-on' which represents estimated potential future exposure (PFE). The amounts are adjusted based on the underlying collateral and any legal netting or compensation that may be permitted under master agreement arrangements such as International Swaps and Derivatives Association (ISDA) master agreements and Credit Support Annexes (CSAs).

Off-balance sheet exposures include letters of credit and guarantees, which are associated with the Lending risk category and are included under 'credit risk outstanding'. Additionally, off-balance sheet exposures include a portion of the unused limits, which represent the expected value of the outstanding at the theoretical moment of default. These are not counted under 'credit risk outstanding' but they contribute to total exposure and READ.

Exposures associated with Securitisations (Asset Backed Financing, Commercial / Residential Mortgage Backed Securities) are shown separately because of their specific treatment. These amounts also relate to the amount invested prior to any impairment or mark-to-market adjustments. These amounts are also considered to be 'Credit Risk outstanding'.

Investments in a financial sector entity, determined following art. 43 of the CRR, are included in the item "amounts below the thresholds for deduction" of table EU-OV1 "ING Group Regulatory capital requirements" up to the level at which the combined significant investments are equal to 10% of the CET1 capital of ING Group. These exposures are subject to 250% risk weight.

A small part of the equity exposure of ING's portfolio is subject to the simple risk weight method for calculating the regulatory capital.

Credit RWA Migration Analysis

The table below explains the changes in Credit RWA in the AIRB portfolio during the reporting period and provides additional information by linking the impact of changes in portfolio composition, model changes and shifts in the risk environment on Credit RWA. The table reconciles movements in Credit RWA for the period for each Credit RWA risk type of ING for the AIRB portfolio including securitisations excluding equity and ONCOA. It does not include counterparty credit risk exposures under the Internal Model Method (IMM), as ING has not yet received regulatory approval to use IMM.

EU CR8 RWA flow statement of credit risk exposures under the IRB approach

		2019
	RWA amounts	Capital requirements
RWAs at the end of the previous reporting period	211,592	16,927
Asset size	5,724	458
Asset quality	-16,131	-1,290
Model updates	1,830	146
Methodology and policy	838	67
Foreign exchange movements	1,512	121
Other	1,714	137
RWAs at the end of the reporting period	**207,080**	**16,566**

Excluding securitisations, equity, ONCOA and counterparty credit risk exposures.

Over the year 2019 the credit RWA in the IRB portfolio decreased by EUR 4.5 billion from EUR 211.6 billion to EUR 207.6 billion.

- **Asset size:** The asset size of the portfolio increased and led to a higher RWA (EUR 5.7 billion), mainly observed in Challengers and Growth increaseing RWA by EUR 3 billion. Further, Wholesale Banking increased RWA by EUR 2.5 billion mainly. In Market Leaders, caused RWA to increase by EUR 220 million.
- **Asset Quality:** The risk profile of the portfolio improved, resulting in a reduction of EUR 16.1 billion RWA. The largest decrease was related to improved risk profiles in Wholesale Banking (mainly in Financial Markets and Structured Finance) and C&G countries (mainly in Germany and Spain). Also the NVM House Price index uplift further improved the book quality of the Dutch mortgages portfolio by relieving RWA by EUR 1.7 billion RWA in Market Leaders.
- **Model Updates**: The total Model Updates in 2019 caused RWA to increase by EUR 1.8 billion.
- **Methodology and policy**: In 2019 there were several methodology and policy changes causing RWA to increase by combined EUR 838 million.
- **Foreign exchange movements:** The increase of RWA by EUR 1.5 billion was mainly due to appreciation of the US dollar and the British Pound during 2019. The US dollar appreciation against the Euro (1.8%) caused an increase of RWA by EUR 1.0 billion and the British Pound appreciaton (5.5%) caused an increase of EUR 287 million.
- **Other:** The remaining increase of EUR 1.7 billion RWA was partially due to recalculation of provisions and covers for several clients.

Overall, RWA management has a high priority throughout ING Group in all aspects of our business. From product design to pricing, RWA allocation and consumption is extensively monitored, reported and managed at all levels of the organisation.

Credit risk approach

ING applies the Advanced Internal Ratings Based (AIRB) approach on the majority of its significant portfolios that contain credit risk in accordance with the required approvals granted by ECB and various local regulators. The AIRB approach is permitted by the regulator if there are regulatory approved rating models (PD, EAD and LGD) in place and if the (local) management understands and uses these rating models (Basel Use Test) in their credit decision-making processes. However, a small portion of the portfolio remains subject to the Standardised Approach (SA). The majority of SA portfolios at ING relate to subsidiaries where the home regulator does not have a robust AIRB framework or requirement.

Credit risk capital and measurement

Credit risk capital

Regulatory capital is the minimum amount of capital (based on 99.90% confidence level) that ING holds from a regulatory perspective as a cushion to be able to survive large unexpected losses.

RWA comparison

The differences in RWA among banks have been classified by the BIS in 3 categories:

- Risk based drivers that stem from the differences in underlying risk at the exposure/portfolio level and in business models/ strategies including asset class mix;
- Practice-based drivers including approaches to risk management and risk measurement; and
- Regulatory environment such as supervisory practices, implementing laws and regulations including national discretion and accounting standards.

Risk based drivers
ING's portfolio is dominated by secured lending especially in the areas of residential mortgages, leasing and commercial real estate. Secured lending tends to have a much lower LGD, given the collateral involved, which is a key driver of RWA calculations. Therefore the regulatory formula for residential mortgages tends to result in lower RWA, all other factors being equal.

Practice based drivers
ING has a proactive approach to non-performing exposures. Non-performing exposures are recognised early based on unlikely to pay triggers. For non-retail, ING typically classifies default based on a borrower rating and not a facility rating which means that a customer will only have one PD (probability of default) regardless of the type(s) of transactions done with ING. As a consequence, if one facility is in default, usually all facilities of the client are in default. Non-performing clients which were granted forbearance measures have an additional probation period of 1 year starting from the last moment they are classified as forborne, before returning to performing status.

Regulatory environment
ING's primary supervising entity is the ECB, which is supported by many host supervisors. The ECB supervises adherence to regulatory rules: the regulatory framework defined in CRR/CRD, European Bank Authority (EBA) standards and ECB guidance. The ECB requires all 'significant changes' in internal models (PD, LGD, EAD and IFRS 9) and policies to be reviewed and approved by the ECB, prior to implementation. Lower level model changes are either pre-notified or post-notified to the ECB.

Comparing capital levels across banks is a challenging exercise because of different risk profiles, differences in risk based drivers, practice based drivers and the regulatory environment (e.g. advanced internal rating based approach or the standardised approach). These factors have a substantial impact on the regulatory capital/RWA of a financial institution. ING continues to work with industry groups and strives to adhere to the latest BIS and EBA recommendations to improve the transparent reporting of the bank's capital calculations.

Economic capital
Economic capital reflects ING's own view on credit risk, which allows it to be used in decision-making processes at (sub) portfolio level. Credit risk and transfer risk capital are calculated for all portfolios which contain credit or transfer risk, including investment portfolios. Economic capital is the minimum amount of capital required to cover unexpected losses within a 99.9% confidence level and a 12 month time horizon. It is used throughout ING in the decision-making process (mainly wholesale banking), in risk adjusted counterparty and portfolio profitability measurement tools (wholesale and retail banking), in investment and divestment decisions, in the country risk framework and in concentration risk management, including risk appetite statements (RAS). Economic capital is calculated using the economic values of rating models (PD, EAD and LGD), in line with regulatory requirements.

An important characteristic of our IT systems and framework is that models are built for several purposes, including economic capital, regulatory capital and loan loss provisioning. These credit risk models are used throughout the organisation which is compliant with the Basel Use Test requirement and facilitates active feedback on the risk parameters by business units.

Credit risk measurement
There are two ways to measure credit risk for regulatory reporting purposes within ING's portfolio, depending on whether the exposure is booked under an ING office that is permitted by the ECB to use the advanced internal rating based (AIRB) approach, or if it falls under the standardised approach (SA).

Standardised approach
The SA applies a fixed risk weight to each asset as dictated by the CRR, and is based on the exposure class to which the exposure is assigned. As such, the SA is the least sophisticated of the regulatory capital methodologies and is not as sensitive as the risk-based approach. Where external rating agency ratings are available, they may be used as a substitute to using the fixed risk weightings assigned by the Financial Supervisory Authorities. Because the underlying obligors are relatively small for exposures treated under SA, the underlying obligors tend not to have external ratings.

Advanced internal rating based approach
There are five main elements that drive the determination of risk-weighted assets under the AIRB approach.

- **Probability of Default (PD)**: The first is the borrower's probability of default, which measures a client's creditworthiness in terms of likelihood to go into default. It attempts to measure the senior, unsecured standalone creditworthiness of an organisation without consideration of structural elements of the underlying transactions, such as collateral, pricing, or maturity. Each borrower has a rating which translates into a specific PD.
- **Exposure at Default (EAD)**: The second element is the borrower's exposure at default. EAD models are intended to estimate the outstandings amount or obligation at the moment of default. Since the time in which a client may go into default is unknown, and the level of outstandings that may occur on that date is also unknown, ING uses a combination of statistical and hybrid models to estimate the EAD. With the exception of guarantees and letters of credit, the EAD is always equal to or

higher than the associated credit risk outstandings, under the assumption that clients tend to absorb liquidity from available credit resources before financial problems become apparent to the clients' creditors. EAD is largely a function of the type of credit facility (overdraft, revolving, term) offered to the borrower.

- **Loss Given Default (LGD)**: The third element is loss given default. LGD models are intended to estimate the amount ING would lose after liquidating collateral pledged in association with a given loan or financial obligation, or alternatively, from liquidating the company as a whole as part of a workout process. LGD models are based on cover types, estimated recovery rates given orderly liquidation, and (in)direct cost of liquidation.
- **Maturity (M)**: The fourth element is the time to the maturity of the underlying financial obligation. Regulatory requirements (CRR/CRDIV) floor the maturity element at one year and cap it at five years.
- **Exposure Class**: The fifth element is the exposure class (a regulatory prescribed grouping of a common obligor type or product type) which is a driver for the correlation factor. To calculate risk-weighted assets the default correlation between a transaction and all other transactions in the portfolio is taken into account.

The expected loss (EL) provides a measure of the value of the credit losses that ING may reasonably expect to incur on its portfolio. In its basic form, the expected loss can be represented as:

EL = PD * EAD * LGD

Securitisations

ING has implemented the AIRB approach for credit risk. As a consequence, ING uses the rating based approach (RBA) for investments in tranches of asset-backed securities (ABS) and mortgage-backed securities (MBS) which have been rated by external rating agencies. Rating agencies which are used by ING under the RBA include Standard & Poor's, Fitch and Moody's.

Under the RBA, the RWA are determined by multiplying the amount of the exposure by the appropriate regulatory risk weights, which depend on:

- The external rating or an available inferred rating;
- The seniority of the position; and
- The granularity of the position.

Further, CRR/CRD IV introduced an additional regulatory capital charge for material increases in the Credit Valuation Adjustment (CVA), the market price of the counterparty credit risk of derivatives. In particular, as credit spreads of ING's counterparties increase, CVA will increase as well and ING will incur a loss. ING follows the SA for calculation of the capital charge to cover CVA Risk (CVA capital) in accordance with the CRR/CRD IV. The scope of the products and counterparties that the CVA capital charge is applied to also follows those regulations.

ING uses the AIRB and the Internal Assessment Approach (IAA) for liquidity lines provided to Asset Backed Commercial Paper programmes and this is explained in more detail in the securitisation section. ING does not use the Basel Foundation IRB Approach (FIRB) for any of its portfolios.

Credit risk tools

Exposure classes

The BCBS has developed the concept of 'Exposure Classes', which has been transposed into CRR/CRDIV. These are essentially groupings of credit risks associated with a common client type, product type and/or cover type. For the AIRB Approach, most of the exposure classes have subcategories. ING has applied the following definitions to determine Exposure Classes:

- Sovereigns include Sovereign Government entities, Central Banks and recognised Local / Regional Authorities as well as Supranational Organisations;
- Institutions include Commercial Banks, non-Bank Financial Institutions, such as Funds and Fund Managers, and Insurance Companies, as well as local and regional government entities not classified as governments;
- Corporates includes all legal entities, that are not considered to be Governments, Institutions or Retail Other;
- Retail includes the following classes:
  - Retail – Secured by immovable property non-SME (hereafter residential mortgages) includes all retail loans which are covered by residential properties;
  - Retail - Secured by immovable property SME (included in tables with Other Retail) includes all retail loans which are covered by commercial properties; and
- Other Retail includes all other credit obligations related to Retail SMEs (such as partnerships and one-man businesses) and private individuals (such as consumer loans, car loans and credit cards). Under these exposure class definitions, it is possible for a private individual to have exposure classified as both residential mortgages and retail other.
- Securitisations include securitisation programs for which ING acts as an investor, sponsor or originator.

Models used for exposure classes

ING has developed PD, EAD and LGD models for Wholesale Banking and Retail Banking portfolios. These models are subject to Credit and Trading Risk Committee (CTRC) approval and changes which significantly impact the results require approval from the regulator before implementation. By nature, the above described exposure classes have different, specific characteristics. To capture these specific characteristics and to have suitable valuations and analyses in place, Model Development is continuously updating and developing models within each exposure class.

ING master scale

Internal rating grade and corresponding PD and external rating equivalent			
Internal rating grade		PD range for each grade	External Rating Equivalent
Performing			
Investment grade	1	0.00 - 0.01%	AAA
	2	0.01 - 0.03%	AA+
	3	0.03 - 0.04%	AA
	4	0.04 - 0.05%	AA-
	5	0.05 - 0.06%	A+
	6	0.06 - 0.08%	A
	7	0.08 - 0.11%	A-
	8	0.11 - 0.17%	BBB+
	9	0.17 - 0.26%	BBB
	10	0.26 - 0.37%	BBB-
Non-investment grade	11	0.37 - 0.58%	BB+
	12	0.58 - 1.00%	BB
	13	1.00 - 1.77%	BB-
	14	1.77 - 3.23%	B+
	15	3.23 - 6.05%	B
	16	6.05 - 11.67%	B-
	17	11.67 - 20.20%	CCC
Sub-standard grade	18	20.20 - 29.58%	CC
	19	>29.58%-100%	C
Non-performing			
Non-performing grade	20	100%	Default
	21	100%	Default
	22	100%	Default

AIRB models per exposure class

In the table below, the number of significant PD, EAD and LGD models per asset class are shown. Additionally a description of the model and methodology are provided per exposure class. The asset classes presented in this table do not align with the EBA Exposure classes as the scope has been redefined to better fit the scope of the model. SME exposure, for example, can be part of either corporate exposures or other retail depending on the size of the SME.

AIRB models and methodology

	Model Type	Number of significant models	Model description and methodology	Number of years of data
Sovereigns	PD	1	The Government Central PD model is a fully statistical model, containing only quantitative risk drivers.	>7 years
	LGD	1	The LGD model for Sovereigns and other governments is an unsecured recovery model built on assessment of structural factors that influence a country's performance.	>7 years
	EAD	1	The Low Default EAD model is a hybrid model that pools default information from multiple low default portfolios, including central governments and central banks.	>7 years
Government related entities	PD	1	The government related entities PD model is expert based and assigns ratings based on stand-alone credit fundamentals as well as degree of government support.	>7 years
	LGD	1	The LGD model for Government related entities is a secured/unsecured recovery model built on assessment of stand-alone fundamentals as well as geography.	>7 years
	EAD	1	The Low Default EAD model is a hybrid model that pools default information from multiple low default portfolios, including government related entities.	>7 years
Financial institutions	PD	3	The main PD model applied is Bank Commercial based upon financial, qualitative and country information. Other PD models for different types of financial institutions are built using a similar framework, but are more specialised for the specific characteristics of the financial institution.	>7 years
	LGD	1	This LGD model was developed based on expert judgement, supported by limited internal and external data. The developed LGD model is based on ultimate recovery rates.	>7 years
	EAD	1	The Low Default EAD model is a hybrid model used that pools default information from multiple low default portfolios, including financial institutions.	>7 years
Corporates - Specialized lending	PD	3	Expert based scorecards Models predict a rating for Commercial Property Finance, Project Finance, Trade and Commodity Finance.	>7 years
	LGD	3	Hybrid LGD Models predict loss given default for Commercial Property Finance, Project Finance, Trade and Commodity Finance.	>7 years
	EAD	1	There is a dedicated EAD model for commercial property finance due to the specificities of this portfolio.	>7 years
Large Corporates	PD	1	The Corporate Large model is a global hybrid model build on 13 years of data, including balance sheet and qualitative information as well as country risk and parent influence.	>7 years
	LGD	1	Loss Given Default for Large corporates are predicted by a dedicated hybrid LGD model using both no loss rates as well as secured/unsecured recovery rates.	>7 years
	EAD	1	The Low Default EAD model is a hybrid model used that pools default information from multiple low default portfolios, including large corporates.	>7 years
SME	PD	6	The SME PD models are estimated statistically and directly predict a PD. Most of these models are developed locally to reflect regional/jurisdiction circumstances.	>7 years
	LGD	6	Local statistical models or hybrid models use various data inputs on cure behaviour as well as cost and recovery.	>7 years
	EAD	6	Local statistical models that use various data inputs, including product type and geography.	>7 years
Secured by residential mortgages	PD	7 [1]	The PD mortgages models are all developed statistically and include borrower specific information, payment behaviour and product related information. These are statistical models that directly predict a PD.	>5 years [2]
	LGD	7	Local statistical models or hybrid models use various data inputs on cure behaviour as well as cost and recovery	>7 years
	EAD	7	Local statistical models that use various data inputs, including product type and geography.	>7 years
Private Individuals	PD	4 [1]	The PD models for private individuals are all developed statistically and include borrower specific information, payment behaviour and product related information. These are statistical models that directly predict a PD.	>5 years [2]

	LGD	4	Local statistical models use various data inputs on cure behaviour as well as cost and recovery.	>7 years
	EAD	4	Local statistical models that use various data inputs, including product type and geography.	>7 years
Other[1]	Other		(Covered Bonds, Structured assets)	

1 Belgian PD models provide a rating at a customer level, covering both secured and unsecured loans.
2 For retail PD modelling a minimum of 5 years is allowed based on ING's Modelling Standards, which are compliant with regulatory requirements.

Credit risk exposure excluding Counterparty Credit Risk

In this credit risk section the tables shown represent the net values of on- and off-balance sheet exposures as per EBA definitions. The scope of these tables are the credit risk exposures excluding the counterparty credit risk exposures (also named Pre-Settlement exposures), Securitisations, Equity positions, CVA and ONCOA items.

In the next four tables the net carrying values are broken down per exposure class, geography, counterparty type and maturity.

The table below displays the net carrying values at the end of 2019 and 2018 per AIRB and SA exposure classes. Next to it the average net carrying value per the same exposure classes over the past 4 quarters is provided. This average net carrying value is based upon the last 4 quarter-end observations in the year 2019.

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

AIRB Approach	Net carrying value[1] of exposures at the end of 2019	Average net exposures over the period	Net carrying value of exposures at the end of 2018
Central governments or central banks	264,834	266,625	268,349
Institutions	114,090	111,427	107,915
Corporates	590,138	490,825	451,072
Of Which: Specialised lending	161,343	162,373	159,650
Of Which: SME	27,039	27,201	27,610
Retail	337,382	335,660	330,343
Secured by real estate property	306,284	304,627	299,959
SMEs	11,508	11,803	11,805
Non-SMEs	294,776	292,825	288,154
Other Retail	31,098	31,032	30,384
SMEs	4,874	4,996	5,029
Non-SMEs	26,224	26,036	25,355
Total AIRB approach	**1,306,444**	**1,204,537**	**1,157,680**
SA approach			
Central governments or central banks	4,237	4,558	3,484
Regional governments or local authorities	152	183	220
Public sector entities	21	22	
Institutions	760	2,109	2,007
Corporates	10,464	10,144	10,489
of which: SMEs	1,669	1,723	1,854
Retail	18,547	17,880	17,366
of which: SMEs	3,412	3,541	3,862
Secured by mortgages on immovable property	19,921	19,131	18,086
of which: SMEs	1,009	1,194	1,553
Exposures in default	778	677	540
Total SA approach	**54,880**	**54,695**	**52,192**
Total	**1,361,324**	**1,259,231**	**1,209,872**

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

In 2019, the total net carrying value of the AIRB portfolio increased by EUR 148.8 billion. The increase was mainly driven by an increase of net carrying value with Corporate Exposure class, mainly due to the cancellation of on-balance-sheet netting related to Bank Mendes Gans N.V.

The SA portfolio increased by EUR 2.7 billion in 2019, driven by residential mortgages, mainly seen in the Retail/ Secured by real estate property exposure class.

Exposure by geography

The table below presents a breakdown of net carrying value of exposures and their totals by geographical area and exposure classes under the AIRB and SA approaches.

EU CRB-C: Geographical breakdown of exposures

2019	Net carrying value[1]									
	Europe	Netherlands	Belgium & Luxembourg	Germany	Other Europe	America	Africa	Asia	Australia	Total
Central governments or central banks	227,420	44,062	51,929	70,892	60,537	18,712	759	10,240	7,703	264,834
Institutions	61,764	6,680	15,100	2,640	37,344	14,976	1,187	30,981	5,182	114,090
Corporates	362,189	86,308	68,609	20,467	186,805	134,747	4,622	81,449	7,132	590,138
Retail	301,331	131,918	52,318	90,447	26,647	265	41	208	35,536	337,382
Total AIRB approach	**952,704**	**268,968**	**187,956**	**184,446**	**311,333**	**168,700**	**6,609**	**122,878**	**55,553**	**1,306,444**
Central governments or central banks	4,237	1			4,236					4,237
Regional governments or local authorities	152		3		148					152
Public sector entities								21		21
Institutions	730	40	45	51	594	23		5	2	760
Corporates	10,122	461	1,065	349	8,246	1		308	33	10,464
Retail	18,172	34	38	1	18,099	7	7		360	18,547
Secured by mortgages on immovable property	16,678	3,018	3	1	13,655	2		57	3,185	19,921
Exposures in default	769	40	183	37	509				9	778
Total SA approach	**50,860**	**3,594**	**1,338**	**440**	**45,488**	**32**	**7**	**391**	**3,589**	**54,880**
Total	**1,003,564**	**272,562**	**189,294**	**184,886**	**356,821**	**168,732**	**6,616**	**123,270**	**59,142**	**1,361,324**

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

EU CRB-C: Geographical breakdown of exposures

2018	Net carrying value[1]									
	Europe	Netherlands	Belgium & Luxembourg	Germany	Other Europe	America	Africa	Asia	Australia	Total
Central governments or central banks	229,860	49,578	52,429	71,672	56,182	19,202	599	10,464	8,225	268,349
Institutions	59,148	5,830	13,814	2,307	37,196	13,402	1,122	29,920	4,324	107,915
Corporates	298,474	70,852	67,581	16,995	143,046	72,495	4,938	68,247	6,918	451,072
Retail	296,849	132,812	51,072	87,740	25,226	248	46	200	32,999	330,343
Total AIRB approach	**884,330**	**259,072**	**184,896**	**178,713**	**261,650**	**105,346**	**6,705**	**108,832**	**52,466**	**1,157,680**
Central governments or central banks	3,462	1			3,461			22		3,484
Regional governments or local authorities	220	50	5		165					220
Institutions	1,922	1,606	75	3	238	31		52	2	2,007
Corporates	10,109	686	1045	358	8,019	10	2	332	37	10,489
Retail	17,174	55	114	1	17,005	7	6		178	17,366
Secured by mortgages on immovable property	15,185	2,979	5	1	12,200	1		57	2,843	18,086
Exposures in default	537	36	144		356				3	540
Total SA approach	**48,609**	**5,413**	**1,388**	**363**	**41,444**	**49**	**8**	**463**	**3,063**	**52,192**
Total	**932,939**	**264,484**	**186,284**	**179,076**	**303,094**	**105,396**	**6,712**	**109,295**	**55,529**	**1,209,872**

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

Again, during 2019 net carrying value in Europe increased by EUR 70.6 billion, mainly driven by the afore mentioned cancellation of on-balance-sheet netting related to Bank Mendes Gans N.V. The effect was most noticeable in the Netherlands, UK and Ireland. As for the increase in Retail exposure class, the main driver was the growth of residential mortgage volumes in Spain, Germany and Belux partially off-set by reduced mortgage lending in the Netherlands and Italy.

Outside of Europe, exposure increased in Corporates class mainly in the United States due to BMG netting cancelation. For the Retail class increased volumes of residential mortgages were seen in Australia.

The SA portfolio in Europe increased by EUR 2.3 billion in 2019 driven by residential mortgages, mainly seen in the Retail/ Secured by real estate property exposure class in Other Europe.

Exposure by industry or counterparty type

The following table provides a breakdown of the net carrying values by industry or counterparty type per exposure class, for both the AIRB and SA portfolio and ordered by the size of the combined AIRB and SA exposure. These industry sector or counterparty types are based upon the European NACE codes (Nomenclature statistique des Activités économiques dans la Communauté Européenne) and reflect the main activity of the client. The industry or counterparty type allocation is based exclusively on the nature of the client. The classification of the exposures incurred jointly by more than one obligor should be done on the basis of characteristics of the obligor that was the more relevant, or determinant, for the institution to grant the exposure.

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

	Net carrying value[1]						
2019	Activities of households as employers and own use	Wholesale and retail trade	Financial and insurance activities	Public administration and defence, compulsory social security	Manufac turing	Other Services	Total
Central governments or central banks			105,365	157,349		2,119	264,834
Institutions			100,751	8,165	15	5,159	114,090
Corporates	46	121,052	65,216		159,944	243,880	590,138
Retail	277,075	6,082	2,284	13,977	9,996	27,968	337,382
Total AIRB approach	**277,121**	**127,134**	**273,616**	**179,492**	**169,955**	**279,127**	**1,306,444**
Central governments or central banks			3,499	737		1	4,237
Regional governments or local authorities				151		2	152
Public sector entities			21				21
Institutions			738			22	760
Corporates	313	2,495	299		4,627	2,731	10,464
Retail	9,772	1,562	438	1,127	1,555	4,093	18,547
Secured by mortgages on immovable property	13,041	424	48	10	672	5,726	19,921
Exposures in default	257	253	4	4	112	149	778
Total SA approach	**23,382**	**4,733**	**5,048**	**2,028**	**6,965**	**12,723**	**54,880**
Total	**300,503**	**131,868**	**278,664**	**181,519**	**176,921**	**291,850**	**1,361,324**

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

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

	Net carrying value[1]						
2018	Activities of households as employers and own use	Wholesale and retail trade	Financial and insurance activities	Public administration and defence, compulsory social security	Manufac turing	Other Services	Total
Central governments or central banks			109,157	155,663	2	3,527	268,349
Institutions			95,811	7,481	24	4,600	107,915
Corporates	52	92,591	46,211	0	95,002	217,216	451,072
Retail	272,360	6,258	1,893	13,434	8,984	27,416	330,343
Total AIRB approach	**272,411**	**98,849**	**253,072**	**176,577**	**104,011**	**252,759**	**1,157,680**
Central governments or central banks			2,719	763		1	3,484
Regional governments or local authorities				168		52	220
Institutions			1,990			17	2,007
Corporates	346	2,949	247		4,252	2,695	10,489
Retail	8,613	1,869	362	991	1,590	3,941	17,366
Secured by mortgages on immovable property	10,871	712	54	8	867	5,575	18,086
Exposures in default	231	105	3	3	68	130	540
Total SA approach	**20,061**	**5,634**	**5,377**	**1,934**	**6,776**	**12,411**	**52,192**
Total	**292,472**	**104,483**	**258,449**	**178,511**	**110,788**	**265,170**	**1,209,872**

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

The table shows the industry or counterparty types that represent at least 5% of the total net carrying value. In total the top 5 counterparty or industry types makes up 78% of the exposure in 2019. The other counterparty or industry types exposures are grouped under the Other Services. Manufacturing is logically mostly found in the Corporate exposure class and the Financial and insurance activities in the Institutions and Sovereign exposure classes.

For AIRB Approach, Corporates exposure class increased net carrying value in: Wholesale and retail trade, mainly in the Netherlands, US, UK and Switzerland; Financial and insurance activities, mainly in the UK; Manufacturing, mainly in the US and Ireland. The main industries that contributed to the increase of Other Services were Transport, storage and communication and Real estate, renting and business activities. This was mainly seen in the US, Singapore, France and UK.
The Retail exposure class grew mainly in Activities of households as employers and own use, mainly due to increased residential mortgage volumes in Australia, Germany and Belux.

In the SA portfolio an increase was seen in Activities of households as employers and own use in Secured by mortgages on immovable property class, mainly driven by residential mortgage growth in Poland and Romania.

Exposure by maturity

The table below presents a breakdown of the net carrying value by residual maturity, for both AIRB and SA exposure classes. In ING's data model all transactions get assigned a regulatory maturity between 1 day and 5 years.

EU CRB-E: Maturity of exposures

2019	Net carrying value[1] <= 1 year	> 1 year < 5 years	>= 5 years	Total
Central governments or central banks	121,178	92,551	51,105	264,834
Institutions	68,750	27,304	18,035	114,090
Corporates	311,246	200,185	78,706	590,138
Retail	9,941	23,556	303,885	337,382
Total AIRB approach	**511,116**	**343,597**	**451,731**	**1,306,444**
Central governments or central banks	3,910	326		4,237
Regional governments or local authorities	3	119	30	152
Public sector entities		13	8	21
Institutions	596	136	29	760
Corporates	5,512	4,105	846	10,464
Retail	5,021	6,539	6,987	18,547
Secured by mortgages on immovable property	1,924	3,606	14,392	19,921
Exposures in default	504	72	202	778
Total SA approach	**17,471**	**14,915**	**22,494**	**54,880**
Total	**528,587**	**358,512**	**474,225**	**1,361,324**

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

EU CRB-E: Maturity of exposures

2018	Net carrying value[1] <= 1 year	> 1 year < 5 years	>= 5 years	Total
Central governments or central banks	115,548	86,464	66,337	268,349
Institutions	65,332	27,810	14,773	107,915
Corporates	173,800	192,990	84,282	451,072
Retail	10,685	27,102	292,556	330,343
Total AIRB approach	**365,365**	**334,366**	**457,948**	**1,157,680**
Central governments or central banks	2,698	777	9	3,484
Regional governments or local authorities	5	75	140	220
Institutions	1,804	138	65	2,007
Corporates	5,283	4,183	1,023	10,489
Retail	4,820	6,660	5,886	17,366
Secured by mortgages on immovable property	2,138	3,584	12,365	18,086
Exposures in default	309	55	177	540
Total SA approach	**17,058**	**15,471**	**19,663**	**52,192**
Total	**382,423**	**349,837**	**477,612**	**1,209,872**

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

The largest part of the exposure is in the <1 year maturity bucket (38.8%) This lower maturity buckets for Central Governments or Central Banks are mostly in money market deposits and regulatory reserve deposits and revolving loans. Exposures in the other two buckets are predominantly seen in bond investment products. Regarding Corporates, revolving loans, guarantees and letters of credit make up the majority of the exposure seen in the first maturity bucket, whereas term loans and revolving loans are the dominant product types in the longer maturity buckets. The exposure increased mainly due to the change in the governance for balance sheet netting in the system. Retail exposure, is mainly seen in the lager bucket, due to the residential mortgage loans tend to have a larger maturity.

Advanced Internal Rating Based approach (AIRB)

AIRB credit exposures by exposure class and PD range

The table below provides an overview of the main parameters used for the calculation of capital requirements for AIRB models. The on- and off-balance sheet exposures are shown by the four main exposure classes and according to PD grades to enable an assessment of the credit quality of the portfolio. The exposures are bucketed in PD Scales prescribed by EBA. This bucketing of PD scales is not used within ING. ING's Probability of Default (PD) rating models are based on a 1-22 scale, which corresponds to the same rating grades that are assigned by external rating agencies. Risk Ratings (PD) for performing loans (1-19) are calculated within ING with regulatory approved models. Risk Ratings for non-performing loans (20-22) are set on the basis of an approved discretionary methodology by the Global or Regional Restructuring unit. Overall the risk weights of the ING portfolio are a mixture of low risk weights for sovereigns and residential mortgages combined with higher risk weights for Corporates. Many central governments exposures receive a zero risk weight due to the high quality rating (permanent partial use of the SA rules). Mortgages generally benefit from large levels of (over)collateralisation.

The average Credit Conversion Factor (CCF), which is the conversion of off-balance sheet exposure into credit exposure equivalents, is calculated as the off-balance exposure post-CRM and post-CCF over the original off-balance sheet exposure. The CCF percentages are applied on product or transaction level and are regulatory driven.

EU CR6: IRB- Credit risk exposures by exposure class and PD range

2019	PD Scale	Original on-balance sheet gross exposure	off-balance sheet exposures pre-ccf	Average CCF	EAD post crm and post-ccf	Average pd	Number of obligors	Average LGD	Average maturity	RWA	RWA density	EL	Value adjust-ments and provisions
Central Governments and Central Banks	0.00 to < 0.15	113,804	140,828	5%	121,508	0.03%	1,020	29%	2	5,029	4%	5	-5
Central Governments and Central Banks	0.15 to < 0.25	1,024	2,404	11%	1,278	0.21%	24	38%	1	322	25%	1	-1
Central Governments and Central Banks	0.25 to < 0.50	1,675	3,755	9%	2,028	0.31%	51	44%	2	1,084	53%	3	-3
Central Governments and Central Banks	0.75 to < 2.50	267	275	54%	416	1.92%	33	23%	4	205	49%	1	
Central Governments and Central Banks	2.50 to < 10.00	336	380	99%	710	6.63%	36	12%	4	321	45%	7	-2
Central Governments and Central Banks	10.00 to < 100.00	23	24	53%	36	18.44%	52	3%	3	7	18%		
Central Governments and Central Banks	default	51		38%	51	100.00%	5	3%	5	1	3%	1	-1
Central Governments and Central Banks	**subtotal**	**117,181**	**147,666**	**6%**	**126,027**	**0.12%**	**1,218**	**29%**	**2**	**6,970**	**6%**	**18**	**-12**
Institutions	0.00 to < 0.15	35,880	51,867	10%	40,864	0.06%	3,066	25%	2	4,981	12%	6	-2
Institutions	0.15 to < 0.25	2,550	3,114	20%	3,182	0.21%	466	13%	2	449	14%	1	
Institutions	0.25 to < 0.50	4,680	6,934	20%	6,050	0.36%	895	15%	2	1,201	20%	3	-1
Institutions	0.50 to <0.75	16	2	28%	17	0.71%	18	14%	3	6	36%		
Institutions	0.75 to < 2.50	3,256	2,886	17%	3,747	1.56%	596	19%	2	1,687	45%	11	-5
Institutions	2.50 to < 10.00	102	1,328	5%	173	5.07%	238	37%	2	233	135%	3	-2
Institutions	10.00 to < 100.00	18	1,055	4%	58	16.95%	6,003	40%	4	148	255%	4	-1
Institutions	default	361	61	42%	386	100.00%	185	4%	5	107	28%	9	-9
Institutions	**subtotal**	**46,862**	**67,247**	**11%**	**54,476**	**0.95%**	**11,415**	**22%**	**2**	**8,811**	**16%**	**37**	**-19**
Corporate	0.00 to < 0.15	135,835	81,661	34%	163,446	0.11%	16,733	14%	1.71	14,857	9%	22	-10
Corporate	0.15 to < 0.25	45,224	32,840	35%	56,795	0.21%	8,593	19%	2.29	11,619	20%	23	-10
Corporate	0.25 to < 0.50	96,431	65,585	37%	120,540	0.37%	26,667	21%	2.72	37,176	31%	91	-43
Corporate	0.50 to <0.75	1,725	651	57%	2,095	0.61%	2,180	29%	3.01	968	46%	4	-1
Corporate	0.75 to < 2.50	69,748	33,204	38%	82,414	1.26%	34,630	23%	2.88	45,722	55%	245	-170
Corporate	2.50 to < 10.00	11,510	4,825	31%	12,985	5.36%	12,310	26%	2.87	11,525	89%	174	-162
Corporate	10.00 to < 100.00	4,094	2,470	28%	4,786	23.57%	16,087	24%	2.79	6,679	140%	266	-198
Corporate	default	5,373	1,624	64%	6,407	100.00%	5,595	31%	2.15	7,999	125%	2,067	-2,067
Corporate	**subtotal**	**369,940**	**222,861**	**36%**	**449,467**	**2.23%**	**121,325**	**19%**	**2.33**	**136,544**	**30%**	**2,892**	**-2,662**
Retail	0.00 to < 0.15	107,622	16,501	80%	120,839	0.08%	5,169,252	19%	4.70	5,028	4%	16	-4
Retail	0.15 to < 0.25	56,874	2,586	62%	58,479	0.18%	628,025	21%	4.84	5,091	9%	22	-7
Retail	0.25 to < 0.50	90,978	3,256	79%	93,562	0.33%	1,327,680	18%	4.86	10,690	11%	55	-21
Retail	0.50 to < 0.75	16,791	1,207	69%	17,624	0.57%	336,075	29%	4.72	4,408	25%	28	-12
Retail	0.75 to < 2.50	22,385	2,299	87%	24,381	1.32%	1,385,347	33%	4.34	10,805	44%	109	-94
Retail	2.50 to < 10.00	9,256	556	88%	9,746	4.91%	419,432	27%	4.51	6,848	70%	120	-101
Retail	10.00 to < 100.00	4,556	167	101%	4,724	22.29%	174,088	25%	4.51	5,320	113%	254	-195
Retail	default	3,377	38	179%	3,444	100.00%	116,500	31%	4.19	5,956	173%	634	-634
Retail	**subtotal**	**311,839**	**26,611**	**79%**	**332,800**	**1.78%**	**9,330,011**	**21%**	**4.73**	**54,145**	**16%**	**1,238**	**-1,068**
Total (all portfolios)	**Total**	**845,821**	**464,385**	**25%**	**962,769**	**1.73%**	**9,463,924**	**21%**	**3.14**	**206,471**	**21%**	**4,185**	**-3,762**

All figures are in millions of EUR, except for the number of obligors.

EU CR6: IRB- Credit risk exposures by exposure class and PD range

2018	PD Scale	Original on-balance sheet gross exposure	off-balance sheet exposures pre-ccf	Average CCF	EAD post crm and post-ccf	Average pd	Number of obligors	Average LGD	Average maturity	RWA	RWA density	EL	Value adjust-ments and provisions
Central Governments and Central Banks	0.00 to < 0.15	106,290	154,453	5%	114,756	0.0%	1,163	34%	2	4,484	4%	4	-6
Central Governments and Central Banks	0.15 to < 0.25	344	765	24%	530	0.2%	20	35%	2	94	18%		
Central Governments and Central Banks	0.25 to < 0.50	2,256	2,995	7%	2,461	0.3%	57	59%	1	1,096	45%	3	-10
Central Governments and Central Banks	0.75 to < 2.50	212	406	32%	341	1.9%	40	25%	4	195	57%	1	
Central Governments and Central Banks	2.50 to < 10.00	272	305	87%	538	7.6%	42	18%	4	196	37%	4	-3
Central Governments and Central Banks	10.00 to < 100.00		17	27%	5	16.3%	48	10%	1	2	42%		
Central Governments and Central Banks	default	54		63%	54	100.0%	5	3%	5	4	8%	1	-1
Central Governments and Central Banks	**subtotal**	**109,429**	**158,941**	**6%**	**118,686**	**0.1%**	**1,372**	**35%**	**2**	**6,072**	**5%**	**14**	**-20**
Institutions	0.00 to < 0.15	29,978	52,207	8%	34,379	0.1%	2,865	28%	2	4,798	14%	6	-2
Institutions	0.15 to < 0.25	1,934	3,080	16%	2,437	0.2%	479	15%	2	394	16%	1	0
Institutions	0.25 to < 0.50	4,462	6,254	17%	5,501	0.4%	965	17%	2	1,158	21%	3	-1
Institutions	0.50 to <0.75	11	3	92%	14	0.7%	14	20%	4	7	49%		
Institutions	0.75 to < 2.50	3,836	3,661	14%	4,357	1.3%	622	26%	2	2,367	54%	13	-9
Institutions	2.50 to < 10.00	78	736	14%	184	6.4%	209	26%	2	178	97%	3	
Institutions	10.00 to < 100.00	53	1,280	19%	298	16.5%	3,574	17%	3	266	89%	7	-2
Institutions	default	325	36	36%	337	100.0%	217	1%	5	12	4%	3	-3
Institutions	**subtotal**	**40,676**	**67,257**	**10%**	**47,506**	**1.1%**	**8,910**	**25%**	**2**	**9,179**	**19%**	**36**	**-17**
Corporate	0.00 to < 0.15	42,855	79,809	34%	70,163	0.1%	17,601	40%	2.71	15,343	22%	21	-9
Corporate	0.15 to < 0.25	28,607	33,351	32%	39,275	0.2%	8,159	35%	2.79	11,385	29%	23	-9
Corporate	0.25 to < 0.50	74,510	62,883	37%	97,888	0.4%	25,937	36%	3.16	37,329	38%	89	-42
Corporate	0.50 to <0.75	1,631	489	48%	1,865	0.6%	2,301	34%	3.11	920	49%	3	-2
Corporate	0.75 to < 2.50	64,770	35,823	39%	78,754	1.3%	34,988	35%	3.19	49,181	62%	261	-173
Corporate	2.50 to < 10.00	10,926	5,220	34%	12,689	5.6%	12,144	52%	2.93	11,896	94%	187	-182
Corporate	10.00 to < 100.00	4,209	2,433	27%	4,855	22.0%	21,591	28%	2.94	6,521	134%	260	-201
Corporate	default	5,560	726	66%	6,037	100.0%	6,409	35%	2.21	8,263	137%	2,112	-2,112
Corporate	**subtotal**	**233,068**	**220,735**	**36%**	**311,525**	**3.0%**	**127,683**	**37%**	**2.99**	**140,837**	**45%**	**2,957**	**-2,730**
Retail	0.00 to < 0.15	87,858	16,031	74%	99,729	0.1%	4,827,943	23%	4.64	4,295	4%	14	-4
Retail	0.15 to < 0.25	59,811	3,072	62%	61,709	0.2%	630,732	23%	4.86	4,983	8%	21	-7
Retail	0.25 to < 0.50	99,381	3,295	75%	101,867	0.3%	1,376,907	20%	4.87	11,671	11%	60	-18
Retail	0.50 to < 0.75	16,234	1,189	59%	16,936	0.6%	342,878	34%	4.73	4,249	25%	27	-12
Retail	0.75 to < 2.50	22,118	2,385	80%	24,032	1.3%	1,343,282	41%	4.29	10,507	44%	108	-98
Retail	2.50 to < 10.00	10,453	653	77%	10,953	4.9%	454,931	31%	4.51	7,860	72%	135	-112
Retail	10.00 to < 100.00	5,274	181	105%	5,464	22.2%	177,033	29%	4.44	6,012	110%	298	-202
Retail	default	3,599	48	148%	3,670	100.0%	97,856	34%	4.02	5,927	162%	787	-787
Retail	**subtotal**	**304,727**	**26,854**	**73%**	**324,360**	**2.0%**	**9,040,020**	**24%**	**4.72**	**55,503**	**17%**	**1,450**	**-1,238**
Total (all portfolios)	**Total**	**687,900**	**473,786**	**24%**	**802,076**	**2.0%**	**9,177,943**	**31%**	**3.54**	**211,592**	**26%**	**4,458**	**-4,006**

All figures are in millions of EUR, except for the number of obligors.

The PD, LGD, EAD and maturity are drivers of RWA and RWA density. RWA density is measured as the RWA over the EAD and increases with each PD scale. In several instances the RWA Density is lower than one might expect, due to the loans guaranteed by an Export Credit Agency (ECA). These ECAs offer loans and insurance to help remove the risk of uncertainty of exporting to other countries and underwrite the political risk and commercial risks of overseas investments, and as such lower the LGD for these loans. With very low LGDs as a result the RWA is lower than would be assumed in a higher PD class.

RWA decreased by EUR 5.1 billion in 2019 mainly due to Corporate and Retail exposure classes. The decrease of RWA in the Corporates exposures class was concentrated mainly in the bucket 0.75 to < 2.50. Default bucket RWA decreased due to risk profile improvements. Regarding the retail exposure class, the PD buckets 0.25 to < 0.50 and 2.50 to < 10.00 PD drove the decrease in the RWA. The Central Governments and Central Banks exposures mostly consists of bond investments issued by European sovereigns. The majority of the exposure resides in the 0.00 – 0.15 PD scale.

EU CR6: IRB - Geographical breakdown of exposure-weighted average LGD and PD by exposure classes

2019	Europe	Netherlands	Belgium & Luxembourg	Germany	Other Europe	America	Africa	Asia	Australia
Central governments or central banks									
Average PD	0.04%	0.01%	0.03%	0.01%	0.03%	0.03%	0.10%	0.09%	0.21%
Average LGD	29.13%	29.80%	27.86%	27.89%	19.96%	29.60%	30.01%	30.01%	45.03%
Institutions									
Average PD	1.34%	9.65%	0.39%	0.18%	0.37%	0.37%	0.55%	0.12%	0.06%
Average LGD	20.81%	24.49%	22.29%	23.45%	18.92%	15.20%	48.56%	33.87%	33.31%
Corporates									
Average PD	2.62%	3.38%	4.21%	1.19%	1.77%	1.61%	3.99%	0.94%	5.22%
Average LGD	21.64%	16.67%	30.73%	24.14%	20.28%	11.77%	31.03%	21.29%	23.68%
Of Which: Specialised lending									
Average PD	2.08%	3.01%	1.73%	0.61%	1.89%	2.52%	1.17%	1.33%	3.98%
Average LGD	21.58%	10.66%	29.13%	14.51%	24.04%	22.31%	40.80%	23.64%	21.96%
Of Which: SME									
Average PD	5.72%	5.35%	5.87%	1.13%	5.98%	5.76%	0.33%		
Average LGD	31.12%	26.31%	35.23%	31.08%	28.85%	36.69%	27.19%		
Retail									
Average PD	1.83%	1.44%	4.01%	1.26%	1.33%	2.56%	3.16%	2.23%	1.37%
Average LGD	21.98%	13.46%	15.86%	34.86%	31.93%	15.90%	14.60%	14.18%	12.45%
Secured by real estate property									
Average PD	1.63%	1.31%	3.86%	0.94%	1.22%	2.90%	3.34%	2.15%	1.37%
Average LGD	18.33%	27.48%	12.77%	26.56%	31.11%	15.08%	7.87%	10.95%	12.43%
Other retail									
Average PD	3.01%	2.31%	4.11%	2.98%	4.23%	1.27%	2.58%	3.09%	1.58%
Average LGD	69.75%	62.83%	45.92%	80.23%	31.32%	19.72%	25.43%	47.37%	68.62%

EU CR6: IRB - Geographical breakdown of exposure-weighted average LGD and PD by exposure classes

2018	Europe	Netherlands	Belgium & Luxembourg	Germany	Other Europe	America	Africa	Asia	Australia
Central governments or central banks									
Average PD	0.04%	0.01%	0.03%	0.02%	0.11%	0.05%	14.81%	0.22%	0.02%
Average LGD	35.28%	29.87%	45.64%	33.20%	34.21%	29.81%	3.98%	32.40%	33.34%
Institutions									
Average PD	1.38%	10.35%	0.35%	0.24%	0.42%	0.70%	0.63%	0.12%	0.05%
Average LGD	24.94%	26.60%	25.19%	37.28%	23.98%	14.48%	50.80%	35.61%	35.85%
Corporates									
Average PD	3.35%	4.15%	3.71%	1.10%	2.99%	2.48%	8.43%	1.20%	2.85%
Average LGD	38.19%	27.63%	54.59%	32.47%	35.88%	36.49%	33.55%	32.74%	28.71%
Of Which: Specialised lending									
Average PD	2.72%	3.89%	1.68%	1.82%	2.65%	2.35%	2.16%	1.33%	4.19%
Average LGD	29.26%	15.30%	39.32%	27.19%	31.93%	33.72%	43.88%	28.93%	24.16%
Of Which: SME									
Average PD	6.15%	4.05%	5.85%	1.97%	9.77%	1.58%	4.39%	15.12%	
Average LGD	77.64%	45.51%	117.71%	57.53%	33.27%	34.85%	1.28%	58.90%	
Retail									
Average PD	2.05%	1.65%	4.03%	1.44%	2.26%	3.18%	5.07%	2.54%	1.17%
Average LGD	25.32%	16.06%	22.22%	39.29%	31.40%	19.10%	21.21%	19.33%	14.58%
Secured by real estate property									
Average PD	1.85%	1.49%	3.87%	1.14%	2.12%	3.08%	5.84%	2.23%	1.14%
Average LGD	21.99%	36.54%	23.55%	18.60%	31.89%	18.08%	15.31%	15.69%	14.45%
Other retail									
Average PD	3.31%	3.15%	4.01%	3.15%	6.01%	3.41%	2.96%	5.79%	5.54%
Average LGD	80.19%	71.08%	48.71%	93.70%	31.26%	20.94%	38.33%	58.28%	38.60%

Over the year, PD's for most geographical areas and sectors improved, in line with the prevailing economic environment. For the calculation of the average LGD, ING adjusted the calculation resulting in slightly higher LGD's for most of the locations and sectors than it was reported in previous year.

Backtesting of model parameters

ING has dedicated AIRB credit risk models per business line and geography. The performance and predictive power of the models is monitored by Model Development, that is part of the Financial Risk department. Moreover an independent Model Risk Management department periodically reviews all AIRB models. All models are backtested when possible by both the Model development and the independent Model Risk Management departments.

If a model is considered not to be robust or backtesting indicates insufficient performance, then the model is either re-calibrated or re-developed. All model recommendations from the Model Risk Management department are tracked via an internal database that management uses to track issues detected by the Internal Audit department, incidents and non-financial risk issues. All significant model changes are submitted to the ECB and implemented after regulatory approval.

PD backtesting

The PD backtesting is performed per exposure class and PD-range, corresponding to the internal rating scales 1 to 19, which are then mapped to comparable rating grades from Standard & Poor's. Securitisations and Equity exposures are not included in these tables.

The average PD as of 31 December 2019 per portfolio is split per exposure class and rating grade. Both the number and the amount-weighted predicted PD figures are shown for the performing portfolios. The number weighted predicted PD is also referred to as the arithmetic weighted PD, and the amount weighted PD is referred to as the EAD-weighted PD.

The Annual Average historical default rate is calculated over the last 6 years, from 2014 until 2019. The performing clients at the end of each year were followed through the following year (12 months) and their into-default moments were flagged each month. In case a client went into-default more than once within the 12-month observation period, the last (i.e. most recent) observed into-default moment was used. The annual average observed default rate represents the average of the 6 years observed number weighted default rates.

EU CR9: IRB – Backtesting of probability of default (PD) per exposure class

Exposure class	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Average historical annual default
					End of 2018	End of 2019		
Central Governments	0.00 - 0.01	AAA	0.01%	0.01%	418	400		
Central Governments	0.01 - 0.03	AA	0.02%	0.02%	243	256		
Central Governments	0.03 - 0.04	AA	0.03%	0.03%	207	112	1	0.13%
Central Governments	0.04 - 0.05	AA	0.04%	0.04%	151	126	2	0.23%
Central Governments	0.05 - 0.06	A	0.05%	0.05%	77	73	1	0.20%
Central Governments	0.06 - 0.08	A	0.06%	0.06%	30	12		
Central Governments	0.08 - 0.11	A	0.09%	0.09%	36	25		
Central Governments	0.11 - 0.17	BBB	0.14%	0.14%	9	4		
Central Governments	0.17 - 0.26	BBB	0.21%	0.21%	21	27		
Central Governments	0.26 - 0.37	BBB	0.31%	0.31%	44	39		
Central Governments	0.37 - 0.58	BB	0.44%	0.44%	18	17		
Central Governments	0.58 - 1.00	BB	0.76%	0.76%	4	3		
Central Governments	1.00 - 1.77	BB	1.32%	1.32%	16	14		
Central Governments	1.77 - 3.23	B	2.38%	2.41%	21	14		
Central Governments	3.23 - 6.05	B	4.39%	4.40%	24	23		0.79%
Central Governments	6.05 - 11.67	B	8.35%	8.36%	17	14		
Central Governments	11.67 - 20.20	CCC	16.32%	16.32%	4	4		3.57%

EU CR9: IRB – Backtesting of probability of default (PD) per exposure class

Exposure class	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors		Defaulted obligors in the year	Average historical annual default
					End of 2018	End of 2019		
Corporates	0.00 - 0.01	AAA	0.01%	0.01%	293	291		
Corporates	0.01 - 0.03	AA	0.02%	0.02%	22	13		
Corporates	0.03 - 0.04	AA	0.03%	0.03%	86	75		
Corporates	0.04 - 0.05	AA	0.04%	0.04%	70	65		0.06%
Corporates	0.05 - 0.06	A	0.05%	0.05%	3,963	2,907	2	0.13%
Corporates	0.06 - 0.08	A	0.06%	0.07%	1,589	1,392	4	0.17%
Corporates	0.08 - 0.11	A	0.09%	0.10%	1,721	1,931	4	0.16%
Corporates	0.11 - 0.17	BBB	0.14%	0.14%	10,300	10,444	22	0.32%
Corporates	0.17 - 0.26	BBB	0.21%	0.21%	7,396	7,910	11	0.28%
Corporates	0.26 - 0.37	BBB	0.31%	0.30%	12,125	12,392	11	0.39%
Corporates	0.37 - 0.58	BB	0.44%	0.44%	14,300	14,738	25	0.48%
Corporates	0.58 - 1.00	BB	0.75%	0.76%	14,728	14,233	39	0.90%
Corporates	1.00 - 1.77	BB	1.31%	1.34%	14,188	13,643	46	1.33%
Corporates	1.77 - 3.23	B	2.36%	2.39%	10,038	11,008	69	2.46%
Corporates	3.23 - 6.05	B	4.38%	4.34%	7,551	7,982	60	3.67%
Corporates	6.05 - 11.67	B	8.33%	8.35%	3,130	2,883	89	8.34%
Corporates	11.67 - 20.20	CCC	15.60%	15.37%	1,953	2,244	104	9.93%
Corporates	20.20 - 29.58	CC-	24.50%	24.30%	991	1,210	105	16.81%
Corporates	29.58 - 100.00	C-	36.77%	40.18%	685	874	95	26.06%

EU CR9: IRB – Backtesting of probability of default (PD) per exposure class

Exposure class	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors: End of 2018	Number of obligors: End of 2019	Defaulted obligors in the year	Average historical annual default
Institutions	0.00 - 0.01	AAA	0.01%	0.01%	54	48		
Institutions	0.01 - 0.03	AA	0.02%	0.02%	27	25		
Institutions	0.03 - 0.04	AA	0.03%	0.03%	55	112		0.21%
Institutions	0.04 - 0.05	AA	0.04%	0.04%	219	231		
Institutions	0.05 - 0.06	A	0.05%	0.05%	1,332	1,411	2	0.06%
Institutions	0.06 - 0.08	A	0.06%	0.06%	760	803	1	0.02%
Institutions	0.08 - 0.11	A	0.09%	0.09%	355	340		
Institutions	0.11 - 0.17	BBB	0.14%	0.14%	619	603	2	0.14%
Institutions	0.17 - 0.26	BBB	0.21%	0.21%	540	525		0.04%
Institutions	0.26 - 0.37	BBB	0.31%	0.31%	662	622		0.10%
Institutions	0.37 - 0.58	BB	0.44%	0.44%	530	487		0.17%
Institutions	0.58 - 1.00	BB	0.76%	0.76%	426	436		0.24%
Institutions	1.00 - 1.77	BB	1.32%	1.33%	424	340	1	0.41%
Institutions	1.77 - 3.23	B	2.38%	2.41%	338	355	1	1.69%
Institutions	3.23 - 6.05	B	4.20%	4.32%	170	241		1.18%
Institutions	6.05 - 11.67	B	8.35%	8.32%	103	131	3	2.69%
Institutions	11.67 - 20.20	CCC	16.09%	16.13%	53	77	3	3.89%
Institutions	20.20 - 29.58	CC-	25.00%	24.96%	15	21	1	10.66%
Institutions	29.58 - 100.00	C-	33.99%	41.53%	8	7	2	11.50%

EU CR9: IRB – Backtesting of probability of default (PD) per exposure class

Exposure class	PD Range	External rating equivalent	Weighted average PD	Arithmetic average PD by obligors	Number of obligors: End of 2018	Number of obligors: End of 2019	Defaulted obligors in the year	Average historical annual default
Retail	0.00 - 0.01	AAA	0.01%	0.01%	1,610,777	1,796,865	415	0.03%
Retail	0.01 - 0.03	AA	0.02%	0.02%	800,937	866,019	195	0.07%
Retail	0.03 - 0.04	AA	0.03%	0.03%	124,920	131,022	4	0.08%
Retail	0.04 - 0.05	AA	0.04%	0.04%	684,179	686,208	167	0.04%
Retail	0.05 - 0.06	A	0.05%	0.05%	46,403	55,598	19	0.03%
Retail	0.06 - 0.08	A	0.06%	0.06%	124,691	120,013	11	0.07%
Retail	0.08 - 0.11	A	0.10%	0.10%	388,580	437,829	90	0.09%
Retail	0.11 - 0.17	BBB	0.14%	0.13%	1,215,927	1,228,536	386	0.11%
Retail	0.17 - 0.26	BBB	0.18%	0.21%	725,259	772,358	194	0.16%
Retail	0.26 - 0.37	BBB	0.29%	0.31%	629,171	596,409	289	0.29%
Retail	0.37 - 0.58	BB	0.46%	0.48%	667,246	619,970	1,750	0.46%
Retail	0.58 - 1.00	BB	0.79%	0.76%	445,739	456,434	517	0.69%
Retail	1.00 - 1.77	BB	1.34%	1.45%	668,584	663,318	1,543	1.19%
Retail	1.77 - 3.23	B	2.53%	2.55%	587,376	627,864	2,220	1.53%
Retail	3.23 - 6.05	B	4.80%	4.14%	174,842	165,497	2,477	4.38%
Retail	6.05 - 11.67	B	8.13%	8.08%	159,559	127,898	3,610	6.64%
Retail	11.67 - 20.20	CCC	16.17%	16.38%	77,503	60,691	1,579	9.98%
Retail	20.20 - 29.58	CC-	24.23%	25.60%	9,931	8,507	1,297	19.14%
Retail	29.58 - 100.00	C-	39.85%	35.94%	35,578	36,508	2,724	28.69%

It should be noted that some of the observed values related to low number of observations (in particular for Sovereigns), hence the numbers should be interpreted with care. For some of the ratings, in particular for the Corporate exposures class, some of the observed values fall above the range of estimation. Until the models have been redeveloped and approved in the context of incorporating new regulations, this has been compensated by add-ons or other prudential measures. Overall, the EL backtest (see EU CR9) does not exhibit underestimations.

EL backtesting

The table below gives insight in the Expected Loss rate and the Observed Loss rate. The expected loss as of 31 December 2019 for the performing portfolio is split per exposure class. The 31 December 2018 portfolio is followed through 2019 to determine the defaulted exposures. The models are based on long series of historical data. In the comparison, the expected loss rate is calculated by dividing the expected loss of the performing portfolio as of 31 December 2019 by the READ of the performing portfolio of the same period. The Observed Loss Rate is a result of dividing the observed defaulted exposures by its EAD. This backtest is only representative of the year end 2019 portfolio and can be influenced by small sample sizes or incidents. Nonetheless, backtesting gives a comparison of the Expected Loss Rate versus the Observed Loss Rate.

Expected loss rate under the Advanced IRB approach versus the observed loss rate per exposure class

2019	Sovereigns	Institutions	Corporate	Other retail	Total
Expected Loss Rate 2018*	0.04%	0.04%	0.28%	1.16%	0.23%
Observed Loss Rate 2019	0.00%	0.03%	0.28%	0.66%	0.20%

Includes the AIRB portfolio only; excludes securitisations, equities and ONCOA.
* Expected loss rate 2019 includes performing loans only.

Standardised Approach

Exposures before and after risk mitigation for the SA portfolio

The table below shows how credit risk mitigation (CRM) in the SA portfolio is distributed over the exposure classes. ING's exposure value is shown before and after credit risk mitigation. There are three principal methods for reducing or mitigating Credit Risk: i) by reduction of credit risk through the acceptance of pledged financial assets as collateral or mitigation or shifting of credit risks to a lower risk weighting group, ii) by accepting guarantees from unrelated third parties, or iii) secured by mortgages. ING uses these methods to take CRM effects into account. For financial markets collateral, ING uses the Financial Collateral Comprehensive Method to allow for mitigation effects.

The table below illustrates the effect of all CRM techniques applied in accordance with the Part Three, Title II, Chapter 4 of Regulation (EU) 575/2013 on the standardised approach capital requirements' calculations.

EU CR4: Standardised approach - credit risk exposure and Credit Risk Mitigation (CRM) effects

2019	Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA and RWA density	
Exposure classes	On-Balance Sheet amount	Off-Balance Sheet amount	On-Balance Sheet amount	Off-Balance Sheet amount	RWA	RWA density
Central governments or central banks	1,920	2,326	2,001	4	1,395	70%
Regional governments or local authorities	150	7	146	0	129	89%
Public sector entities	0	21	0	11	11	100%
Multilateral development banks	0	0	0	4	0	0%
International organisations	0	0	0	0	0	0%
Institutions	406	356	2,371	16	652	27%
Corporates	4,787	5,716	4,684	727	5,281	98%
Retail	13,581	5,180	11,404	1,390	9,205	72%
Secured by mortgages on immovable property	17,954	2,006	17,889	706	9,417	51%
Exposure in default	1,386	85	661	7	830	124%
Total	**40,184**	**15,697**	**39,156**	**2,864**	**26,919**	**64%**

Excludes Counterparty Credit Risk exposures.

EU CR4: Standardised approach - credit risk exposure and Credit Risk Mitigation (CRM) effects						
2018	Exposures before CCF and CRM		Exposures post-CCF and CRM		RWA and RWA density	
Exposure classes	On-Balance Sheet amount	Off-Balance Sheet amount	On-Balance Sheet amount	Off-Balance Sheet amount	RWA	RWA density
Central governments or central banks	1,519	1,975	1,586	18	1,444	90%
Regional governments or local authorities	170	53	168	4	116	67%
Institutions	1,806	202	3,241	55	697	21%
Corporates	5,474	5,042	5,350	744	5,936	97%
Retail	12,113	5,466	10,474	1,343	8,456	72%
Secured by mortgages on immovable property	16,078	2,052	15,996	650	8,488	51%
Exposure in default	1,047	55	490	9	589	118%
Total	**38,207**	**14,844**	**37,304**	**2,824**	**25,726**	**64%**

Excludes Counterparty Credit Risk exposures.

The total SA exposure before CCF and CRM increased by EUR 2.8 billion or 5% compared to December 2018, mainly in Retail and secured by mortgages on immovable property.

Risk weights per exposure class

The table below presents the breakdown, post conversion factor and post risk mitigation techniques, of exposures under the Standardised approach by exposure class and risk weight (corresponding to the riskiness attributed to the exposure according to SA approach). The risk weights presented encompass all those assigned to each credit quality step in Article 113 to Article 134 in Part Three, Title II, Chapter 2 of Regulation (EU) 575/2013.

EU CR5: Standardised approach Post-CCF and Post-CRM Techniques								
2019	**Risk weight**							**Total**
Exposure Classes	0%	20%	35%	50%	75%	100%	150%	
Central governments or central banks	610					1,395		**2,005**
Regional governments or local authorities		4		28		115		**146**
Public sector entities						11		**11**
Multilateral development banks	4							**4**
International organisations								
Institutions		2,147		35		205		**2,387**
Corporates		17		12		5,383		**5,411**
Retail					12,795			**12,795**
Secured by mortgages on Real immovable property			10,616	4,415		3,564		**18,595**
Exposure in default						342	325	**667**
Total	**614**	**2,167**	**10,616**	**4,490**	**12,795**	**11,014**	**325**	**42,021**

Excludes Counterparty Credit Risk exposures.

EU CR5: Standardised approach Post-CCF and Post-CRM Techniques								
2018	**Risk weight**							**Total**
Exposure Classes	0%	20%	35%	50%	75%	100%	150%	
Central governments or central banks	160					1,444		**1,604**
Regional governments or local authorities		51		32		90		**173**
Institutions		3,235		22		39		**3,296**
Corporates		7		46		6,016	25	**6,093**
Retail					11,817			**11,817**
Secured by mortgages on immovable property			9,215	4,116		3,315		**16,646**
Exposure in default						319	180	**499**
Total	**160**	**3,294**	**9,215**	**4,215**	**11,817**	**11,222**	**205**	**40,128**

Excludes Counterparty Credit Risk exposures.

The exposure of the SA portfolio increased mainly due to retail and Secured by mortgages on immovable property from EUR 40,128 million to EUR 42,021 million.

Credit quality

This section focusses on non-performing loans, which are loans where there is a reasonable probability that ING may encounter a loss, unless ING intervenes with specific and significant actions. In other words, in this category an account or portfolio requires a more intensified approach, which may include renegotiation of terms and conditions and/or business/financial restructuring. This section should be read in conjunction with the Risk Management paragraph sections of the Annual Report on: Risk Appetite Framework and Credit Quality.

The credit quality of risk exposures is presented in three tables providing insight in the credit quality per exposure class, industry or counterparty type and geography. These tables present the gross carrying values, consisting of on- and off-balance sheet exposures, split over non-performing / performing, specific risk adjustments and impairments/allowances. The net carrying values are the result of specific risk adjustments and / or after impairments/allowances and are presented at the end of the tables. These three tables should be read in conjunction with table EU CR6: IRB-Credit risk exposures by exposure class and PD range.

On-balance sheet items include loans and debt securities. Off-balance sheet items include guarantees given and irrevocable loan commitments. Pre-settlement exposures are not included in this section.
More information on the definition of non-performing loans and allowances can be found in the credit quality section of the Risk Management paragraph of the Annual report.

Credit quality of exposures
This section provides a comprehensive picture of the credit quality of the banks' assets per exposure class.

EU CR1-A: Credit quality of exposures by exposure classes and instruments

	gross carrying values[1]			
2019	defaulted exposures	non-defaulted exposures	specific credit risk adjustments	Net values
Central governments or central banks	51	264,795	-12	264,834
Institutions	422	113,688	-19	114,090
Corporates	6,997	585,804	-2,662	590,138
of which: specialised lending	1,663	160,273	-593	161,343
of which: SMEs	869	26,469	-299	27,039
Retail	3,414	335,035	-1,068	337,382
secured by real estate property	2,761	304,002	-479	306,284
SMEs	281	11,299	-71	11,508
Non-SMEs	2,480	292,703	-408	294,776
Other retail	654	31,033	-589	31,098
SMEs	205	4,847	-177	4,874
Non-SMEs	449	26,186	-412	26,224
Total IRB Approach	**10,884**	**1,299,322**	**-3,762**	**1,306,444**
Central governments or central banks		4,246	-11	4,237
Regional governments or local authorities		157	-5	152
Public sector entities		21		21
Institutions		762	-2	760
Corporates		10,503	-39	10,464
of which: SMEs		1,680	-7	1,673
Retail		18,760	-214	18,547
of which: SMEs		3,453	-41	3,412
secured by mortgages on immovable property		19,960	-39	19,921
of which: SMEs		1,020	-11	1,009
Exposures in default	1,472		-693	778
Total SA approach	**1,472**	**54,409**	**-1,003**	**54,880**
Total	**12,356**	**1,353,731**	**-4,763**	**1,361,324**

Excludes Counterparty Credit Risk, Securitisations, CVA RWA, Equities and ONCOA.
1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

EU CR1-A: Credit quality of exposures by exposure classes and instruments

2018	gross carrying values[1] defaulted exposures	gross carrying values[1] non-defaulted exposures	specific credit risk adjustments	Net values
Central governments or central banks	54	268,316	-20	268,349
Institutions	360	107,572	-17	107,915
Corporates	6,286	447,517	-2,730	451,072
of which: specialised lending	2,186	158,127	-663	159,650
of which: SMEs	948	27,051	-389	27,610
Retail	3,647	327,934	-1,238	330,343
secured by real estate property	2,970	297,525	-536	299,959
SMEs	447	11,498	-140	11,805
Non-SMEs	2,523	286,027	-396	288,154
Other retail	677	30,410	-703	30,384
SMEs	211	5,019	-201	5,029
Non-SMEs	466	25,390	-502	25,355
Total IRB Approach	**10,346**	**1,151,339**	**-4,006**	**1,157,680**
Central governments or central banks		3,494	-10	3,484
Regional governments or local authorities		223	-3	220
Institutions		2,008		2,007
Corporates		10,516	-27	10,489
of which: SMEs		1,866	-2	1,863
Retail		17,579	-213	17,366
of which: SMEs		3,900	-37	3,863
secured by mortgages on immovable property		18,130	-43	18,086
of which: SMEs		1,561	-8	1,553
Exposures in default	1,102		-561	540
Total SA approach	**1,102**	**51,949**	**-858**	**52,192**
Total	**11,448**	**1,203,288**	**-4,864**	**1,209,872**

Excludes Counterparty Credit Risk, Securitisations, CVA RWA, Equities and ONCOA.
1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

The overall exposure increased by EUR 151,452 million in 2019. The increase was mainly due to the cancellation of on-balance-sheet netting related to Bank Mendes Gans N.V. and was mainly witnessed in the Corporates exposure class.

EU CR1-B: Credit quality of exposures by industry or counterparty types

2019	gross carrying values[1] defaulted exposures	gross carrying values[1] non-defaulted exposures	specific credit risk adjustments	Net values
Agriculture, Forestry and Fishing	211	5,102	-72	5,240
Mining and Quarrying	1,055	23,025	-324	23,756
Manufacturing	1,914	175,905	-898	176,921
Electricity, Gas, Steam and Air Conditioning Supply	160	26,624	-87	26,697
Water Supply; Sewerage, Waste Management and Remediation Activities	94	3,786	-21	3,859
Construction	778	20,932	-310	21,399
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1,578	130,979	-690	131,868
Transportation and Storage	591	36,255	-208	36,638
Accommodation and Food Service Activities	113	12,171	-58	12,226
Information and Communication	175	37,731	-142	37,763
Financial and Insurance Activities	965	277,796	-97	278,664
Real Estate Activities	652	47,289	-176	47,765
Professional, Scientific, and Technical Activities	616	30,289	-280	30,624
Administrative and Support Service Activities	444	28,852	-149	29,146
Public Administration and Defence; Compulsory Social Security	148	181,450	-79	181,519
Education	22	1,814	-12	1,824
Human Health and Social Work Activities	82	10,542	-60	10,563
Arts, Entertainment, and Recreation	27	1,732	-15	1,744
Other Service Activities	47	2,583	-27	2,603
Activities of Households as Employers; Producing Activities of Households for own use	2,685	298,875	-1,056	300,503
Total	**12,356**	**1,353,731**	**-4,763**	**1,361,324**

Excludes Counterparty Credit Risk exposures, Securitisations, CVA RWA, Equities and ONCOA.

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

EU CR1-B: Credit quality of exposures by industry or counterparty types

	gross carrying values[1]			
2018	defaulted exposures	non-defaulted exposures	specific credit risk adjustments	Net values
Agriculture, Forestry and Fishing	191	5,075	-72	5,194
Mining and Quarrying	819	24,907	-260	25,466
Manufacturing	1,497	110,106	-815	110,788
Electricity, Gas, Steam and Air Conditioning Supply	234	25,100	-98	25,236
Water Supply; Sewerage, Waste Management and Remediation Activities	32	3,587	-22	3,597
Construction	976	20,453	-415	21,014
Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1,242	103,838	-597	104,483
Transportation and Storage	800	33,772	-268	34,304
Accommodation and Food Service Activities	94	4,931	-48	4,976
Information and Communication	160	20,998	-123	21,035
Financial and Insurance Activities	497	258,078	-126	258,449
Real Estate Activities	945	54,138	-276	54,807
Professional, Scientific, and Technical Activities	430	28,162	-255	28,337
Administrative and Support Service Activities	390	24,444	-135	24,698
Public Administration and Defence; Compulsory Social Security	87	178,499	-75	178,511
Education	21	1,710	-15	1,716
Human Health and Social Work Activities	126	10,464	-80	10,510
Arts, Entertainment, and Recreation	25	1,708	-14	1,719
Other Service Activities	56	2,534	-30	2,560
Activities of Households as Employers; Producing Activities of Households for own use	2,827	290,785	-1,140	292,472
Total	**11,448**	**1,203,288**	**-4,864**	**1,209,872**

Excludes Counterparty Credit Risk exposures, Securitisations, CVA RWA, Equities and ONCOA.
1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

In 2019 the exposures increased overall by EUR 151,452 million caused by the cancellation of on-balance-sheet netting related to Bank Mendes Gans N.V.. The main increase was observed in Manufacturing, Wholesale and Retail trade and Financial and Insurance Activities .

EU CR1-C : Credit quality of exposures by geography

2019	gross carrying values[1] defaulted exposures	non-defaulted exposures	specific credit risk adjustments	Net values
Europe	10,055	997,548	-4,040	1,003,564
Netherlands	3,158	270,369	-964	272,562
Germany	707	184,588	-408	184,886
Belgium & Luxembourg	3,131	186,977	-813	189,294
Other Europe	3,060	355,615	-1,854	356,821
Africa	71	6,561	-17	6,616
America	1,331	167,901	-499	168,732
Asia	159	123,212	-101	123,270
Australia	739	58,509	-106	59,142
Total	**12,356**	**1,353,731**	**-4,763**	**1,361,324**

Excludes Counterparty Credit Risk exposures, Securitisations, CVA RWA, Equities and ONCOA.

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

EU CR1-C : Credit quality of exposures by geography

2018	gross carrying values[1] defaulted exposures	non-defaulted exposures	specific credit risk adjustments	Net values
Europe	9,842	927,430	-4,332	932,939
Netherlands	3,212	262,352	-1,080	264,484
Germany	747	178,829	-500	179,076
Belgium & Luxembourg	2,590	184,456	-762	186,284
Other Europe	3,293	301,792	-1,990	303,094
Africa	152	6,597	-37	6,712
America	827	104,894	-325	105,396
Asia	237	109,156	-98	109,295
Australia	390	55,210	-71	55,529
Total	**11,448**	**1,203,288**	**-4,864**	**1,209,872**

Excludes Counterparty Credit Risk exposures, Securitisations, CVA RWA, Equities and ONCOA.

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

The total exposure mainly increased in Europe and America. The defaulted exposure increase was also mainly witnessed in Belgium& Luxembourg and America (EUR 908 million).

Non-performing and forborne exposures

EBA Template 4: Performing and non-performing exposures and related provisions

2019	Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Accumulated partial write-off	Collateral 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 to credit risk and provisions				On performing exposures	On non-performing exposures
		Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3		Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3			
Loans and advances	**667,611**	**630,665**	**36,946**	**10,446**		**10,446**	**1,341**	**410**	**617**	**3,254**	**47**	**3,163**	**214**	**467,476**	**5,314**
Central banks	52,386	52,364	22				2	1							
General governments	14,259	14,060	199	64		64	7	6	1	3		3		5,319	57
Credit institutions	19,909	19,742	167				10	6	1					3,224	
Other financial corporations	27,566	26,591	974	415		415	45	11	10	23		23		17,922	41
Non-financial corporations	220,407	201,655	18,752	5,985		5,985	677	160	262	2,255	8	2,211	213	135,382	2,692
Of which SMEs	26,616	23,354	3,262	1,256		1,256	150	52	82	455	6	436	2	21,044	614
Households	333,084	316,252	16,832	3,982		3,982	599	226	343	972	39	925		305,628	2,525
Debt securities	**75,430**	**75,430**					**17**	**17**						**213**	
Central banks	844	844													
General governments	55,387	55,387					16	16							
Credit institutions	15,814	15,814					1	1							
Other financial corporations	2,724	2,724												119	
Non-financial corporations	662	662												94	
Off-balance-sheet exposures	**156,787**	**111,152**	**4,137**	**1,414**	**0**	**509**	**3**	**1**	**2**	**115**	**0**	**28**			**5**
Central banks	8														
General governments	6,604	6,315	171												
Credit institutions	5,755	391	27												
Other financial corporations	19,047	15,823	175	426		54									
Non-financial corporations	109,803	73,829	3,147	972		441	3	1	2	114	0	28			4
Households	15,571	14,794	617	16		14									1
Total	**899,828**	**817,247**	**41,083**	**11,860**		**10,955**	**1,361**	**428**	**619**	**3,369**	**47**	**3,191**	**214**	**467,689**	**5,319**

EU CR1-E: Non-performing and forborne exposures

2018	Gross carrying amount of performing and non-performing exposures					Accumulated impairment and provisions and negative fair value adjustments due to credit risk				Collaterals and financial guarantees received	
		Of which performing but past due >30 days and <=90 days	of which performing forborne	Of which non-performing		On performing exposures		On non-performing exposures		On non-performing exposures	of which: forborne exposures[1]
					of which: forborne		of which: forborne		of which: forborne		
Debt Securities	71,184					-17					
Loans and advances	659,647	1,402	5,949	10,548	4,145	-1,401	-144	-3,107	-996	5,479	6,892
Off-balance sheet exposures	156,997	129	275	648	58	-21		-101		8	

1 This relates to the Collaterals and financial guarantees received for the total portfolio of forborne exposures

In 2019, the loans and advances, debt securities and off-balance-sheet exposures on a total level amount to EUR 911.7 billion, of which EUR 869.3 billion is eligible for IFRS. Of the IFRS eligible exposure, 99% is marked as performing of which 95% is classified as stage 1. Focussing on loans and advances which make up 78% of the IFRS eligible portfolio, 98% is marked as performing of which 94% is classified as stage 1.

Forborne exposures

EBA Template 1: Credit quality of forborne exposures

2019	Performing forborne	Non-performing forborne			Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral received and financial guarantees received on forborne exposures	
			Of which defaulted	Of which impaired	On performing forborne exposure	On non-performing forborne exposures		Of which collateral and financial guarantees received on non-performing exposures with forbearance measures
Loans and advances	**5,385**	**4,107**	**4,107**	**4,107**	**157**	**1,175**	**6,050**	**1,040**
Central banks								
General governments		52	52	52		1	50	50
Credit institutions								
Other financial corporations	46	25	25	25	1	6	47	1
Non-financial corporations	3,762	2,664	2,664	2,664	122	998	3,654	925
Households	1,578	1,366	1,366	1,366	33	170	2,299	64
Debt securities								
Loan commitments given	**494**	**138**	**138**	**138**	**1**	**2**		
Total	**5,879**	**4,245**	**4,245**	**4,245**	**158**	**1,177**	**6,050**	**1,040**

While the portfolio of ING grew in 2019, total forborne exposures -including off-balance sheet items- decreased by EUR 0.3 billion, largely driven by the performing loans and advances (-EUR 0.6 billion) partially offset by the performing loan commitments (+EUR 0.2 billion).

With regard to the total on-balance forborne assets, almost 77% of the decrease derived from the Wholesale Banking and especially the industries Real Estate (-EUR 0.6 billion) and Transportation & Logistics (-EUR 0.2 billion), while in Food, Beverages & Personal Care and in Natural Resources a joint increase of EUR 0.2 billion has been witnessed. The industry with the largest concentration remained the Natural Resources with EUR 1.6 billion. The main concentration of forborne assets in a single country was in the Netherlands with EUR 3.0 billion (32% of the total loans and advances forborne exposures).

Aging of past due exposures

The table below gives an insight into the ageing of the FINREP eligible Business and Consumer exposures, including both performing and non-performing assets. The table covers Loans and Debt Securities. The values displayed are the on balance sheet gross carrying values before impairment, provisions before write-offs, as write- offs take place after the provisioning process.

EBA Template 3: Credit quality of performing and non-performing exposures by past due days

	Gross carrying amount/nominal amount											
	Performing exposures			Non-performing exposures								
2019		Not past due or past due ≤ 30 days	Past due > 30 days ≤ 90 days		Unlikely to pay that are not past due or are past due ≤ 90 days	Past due > 90 days ≤ 180 days	Past due > 180 days ≤ 1 year	Past due > 1 year ≤ 2 years	Past due > 2 years ≤ 5 years	Past due > 5 years ≤ 7 years	Past due > 7 years	Of which defaulted
Loans and advances	**667,611**	**665,690**	**1,655**	**10,446**	**5,621**	**1,191**	**1,025**	**1,097**	**1,119**	**191**	**203**	**10,446**
Central banks	52,386	52,386										
General governments	14,259	14,241	2	64	59						4	64
Credit institutions	19,909	19,908										
Other financial corporations	27,566	27,512	1	415	389	1	12	4	7	0	2	415
Non-financial corporations	220,407	219,530	827	5,985	3,795	193	536	543	720	85	112	5,985
Of which SMEs	26,616	26,536	68	1,256	750	49	83	147	155	28	44	1,256
Households	333,084	332,113	825	3,982	1,377	996	476	550	392	105	85	3,982
Debt securities	**75,430**	**75,430**										
Central banks	844	844										
General governments	55,387	55,387										
Credit institutions	15,814	15,814										
Other financial corporations	2,724	2,724										
Non-financial corporations	662	662										
Off-balance-sheet exposures	**156,787**			**1,414**								**509**
Central banks	8											
General governments	6,604											
Credit institutions	5,755											
Other financial corporations	19,047			426								
Non-financial corporations	109,803			972								
Households	15,571			16								
Total	**899,828**	**741,120**	**1,655**	**11,860**	**5,621**	**1,191**	**1,025**	**1,097**	**1,119**	**191**	**203**	**10,955**

EU CR1-D: Ageing of past-due exposures

2018	<= 30 days	>30 days <60 days	> 60 days <90 days	>90 days <180 days	>180 days < 1year	> 1year
Loans	652,113	1,401	503	1,574	811	3,246
Debt Securities	71,184					
Total exposures	**723,297**	**1,401**	**503**	**1,574**	**811**	**3,246**

The table gives an insight in the ageing of the Business and Consumer exposures and includes both the performing and non-performing portfolio. The table is broken down into type of instruments loans and advances, debt securities and off-balance-sheet exposures. The values displayed are the on balance sheet gross carrying values before impairment, provisions and before write offs, as write offs take place after the provisioning process.

Due to absence of gross carrying amounts for December 2018, this comment serves as a placeholder for future analysis. On a total level the loans and advances, debt securities and off-balance-sheet exposures amount to EUR 911.7 billion, of which 99% are marked as performing. Of the not past due or past due ≤ 30 days bucket, 99% is 0 days past due. Focussing on loans and advances which make up 74% of the total portfolio, 98% is marked as performing. Of the non-performing exposures, 25% are past due > 1 year.

Changes in the stock of general and specific credit risk adjustments

This table identifies the changes in the stock of general and specific credit risk adjustments held against loans and debt securities that are defaulted or impaired. General and specific credit risk adjustments include amounts defined in Article 1 of the Commission Delegated Regulation (EU) No 183/2014 of 20 December 2013.

EU CR2-A: Changes in the stock of general and specific credit risk adjustments

	2019	
	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment
Opening balance	3,221	1,426
Increases due to amounts set aside for estimated loan losses during the period	283	171
Decreases due to amounts reversed for estimated loan losses during the period	-138	-265
Decreases due to amounts taken against accumulated credit risk adjustments	-1,027	-3
Transfers between credit risk adjustments	1,009	30
Impact of exchange rate differences	-42	-4
Business combinations, including acquisitions and disposals of subsidiaries	0	0
Other adjustments	-33	17
Closing balance	**3,273**	**1,372**
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		

EU CR2-A: Changes in the stock of general and specific credit risk adjustments

	2018	
	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment
Opening balance	**4,030**	**1,393**
Increases due to amounts set aside for estimated loan losses during the period	312	230
Decreases due to amounts reversed for estimated loan losses during the period	-372	-301
Decreases due to amounts taken against accumulated credit risk adjustments	-991	
Transfers between credit risk adjustments	628	159
Impact of exchange rate differences	-386	-55
Business combinations, including acquisitions and disposals of subsidiaries		
Other adjustments		
Closing balance	**3,221**	**1,426**
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		

Changes in the stock of defaulted and impaired loans and debt securities

In the next table the changes of the stock of defaulted loans and debt securities is shown. The table shows the movements in the gross carrying amounts of the defaulted exposures in stage 3. The line other changes includes primarily changes in volumes of defaulted loans for instance as a consequence of partial repayments, or FX impact.

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

	2019	2018
	Gross carrying value defaulted exposures	Gross carrying value defaulted exposures
Opening balance	**10,548**	**11,679**
Loans and debt securities that have defaulted or impaired since the last reporting period	2,985	2,514
Returned to non-defaulted status	-1,082	-1,330
Amounts written off	-1,027	-1,044
Other changes	-469	-1,270
Closing balance	**10,955**	**10,548**

LTV residential mortgages per country

The table below shows the weighted average Loan-to-Value (LTV) ratio of the ING residential mortgage portfolio per country. All LTV figures are based on market values. In most portfolios, ING uses official house price indices to adjust the market values. In several markets, customers provide additional collateral or (government sponsored) mortgage insurance programmes are used. None of these additional covers are included in the LTV figures.

Loan-to-Value residential mortgages per country

	2019			2018	
	LTV	READ	net carrying values[1]	LTV	READ
Netherlands	62%	115,941	116,859	65%	116,984
Germany	59%	77,453	79,212	61%	75,625
Belgium, Luxembourg	62%	42,475	42,389	66%	40,844
Australia	66%	36,567	35,715	59%	34,664
Spain	58%	17,350	17,323	59%	15,105
Italy	57%	8,468	8,416	58%	8,688
Poland	62%	9,718	10,019	61%	7,857
Turkey	50%	526	524	51%	589
Romania	62%	2,006	1,994	69%	1,765
Total	61%	310,504	312,452	63%	**302,121**

1 The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

The economic environment in most countries supported the housing markets, resulting in increased house prices and improved LTVs. In the Netherlands, the average Dutch house price increased to EUR 304,000 in November 2019 (from EUR 298,000 in December 2018, which led to an improved LTV through indexation. In Australia we observe a decrease in the LTV's as a consequence of a decrease in the house price index in 2019. With respect to the volumes, with the exception of the Netherlands and Italy, the other countries showed an (albeit modest) increase in READ due to growth in their mortgage portfolios.

Off-balance items

Undrawn commitments

The figures below represent the potential exposure that may be drawn by ING's obligors under committed facilities. In most cases, the obligors have the right to draw under these facilities unless an event of default has occurred, or another event as defined in the relevant credit risk agreement has occurred. Usually, the obligor pays a commitment fee to ING on the unused portion of these facilities. Pre-Settlement, Money Market and Investment limits are generally not committed.

Undrawn commitments

						2019	2018
	Central Governments and central banks	Institutions	Corporate	Retail – sec. by imm. property non-SME / on residential prop.	Other retail[1]	Total	Total
Under SA approach	1	26	1,093	536	2,845	4,500	4,238
Under AIRB Approach	5,051	7,523	91,643	10,553	2,701	117,471	117,647
0% risk weight	3,077		8	1		3,087	3,210
>0% - ≤10% risk weight	440	3,837	15,032	8,127	788	28,224	25,379
>10% - ≤20% risk weight	1,322	869	12,584	1,568	472	16,815	18,019
>20% - ≤35% risk weight	211	1,800	23,773	583	385	26,752	23,958
>35% - ≤50% risk weight		676	15,886	137	398	17,098	19,672
>50% - ≤75% risk weight		84	13,649	54	362	14,150	13,773
>75% - ≤100% risk weight		56	3,908	27	208	4,200	6,298
>100% - ≤150% risk weight		116	4,260	39	58	4,473	4,769
>150% - ≤200% risk weight		65	1,698	9	20	1,792	1,964
>200% - <1250% risk weight		19	845	6	8	879	606
1250% risk weight							
Total	**5,052**	**7,549**	**92,736**	**11,089**	**5,546**	**121,971**	**121,885**

1 AIRB: Retail – secured by immovable property SME, Retail – Other SME, Retail – non SME; SA: Retail, exposures secured by mortgages on commercial immovable property.

If all of the undrawn commitments would be drawn, ING Group's credit risk outstanding would increase by 16%. For RWA calculation purposes, the EAD models estimate how much of these commitments would be drawn under normal circumstances and increase the EAD accordingly. For uncommitted facilities a similar approach is applied, albeit at a lower rate.

Counterparty credit risk (CCR)

The main activities that qualify under counterparty credit risk are derivatives trading activities and securities financing. To mitigate the credit risk of these transactions, ING enters into master agreements such as ISDA master agreements and Global Master Repurchase Agreements (GMRAs) that ensures netting of the outstanding positions. To further eliminate the risk on the netted positions, both ING Bank and its counterparties may agree to pledge additional collateral to each other. Additionally ING started to exchange initial margin amounts with its trading partners in 2017. The actual amount that ING may be required to pledge varies based on ING's portfolio composition of both derivatives and securities pledged in securities financing transactions, market circumstances, the number of downgrade notches as well as the terms and conditions of future CSAs or other similar agreements.

CCR risk approach

Analysis of the counterparty credit risk exposure by approach

The main purpose of the derivatives portfolio of ING is to facilitate the hedging of the mortgage lending portfolio as well as hedging for clients. The portfolio consists mainly plain vanilla interest rate and foreign exchange derivatives.
It must also be noted that - in line with regulatory requirement - ING novated the bulk of its new trades via qualifying central counterparties (CCPs), which compresses the exposure via the use of the large netting pool of a CCP.

In the table below ING counterparty credit risk portfolio is presented. Under Pillar 1 ING uses the Current Exposure Method (Mark to Market method, in line with CRR art. 274), which is a standard approach prescribed by the regulation. There are no exposures under the advanced, Internal Model Method (IMM) under Pillar1. Under Pillar 2 however, for FX and interest rate derivatives, ING uses a risk sensitive approach based on Monte Carlo simulations.

For the calculation of the collateral and securities financing transactions (SFT) exposures, ING uses the financial collateral comprehensive method. There is no contractual cross product netting applied.

Under Pillar 1, according to the Current Exposure Method, the regulatory exposure at default (READ) measure consists of an MTM part and a regulatory prescribed add-on to reflect the potential future credit exposure of the trade. The exposure at default is calculated on a daily basis to take into account the changes in the MTM value due to market movements and changes in the portfolio composition. This calculation is done on:

- Gross basis (ignoring any collateral received and ignoring any netting between trades).
- Net basis (ignoring any collateral received, but applying netting between trades with a positive and negative MTM in case there is a legally enforceable netting agreement in place).
- Net basis after collateral (subtracting any post haircut value of collateral received, and applying netting between trades with a positive and negative MTM in case there is a legally enforceable netting agreement in place).

READ also takes into account the credit valuation adjustment (CVA) recognised as an incurred write-down in line with art. 273(6) CRR

EU CCR1 – Analysis of the counterparty credit risk (CCR) exposure by approach

2019	Replacement cost (floored MtM)	Potential future exposure	EAD post-CRM[1]	RWA
Mark to market (Derivatives)	12,993	18,594	26,700	6,927
Financial collateral comprehensive method (for SFTs)			8,939	1,421
Total				**8,349**

Excluding exposure class Securitizations

EU CCR1 – Analysis of the counterparty credit risk (CCR) exposure by approach

2018	Replacement cost (floored MtM)	Potential future exposure	EAD post-CRM	RWA
Mark to market (Derivatives)	10,853	17,638	25,595	7,185
Financial collateral comprehensive method (for SFTs)			8,825	1,467
Total				**8,653**

Excluding exposure class Securitizations.

Besides minor volume increase the EAD and RWA measures of the counterparty credit risk portfolio did not change significantly between end of 2018 and 2019.

Standardised approach – CCR exposures by regulatory portfolio and risk

The following table presents the CCR exposures that are calculated according the Standardised approach (SA) , which is only an insignificant part of ING's portfolio.

EU CCR3: Standardised approach - CCR exposures by regulatory portfolio and risk

2019	Risk weight						
Exposure Class	0%	20%	50%	75%	100%	150%	Total
Central governments or central banks							
Regional governments or local authorities							
Public sector entities		3					3
Institutions		3	22		125		150
Corporates					167	2	169
Retail							
Total		**6**	**22**		**292**	**2**	**322**

EU CCR3: Standardised approach - CCR exposures by regulatory portfolio and risk

2018	Risk weight					Total
Exposure Class	20%	50%	75%	100%	150%	
Regional governments or local authorities	4					4
Institutions	62	33				96
Corporates				211	6	217
Retail			1			1
Total	**66**	**33**	**1**	**211**	**6**	**318**

The 100% risk weight exposures contain mainly FX forwards in the ING Turkey portfolio as well as interest rate swaps related to the Dutch healthcare portfolio.

IRB – CCR exposures by portfolio and PD scale

The following table shows all relevant parameters used for the calculation of CCR capital requirements for IRB models.

EU CCR4: IRB-CCR exposures by portfolio and PD scale

2019	PD Scale	READ	Average pd	Number of obligors	Average LGD	Average maturity	RWA	RWA density
Central Governments and Central Banks	0.00 to < 0.15	2,085	0.03%	99	27%	4	57	3%
Central Governments and Central Banks	0.15 to < 0.25	59	0.21%	10	43%	3	29	49%
Central Governments and Central Banks	0.25 to < 0.50	1	0.31%	6	46%	1	1	42%
Central Governments and Central Banks	0.75 to < 2.50		0.76%	2	31%	4		77%
Central Governments and Central Banks	2.50 to < 10.00			1				
Central Governments and Central Banks	10.00 to < 100.00			5				
Central Governments and Central Banks	**sub-total**	**2,145**	**0.03%**	**123**	**28%**	**4**	**87**	**4%**
Corporates	0.00 to < 0.15	6,112	0.09%	1,324	26%	2	1,030	17%
Corporates	0.15 to < 0.25	1,152	0.21%	925	41%	3	598	52%
Corporates	0.25 to < 0.50	2,611	0.37%	2,517	45%	2	1,699	65%
Corporates	0.50 to < 0.75	1	0.58%	120	53%	2	1	71%
Corporates	0.75 to < 2.50	1,204	1.27%	3,480	45%	3	1,297	108%
Corporates	2.50 to < 10.00	203	5.35%	532	34%	4	262	129%
Corporates	10.00 to < 100.00	28	20.83%	637	48%	3	76	267%
Corporates	default	17	100.00%	144	37%	3	83	502%
Corporates	**sub-total**	**11,328**	**0.59%**	**9,667**	**34%**	**2**	**5,046**	**45%**
Institutions	0.00 to < 0.15	27,792	0.07%	1,198	27%	2	2,154	8%
Institutions	0.15 to < 0.25	2,101	0.21%	117	18%		342	16%
Institutions	0.25 to < 0.50	1,766	0.31%	338	16%	1	221	13%
Institutions	0.75 to < 2.50	173	1.22%	607	37%	1	114	66%
Institutions	2.50 to < 10.00	8	4.55%	200	43%		12	139%
Institutions	10.00 to < 100.00	14	16.32%	245	29%	1	23	164%
Institutions	default	1	100.00%	6	36%	1	4	449%
Institutions	**sub-total**	**31,855**	**0.11%**	**2,711**	**26%**	**2**	**2,870**	**9%**
Retail	0.00 to < 0.15	6	0.06%	181	69%	2	1	10%
Retail	0.15 to < 0.25	2	0.19%	71	62%	1		24%

Retail	0.25 to < 0.50	1	0.34%	102	65%	1	0	36%
Retail	0.50 to < 0.75	1	0.55%	62	70%	1	1	55%
Retail	0.75 to < 2.50	4	1.27%	477	55%	2	2	60%
Retail	2.50 to < 10.00	1	3.56%	113	65%	1	1	85%
Retail	10.00 to < 100.00	1	16.37%	211	65%	1	2	123%
Retail	default	0		5			0	
Retail	**sub-total**	**16**	**1.87%**	**1,222**	**64%**	**2**	**7**	**41%**
Total Portfolio		**45,344**	**0.23%**	**13,724**	**28%**	**2**	**8,009**	**18%**

Excluding exposure class Securitisations. All figures are in EUR millions, except for the number of obligors.
RWA density is the average risk weight.

EU CCR4: IRB-CCR exposures by portfolio and PD scale

2018	PD Scale	READ	Average pd	Number of obligors	Average LGD	Average maturity	RWA	RWA density
Central Governments and Central Banks	0.00 to < 0.15	2,511	0.03%	137	28%	4	125	5%
Central Governments and Central Banks	0.15 to < 0.25	21	0.21%	5	35%	4	9	44%
Central Governments and Central Banks	0.25 to < 0.50	40	0.31%	11	45%	3	27	69%
Central Governments and Central Banks	0.75 to < 2.50			2				
Central Governments and Central Banks	2.50 to < 10.00			1				
Central Governments and Central Banks	10.00 to < 100.00	2	16.32%	8	31%	4	3	176%
Central Governments and Central Banks	**sub-total**	**2,574**	**0.04%**	**164**	**28%**	**4**	**164**	**6%**
Corporates	0.00 to < 0.15	6,557	0.09%	1,439	30%	1	1,207	18%
Corporates	0.15 to < 0.25	1,130	0.21%	841	43%	3	557	49%
Corporates	0.25 to < 0.50	2,226	0.37%	2,644	47%	2	1,459	66%
Corporates	0.50 to < 0.75	3	0.64%	386	56%	2	2	74%
Corporates	0.75 to < 2.50	1,289	1.17%	2,866	47%	2	1,369	106%
Corporates	2.50 to < 10.00	132	5.20%	480	36%	4	188	143%
Corporates	10.00 to < 100.00	19	19.09%	658	49%	2	47	248%
Corporates	default	14	100.00%	166	45%	3	80	586%
Corporates	**sub-total**	**11,369**	**0.49%**	**9,470**	**37%**	**2**	**4,910**	**43%**
Institutions	0.00 to < 0.15	23,534	0.07%	1,200	29%	2	2,376	10%
Institutions	0.15 to < 0.25	1,610	0.21%	123	14%	1	244	15%
Institutions	0.25 to < 0.50	1,623	0.31%	363	15%	0	214	13%
Institutions	0.75 to < 2.50	398	1.20%	621	50%	1	442	111%
Institutions	2.50 to < 10.00	5	5.04%	189	31%	1	6	113%
Institutions	10.00 to < 100.00	2	16.32%	268	39%	1	5	221%
Institutions	default							
Institutions	**sub-total**	**27,173**	**0.11%**	**2,764**	**28%**	**2**	**3,286**	**12%**
Retail	0.00 to < 0.15	5	0.06%	190	49%	1		8%
Retail	0.15 to < 0.25	1	0.20%	69	53%	1		21%
Retail	0.25 to < 0.50	2	0.35%	130	54%	1	1	32%
Retail	0.50 to < 0.75	3	0.58%	106	55%	1	1	44%
Retail	0.75 to < 2.50	1	1.40%	199	41%	4	1	39%
Retail	2.50 to < 10.00	0	7.26%	41	30%	2		38%
Retail	10.00 to < 100.00	7	16.32%	160	55%	3	8	117%
Retail	default	0	100.00%	16	36%	1		454%
Retail	**sub-total**	**19**	**6.23%**	**911**	**52%**	**2**	**11**	**58%**
Total Portfolio		**41,135**	**0.21%**	**13,309**	**30%**	**2**	**8,372**	**20%**

Excluding exposure class Securitisations. All figures are in EUR millions, except for the number of obligors.
RWA density is the average risk weight.

Derivatives by product type

The table below shows the derivatives exposure by product type, where the exposure measure is based on the regulatory exposure at default (READ).

Derivatives by product type in READ					2019	2018
	Sovereigns	Institutions	Corporate	Other retail	Total	Total
Interest Rate Derivatives	1,741	13,460	4,741	1	19,943	17,212
FX Derivative	276	1,697	1,601	3	3,577	3,471
Equity Derivative	2	331	404	12	748	1,835
Exchange Traded Products		996	387	1	1,384	1,295
Commodity Derivative		64	731		795	846
Credit Derivative		449	111		559	648
Derivatives Other		63	10		73	65
Total	**2,018**	**17,060**	**7,985**	**17**	**27,079**	**25,371**

Excluding exposure class Securitisations

In line with the strategy, ING achieved volume increase in interest rate and FX derivatives, while built down the equity derivative portfolio significantly.

Over-the-counter and exchange traded derivatives

This section quantifies the size of the derivatives exposure in terms of notional value. It also shows whether derivatives are traded over-the-counter (OTC) or traded on recognised exchanges (ETD). Where the derivatives are OTC, the table shows how much is cleared by central counterparties.

Credit risk from derivative transactions	2019	2018
	Notional	Notional
OTC derivatives		
CCP	2,557,483	2,248,857
Non-CCP	1,274,244	1,376,338
ETD derivatives	25,885	27,061
Total	**3,857,612**	**3,652,256**

At the end of 2019, in line with EMIR regulations, two-third of the derivative portfolio (based on notional value) was novated via a central counterparty. Less than 20% of the non-cleared trades were uncollateralized, which mainly relate to corporates with small credit limits and mainly comprise of interest rate and FX Derivatives. Among the collateralised, but not cleared trades the vast majority is under a bilateral CSA. Unilateral CSA agreements relate to agreements that are unilateral against ING and mainly consist of Interest Rate Derivatives with sovereign counterparties.

Securities financing by product type

The exposures in this table are calculated based on the Financial Collateral Comprehensive Method as described in CRR art. 223, where regulatory haircuts are used for exposure and collateral and where netting is applied whenever there is a master netting agreement in place with a positive legal netting opinion.

Securities financing by product type in READ				2019	2018
	Sovereigns	Institutions	Corporate	Total	Total
Bond Financing Given	50	7,832	642	8,524	7,732
Equity Financing Given		5,429	1,616	7,045	4,875
Bond Financing Taken	80	1,182	593	1,854	1,959
Equity Financing Taken		503	661	1,164	1,516
Total (ALL)	**130**	**14,945**	**3,512**	**18,587**	**16,082**

Includes both AIRB and SA portfolios; excludes Securitisations, equities and ONCOA.

Impact of netting and collateral held on exposure values

Impact of netting

It is common practice in OTC derivatives trading to sign master agreements that allow for close-out netting in the event that one of the parties defaults. When ING has signed such a master agreement and a positive legal netting opinion is in place, the agreement is deemed to be legally enforceable. For trades done under such a legally enforceable netting agreement, it is possible to calculate the exposure on a net basis.

EU CCR5-A: Impact of netting and collateral held on regulatory exposure values

2019	Gross positive fair value	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure post collateral
Derivatives	119,946	84,777	35,169	8,469	26,700
Securities Financing Transactions	49,951	31,201	18,750	9,811	8,939
Total	**169,898**	**115,979**	**53,919**	**18,280**	**35,639**

Excluding exposure class securitization

EU CCR5-A: Impact of netting and collateral held on regulatory exposure values

2018	Gross positive fair value	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure post collateral
Derivatives	103,265	72,450	30,815	5,220	25,595
Securities Financing Transactions	43,875	27,638	16,237	7,412	8,825
Total	**147,140**	**100,088**	**47,052**	**12,632**	**34,421**

Excluding exposure class securitization

Collateral

The change in the actual amount that ING had to pledge can be observed in the following table.

EU CCR5-B: Composition of collateral for exposures to counterparty credit risk

		Collateral used in derivative transactions				Collateral used in SFTs	
		Fair value of collateral received		Fair value of posted collateral			
2019		Segregated	Un-Segregated	Segregated	Un-segregated	Fair value of collateral received	Fair value of posted collateral
	Cash	2,634	7,375	-6,171	-8,964		
	Securities	2,703	2,339	-3,346	-858	127,653	-121,252
	Total	5,337	9,714	-9,517	-9,823	112,610	-114,431
2018	Total	**1,984**	**6,282**	**-5,452**	**-7,350**	**121,597**	**-106,815**

The change in collateral posted and received on the derivatives portfolio is mainly coming from increase in the amount of initial margin collateral due to EMIR regulations.
The bulk of collateral posted/received is in government bonds both for OTC derivatives and SFT.
ING's key drivers of the changes to the collateralized derivatives portfolio are Interest- and Foreign Exchange Risk. A one notch rating downgrade will not lead to a material outflow of collateral. Additional outflows are taken into account in the Liquidity Coverage Ratio if ING would be downgraded by three notches.

Central Counterparties

In line with EMIR regulation - for standard products - the use of Central Clearing Parties (CCPs) is mandatory and thus increasing part of the portfolio is shifting from bilateral trades to CCPs.

The table below presents the exposures to central counterparties, broken down by qualified (QCCP) and non-qualified CCPs:

EU CCR8: Exposures to central counterparties		
2019	EAD (post-CRM)	RWA
Exposures to QCCPs (total)		
Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	10,802	216
(i) OTC derivatives	9,287	186
(ii) Exchange-traded derivatives	866	17
(iii) Securities financing transactions	649	13
Pre-funded default fund contributions	247	183
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) Securities financing transactions		
Pre-funded default fund contributions		

EU CCR8: Exposures to central counterparties		
2018	EAD (post-CRM)	RWA
Exposures to QCCPs (total)		
Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	8,397	168
(i) OTC derivatives	7,209	144
(ii) Exchange-traded derivatives	439	9
(iii) Securities financing transactions	749	15
Pre-funded default fund contributions	185	244
Exposures to non-QCCPs (total)		
Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which	4	2
(i) OTC derivatives		
(ii) Exchange-traded derivatives		
(iii) Securities financing transactions	4	2
Pre-funded default fund contributions	1	1

Notes:
(1) By definition segregated initial margin does not contribute to exposure
(2)The status "qualified" is based on the European Securities and Markets Authority (ESMA) qualification.

Note: ING reports CCP's as "qualified" CCPs (QCCPs) if they have files for the European Securities and Markets Authority (ESMA) approval, that enables credit institutions to calculate capital in a preferential way. ING clears with the following QCCPs: Banque Centrale de Compensation SA, Banque Centrale de Compensation SA, LCH CDSClear SA, Chicago Mercantile Exchange Inc, EUREX Clearing Aktiengesellschaft, EUREX OTC CLEAR, ICE Clear Europe Ltd, Japan Securities Clearing Corp, KDPW_CCP SA, LCH Limited, Equity Clear Service, LCH Ltd, Forexclear service, LCH.Clearnet Repoclear service, LCH.Clearnet Swapclear service, LME Clear Ltd, The Korea Exchange, The Options Clearing Corporation.

Voluntary and mandatory clearing has a large impact on the development of EAD and RWA. From an EAD perspective many trades are concentrated in one netting set (per CCP service), compared to bilateral trading, where trades are in various netting sets. Novating a bilateral traded contract to a CCP therefore typically reduces the amount of EAD. From an RWA perspective, the novation reduces the amount of RWA even more, due to the fact that the risk weight is only 2% (for QCCP exposure).

CVA risk

ING follows the standardised approach for calculating the own fund requirement for CVA Risk. The scope of products and counterparties follows the European regulations (CRR and EMIR).

EU CCR2 – CVA capital charge		2019		2018
	Exposure value	RWAs	Exposure value	RWAs
Total portfolios subject to the advanced method				
All portfolios subject to the standardised method	5,487	550	6,558	552
Based on the original exposure method				
Total subject to the CVA capital charge	5,487	550	**6,558**	**552**

In 2019 ING continued to hedge CVA risk that kept the capital requirement on low level. The exposure value decreased due to increased use of EMIR collaterals.

Credit default swaps

ING participates in the credit risk derivative trading market, as a net purchaser of credit risk protection from other counterparties.

EU CCR6: Credit derivatives exposures

2019	Protection bought	Protection sold
Notionals		
Single-name credit default swaps	-14,905	12,897
Index credit default swaps	-1,670	245
Total return swaps	0	2,145
Total Notionals	**-16,575**	**15,288**
Fair values	-259	149
Positive fair value (asset)	48	192
Negative fair value (liability)	-307	-43

EU CCR6: Credit derivatives exposures

2018	Protection bought	Protection sold
Notionals		
Single-name credit default swaps	-15,176	13,212
Index credit default swaps	-1,433	430
Total return swaps		1,852
Total Notionals	**-16,609**	**15,494**
Fair values	-36	30
Positive fair value (asset)	132	142
Negative fair value (liability)	-168	-112

For ING's credit derivative positions as of 31 December 2019, the largest notional is under single-name credit default swap (CDS), and a small notional is under Index CDS (IXCDS).

Compared to 4Q2018, the total notional for both protection bought and protection sold decreased slightly. For protection bought, the total fair value became more negative in 4Q2019 compared to 4Q2018, mainly due to an increase in assets in corporates and sovereigns. On the other hand, the fair value of protection sold became more positive in 4Q2019 compared to 4Q2018, mainly to a decrease liabilities in sovereigns.

Credit risk mitigation

ING's lending and investment businesses are subject to credit risk. As such, the creditworthiness of our customers and investments is continually monitored for their ability to meet their financial obligations to ING Bank. In addition to determining the credit quality and creditworthiness of the customer, ING uses various credit risk mitigation techniques and instruments to mitigate the credit risk associated with an exposure and to reduce the losses incurred subsequent to an event of default on an obligation a customer may have towards ING. The most common terminology used in ING for credit risk protection is 'cover'. While a cover can be an important method for mitigation of credit risk and an alternative source of repayment, generally it is ING's practice to lend on the basis of the customer's creditworthiness rather than exclusively relying on the value of the cover. Within ING, there are two distinct forms of covers: assets and third party obligations.

Cover forms

Assets

The asset that has been pledged to ING as collateral or security gives ING the right to liquidate it in the event where the customer is unable to fulfil its financial obligation. As such, the proceeds can be applied towards full or partial payments of the customer's outstanding exposure. An asset can be tangible (such as cash, securities, receivables, inventory, plant & machinery and mortgages on real estate properties) or intangible (such as patents, trademarks, contract rights and licenses).

Third party obligation

Third Party Obligation, indemnification or undertaking (either by contract and/or by law) is a legally binding declaration by a third party that gives ING the right to expect and claim from that third party to pay an amount, if the customer fails on its obligations to ING. The most common examples are guarantees (such as parent guarantees and export credit insurances) and letters of comfort.

Cover valuation methodology

General guidelines for cover valuation are established to ensure consistency of the application within ING. These general guidelines also require that the value of the cover is monitored on a regular basis, in principle at least annually. Covers shall be revalued accordingly and whenever there is reason to believe that the market is subject to significant changes in conditions. The frequency of monitoring and revaluation depends on the type of covers.

The valuation method also depends on the type of covers. For asset collateral, the valuation sources can be the customer's balance sheet (e.g. inventory, machinery, and equipment), nominal value (e.g. cash, receivables), market value (e.g. securities and commodities), independent appraiser (commercial real estate) and market indices (residential real estate). For third party obligations, the valuation is based on the value that is attributed to the contract between ING and that third party.

For the determination of the Credit Risk applicable amount for Pre-Settlement transactions, ING first matches trades with similar characteristics to determine their eligibility for offset. This offsetting effect is called 'compensation'. Subsequently, ING reduces the amount by any legal netting that may be permitted under various types of Master Agreements (such as ISDAs and GMRAs). Lastly, the amount is further reduced by any collateral that is held by ING under CSAs or other similar agreements.

For the other risk types and especially lending, covers are received that are intended to reduce the losses incurred subsequent to an event of default on an obligation a customer may have towards ING. These are subdivided into four groups called collateral values mortgages, cover values cash, cover value guarantees and other physical covers.

The table below presents the ING portfolio excluding equities per loan type. Exposures represent the outstanding and a loan is presented as secured by collateral or a guarantee if such a cover exists on a facility type. The secured amounts represent the part of the loan that is covered by the collateral. If a loan has both collateral and a guarantee than these are both shown in the designated column.

Credit Risk Mitigations techniques – overview

The table below presents the extent of the use of CRM techniques. All collaterals and financial guarantees are included for all secured exposures, irrespective of whether the standardized approach or the IRB approach is used for RWA calculation. In the column *Exposures unsecured – Carrying amount* are the exposures (net of allowances/impairments) that do not benefit from a CRM technique. In the column *Exposures to be secured* are the exposures that have at least one CRM mechanism (collateral, financial guarantees, credit derivatives) associated with them.

EU CR3: Credit risk mitigation techniques - overview

2019	Exposures unsecured: carrying amount	Exposures to be secured	Exposures secured by collateral	Exposures secured by financial guarantees
Total loans	626,904	567,217	522,367	44,750
Total debt securities	166,931	272	198	74
Total exposures	**793,835**	**567,489**	**522,565**	**44,824**
Of which defaulted	4,861	4,090	3,550	540

Includes the AIRB and SA portfolios and excludes the Default Fund Contribution, securitisations, CVA RWA, equities and ONCOA.

EU CR3: Credit risk mitigation techniques - overview

2018	Exposures unsecured: carrying amount	Exposures to be secured	Exposures secured by collateral	Exposures secured by financial guarantees
Total loans	624,330	411,070	364,627	46,443
Total debt securities	173,828	644	566	78
Total exposures	**798,158**	**411,714**	**365,193**	**46,521**
Of which defaulted	4,003	3,981	3,488	493

Includes the AIRB and SA portfolios and the Default Fund Contribution, excludes securitisations, CVA RWA, equities and ONCOA.

Over the year, there was an increase in the covered amounts, from 34.0% to 41.7% of total exposures due to BMG netting cancelation. For more information on the covers, please see the section 'credit risk mitigation' part of the Risk Management paragraph of the ING Group Annual Report 2019.

Securitisations

The following is prepared taking into account the 'Industry Good Practice Guidelines on Pillar 3 disclosure requirements for securitisations' issued by the European Banking Federation and other industry associations on 31 January 2010 and the CRR/CRD IV disclosure requirements. It includes qualitative and quantitative disclosures addressing both the exposure securitised as well as securitisations positions held. While quantitative disclosures are limited to those securitisations that are used for the purpose of calculating the regulatory capital requirements under the CRR/CRD IV, qualitative information have a broader scope and give a view on ING's entire securitisation activity.

Depending on ING's role as investor, originator, or sponsor, the objectives, the involvement and the rules applied may be different. ING is primarily engaged in securitisation transactions in the role of investor (in securitisations arranged by others). To a lesser extent, ING is also an originator or sponsor of securitisations that are usually traded in the public markets. ING does not re-securitise its securitisations exposure and even though ING hedges its securitisation positions, such instruments are not recognized as credit risk mitigation for regulatory capital purposes. ING does not engage in securitisation of any impaired assets from its own balance. Furthermore, ING does not have any securitisation position in its trading book.

Valuation and accounting policies

ING's activities regarding securitisations are described in Note 50 'Structured entities' in the annual accounts. The applicable accounting policies are included in the section 'Accounting policies for the consolidated annual accounts of ING Group' in the annual accounts. The most relevant accounting policies for ING's own originated securitisation programmes are 'De-recognition of financial assets' and 'Consolidation'. Where ING acts as investor in securitisation positions, the most relevant accounting policy is 'Classification of financial instruments'.

Regulatory capital method used and Rating Agencies

ING has implemented SEC-IRB, SEC-SA, SEC-ERBA and SEC-IAA in line with of Regulation 2017/2401. This regulation became effective for securitisations originated as of 1 January 2019 and as of 1 January 2020 for all securitisation positions. As a result until year-end 2019, ING has a different approach for securitisations originated before 1 January 2019 and after this date.

For securitisations originated before 1 January 2019, ING continued to use the AIRB approach for credit risk. For these positions ING uses the Rating Based Approach (RBA) for investments in tranches of asset-backed securities (ABS) and mortgage-backed securities (MBS) which have been rated by external rating agencies. Rating agencies which are used by ING under the RBA include Standard & Poor's, Fitch and Moody's. The securitisation exposure for which each rating agency is used is given in the following table. In case of multiple ratings, the worst rating is applied.

ING uses the Internal Assessment Approach (IAA) for the support facilities it provides to Asset Backed Commercial Paper (ABCP) conduit Mont Blanc Capital Corp., based on externally published rating agency methodologies. Under the IAA approach, the unrated position is assigned by the institution to an internal rating grade, which is estimated using an ING developed model. The individual liquidity facilities are then attributed a derived rating by mapping the internal rating grade to an externally published credit assessment corresponding to that rating grade.

Securitisation exposure per rating agency used

						2019	2018
	S&P	Fitch	Moody's	IAA approach	Other	Total	Total
Asset Backed Securities	1,360	697	322		214	2,594	2,237
Residential Mortgage Backed Securities	2,640				85	2,724	3,879
Securitisation Liquidity				841	814	1,655	1,181
Interest Rate Derivatives				282	63	345	281
Other		3		404	285	691	388
Total	**4,000**	**700**	**322**	**1,527**	**1,461**	**8,010**	**7,966**

Under the RBA, RWA are determined by multiplying the amount of the exposure by the appropriate regulatory risk weights, which depend on: the external rating or an available inferred rating, the seniority of the position and the granularity of the position.

For securitisations originated after 1 January 2019, ING applies the hierarchy of methods as introduced in Regulation 2017/2401. Following the prescribed hierarchy securitisation positions are reported under SEC-IRB, SEC-SA, SEC-ERBA or SEC-IAA. As of 1-1-2020 all securitisation positions will be reported under the SEC-IRB, SEC-SA, SEC-ERBA or SEC-IAA approach based on the regulatory hierarchy of methods.

Under all approaches in the hierarchy, the risk weight for STS-compliant securitizations is subject to a floor of 10% for senior tranches and 15% for non-senior tranches.

Due to all these changes, the RWA is expected to increase by EUR 1.7 billion when the whole portfolio is reported under Regulation 2017/2401.

Securitisations - credit risk disclosure in READ

	2019	2018	Delta %
Geography	**8,010**	**7,966**	**0.6%**
America	1,325	1,248	6.1%
Asia	114	143	-20.1%
Australia	4	4	-10.3%
Europe	6,567	6,570	0.0%
Europe	**6,567**	**6,570**	**0.0%**
Germany	4,486	4,801	-6.6%
Netherlands	692	728	-4.8%
Spain	5	427	-98.7%
United Kingdom	664	238	179.4%
Rest of Europe	720	377	91.1%
Product Type	**8,010**	**7,966**	**0.6%**
Asset Backed Securities	2,678	2,237	19.7%
Residential Mortgage Backed Securities	2,724	3,879	-29.8%
Securitisation Liquidity (1)	1,655	1,181	40.2%
Interest Rate Derivatives	345	281	22.7%
Other	607	388	56.5%
Exposure Class (2)	**8,010**	**7,966**	**0.6%**
Securitisation Originator	2,541	2,860	-11.2%
Securitisation Investor	2,865	3,259	-12.1%
Securitisation Sponsor	2,604	1,846	41.0%

Excludes equities and ONCOA.
1 These are structured financing transactions by ING for clients by assisting them in obtaining sources of liquidity by selling the clients' receivables or other financial assets to an SPV.
2 Securitisation benefits are excluded. Own originated securitisations are explained in a separate section.

During 2019 the exposure to securitisations remained relatively stable at EUR 8.0 billion. All assets in the securitisation portfolio are performing.

Investor securitisations

ING's goal is to maintain a portfolio of high quality liquid assets that meets the regulatory requirements of CRR/CRD IV and the Delegated Act of October 2014 regarding liquidity. ING invests in high quality Asset Backed Securities (ABS) keeping close track of the securitisation investment positions via monthly monitoring reports and weekly update calls. Additionally, ING may invest in securitisation positions in order to facilitate client business from Wholesale Banking Securitisation department.

In the next table, the investor securitisations are given, broken down by underlying exposure.

In 2019, the total Securitisation Investment portfolio decreased with EUR 0.4 billion to EUR 2.9 billion. The biggest decrease was in Residential Mortgages of EUR 1.0 billion to EUR 0.2 billion, this is the result of selling legacy positions.

Investor securitisation activities

		2019	2018
	Traditional	Total	Total
Residential mortgage	244	244	1,193
Other retail exposures	1,083	1,083	887
Loans to corporates	55	55	61
Commercial mortgage			
Lease and receivables	1,483	1,483	1,118
Re-securitisation			
Total	**2,865**	**2,865**	**3,259**

The following table provides the breakdown of current exposures by risk weight bands. The amount of securitisation positions is based on the regulatory exposure values calculated according to the CRR/CRD IV after consideration of credit conversion factors (CCFs) where applicable as used for the purpose of Pillar 1, but prior to the application of credit risk mitigates on securitisation positions. Given the focus on high quality securitisations the portfolio composition is shifting to the lower risk band.

Investor securitisation activities

		2019		2018
	READ	RWA	READ	RWA
Risk weight band 1 <= 10%	2,055	174	2,711	206
Risk weight band 2 >10% and <= 18%	254	35	481	80
Risk weight band 3 >18% and <= 35%	556	113	67	12
Risk weight band 4 >35% and <= 75%				
Risk weight band 5 >75% and <1250%				
Risk weight 1250%	0	2	0	6
Total	**2,865**	**325**	**3,259**	**304**

Capital requirements for investment positions in securitisations

		Traditional securitisation			Total exposure 2019	Total exposure 2018
		Total traditional	Of which retail underlying	Of which non-retail underlying		
Exposure values (by RW bands)	<= 20% RW	2,807	2,420	386	2,807	3,259
	>20% to 50% RW	58	58		58	
	>50% to 100% RW					
	>100% to <1250% RW					
	1250% RW					
	Total	**2,865**	**2,478**	**386**	**2,865**	**3,259**
Exposure values (by regulatory approach)	IRB RBA (incl. IAA)	2,865	2,478	386	2,865	3,259
	1250% Risk Weight					
	Total	**2,865**	**2,478**	**386**	**2,865**	**3,259**
RWA (by regulatory approach)	IRB RBA (incl. IAA)	323	281	42	323	298
	1250% Risk Weight	2	2		2	6
	Total	**325**	**283**	**42**	**325**	**304**
Capital charge after cap	IRB RBA (incl. IAA)	26	22	3	26	24
	1250% Risk Weight					
	Total Capital	**26**	**23**	**3**	**26**	**24**

Excludes equities and ONCOA. ING does not have any re-securitisation in its books.

In the table above an overview of Investor Securitization exposures and their respective capital requirements are shown. In line with ING's policy and Risk Appetite the vast majority of positions are rated AA- and above, and almost the entire portfolio remains within the investment grade.

Sponsor securitisations

In the normal course of business, ING structures financing transactions for its clients by assisting them in obtaining sources of liquidity by selling the clients' receivables or other financial assets to a Special Purpose Vehicle (SPV). The senior positions in these transactions are funded by the ING administered multi seller Asset Backed Commercial Paper (ABCP) conduit Mont Blanc Capital Corp. (rated A-1/P-1). Mont Blanc Capital Corp. funds itself externally in the ABCP markets.

In its role as administrative agent, ING facilitates these transactions by acting as administrative agent, swap counterparty and liquidity provider to Mont Blanc. ING also provides support facilities (liquidity) backing the transactions funded by the conduit. The types of asset currently in the Mont Blanc conduit include trade receivables, consumer finance receivables and car leases.

ING supports the commercial paper programmes by providing Mont Blanc Capital Corp. with short-term liquidity facilities. Once drawn these facilities bear normal credit risk.

The standby liquidity facilities are reported under irrevocable facilities. All facilities, which vary in risk profile, are granted to the SPE subject to normal ING credit and liquidity risk analysis procedures. The fees received for services provided and for facilities are charged subject to market conditions. Mont Blanc is consolidated by ING. These transactions are therefore on-balance sheet arrangements.

In line with the Internal Assessment Approach, which has been approved for use by ECB for ING in relation to the ING sponsored ABCP conduit, Mont Blanc Capital Corp, the credit quality of the positions are internally assessed by following publicly available assessment methodology of external rating agencies. This includes differing stress factors for different asset classes as outlined by rating agencies as well as assessing the entire structure of the transaction including additional quantitative and qualitative features. This will result in the calculation of a certain credit enhancement. Other protections in a transaction (eligibility criteria, early amortization triggers, commingling protections etc.) are factored in and that then results in an internal rating. This rating is then directly mapped to an external rating, which is used to determine the RWA for the liquidity facilities provided by ING to support the transactions and is outlined in a defined approach. Any changes to rating agency methodology is tracked annually with a procedure in place with the credit risk measurement department verifying that any changes are captured in an update to the approach.

The credit approval process for individual transactions follows ING's standard credit approval procedures. At inception, initial data is required to be received outlining the historical performance of the assets. Due diligence is carried out on the underlying asset pool. Following ING policy, each transaction is reviewed (including reassessing the internal assessment approach analysis for that transaction) on a regular basis. The performance of each transaction is closely monitored on an ongoing basis through a.o. detailed transaction reports.

Originator securitisations

ING originates own securitisation transactions for economic and regulatory capital purposes, as well as liquidity and funding purposes.

Liquidity and funding

The senior tranches in securitisations are used to obtain funding and/or provide contingent liquidity. To be eligible as collateral for central banks securitised exposures must be sold to a Special Purpose Vehicle (SPV) which, in turn, issues securitisation notes ('traditional securitisations') in two tranches, one subordinated tranche and one senior tranche, rated AAA by a rating agency. The AAA tranche can then be used by ING as (stand-by) collateral in the money market for secured borrowings. The assets awaiting securitisations are originated from a banking book and are valued in line with the respective accounting framework. In principle, loans that are securitised are valued at cost.

ING has created a number of these securitisations with a 31 December 2019 position of approximately EUR 56.8 billion of AAA rated notes and unrated subordinated notes. The underlying exposures are residential mortgages in the Netherlands, Belgium, Spain, Italy and Australia and SME Loans in Belgium.

As long as the securitisation exposures created are not transferred to third parties, the regulatory capital remains unchanged. These are not detailed hereunder. Apart from the structuring and administration costs of these securitisations, these securitisations are profit / loss neutral.

Simple risk weight method

A small part of the equity exposure of ING's portfolio is subject to the simple risk weight method for calculating the regulatory capital. The table below shows more details on the equity exposure for which the simple risk weight method is used.

EU CR10: IRB (specialised lending and equities) - Equities under the simple risk-weighted approach									
	On balance sheet amount		RW	Exposure amount		RWA		Capital requirements	
	2019	2018		2019	2018	2019	2018	2019	2018
Exchange traded equity exposures	33	954	290%	33	954	94	2,766	8	221
Private equity exposures	574	572	190%	574	572	1,091	1,087	87	87
Other equity exposures			370%						
Total	**607**	**1,526**		**607**	**1,526**	**1,185**	**3,853**	**95**	**308**

In 2019, the total value of ING Group equity investments reported under simple risk weighted approach decreased by EUR 919 million to EUR 607 million (2018: EUR 1,526 million). As a result, the total value of RWA under simple risk weight method and the total value of regulatory capital has decreased, correspondingly, by EUR 2,668 million and EUR 213 million in 2019. The decrease in total value of ING equity exposure is mainly observed in assets under 290% risk weight category (-EUR 921 million), the impact being mostly driven by complete divestment in Kotak Mahindra participation in February 2019. The assets under 190% risk weight category increased by EUR 2 million in 2019.

Market risk

Prudent Valuation Adjustments

The fair valued instruments of ING portfolio are subject to valuation adjustments, supported by a bank-wide valuation policy framework which meets both IFRS and CRR requirements. In addition to the valuation adjustments reflected in the P&L, an adjustment for fair valued concentrated positions is recognised in the Common Equity Tier 1 capital (i.e. Concentration AVA), in compliance with EBA regulatory standards and IFRS.

Adjustment on concentrated position											
							2019				2018
	Equity	Interest rates	FX	Credit spread	Commodities	Total	Of which: in the trading book	Of which: in the banking book	Total	Of which: in the trading book	Of which: in the banking book
Concentration AVA	**273**	**63**	**0**	**16,441**		**16,777**	**16,642**	**135**	18,478	16,391	2,087

As of 31 December 2019, the Concentration AVA totalled EUR 16.8 million (before tax). This is a decrease of 1.7 million when compared to year-end 2018 (18.5 million before tax) mainly driven by the changes of concentrated fair valued bonds positions held by the banking book. On a quarterly basis the Concentration AVA, as well as all other valuation adjustments, is discussed and approved in the Global Pricing and Impairment Committee (GP&IC), who oversees the bank-wide valuation framework.

Market RWA under the internal model approach (IMA)

The table below explains the changes in Market RWA under the Internal Model Approach (IMA) during 2019 and provides additional information by linking the impact of changes in portfolio composition, model changes, and shifts in the risk environment on Market RWA.

EU MR2-B: RWA flow statements of market risk exposures under the IMA								
amounts in EUR millions						2019		2018
		VaR	SVaR	IRC	Total RWA	Total capital requirements	Total RWA	Total capital requirements
1	RWA at previous year end	**1,394**	**3,217**	**767**	**5,378**	**430**	**3,604**	**288**
1a	*Regulatory adjustment*	*866*	*1,730*	*40*	*2,636*	*211*	*1,572*	*126*
1b	*RWA at previous year-end (end of the day)*	*529*	*1,486*	*727*	*2,742*	*219*	*2,032*	*163*
2	Movement in risk levels	-124	-584	72	-636	-51	-710	-57
8a	*RWAs at the end of the reporting period (end of the day)*	*404*	*902*	*799*	*2,105*	*168*	*2,742*	*219*
8b	*Regulatory adjustment*	*857*	*2,109*	*479*	*3,445*	*276*	*2,636*	*211*
8	RWA at the end of the reporting period	**1,261**	**3,011**	**1,278**	**5,550**	**444**	**5,378**	**430**

* It is required to fill in Rows 1a/1b and 8a/8b when the RWA/capital requirement for any of the columns (VaR, SVaR, IRC) is the 60-day average (for VaR and SVaR) or the 12-week average measure (for IRC) and not the RWA/capital requirement at the end of the period. According to regulatory guidelines the values in rows 1a/8b are calculated as differences between values in rows 1 and 1b and 8 and 8a, respectively.

** Movement in risk levels: Changes due to position changes between end-of-day values for two reporting periods in question.

Key changes

The ING Group Market RWA under Internal Model Approach increased to EUR 5.5 billion in 2019 from EUR 5.4 billion in 2018 (EUR +172 million). The components of the change are: 10D HVaR (EUR -134 million), 10D SVaR (EUR -206 million), and IRC (EUR +512 million). IRC capital increased as a result of changes in the portfolio in combination with credit spread movements.

Funding & liquidity risk

Funding and liquidity risk is the risk that ING Group or one of its subsidiaries cannot meet its financial liabilities when they come due, at reasonable cost and in a timely manner. ING ensures that long term obligations are adequately met with a diversity of stable funding instruments under both normal and stressed conditions. For more information, please refer to the Risk management paragraph of the ING Group Annual Report.

Liquidity coverage ratio

To protect ING and its depositors against liquidity risks, ING maintains a liquidity buffer based on the Delegated Act Liquidity coverage ratio (LCR). ALCO Bank ensures that sufficient liquidity is maintained, in accordance with Bank and regulatory rules and standards, including a buffer of unencumbered, high quality liquid assets.

EU LIQ1: LCR disclosure template

EUR million		Total unweighted value	Total weighted value
		31 December 2019	
Number of data points used in the calculation of averages		12	12
HIGH-QUALITY LIQUID ASSETS			
1	Total high-quality liquid assets (HQLA)		133,980
CASH-OUTFLOWS			
2	Retail deposits and deposits from small business customers, of which:	412,876	30,030
3	*Stable deposits*	303,993	15,200
4	*Less stable deposits*	101,055	12,865
5	Unsecured wholesale funding	346,877	120,128
6	*Operational deposits (all counterparties) and deposits in networks of cooperative banks*	245,800	61,226
7	*Non-operational deposits (all counterparties)*	94,982	52,807
8	*Unsecured debt*	6,096	6,096
9	Secured wholesale funding		13,388
10	Additional requirements	107,478	22,909
11	*Outflows related to derivative exposures and other collateral requirements*	8,783	8,783
12	*Outflows related to loss of funding on debt products*	355	355
13	*Credit and liquidity facilities*	98,341	13,771
14	Other contractual funding obligations	7,728	6,883
15	Other contingent funding obligations	134,366	5,191
16	**TOTAL CASH OUTFLOWS**		198,528
CASH-INFLOWS			
17	Secured lending (eg reverse repos)	79,320	16,618
18	Inflows from fully performing exposures	38,159	29,501
19	Other cash inflows	226,103	46,639
EU-19a	(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)		0
EU-19b	(Excess inflows from a related specialised credit institution)		0
20	**TOTAL CASH INFLOWS**	343,582	92,758
EU-20a	***Fully exempt inflows***	0	0
EU-20b	***Inflows Subject to 90% Cap***	0	0
EU-20c	***Inflows Subject to 75% Cap***	333,945	92,758
			TOTAL ADJUSTED VALUE
21	**LIQUIDITY BUFFER**		133,980
22	**TOTAL NET CASH OUTFLOWS**		105,771
23	**LIQUIDITY COVERAGE RATIO (%)**		127%

EU LIQ1: LCR disclosure template					
EUR million		Total unweighted value	Total weighted value	Total unweighted value	Total weighted value
		30 September 2019		30 June 2019	
Number of data points used in the calculation of averages		12	12	12	12
HIGH-QUALITY LIQUID ASSETS					
1	Total high-quality liquid assets (HQLA)		135.682		136.537
CASH-OUTFLOWS					
2	Retail deposits and deposits from small business customers, of which:	407.679	29.755	402.160	29.350
3	*Stable deposits*	298.689	14.934	294.459	14.723
4	*Less stable deposits*	101.356	12.904	100.355	12.783
5	Unsecured wholesale funding	344.064	119.951	339.547	119.843
6	*Operational deposits (all counterparties) and deposits in networks of cooperative banks*	242.129	60.288	235.534	58.650
7	*Non-operational deposits (all counterparties)*	94.846	52.573	96.248	53.428
8	*Unsecured debt*	7.090	7.090	7.765	7.765
9	Secured wholesale funding		13.695		13.212
10	Additional requirements	105.902	23.111	104.796	23.460
11	*Outflows related to derivative exposures and other collateral requirements*	9.249	9.249	9.743	9.743
12	*Outflows related to loss of funding on debt products*	296	296	286	286
13	*Credit and liquidity facilities*	96.358	13.567	94.767	13.431
14	Other contractual funding obligations	8.614	7.790	9.177	8.373
15	Other contingent funding obligations	136.997	5.295	136.810	5.399
16	**TOTAL CASH OUTFLOWS**		199.597		199.637
CASH-INFLOWS					
17	Secured lending (eg reverse repos)	82.149	16.225	85.398	15.929
18	Inflows from fully performing exposures	38.721	29.978	39.389	30.348
19	Other cash inflows	223.265	46.086	217.946	45.188
20	**TOTAL CASH INFLOWS**	344.135	92.289	342.733	91.466
EU-20a	***Fully exempt inflows***	0	0	0	0
EU-20b	***Inflows Subject to 90% Cap***	0	0	0	0
EU-20c	***Inflows Subject to 75% Cap***	335.021	92.289	333.802	91.466
			TOTAL ADJUSTED VALUE		TOTAL ADJUSTED VALUE
21	**LIQUIDITY BUFFER**		135.682		136.537
22	**TOTAL NET CASH OUTFLOWS**		107.308		108.172
23	**LIQUIDITY COVERAGE RATIO (%)**		126%		126%

EU LIQ1: LCR disclosure template

EUR million		Total unweighted value	Total weighted value	Total unweighted value	Total weighted value
		31 March 2019		31 December 2018	
Number of data points used in the calculation of averages		12	12	12	12
HIGH-QUALITY LIQUID ASSETS					
1	Total high-quality liquid assets (HQLA)		135.241		135.726
CASH-OUTFLOWS					
2	Retail deposits and deposits from small business customers, of which:	397.206	28.988	393.055	28.538
3	*Stable deposits*	291.135	14.557	290.231	14.512
4	*Less stable deposits*	98.972	12.648	95.914	12.291
5	Unsecured wholesale funding	334.412	119.923	330.381	120.713
6	*Operational deposits (all counterparties) and deposits in networks of cooperative banks*	227.987	56.789	221.185	55.115
7	*Non-operational deposits (all counterparties)*	97.926	54.636	101.245	57.647
8	*Unsecured debt*	8.498	8.498	7.951	7.951
9	Secured wholesale funding		12.758		12.588
10	Additional requirements	103.439	23.884	100.984	23.818
11	*Outflows related to derivative exposures and other collateral requirements*	10.205	10.205	10.502	10.502
12	*Outflows related to loss of funding on debt products*	352	352	310	310
13	*Credit and liquidity facilities*	92.882	13.327	90.172	13.006
14	Other contractual funding obligations	9.102	8.319	9.639	8.876
15	Other contingent funding obligations	136.017	5.510	134.263	5.812
16	**TOTAL CASH OUTFLOWS**		199.382		200.345
CASH-INFLOWS					
17	Secured lending (eg reverse repos)	88.210	16.088	89.328	15.987
18	Inflows from fully performing exposures	40.153	30.655	40.360	30.527
19	Other cash inflows	212.436	44.094	207.563	43.213
20	**TOTAL CASH INFLOWS**	340.799	90.838	337.251	89.727
EU-20a	***Fully exempt inflows***	0	0	0	0
EU-20b	***Inflows Subject to 90% Cap***	0	0	0	0
EU-20c	***Inflows Subject to 75% Cap***	331.866	90.838	328.397	89.727
			TOTAL ADJUSTED VALUE		TOTAL ADJUSTED VALUE
21	**LIQUIDITY BUFFER**		135.241		135.726
22	**TOTAL NET CASH OUTFLOWS**		108.544		110.618
23	**LIQUIDITY COVERAGE RATIO (%)**		125%		123%

Asset encumbrance

As part of the liquidity buffer management, ING Group monitors the existing asset encumbrance. Encumbered assets represent the on- and off-balance sheet assets that are pledged or used as collateral for ING Group's liabilities. The presented templates of ING Group's encumbered and unencumbered assets are based on the CRR (Part Eight) and the Regulatory Technical Standards (RTS) for disclosure of encumbered and unencumbered assets.

In 2019, the median asset encumbrance ratio for ING Group is 19%.

ING Group: Encumbered and unencumbered assets

2019 median in EUR million	Carrying amount of encumbered assets		Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets	
		Of which notionally eligible EHQLA and HQLA		Of which notionally eligible EHQLA and HQLA		Of which EHQLA and HQLA		Of which EHQLA and HQLA
Assets of ING Group	**102,285**	**11,607**			**807,651**	**103,965**		
Equity instruments	5,324	3,379	5,324	3,051	6,560	2,587	6,560	2,587
Debt securities	12,863	9,033	12,868	9,032	72,990	54,121	73,756	54,633
of which: covered bonds	394	379	383	373	8,720	8,458	9,169	8,456
of which: asset-backed securities	1,635	19	1,635	19	3,682	2,966	3,756	2,966
of which: issued by general governments	5,659	5,566	5,745	5,566	52,303	37,111	52,585	37,252
of which: issued by financial corporations	6,830	2,267	6,836	2,266	15,965	13,575	16,199	13,806
of which: issued by non-financial corporations	639	560	639	560	1,107	600	1,128	600
Other assets	84,602	933			726,858	47,905		
of which: loans on demand	1,348				51,889	38,241		
of which: loans and advances other than on demand	82,440				628,656	351		
of which: mortgage loans	65,168				303,455			

Note: The numbers and structure of the 2019 table have been amended as the previous version included a shift in columns.

ING Group: Encumbered and unencumbered assets

2018 median in EUR million	Carrying amount of encumbered assets	Fair value of encumbered assets	Carrying amount of unencumbered assets	Fair value of unencumbered assets
Assets of ING Group	**101,510**		**792,823**	
Equity instruments	6,789	6,789	7,876	7,876
Debt securities	12,996	12,955	69,426	70,070
of which: covered bonds	382	380	8,795	8,824
of which: asset-backed securities	1,060	1,060	3,871	3,973
of which: issued by general governments	5,431	5,292	48,367	48,658
of which: issued by financial corporations	6,377	6,385	17,438	17,467
of which: issued by non-financial corporations	1,139	1,111	1,730	1,745
Other assets	81,460		716,208	
of which: loans on demand	1,493		39,015	
of which: loans and advances other than on demand	78,180		628,322	
of which: mortgage loans	64,668		286,992	

ING Group: Collateral received

2019 median in EUR million	Fair value of encumbered collateral received or own debt securities issued	Of which notionally eligible EHQLA and HQLA	Fair value of collateral received or own debt securities issued available for encumbrance	Of which EHQLA and HQLA
Collateral received by ING Group	**91,340**	**75,980**	**35,002**	**26,885**
Loans on demand				
Equity instruments	13,572	7,112	1,192	725
Debt securities	78,064	69,594	33,619	26,793
of which: covered bonds	740	726	567	487
of which: asset-backed securities	308		1,448	
of which: issued by general governments	64,631	64,291	20,876	19,899
of which: issued by financial corporations	10,959	6,454	7,095	2,467
of which: issued by non-financial corporations	3,193	1,714	2,084	1,201
Loans and advances other than loans on demand				
Other collateral received				
Own debt securities issued other than own covered bonds or asset-backed securities				
Own covered bonds and asset-backed securities issued and not yet pledged			45,540	
TOTAL ASSETS, COLLATERAL RECEIVED AND OWN DEBT SECURITIES ISSUED	192,852	87,587		

Note: The numbers and structure of the 2019 table have been amended as the previous version included a shift in columns.

ING Group: Collateral received

2018 median in EUR million	Fair value of encumbered collateral received or own debt securities issued	Unencumbered Fair value of collateral received or own debt securities issued available for encumbrance
Collateral received by ING Group	**90,483**	**50,549**
Loans on demand		
Equity instruments	13,003	5,154
Debt securities	77,167	45,299
of which: covered bonds	1,585	425
of which: asset-backed securities		1,125
of which: issued by general governments	62,833	30,868
of which: issued by financial corporations	10,715	9,798
of which: issued by non-financial corporations	3,435	3,060
Loans and advances other than loans on demand		
Other collateral received		
Own debt securities issued other than own covered bonds or asset-backed securities		
Own covered bonds and asset-backed securities issued and not yet pledged		48,179
TOTAL ASSETS, COLLATERAL RECEIVED AND OWN DEBT SECURITIES ISSUED	191,993	

Encumbered assets/collateral received and associated liabilities ING Group

2019 median	Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
Carrying amount of selected financial liabilities	**129,658**	**165,200**
of which: derivatives	14,728	10,575
of which: repurchase agreements	58,497	83,539
of which: collateralised deposits excl. repurchase agreements	23,789	27,074
of which: covered bonds	29,739	39,338
of which: asset-backed securities	2,943	4,414

Note: The numbers and structure of the 2019 table have been amended as the previous version included a shift in columns.

Encumbered assets/collateral received and associated liabilities ING Group

2018 median	Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities issued other than covered bonds and ABSs encumbered
Carrying amount of selected financial liabilities	**133,533**	**165,585**
of which: derivatives	13,611	8,219
of which: repurchase agreements	64,857	87,050
of which: collateralised deposits excl. repurchase agreements	24,303	27,435
of which: covered bonds	25,792	36,160
of which: asset-backed securities	5,672	6,770

Information on importance of encumbrance ING Bank

ING Group manages it balance sheet prudently whereby a variety of funding sources is readily available. Given this situation, the level of encumbrance of ING Group's balance sheet is relatively low.

Encumbered assets on ING Group's balance sheet comprise to a large extent mortgages and other loans which are used as cover pool for covered bond programs issued by subsidiaries in the Netherlands, Belgium and Germany, as well as external securitisations and other types of collateralized deposits. Of the total encumbered assets of the Group, EUR 84 billion are loans and advances, mostly mortgages, that serve as collateral for these type of liabilities. The cover pool assets are not considered encumbered when the securities are retained within ING Group. The issued securitisations and especially the covered bonds have over collateralisation, meaning that the assets in the cover pool are higher than the issuance.

Furthermore, assets are encumbered as a result of the repo- and securities lending business and cash and securities collateral posted for derivative and clearing transactions in which pledging collateral is a requirement. As part of its normal securities financing and derivatives trading activities ING enters into standard master agreements such as ISDA and Global Master Repurchase Agreements (GMRA), which contain Credit Support Annexes (CSA) or other similar clauses. Under the terms of these contracts ING could be required to provide additional collateral in the event ING is downgraded by one of the established rating agencies. Refer to the paragraph Counterparty Credit Risk.

The main part of ING Group's repo- and reverse repo activities are short-term dated. Repo transactions are mostly conducted with securities which have been obtained as collateral in reverse repo transactions, which are not recognized on the balance sheet. Where securities recognized on the balance sheet have been used in a repo transaction, these remain recognized on the balance sheet and are reported as encumbered.

Non-financial risk

The table below shows the distribution of the gross loss amount for non-financial risk events by the Basel risk categories. The Basel risk categories (i.e. Basel event type classifications) include the risk areas set out in the Non-Financial Risk chapter. The event loss is presented in the year of discovery of the individual events.

Distribution of gross loss* by risk category

	2019	2018**
Business disruption and systems failures	1	1
Clients, products and business practices	43	13
Damage to physical assets	1	2
Employment practices and workplace safety	1	9
Execution, delivery and process management	53	25
External fraud	43	19
Internal fraud	1	3
Total	**143**	**72**

* Loss amounts for events with an individual loss ≥ EUR 5,000.
** Due to recoveries and the development of loss amounts over time, the figures of previous years can be subject to change.

In 2019, the losses to internal events have increased. The losses were again mainly in the categories Execution, Delivery and Process management (37%), External fraud (30%) and Clients, Products and Business practices (30%).

In 2018, the internal event losses were mainly in the categories Execution, Delivery and Process management (35%), External fraud (25%) and Clients, Products and Business practices (20%). These amounts do not include additional losses to events that were reported before 2018, which include the settlement of EUR 775 million reached with the Dutch Public Prosecution Service, related to an event first identified and internally reported in 2016.

Compliance risk

Whistleblower

ING deems it important that any employee can report, anonymously or not, alleged irregularities ('Concerns') regarding accounting or auditing matters, as well as Concerns of a general, operational and financial nature within the company, in accordance with its Whistleblower Policy. ING exercises the utmost care with regard to the confidentiality of such a report or the anonymity of the employee, within the limits as defined by applicable laws and regulations. ING will not discharge, demote, suspend, threaten, harass or in any other way harm the employment status of a Whistleblower who has reported a Concern in good faith or of an employee who participates or has participated in an investigation following a reported Concern.

Concerns are recorded in accordance with specific categories, as represented in the table. These are limited to concerns reported through the dedicated whistle-blower channels as alternative to standard reporting and escalation channels. The Concerns are reported periodically (in numbers and on content, if necessary) via the Head of Compliance up to the level of the Supervisory Board.

Whistleblower concerns

Number of cases reported	2019
Accounting, internal accounting controls or auditing matters	
Anti-trust / competition law	
Breach of ING values or unethical behaviour	52
Breach of confidentiality and data privacy	3
Bribery / Corruption	
Customer suitability	
Discrimination	2
Financial Economic Crime	8
Fraud / Theft	4
Harassment / Bullying / Sexual intimidation	8
Market abuse / Insider trading	1
Other unethical behaviour (e.g. aggression, violence)	6
Other breach of any external law / regulation or any policy	18
Retaliation	
Total	**102**

Due to a change in the categorisation of Concerns starting 1 January 2019, there are no comparative numbers for 2018 for the categories used in 2019. The numbers for 2018 are presented separately below, using the previous categories.

Whistleblower concerns

Number of cases reported	2018
Breach of Orange code or unethical behaviour	45
Bribery / Corruption	
Customer suitability	1
Financial Economic Crime	6
Fraud / Theft	2
Privacy or (client) confidentiality	1
Other breach of any external law / regulation	18
Retaliation	2
Total	**75**