ING Bank Additional Pillar III Report 2022

Contents

Introduction

Basis of disclosure

The information in this report relates to ING Groep N.V. and all of its subsidiaries (hereafter ING). 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 'Basis of preparation and significant accounting policies', Note 44 'Principal subsidiaries, investments in associates and joint ventures' and Note 45 'Structured entities'.

Governance

The Pillar III disclosures have been subject to our internal control framework, to ensure compliance with laws and regulations. The Disclosure Committee (DisCom), responsible for all our 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 our 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.

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 certain amendments to CRR and CRD IV commonly referred to as 'CRR II' and CRD V'. On 27 June 2019, the Banking Reform Package came into force, subject to various transitional and staged timetables.

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 prepares the Pillar III report in accordance with the CRR II and CRD V. ING'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. In order to comply to the CRR II disclosure requirements, ING is using in this report the templates from implementing technical standards (ITS) with regard to public disclosures, as developed by the EBA. Qualitative information (templates) is included in the Annual Report. Therefore, this report should be read in conjunction with the Risk Management section of the Annual Report.

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.

Comparative figures

To give insight into movements during the year, we provide comparative figures for the previous year and analytical review of variances. Table name references and row numbering in tables identify those prescribed in the relevant EBA guidelines where applicable and where there is a value.

Where disclosures have been enhanced, or are new, we do not generally restate or provide prior year comparatives. Wherever specific rows and columns in the tables prescribed by the EBA are not applicable or immaterial to our activities, we omit them and follow the same approach for comparative disclosures.

Management attestation

Throughout the year, and to date, ING has operated a framework of disclosure controls and procedures to support the appropriateness of the Pillar 3 disclosures. In line with the ITS and the mapping tool as provided by EBA, the templates in this report have been aligned to other supervisory reporting and reconciliation were executed against regulatory reporting to ECB such as Corep, Finrep and TLAC. The Disclosure Committee is responsible for examining the reports and disclosures to ensure that they have been subject to adequate verification and comply with applicable standards and legislation.

Disclosure requirements changes in 2022

The following EBA final draft ITS have already been applied into our disclosures.

Final draft ITS on prudential disclosures on ESG risks in accordance with article 449a CRR

In January 2022, the EBA published the final draft ITS on Pillar 3 disclosures on Environmental, Social and Governance (ESG) risks in accordance with article 449a CRR. It puts forward tables, templates and associated instructions that specify the requirement in Article 449a of Regulation (EU) No 575/2013 (Capital Requirements Regulation – CRR) to disclose prudential information on environmental, social and governance (ESG) risks, including transition and physical risk, addressed to large institutions with securities traded on a regulated market of any Member State.

The ITS was adopted by the European Commission in November 2022, published in the Official Journal of the EU in December 2022 with a first reporting date in 2023 (reference date: 31 December 2022). The ESG Pillar 3 requires credit institutions such as ING to disclose the following information:

- Climate risks: how climate change may exacerbate other risks within banks balance sheets.
- Mitigating actions: what mitigating actions banks have in place to address those risks, including financing activities that reduce carbon emissions.
- Green Asset ratio and Banking Book Taxonomy Alignment ratio: to understand how banks are financing activities that will meet the publicly agreed Paris agreement objectives of climate change mitigation and adaptation based on the EU taxonomy of green activities.

The EBA ESG Pillar 3 requirements features (i) a set of 10 quantitative templates that request banks to disclose climate-related risks and actions to mitigate them, together with exposure to green assets and (ii) qualitative information on their ESG strategies, governance and risk management arrangements with regard to ESG risk. It should be noted that the EBA ESG Pillar 3 requirements will become binding following a phased-in approach, with a transitional period for certain disclosures until 2025 (reference date: 31 December 2024).

The ITS on disclosure have been developed in accordance with the mandate included in Article 434a of Regulation (EU) N0 575/2013.

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 a 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 is currently gradually implemented.

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 only and is therefore 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 II/CRD V 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 extent 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.

Specific measurement by risk type is described in greater detail in the separate risk type sections.

The tables below provide ING Bank's EC and RC by risk type and business line. The increase in credit risk EC is mainly the result of add-ons that were introduced to account for limitations relating to concentration risk and to mitigate specific current modelling decisions.

ING Bank: Economic and Regulatory Capital by risk type

		Economic capital		Regulatory capital	
		2022	2021	2022	2021
1	Credit risk	18,543	14,841	22,606	21,478
2	Market risk	11,098	10,737	1,116	723
3	Business risk	1,429	1,075		
4	Operational risk	2,800	2,844	2,800	2,844
5	**Total**	**33,869**	**29,497**	**26,522**	**25,045**

ING Bank: Economic and Regulatory Capital by business line combination

		Economic capital		Regulatory capital	
		2022	2021	2022	2021
1	Wholesale Banking	13,571	10,558	12,755	11,959
2	Retail Benelux	9,405	8,685	6,830	6,608
3	Retail Challengers & Growth Markets	8,231	7,815	6,255	6,225
4	Corporate Line	2,657	2,439	682	253
5	**Total**	**33,865**	**29,497**	**26,522**	**25,045**

Capital Adequacy

The rules for required Regulatory Capital or Capital adequacy are defined by European Union regulation and directives.

The rules express the regulators' and legislators' opinion on how much capital a bank and other regulated 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 significant component 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 which can 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 2022 per risk type and method of calculation. The largest part of the RWA is related to Credit risk (excluding counterparty credit risk) (76%), 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: Regulatory capital requirements

		RWA amounts		Minimum capital requirements	
		2022	2021	2022	2021
1	**Credit risk (excluding CCR)**	**254,446**	**240,315**	**20,356**	**19,225**
2	Of which the standardised approach	26,636	27,663	2,131	2,213
3	Of which the Foundation IRB (F-IRB) approach	21,178	30,043	1,694	2,403
4	Of which slotting approach				
EU 4a	Of which equities under the simple riskweighted approach	1,509	2,745	121	220
5	Of which the Advanced IRB (A-IRB) approach	205,124	179,864	16,410	14,389
6	**Counterparty credit risk - CCR**	**11,314**	**12,504**	**905**	**1,000**
7	Of which the standardised approach	7,786	10,005	623	800
8	Of which internal model method (IMM)				
EU 8a	Of which exposures to a CCP	868	298	69	24
EU 8b	Of which credit valuation adjustment - CVA	863	584	69	47
9	Of which other CCR	1,797	1,616	144	129
15	**Settlement risk**	**68**	**15**	**5**	**1**
16	**Securitisation exposures in the non-trading book (after the cap)**	**2,466**	**2,341**	**197**	**187**
17	Of which SEC-IRBA approach	347	421	28	34
18	Of which SEC-ERBA (including IAA)	684	800	55	64
19	Of which SEC-SA approach	1,435	1,120	115	90
EU 19a	Of which 1250% / deduction				
20	**Position, foreign exchange and commodities risks (Market risk)**	**15,119**	**8,835**	**1,209**	**707**
21	Of which the standardised approach	7,026	6	562	
22	Of which IMA	8,092	8,829	647	706
EU 22a	**Large exposures**				
23	**Operational risk**	**35,000**	**35,550**	**2,800**	**2,844**
EU 23a	Of which basic indicator approach				
EU 23b	Of which standardised approach				
EU 23c	Of which advanced measurement approach	35,000	35,550	2,800	2,844
24	**Amounts below the thresholds for deduction (subject to 250% risk weight)**	**9,497**	**9,255**	**760**	**740**
25	**Other Risk Exposures**	**4,944**	**3,800**	**396**	**304**
29	**Total**	**332,853**	**312,616**	**26,628**	**25,009**

The amount of RWA increased in 2022 by EUR 20.2 billion to EUR 332.9 billion. This is mainly triggered by a EUR 12.9 billion increase in Credit RWA. For more information on Credit RWA see the credit risk chapter.

Key Metrics

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. This was not changed in the CRR II/CRD V.

EU KM1 - Key metrics template

		Total	Total
		2022	2021
		CRR II/CRD V	CRR II/CRD V
	Available own funds (amounts)		
1	Common Equity Tier 1 (CET1) capital	41,966	44,850
2	Tier 1 capital	48,324	51,720
3	Total capital	58,411	61,081
	Risk-weighted exposure amounts		
4	Total risk exposure amount	332,853	312,616
	Capital ratios (as a percentage of risk-weighted exposure amount)		
5	Common Equity Tier 1 ratio (%)	12.61 %	14.35 %
6	Tier 1 ratio (%)	14.52 %	16.54 %
7	Total capital ratio (%)	17.55 %	19.54 %
	Additional own funds requirements to address risks other than the risk of excessive leverage (as a percentage of risk-weighted exposure amount)		
EU 7a	Additional own funds requirements to address risks other than the risk of excessive leverage (%)		
EU 7b	of which: to be made up of CET1 capital (percentage points)		
EU 7c	of which: to be made up of Tier 1 capital (percentage points)		
EU 7d	Total SREP own funds requirements (%)	8.00 %	8.00 %
	Combined buffer and overall capital requirement (as a percentage of risk-weighted exposure amount)		
8	Capital conservation buffer (%)	2.50 %	2.50 %
EU 8a	Conservation buffer due to macro-prudential or systemic risk identified at the level of a Member State (%)		
9	Institution specific countercyclical capital buffer (%)	0.10 %	0.03 %
EU 9a	Systemic risk buffer (%)		
10	Global Systemically Important Institution buffer (%)		
EU 10a	Other Systemically Important Institution buffer (%)		
11	Combined buffer requirement (%)	2.60 %	2.53 %
EU 11a	Overall capital requirements (%)	10.60 %	10.53 %
12	CET1 available after meeting the total SREP own funds requirements	8.11%	7.32%
	Leverage ratio		
13	Total exposure measure	N/A	N/A
14	Leverage ratio (%)	N/A	N/A
	Additional own funds requirements to address the risk of excessive leverage (as a percentage of total exposure measure)		
EU 14a	Additional own funds requirements to address the risk of excessive leverage (%)	N/A	N/A
EU 14b	of which: to be made up of CET1 capital (percentage points)	N/A	N/A
EU 14c	Total SREP leverage ratio requirements (%)	N/A	N/A
	Leverage ratio buffer and overall leverage ratio requirement (as a percentage of total exposure measure)		
EU 14d	Leverage ratio buffer requirement (%)	N/A	N/A
EU 14e	Overall leverage ratio requirement (%)	N/A	N/A
	Liquidity Coverage Ratio		
15	Total high-quality liquid assets (HQLA) (Weighted value -average)	N/A	N/A
EU 16a	Cash outflows - Total weighted value	N/A	N/A
EU 16b	Cash inflows - Total weighted value	N/A	N/A
16	Total net cash outflows (adjusted value)	N/A	N/A
17	Liquidity coverage ratio (%)	N/A	N/A
	Net Stable Funding Ratio		
18	Total available stable funding	N/A	N/A
19	Total required stable funding	N/A	N/A
20	NSFR ratio (%)	N/A	N/A

Countercyclical buffer

As the Covid-19 pandemic receded, macroprudential authorities started (re)introducing or raising their CCyBs. As consequence, ING's countercyclical buffer requirement rose from 0.029% at the end of 2021 to 0.095% at the end of 2022. See below for an overview of the exposure distribution for the most relevant countries (having an own funds requirements weight larger than 1% and/or having in place or announced a countercyclical buffer rate larger than 0%).

Countercyclical buffer

2022	General credit exposures		Relevant credit exposures – Market risk		Securitisation exposures Exposure value for non-trading book	Total exposure value	Own funds requirements				Risk-weighted exposure amounts	Own funds requirements weights (%)	Counter-cyclical capital buffer rate (%)
	Exposure value under the standardised approach	Exposure value under the IRB approach	Sum of long and short positions of trading book exposures for SA	Value of trading book exposures for internal models			Relevant credit risk exposures - Credit risk	Relevant credit exposures – Market risk	Relevant credit exposures – Securitisation positions in the non-trading book	Total			
Netherlands	2,479	205,317			1,012	208,808	3,339	1	15	3,356	41,950	18.051 %	
Germany	452	128,680			2,810	131,942	2,543	1	37	2,582	32,269	13.885 %	
Belgium	1,417	92,651			1,101	95,168	2,419	1	15	2,434	30,430	13.094 %	
United States	48	100,358			2,959	103,364	1,638	1	42	1,681	21,016	9.043 %	
Poland	16,852	17,278				34,130	1,405			1,405	17,560	7.556 %	
United Kingdom	25	22,962			491	23,477	766	3	9	778	9,722	4.183 %	1.000 %
Spain	3,803	28,025			95	31,923	727		4	731	9,138	3.932 %	
Luxembourg	752	20,907		9	4,349	26,017	524	2	53	578	7,224	3.108 %	0.500 %
Australia	3,069	48,948			482	52,499	562		6	568	7,094	3.053 %	
Russian Federation		2,854		19	67	2,940	535		3	538	6,722	2.893 %	
France	2,604	24,077			1,515	28,195	486		16	503	6,287	2.705 %	
Italy	1,268	13,850		3	28	15,150	438	2		440	5,494	2.364 %	
Romania	5,692	1,883				7,575	350			350	4,372	1.881 %	0.500 %
Turkey	2,998	1,597		6		4,601	291			291	3,640	1.566 %	
Switzerland	2	22,036		20		22,058	275	1		275	3,444	1.482 %	
Ireland	2	27,552			538	28,093	180		5	185	2,314	0.995 %	
Hong Kong	58	8,045				8,103	128			128	1,603	0.690 %	1.000 %
Sweden	20	3,607		8		3,634	89			90	1,121	0.482 %	1.000 %

Czechia	5	1,724				1,729	60	1		61	764	0.329 %	1.500 %
Norway		3,052				3,053	54	1		55	692	0.298 %	2.000 %
Hungary	1	1,287				1,288	46			46	570	0.245 %	
Slovakia		799				799	34			34	428	0.184 %	1.000 %
Denmark	2	1,764			144	1,910	23		2	25	307	0.132 %	2.000 %
Bulgaria		414		3		417	21			22	269	0.116 %	1.000 %
Cyprus	6	92				98	4			4	55	0.024 %	
Iceland		75				76	3			3	38	0.016 %	2.000 %
Estonia		80				80	2			2	20	0.009 %	1.000 %
Croatia		22				22	1			1	16	0.007 %	
Lithuania		53				53	1			1	10	0.004 %	
Slovenia		1				1							
Armenia		4				4							
Other countries	217	82,224		64	1,154	83,660	1,405	7	14	1,427	17,833	7.673 %	
total	**41,770**	**862,218**		**132**	**16,745**	**920,866**	**18,349**	**22**	**221**	**18,592**	**232,403**	**100.000 %**	**0.095 %**

Countercyclical buffer

2021	General credit exposures		Relevant credit exposures – Market risk		Securitisation exposures Exposure value for non-trading book	Total exposure value	Own funds requirements			Total	Risk-weighted exposure amounts	Own funds requirements weights (%)	Counter-cyclical capital buffer rate (%)
	Exposure value under the standardised approach	Exposure value under the IRB approach	Sum of long and short positions of trading book exposures for SA	Value of trading book exposures for internal models			Relevant credit risk exposures - Credit risk	Relevant credit exposures – Market risk	Relevant credit exposures – Securitisation positions in the non-trading book				
Netherlands	2,686	199,936			1,132	203,754	2,868	1	15	2,884	36,056	16.863 %	
Belgium	1,338	91,312			246	92,897	2,518	1	10	2,528	31,602	14.780 %	
Germany	515	120,710			3,206	124,431	2,427	1	38	2,465	30,818	14.413 %	
Poland	17,716	16,207				33,924	1,432			1,432	17,897	8.370 %	
United States	23	98,122			2,801	100,946	1,329	1	42	1,371	17,133	8.013 %	
Spain	3,658	27,435				31,093	725			726	9,071	4.243 %	
United Kingdom	86	20,690			407	21,182	641	1	9	651	8,141	3.808 %	
Australia	3,112	46,862			146	50,120	532		2	534	6,671	3.120 %	
France	3,047	25,129			1,052	29,227	515	1	11	526	6,575	3.075 %	
Luxembourg	212	19,389		6	4,049	23,656	457	1	62	520	6,505	3.043 %	0.500 %
Italy	1,358	13,461		5	84	14,908	407		1	409	5,108	2.389 %	
Turkey	3,124	1,716		14		4,854	303	2		305	3,816	1.785 %	
Romania	4,428	2,550				6,978	304			304	3,800	1.777 %	
Switzerland	9	20,205			380	20,593	223		5	228	2,853	1.334 %	
Russian Federation		3,626		20	406	4,051	168	1	7	176	2,197	1.027 %	
Hong Kong	58	6,969				7,027	117	1		118	1,469	0.687 %	1.000 %
Czechia	8	1,655				1,664	54			54	677	0.317 %	0.500 %
Sweden	18	2,718		11		2,746	50	1		51	635	0.297 %	
Norway		2,754				2,754	43			43	543	0.254 %	1.000 %
Slovakia		913				914	43			43	533	0.249 %	1.000 %
Denmark	6	1,893			86	1,985	19		2	21	266	0.124 %	
Bulgaria		411		3		413	18			18	221	0.103 %	0.500 %
Iceland		96				96	5			5	57	0.027 %	
Estonia		33				33	2			2	20	0.009 %	
Other countries	1,623	99,671		80	1,039	102,413	1,674	7	11	1,692	21,149	9.892 %	
Total	**43,024**	**824,463**		**139**	**15,033**	**882,660**	**16,873**	**18**	**214**	**17,105**	**213,812**	**100.000 %**	**0.029 %**

Amount of institution-specific CCyB	2022	2021
Total risk exposure amount	**332,853**	**312,616**
Institution specific countercyclical capital buffer rate	0.095 %	0.029 %
Institution specific countercyclical capital buffer requirement	317.7	91.3

Own funds

The CRR requires ING 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. https://www.ing.com/Investor-relations/Financial-performance/Annual-reports.htm

EU CC1 - Composition of regulatory own funds

		2022	2021	Source based on reference numbers/letters of the balance sheet under the regulatory scope of consolidation
		Amounts	Amounts	
Common Equity Tier 1 (CET1) capital: instruments and reserves				
1	Capital instruments and the related share premium accounts	17,067	17,067	CC2 - 26
	of which: Ordinary Shares	17,067	17,067	
2	Retained earnings	22,956	25,199	CC2 - 28
3	Accumulated other comprehensive income (and other reserves)	-1,145	878	
EU-3a	Funds for general banking risk			
4	Amount of qualifying items referred to in Article 484 (3) CRR and the related share premium accounts subject to phase out from CET1			
5	Minority interests (amount allowed in consolidated CET1)	487	369	
EU-5a	Independently reviewed interim profits net of any foreseeable charge or dividend	2,755	3,836	
6	**Common Equity Tier 1 (CET1) capital before regulatory adjustments**	**42,120**	**47,349**	
Common Equity Tier 1 (CET1) capital: regulatory adjustments				
7	Additional value adjustments (negative amount)	-609	-467	
8	Intangible assets (net of related tax liability) (negative amount)	-824	-815	CC2 - 9
9	Not applicable			
10	Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liability where the conditions in Article 38 (3) CRR are met) (negative amount)	-438	-257	CC2 - 11
11	Fair value reserves related to gains or losses on cash flow hedges of financial instruments that are not valued at fair value	3,055	153	
12	Negative amounts resulting from the calculation of expected loss amounts	-149	-143	
13	Any increase in equity that results from securitised assets (negative amount)			
14	Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	-70	80	
15	Defined-benefit pension fund assets (negative amount)	-489	-603	
16	Direct, indirect and synthetic holdings by an institution of own CET1 instruments (negative amount)	-4	-8	
17	Direct, indirect and synthetic holdings of the CET 1 instruments of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)			
18	Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector entities where the institution does not have a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)			
19	Direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)			
20	Not applicable			

EU-20a	Exposure amount of the following items which qualify for a RW of 1250%, where the institution opts for the deduction alternative			
EU-20b	of which: qualifying holdings outside the financial sector (negative amount)			
EU-20c	of which: securitisation positions (negative amount)			
EU-20d	of which: free deliveries (negative amount)			
21	Deferred tax assets arising from temporary differences (amount above 10% threshold, net of related tax liability where the conditions in Article 38 (3) CRR are met) (negative amount)			
22	Amount exceeding the 17,65% threshold (negative amount)			
23	of which: direct, indirect and synthetic holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities			
24	Not applicable			
25	of which: deferred tax assets arising from temporary differences			
EU-25a	Losses for the current financial year (negative amount)			
EU-25b	Foreseeable tax charges relating to CET1 items except where the institution suitably adjusts the amount of CET1 items insofar as such tax charges reduce the amount up to which those items may be used to cover risks or losses (negative amount)			
26	Not applicable			
27	Qualifying AT1 deductions that exceed the AT1 items of the institution (negative amount)			
27a	Other regulatory adjustments	-625	-439	
28	**Total regulatory adjustments to Common Equity Tier 1 (CET1)**	**-154**	**-2,499**	
29	**Common Equity Tier 1 (CET1) capital**	**41,966**	**44,850**	
Additional Tier 1 (AT1) capital: instruments				
30	Capital instruments and the related share premium accounts	6,280	6,792	CC2 - 24
31	of which: classified as equity under applicable accounting standards			
32	of which: classified as liabilities under applicable accounting standards	6,280	6,792	
33	Amount of qualifying items referred to in Article 484 (4) CRR and the related share premium accounts subject to phase out from AT1			
EU-33a	Amount of qualifying items referred to in Article 494a(1) CRR subject to phase out from AT1			
EU-33b	Amount of qualifying items referred to in Article 494b(1) CRR subject to phase out from AT1			
34	Qualifying Tier 1 capital included in consolidated AT1 capital (including minority interests not included in row 5) issued by subsidiaries and held by third parties	78	78	
35	of which: instruments issued by subsidiaries subject to phase out			
36	**Additional Tier 1 (AT1) capital before regulatory adjustments**	**6,358**	**6,870**	
Additional Tier 1 (AT1) capital: regulatory adjustments				
37	Direct, indirect and synthetic holdings by an institution of own AT1 instruments (negative amount)			
38	Direct, indirect and synthetic holdings of the AT1 instruments of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)			
39	Direct, indirect and synthetic holdings of the AT1 instruments of financial sector entities where the institution does not have a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)			
40	Direct, indirect and synthetic holdings by the institution of the AT1 instruments of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions) (negative amount)			
41	Not applicable			
42	Qualifying T2 deductions that exceed the T2 items of the institution (negative amount)			
42a	Other regulatory adjustments to AT1 capital			
43	**Total regulatory adjustments to Additional Tier 1 (AT1) capital**			
44	**Additional Tier 1 (AT1) capital**	**6,358**	**6,870**	
45	**Tier 1 capital (T1 = CET1 + AT1)**	**48,324**	**51,720**	
Tier 2 (T2) capital: instruments				

46	Capital instruments and the related share premium accounts	10,046	9,188	CC2 - 24
47	Amount of qualifying items referred to in Article 484(5) CRR and the related share premium accounts subject to phase out from T2 as described in Article 486(4) CRR		153	
EU-47a	Amount of qualifying items referred to in Article 494a(2) CRR subject to phase out from T2			
EU-47b	Amount of qualifying items referred to in Article 494b(2) CRR subject to phase out from T2			
48	Qualifying own funds instruments included in consolidated T2 capital (including minority interests and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties	41	21	
49	of which: instruments issued by subsidiaries subject to phase out			
50	Credit risk adjustments			
51	**Tier 2 (T2) capital before regulatory adjustments**	**10,088**	**9,361**	
Tier 2 (T2) capital: regulatory adjustments				
52	Direct, indirect and synthetic holdings by an institution of own T2 instruments and subordinated loans (negative amount)			
53	Direct, indirect and synthetic holdings of the T2 instruments and subordinated loans of financial sector entities where those entities have reciprocal cross holdings with the institution designed to inflate artificially the own funds of the institution (negative amount)			
54	Direct, indirect and synthetic holdings of the T2 instruments and subordinated loans of financial sector entities where the institution does not have a significant investment in those entities (amount above 10% threshold and net of eligible short positions) (negative amount)			
54a	Not applicable			
55	Direct, indirect and synthetic holdings by the institution of the T2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities (net of eligible short positions) (negative amount)			
56	Not applicable			
EU-56a	Qualifying eligible liabilities deductions that exceed the eligible liabilities items of the institution (negative amount)			

EU-56b	Other regulatory adjustments to T2 capital		
57	Total regulatory adjustments to Tier 2 (T2) capital		
58	**Tier 2 (T2) capital**	**10,088**	**9,361**
59	**Total capital (TC = T1 + T2)**	**58,411**	**61,081**
60	**Total Risk exposure amount**	**332,853**	**312,616**
Capital ratios and requirements including buffers			
61	Common Equity Tier 1 capital	12.61 %	14.35 %
62	Tier 1 capital	14.52 %	16.54 %
63	Total capital	17.55 %	19.54 %
64	Institution CET1 overall capital requirements	7.10 %	7.03 %
65	of which: capital conservation buffer requirement	2.50 %	2.50 %
66	of which: countercyclical capital buffer requirement	0.10 %	0.03 %
67	of which: systemic risk buffer requirement		
EU-67a	of which: Global Systemically Important Institution (G-SII) or Other Systemically Important Institution (O-SII) buffer requirement		
EU-67b	of which: additional own funds requirements to address the risks other than the risk of excessive leverage		
68	**Common Equity Tier 1 capital (as a percentage of risk exposure amount) available after meeting the minimum capital requirements**	**8.11 %**	**7.32 %**
National minima (if different from Basel III)			
69	Not applicable		
70	Not applicable		
71	Not applicable		
Amounts below the thresholds for deduction (before risk weighting)			
72	Direct and indirect holdings of own funds and eligible liabilities of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	238	157
73	Direct and indirect holdings by the institution of the CET1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 17.65% thresholds and net of eligible short positions)	2,893	3,071
74	Not applicable		

75	Deferred tax assets arising from temporary differences (amount below 17,65% threshold, net of related tax liability where the conditions in Article 38 (3) CRR are met)	906	631
Applicable caps on the inclusion of provisions in Tier 2			
76	Credit risk adjustments included in T2 in respect of exposures subject to standardised approach (prior to the application of the cap)		
77	Cap on inclusion of credit risk adjustments in T2 under standardised approach	336	351
78	Credit risk adjustments included in T2 in respect of exposures subject to internal ratings-based approach (prior to the application of the cap)		
79	Cap for inclusion of credit risk adjustments in T2 under internal ratings-based approach	1,484	1,399
Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2014 and 1 Jan 2022)			
80	Current cap on CET1 instruments subject to phase out arrangements		
81	Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)		
82	Current cap on AT1 instruments subject to phase out arrangements		
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)		
84	Current cap on T2 instruments subject to phase out arrangements		744
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)		

EU CC2 - reconciliation of regulatory own funds to balance sheet in the audited financial statements

		Balance sheet as in published financial statements	Balance sheet as in published financial statements	Reference
		2022	2021	
Assets - Breakdown by asset classes according to the balance sheet in the published financial statements				
1	Cash and balances with central banks	87,614	106,520	
2	Loans and advances to banks	35,103	23,591	
3	Financial assets at fair value through profit or loss	113,770	101,964	
4	Financial assets at fair value through other comprehensive income	31,625	30,635	
5	Securities at amortised cost	48,160	48,319	
6	Loans and advances to customers	635,557	627,550	
7	Investments in associates and joint ventures	1,500	1,587	
8	Property and equipment	2,446	2,515	
9	Intangible assets	1,102	1,156	CC1 -8
10	Current tax assets	349	533	
11	Deferred tax assets	1,796	957	CC1 - 10
12	Other assets	8,839	5,991	
13	Assets held for sale			
14	**Total assets**	**967,861**	**951,317**	
Liabilities - Breakdown by liability classes according to the balance sheet in the published financial statements				
15	Deposits from banks	56,632	85,092	
16	Customer deposits	686,341	657,831	
17	Financial liabilities at fair value through profit or loss	93,019	71,042	
18	Current tax liabilities	324	271	
19	Deferred tax liabilities	257	603	
20	Provisions	1,030	973	
21	Other liabilities	13,344	12,695	
22	Liabilities held for sale			
23	Debt securities in issue	58,075	57,443	
24	Subordinated loans	15,789	16,719	CC1 - 30, 46
25	**Total liabilities**	**924,811**	**902,668**	
Shareholders' Equity				
26	Share capital and share premium	17,067	17,067	CC1 - 1
27	Other reserves	-1,145	878	
28	Retained earnings (incl. profit for the period)	26,623	29,969	CC1 - 2
29	Shareholders' equity (parent)	42,546	47,914	
30	Non-controlling interests	504	736	
31	**Total shareholders' equity**	**43,050**	**48,650**	

Transitional arrangements for IFRS 9 or analogous ECLs

In January 2018, the EBA published its final guidelines on disclosure requirements of IFRS 9 or analogous expected credit losses (ECLs) transitional arrangements. The guidelines specify a uniform disclosure template institutions shall use when disclosing the information on own funds, capital and leverage ratios, with and without the application of transitional arrangements for IFRS 9 or ECLs. These guidelines have been drafted in accordance with article 473a, paragraph 10 of the CRR, which mandates the EBA to issue guidelines on the disclosure requirements laid down in the same article.

In 2018, ING initially decided not to apply the CRR transitional arrangements for mitigating the impact of the introduction of IFRS 9 impairment on own funds. Therefore, the capital and leverage ratios published as from reporting period 1 January 2018 fully reflected the impact of impairment requirements resulting from IFRS 9.

On 26 June 2020, the Regulation (EU) 2020/873 of the European Parliament and of the Council of 24 June 2020 amending Regulations (EU) No 575/2013 and (EU) 2019/876 (CRR II) as regards certain adjustments in response to the Covid-19 pandemic (CRR 'quick fix') was published. Part of that was the possibility to extend by 2 years the transitional arrangements for mitigating the impact on own funds of the introduction of IFRS 9 (Article 473a (8) of Regulation (EU) No 575/2013). During 2020, ING obtained supervisory permission to apply the dynamic component of transitional arrangements pursuant the CRR 'quick fix' (phasing in impact of increases in IFRS 9 Stage 1 and 2 provisions that have arisen since 1 January 2020). The next table illustrates the own funds, capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs.

IFRS 9-FL: Comparison of institutions' own funds and capital and leverage ratios with and without the application of transitional arrangements for IFRS 9 or analogous ECLs

	2022	2021
Available capital (amounts)		
Common Equity Tier 1 (CET1) capital	41,966	44,850
Common Equity Tier 1 (CET1) capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	41,949	44,828
Tier 1 capital	48,324	51,720
Tier 1 capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	48,307	51,698
Total capital	58,411	61,081
Total capital as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	58,394	61,059
Risk-weighted assets (amounts)		
Total risk-weighted assets	332,853	312,616
Total risk-weighted assets as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	332,836	312,593
Capital ratios		
Common Equity Tier 1 (as a percentage of risk exposure amount)	12.61 %	14.35 %
Common Equity Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	12.60 %	14.34 %
Tier 1 (as a percentage of risk exposure amount)	14.52 %	16.54 %
Tier 1 (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	14.51 %	16.54 %
Total capital (as a percentage of risk exposure amount)	17.55 %	19.54 %
Total capital (as a percentage of risk exposure amount) as if IFRS 9 or analogous ECLs transitional arrangements had not been applied	17.54 %	19.53 %

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.

The Figures Securities Financing are based on the Financial Collateral Comprehensive Method applying supervisory volatility adjustments. The Derivatives figures are based on the Standardized Approach for Counterparty Credit Risk (SA-CCR). Under SA-CCR the exposure at default (EAD) estimate is based on two components; the current replacement cost (RC) and the potential future exposure (PFE). The RC reflects today's loss amount upon the default of a counterparty. The PFE reflects the future expected increase in loss amount. Both replacement cost and PFE 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.

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 Regulatory capital requirements" up to the level at which the combined significant investments are equal to 10% of the CET1 capital of ING. 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 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

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, implementing- and regulatory technical standards, European Banking Authority (EBA) guidelines and ECB guidance. Regulations require all 'significant changes' in internal models (PD, LGD and EAD) 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, with an exception for Governments and central banks, 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

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	1	Default
	21	1	Default
	22	1	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
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
Other1	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 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.

The credit quality of risk exposures is presented in several tables, that were introduced in 2021 due to changes in Pillar 3 regulations. The tables provide 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.

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.

This section provides a comprehensive picture of the credit quality of the banks' assets per exposure class. The data excludes Counterparty Credit Risk exposures, Securitisations, CVA RWA, Equities and ONCOA. The net carrying values correspond to the original exposure (on and off-balance) pre-credit conversion factors corrected for allowances, impairments and provisions.

Performing and Non-Performing Exposures and Related Provisions

EU CR1: Performing and non-performing exposures and related provisions															
2022	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			
Cash balances at central banks and other demand deposits	88,796	88,600	196				-12	-1	-11					8	
Loans and advances	718,921	614,775	57,651	11,431		11,170	-2,191	-550	-1,641	-3,831		-3,819	-25	553,248	5,184
Central banks	16,226	15,175	145											15,989	
General governments	12,609	11,530	973	175		175	-11	-4	-7	-6		-6		4,097	150
Credit institutions	33,052	15,895	1,056	20		20	-17	-7	-10	-20		-20		21,204	
Other financial corporations	72,982	40,390	4,945	303		303	-84	-18	-66	-165		-165		53,524	88
Non-financial corporations	229,399	194,923	32,742	6,646		6,502	-1,367	-257	-1,110	-2,549		-2,538	-25	132,688	2,215
Of which SMEs	34,462	29,118	5,338	1,293		1,293	-173	-54	-120	-542		-542		28,654	660
Households	354,653	336,861	17,790	4,288		4,171	-711	-263	-449	-1,091		-1,091		325,747	2,731
Debt securities	83,551	74,927	2,366				-38	-23	-15						
Central banks	2,638	2,225	106												
General governments	58,102	54,267	1,804				-35	-22	-14						
Credit institutions	15,933	15,343	424				-2	-1	-1						
Other financial corporations	5,702	2,772	32												
Non-financial corporations	1,176	320													
Off-balance-sheet exposures	273,302	149,249	13,244	715		421	-19	-6	-12	-120		-11		49,418	208
Central banks	711													24	
General governments	7,864	5,794	321	20		20								207	
Credit institutions	6,870	403	1											66	
Other financial corporations	32,195	19,724	1,976	97		94	-1	-1						9,573	92
Non-financial corporations	190,054	94,508	10,038	562		273	-11	-4	-7	-119		-11		22,272	106
Households	35,608	28,820	908	37		34	-7	-1	-5	-1				17,276	10
Total	**1,164,571**	**927,551**	**73,458**	**12,146**		**11,590**	**-2,259**	**-580**	**-1,679**	**-3,951**		**-3,831**	**-25**	**602,675**	**5,392**

EU CR1: Performing and non-performing exposures and related provisions

2021	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			
Cash balances at central banks and other demand deposits	106,551	106,535	16				-6	-6						20	
Loans and advances	683,864	601,033	40,626	11,520		11,367	-1,470	-460	-1,010	-3,827		-3,824	-114	512,416	5,800
Central banks	2,579	1,952												1,960	
General governments	10,878	10,397	344	84		84	-6	-2	-4	-5		-5		3,402	64
Credit institutions	39,469	19,811	177				-22	-18	-4					23,152	
Other financial corporations	59,686	37,236	1,799	470		470	-85	-18	-67	-140		-140		41,829	171
Non-financial corporations	226,005	198,847	25,851	5,909		5,871	-832	-211	-621	-2,532		-2,529	-80	127,441	2,178
Of which SMEs	33,272	28,451	4,812	1,232		1,231	-130	-39	-91	-480		-479	-14	26,861	650
Households	345,248	332,791	12,455	5,056		4,942	-525	-210	-314	-1,150		-1,149	-33	314,631	3,387
Debt securities	82,347	75,689					-31	-31							
Central banks	2,026	1,477													
General governments	59,526	56,859					-30	-30							
Credit institutions	14,636	14,588					-1	-1							
Other financial corporations	4,950	2,333													
Non-financial corporations	1,210	432													
Off-balance-sheet exposures	252,135	135,746	8,834	1,043		591	76	4	6	72		24		41,646	80
Central banks	510														
General governments	8,846	6,688	145											546	
Credit institutions	8,316	343												16	
Other financial corporations	27,076	17,182	674	133		126	1							7,755	1
Non-financial corporations	168,952	80,706	7,022	835		392	69	2	1	72		24		19,797	57
Households	38,434	30,828	992	75		73	6	2	4					13,532	23
Total	**1,124,897**	**919,003**	**49,476**	**12,563**		**11,957**	**-1,431**	**-492**	**-1,005**	**-3,756**		**-3,800**	**-114**	**554,083**	**5,880**

The overall exposure in 2022 increased to EUR 1,250.1 billion consists of mainly in Loans and advances: non-financial corporations and households. The non-performing exposure decreased slightly to EUR 12.1 billion (0.97% of the total exposure). Driven by these exposures: non-financial corporations (EUR 6.3 billion) and households (EUR 4.2 billion).

Maturity of Exposures

EU CR1-A: Maturity of exposures						
2022	Net exposure value					
	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
Loans and advances	244,508	288,338	237,415	428,490		1,198,752
Debt securities		59,613	77,776	73,077		210,465
Total	**244,508**	**347,951**	**315,191**	**501,567**		**1,409,217**

EU CR1-A: Maturity of exposures						
2021	Net exposure value					
	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
Loans and advances	229,096	158,143	221,669	412,663		1,021,571
Debt securities		30,313	102,852	75,334		208,499
Total	**229,096**	**188,456**	**324,521**	**487,997**		**1,230,070**

Changes in the stock of non-performing loans and advances

This table identifies the changes in the stock of provisions held against loans and advances that are defaulted or impaired.

EU CR2: Changes in the stock of non-performing loans and advances	2022	2021
	Gross carrying amount	Gross carrying amount
Initial stock of non-performing loans and advances	**11,521**	**13,008**
Inflows to non-performing portfolios	7,278	5,911
Outflows from non-performing portfolios	-7,653	-7,290
Outflows due to write-offs	-1,130	-854
Outflow due to other situations	-6,523	-6,436
Final stock of non-performing loans and advances	**11,431**	**11,520**

Forborne exposures

EU CQ1: Credit quality of forborne exposures								
	Gross carrying amount/nominal amount of exposures with forbearance measures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral received and financial guarantees received on forborne exposures	
	Performing forborne	Non-performing forborne			On performing forborne exposures	On non-performing forborne exposures		Of which collateral and financial guarantees received on non-performing exposures with forbearance measures
2022			Of which defaulted	Of which impaired				
Cash balances at central banks and other demand deposits								
Loans and advances	10,869	5,628	5,469	5,469	-220	-1,635	9,753	2,616
Central banks								
General governments		30	30	30		-1	24	24
Credit institutions								
Other financial corporations	379	256	256	256	-3	-137	248	25
Non-financial corporations	7,658	3,581	3,538	3,538	-198	-1,243	5,690	1,301
Households	2,832	1,762	1,645	1,645	-19	-254	3,791	1,265
Debt Securities								
Loan commitments given	1,563	187	187	187	-9	-11	130	17
Total	**12,432**	**5,815**	**5,655**	**5,655**	**-229**	**-1,646**	**9,883**	**2,633**

Total forborne exposures in 2022 decreased from was EUR 23.2 billion to EUR 19.3 billion mainly witnessed in loans and advances for non-financial corporations; performing forborne (EUR 8.8 billion) and non-performing forborne (EUR 3.3 billion).

EU CQ1: Credit quality of forborne exposures								
	Gross carrying amount/nominal amount of exposures with forbearance measures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral received and financial guarantees received on forborne exposures	
	Performing forborne	Non-performing forborne			On performing forborne exposures	On non-performing forborne exposures		Of which collateral and financial guarantees received on non-performing exposures with forbearance measures
2021			Of which defaulted	Of which impaired				
Cash balances at central banks and other demand deposits								
Loans and advances	13,793	6,023	5,909	5,909	-158	-1,695	12,592	3,338
Central banks								
General governments	26	39	39	39		-1	64	38
Credit institutions								
Other financial corporations	385	331	331	331	-2	-142	306	74
Non-financial corporations	10,241	3,393	3,393	3,393	-137	-1,295	7,561	1,448
Households	3,142	2,260	2,145	2,145	-19	-257	4,661	1,778
Debt Securities								
Loan commitments given	3,190	194	194	194	16	14	1,017	96
Total	**16,983**	**6,217**	**6,102**	**6,102**	**-142**	**-1,681**	**13,609**	**3,434**

Aging of past due exposures

The table below gives an insight into the ageing of the on and off-balance sheets exposures, including both performing and non-performing assets.

EU CQ3: Credit quality of performing and non-performing exposures by past due days

2022	Gross carrying amount/nominal amount											
	Performing exposures			Non-performing exposures								
		Not past due or past due ≤ 30 days	Past due > 30 days ≤ 90 days		Unlikely to pay that are not past due or 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
Cash balances at central banks and other demand deposits	**88,796**	**88,796**										
Loans and advances	**718,921**	**717,869**	**1,052**	**11,431**	**7,636**	**538**	**668**	**792**	**1,207**	**324**	**264**	**11,431**
Central banks	16,226	16,226										
General governments	12,609	12,609		175	148	3		19	1		4	175
Credit institutions	33,052	33,052		20	13		7					20
Other financial corporations	72,982	72,979	3	303	272	4	6	4	11	5		303
Non-financial corporations	229,399	228,932	468	6,646	4,789	171	242	356	719	216	152	6,646
Of which SMEs	34,462	34,364	98	1,293	775	42	72	104	203	56	41	1,293
Households	354,653	354,072	581	4,288	2,416	360	414	412	476	103	108	4,288
Debt securities	**83,551**	**83,551**										
Central banks	2,638	2,638										
General governments	58,102	58,102										
Credit institutions	15,933	15,933										
Other financial corporations	5,702	5,702										
Non-financial corporations	1,176	1,176										
Off-balance-sheet exposures	**273,302**			**715**								**715**
Central banks	711											
General governments	7,864			20								20
Credit institutions	6,870											
Other financial corporations	32,195			97								97
Non-financial corporations	190,054			562								562
Households	35,608			37								37
Total	**1,164,571**	**890,217**	**1,052**	**12,146**	**7,636**	**538**	**668**	**792**	**1,207**	**324**	**264**	**12,146**

EU CQ3: Credit quality of performing and non-performing exposures by past due days

2021	Gross carrying amount/nominal amount											
	Performing exposures			Non-performing exposures								
		Not past due or past due ≤ 30 days	Past due > 30 days ≤ 90 days		Unlikely to pay that are not past due or 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
Cash balances at central banks and other demand deposits	**106,551**	**106,551**										
Loans and advances	**683,864**	**682,860**	**1,004**	**11,520**	**7,323**	**512**	**705**	**1,143**	**1,364**	**221**	**251**	**11,520**
Central banks	2,579	2,579										
General governments	10,878	10,878		84	55	3	20	1			4	84
Credit institutions	39,469	39,469										
Other financial corporations	59,686	59,684	1	470	438	3	2	9	17		1	470
Non-financial corporations	226,005	225,474	531	5,909	3,853	159	233	633	776	125	131	5,909
Of which SMEs	33,272	33,194	78	1,232	739	52	74	108	194	16	50	1,232
Households	345,248	344,776	472	5,056	2,978	347	449	501	571	96	115	5,056
Debt securities	**82,347**	**82,347**										
Central banks	2,026	2,026										
General governments	59,526	59,526										
Credit institutions	14,636	14,636										
Other financial corporations	4,950	4,950										
Non-financial corporations	1,210	1,210										
Off-balance-sheet exposures	**252,135**			**1,043**								**1,043**
Central banks	510											
General governments	8,846											
Credit institutions	8,316											
Other financial corporations	27,076			133								133
Non-financial corporations	168,952			835								835
Households	38,434			75								75
Total	**1,124,897**	**871,758**	**1,004**	**12,563**	**7,323**	**512**	**705**	**1,144**	**1,364**	**221**	**251**	**12,563**

Non-performing by geography

EU CQ4: Quality of non-performing exposures by geography

2022	Gross carrying/nominal amount	Of which non-performing	Of which defaulted	Of which subject to impairment	Accumulated impairment	Provisions on off-balance-sheet commitments and financial guarantees given	Accumulated negative changes in fair value due to credit risk on non-performing exposures
On-balance-sheet exposures	**813,903**		**11,431**		**-6,059**		
Netherlands	175,293		1,582		-812		
Belgium & Luxembourg	115,973		3,570		-1,196		
Germany	125,201		790		-732		
UK	22,772		341		-168		
France	25,302		197		-156		
Spain	35,567		246		-255		
Poland	41,842		701		-664		
Italy	16,725		359		-196		
Other Europe	63,891		1,107		-727		
America	88,304		609		-475		
Africa	2,135		67		-15		
Asia	44,268		1,390		-544		
Australia	51,224		471		-119		
Other countries	5,406				-1		
Off-balance-sheet exposures	**274,017**		**715**			**139**	
Netherlands	46,962		214			27	
Belgium & Luxembourg	35,014		161			52	
Germany	28,647		36			21	
UK	14,544		21				
France	9,428		38			1	
Spain	5,144		1				
Poland	9,745		10			1	
Italy	6,343		1				
Other Europe	31,154		31			10	
America	42,161		117			19	
Africa	613						
Asia	35,542		79			8	
Australia	8,645		6				
Other countries	75						
Total	**1,087,920**		**12,146**		**-6,059**	**139**	

Columns "Of which non-performing" and "of which subject to impairment" are kept empty (greyed) in line with the requirements for institutions with an NPL ratio lower than 5%.

In 2022, the on- and off-balance-sheet exposures on a total level gross carrying amount increased to EUR 1,112 billion, of which EUR 12.1 billion is in default. The defaulted exposure was mainly witnessed in the Netherlands and Belgium. For both the Netherlands and Belgium the defaulted exposure was mainly witnessed in term loans and residential mortgages.

EU CQ4: Quality of non-performing exposures by geography

2021	Gross carrying/nominal amount	Of which non-performing	Of which defaulted	Of which subject to impairment	Accumulated impairment	Provisions on off-balance-sheet commitments and financial guarantees given	Accumulated negative changes in fair value due to credit risk on non-performing exposures
On-balance-sheet exposures	**777,731**		**11,520**		**-5,329**		
Netherlands	174,349		1,960		-797		
Belgium & Luxembourg	113,327		3,218		-1,139		
Germany	120,101		964		-531		
UK	24,155		455		-181		
France	26,209		113		-92		
Spain	33,435		284		-264		
Poland	40,924		767		-606		
Italy	15,411		370		-170		
Other Europe	49,446		513		-423		
America	76,925		1,015		-557		
Africa	2,003		104		-17		

Asia	46,784		790		-434		
Australia	48,999		965		-117		
Other countries	5,663		1				
Off-balance-sheet exposures	**253,178**		**1,043**			**148**	
Netherlands	44,400		388			43	
Belgium & Luxembourg	34,059		352			68	
Germany	27,825		50			23	
UK	12,585		22				
France	10,192		23				
Spain	4,590						
Poland	9,924		7			1	
Italy	5,432						
Other Europe	29,090		12			6	
America	33,916		143				
Africa	1,089						
Asia	32,082		31			5	
Australia	7,877		15				
Other countries	118						
Total	**1,030,909**		**12,563**		**-5,329**	**148**	

Loans and advances to non-financial corporations by industry

Columns "Of which non-performing" and "Of which loans and advances subject to impairment" are kept empty (greyed) in line with the requirements for institutions with an NPL ratio lower than 5%.

EU CQ5: Credit quality of loans and advances to non-financial corporations by industry

2022	Gross carrying amount	Of which non-performing	Of which non-performing: Of which defaulted	Of which loans and advances subject to impairment	Accumulated impairment	Accumulated negative changes in fair value due to credit risk on non-performing exposures
Agriculture, forestry and fishing	3,610		302		-109	
Mining and quarrying	9,883		824		-378	
Manufacturing	48,295		1,253		-707	
Electricity, gas, steam & air conditioning supply	17,534		368		-204	
Water supply	2,449		25		-15	
Construction	9,397		353		-189	
Wholesale and retail trade	38,479		1,367		-725	
Transport and storage	24,384		332		-196	
Accommodation & food service activities	2,522		239		-155	
Information & communication	13,366		412		-170	
Real estate activities	35,121		518		-226	
Financial and insurance activities	6		1			
Professional, scientific & technical activities	9,362		226		-186	
Administrative & support service activities	12,883		234		-447	
Public admin. & defense, compulsory soc. security	1,069				-24	
Education	246		6		-4	
Human health services & social work activities	5,905		148		-143	
Arts, entertainment & recreation	670		21		-15	
Other services	865		16		-23	
Total	**236,045**		**6,646**		**-3,916**	

EU CQ5: Credit quality of loans and advances to non-financial corporations by industry

2021	Gross carrying amount	Of which non-performing	Of which non-performing: Of which defaulted	Of which loans and advances subject to impairment	Accumulated impairment	Accumulated negative changes in fair value due to credit risk on non-performing exposures
Agriculture, forestry and fishing	3,597		158		-48	
Mining and quarrying	10,581		975		-402	
Manufacturing	44,970		1,177		-676	
Electricity, gas, steam and air conditioning supply	16,720		181		-143	
Water supply	2,855		54		-28	
Construction	9,583		399		-186	
Wholesale and retail trade	40,868		1,259		-622	
Transport and storage	23,822		420		-221	
Accommodation and food service activities	2,462		251		-121	
Information and communication	12,237		189		-171	
Real estate activities	34,207		298		-142	
Financial and insurance activities	979					
Professional, scientific and technical activities	9,301		214		-208	
Administrative and support service activities	11,057		250		-203	
Public administration and defense, compulsory social security	931				-22	
Education	271		7		-7	
Human health services and social work activities	5,958		35		-88	
Arts, entertainment and recreation	715		27		-12	
Other services	802		18		-64	
Total	**231,914**		**5,909**		**-3,364**	

Exposures subject to measures applied in response to the Covid-19 crisis

In response to the need to address negative economic consequences of Covid-19 pandemic, the European Union (EU) and some Member States have introduced legislative moratoria on loan repayments granting the borrowers various forms of payment holidays on their existing loans. In other Member States similar measures have been introduced under individual institutions' industry-coordinated initiatives. Many Member States have also introduced various forms of public guarantees to be applied to new lending. Subsequently, the EBA issued guidelines covering (i) disclosure requirements for the exposures subject to the payment moratoria in accordance with the GL on moratoria and (ii) disclosure requirements for the new loans subject to the specific public guarantees set up to mitigate the effects of Covid-19 crisis.

The EBA Guidelines on legislative and non-legislative moratoria on loan repayments applied in the light of the Covid-19 crisis which clarifies a set of criteria and conditions under which such measures do not trigger forbearance classification and the assessment of distressed structuring of loans and advances benefiting from these moratoria and they do not automatically lead to default classification. The table below gives an insight into Information on loans and advances subject to legislative and non-legislative moratoria.

EBA Template 1 Covid-19: Information on loans and advances subject to legislative and non-legislative moratoria

2022	Gross carrying amount							Accumulated impairment, accumulated negative changes in fair value due to credit risk							Gross carrying amount
		Performing exposures			Non-performing exposures				Performing exposures			Non-performing exposures			Inflows to
			Of which exposures with forbearance measures	Of which Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)		Of which exposures with forbearance measures	Of which: Unlikely to pay that are not past-due or past-due <= 90 days			Of which exposures with forbearance measures	Of which Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)		Of which exposures with forbearance measures	Of which: Unlikely to pay that are not past-due or past-due <= 90 days	non-performing exposures
Loans and advances subject to moratorium	1	1	1	1											
Households															
Of which: Collateralised by residential immovable property															
Non-financial corporations	1	1	1	1											
Of which: Small and Medium-sized Enterprises															
Of which: Collateralised by commercial immovable property															
Management overlays are not included in the provisions reported here.															

Management overlays are not included in the provisions reported here.

EBA Template 1 Covid-19: Information on loans and advances subject to legislative and non-legislative moratoria

2021	Gross carrying amount							Accumulated impairment, accumulated negative changes in fair value due to credit risk							Gross carrying amount
		Performing exposures			Non-performing exposures				Performing exposures			Non-performing exposures			Inflows to non-performing exposures
			Of which exposures with forbearance measures	Of which Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)		Of which exposures with forbearance measures	Of which: Unlikely to pay that are not past-due or past-due <= 90 days			Of which exposures with forbearance measures	Of which Instruments with significant increase in credit risk since initial recognition but not credit-impaired (Stage 2)		Of which exposures with forbearance measures	Of which: Unlikely to pay that are not past-due or past-due <= 90 days	
Loans and advances subject to moratorium	**38**	**38**	**2**	**21**	**1**			**-1**							
Households	23	22		5	1										
Of which: Collateralised by residential immovable property	16	15		1											
Non-financial corporations	15	15	2	15											
Of which: Small and Medium-sized Enterprises															
Of which: Collateralised by commercial immovable property	9	9		9											
Management overlays are not included in the provisions reported here.															

EBA Template 2 Covid-19: Breakdown of loans and advances subject to legislative and non-legislative moratoria by residual maturity of moratoria

2022		Gross carrying amount							
	Number of obligors		Of which: legislative moratoria	Of which: expired	Residual maturity of moratoria				
					<= 3 months	> 3 months <= 6 months	> 6 months <= 9 months	> 9 months <= 12 months	> 1 year
Loans and advances for which moratorium was offered	**111,936**	**12,739**							
Loans and advances subject to moratorium (granted)	**106,162**	**11,948**	**3,166**	**11,947**		**1**			
Households		5,380	2,547	5,380					
Of which: Collateralised by residential immovable property		4,446	2,309	4,446					
Non-financial corporations		6,018	571	6,016		1			
Of which: Small and Medium-sized Enterprises		1,138	31	1,138					
Of which: Collateralised by commercial immovable property		4,305	478	4,305					

EBA Template 2 Covid-19: Breakdown of loans and advances subject to legislative and non-legislative moratoria by residual maturity of moratoria

2021		Gross carrying amount							
	Number of obligors		Of which: legislative moratoria	Of which: expired	Residual maturity of moratoria				
					<= 3 months	> 3 months <= 6 months	> 6 months <= 9 months	> 9 months <= 12 months	> 1 year
Loans and advances for which moratorium was offered	**144,770**	**16,337**							
Loans and advances subject to moratorium (granted)	**137,547**	**15,346**	**4,136**	**15,308**	**33**	**3**			**2**
Households		6,771	3,277	6,748	23				
Of which: Collateralised by residential immovable property		5,390	2,887	5,374	16				
Non-financial corporations		7,933	796	7,918	11	3			2
Of which: Small and Medium-sized Enterprises		1,664	53	1,664					
Of which: Collateralised by commercial immovable property		5,333	600	5,324	9				

As part of the response to the Covid-19 pandemic, a number of Member States introduced public guarantee schemes to be applied to newly originated loans and advances. These public guarantee schemes may vary in their characteristics, such as in the level of guarantee given to different counterparties (e.g. households, SMEs and large corporates) and in the duration of the guarantee.

The table below gives an insight into Information on newly originated loans and advances provided under newly applicable public guarantee schemes introduced in response to Covid-19 crisis.

EBA Template 3 Covid-19: Information on newly originated loans and advances provided under newly applicable public guarantee schemes introduced in response to Covid-19 crisis

2022	Gross carrying amount		Maximum amount of the guarantee that can be considered	Gross carrying amount
		Of which: forborne	Public guarantees received	Inflows to non-performing exposures
Newly originated loans and advances subject to public guarantee schemes	**2,422**	**74**	**2,407**	**29**
Households	106			1
Of which: Collateralised by residential immovable property	2			
Non-financial corporations	2,307	72	2,292	28
Of which: Small and Medium-sized Enterprises	1,201			17
Of which: Collateralised by commercial immovable property	564			6

EBA Template 3 Covid-19: Information on newly originated loans and advances provided under newly applicable public guarantee schemes introduced in response to Covid-19 crisis

2021	Gross carrying amount		Maximum amount of the guarantee that can be considered	Gross carrying amount
		Of which: forborne	Public guarantees received	Inflows to non-performing exposures
Newly originated loans and advances subject to public guarantee schemes	**2,198**	**208**	**2,155**	**27**
Households	77			
Of which: Collateralised by residential immovable property	3			
Non-financial corporations	2,116	203	2,073	26
Of which: Small and Medium-sized Enterprises	1,001			13
Of which: Collateralised by commercial immovable property	539			6

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 – CRM techniques overview: Disclosure of the use of credit risk mitigation techniques

2022	Unsecured carrying amount	Secured carrying amount	Of which secured by collateral	Of which secured by financial guarantees	Of which secured by credit derivatives
Loans and advances	254,682	558,433	515,176	43,257	
Debt securities	83,551				
Total	338,233	558,433	515,176	43,257	
Of which non-performing exposures	2,416	5,184	4,598	586	
Of which defaulted	6,246	5,184			

For more information on the covers, please see the section 'credit risk mitigation' part of the Risk Management section of the Annual Report 2022.

EU CR3 – CRM techniques overview: Disclosure of the use of credit risk mitigation techniques

2021	Unsecured carrying amount	Secured carrying amount	Of which secured by collateral	Of which secured by financial guarantees	Of which secured by credit derivatives
Loans and advances	283,719	518,216	460,212	58,005	
Debt securities	82,347				
Total	366,066	518,216	460,212	58,005	
Of which non-performing exposures	5,720	5,800	5,278	522	
Of which defaulted	5,720	5,800			

Collateral obtained by taking possession and execution processes

Table EU CQ7 provides information about the collateral that has been obtained within the reporting period. Collateral obtained by talking possession includes assets that were not pledged by the debtor as collateral, but obtained in exchange for the cancellation of debt.

The value at initial recognition reflects the gross carrying amount at the point in time of the initial recognition in the balance sheet, while accumulated negative changes reflect the difference between the value at initial recognition and the carrying amount at the reporting date.

EU CQ7: Collateral obtained by taking possession and execution processes

2022	Collateral obtained by taking possession	
	Value at initial recognition	Accumulated negative changes
Property, plant and equipment (PP&E)	8	-2
Other than PP&E	9	
Residential immovable property	1	
Commercial Immovable property	8	
Movable property (auto, shipping, etc.)		
Equity and debt instruments		
Other collateral		
Total	**17**	**-2**

EU CQ7: Collateral obtained by taking possession and execution processes

2021	Collateral obtained by taking possession	
	Value at initial recognition	Accumulated negative changes
Property, plant and equipment (PP&E)	10	-1
Other than PP&E	11	
Residential immovable property	2	
Commercial Immovable property	9	
Movable property (auto, shipping, etc.)		
Equity and debt instruments		
Other collateral		
Total	**21**	**-1**

Advanced Internal Rating Based approach (AIRB)

Development of credit risk RWA

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 – RWEA flow statements of credit risk exposures under the IRB approach

	2022	2021
	Risk weighted exposure amount	Risk weighted exposure amount
Risk weighted exposure amount as at the end of the previous reporting period	**183,684**	**193,795**
Asset size (+/-)	13,330	6,428
Asset quality (+/-)	-7,744	-15,511
Model updates (+/-)	15,280	1,443
Methodology and policy (+/-)		-4,235
Acquisitions and disposals (+/-)		
Foreign exchange movements (+/-)	2,748	3,708
Other (+/-)	-2,046	-1,950
Risk weighted exposure amount as at the end of the reporting period	**205,251**	**183,684**

Over the year 2022 the credit RWA in the IRB portfolio increased by EUR 21.6 billion from EUR 183.7 billion to EUR 205.3 billion.

- Asset Size impact of +€13.3 billion, in Wholesale Banking +€8.8 billion, largely explained by increased lending activities;
- Asset quality improvements caused RWA to decrease by -€7.7 billion in 2022 as a result of risk profile changes across the business lines. In Wholesale Banking overall -€5.1 billion, with lending as its main driver;
- Total Model / Methodology impact in 2022 is €15.3 billion, which includes multiple items, among others the introduction of a risk-weight floor on Dutch residential mortgages by the Dutch Central Bank.
- In 2022, FX impact caused RWA to increase by €2.7 billion, mainly due to appreciation of the US dollar of 6.19%;
- Other items decreased RWA by -€2.0 billion in 2022, mainly as a result of impact of non-performing portfolio's on RWA of -€2.7 billion.

Overall, RWA management has a high priority throughout ING 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.

Scope of the use of IRB and SA approaches

EU CR6-A – Scope of the use of IRB and SA approaches

2022

PD Scale	Exposure value as defined in Article 166 CRR for exposures subject to IRB approach	Total exposure value for exposures subject to the Standardised approach and to the IRB approach	Percentage of total exposure value subject to the permanent partial use of the SA (%)	Percentage of total exposure value subject to a roll-out plan (%)	Percentage of total exposure value subject to IRB Approach (%)
Central governments or central banks	207,367	338,121	100		
Of which Regional governments or local authorities		46,800	100		
Of which Public sector entities		11,835	100		
Institutions	65,453	98,661	1		99
Corporates	507,475	591,740	1	1	98
Of which Corporates - Specialised lending, excluding slotting approach		131,639		2	98
Of which Corporates - Specialised lending under slotting approach					
Retail	391,133	394,679	4	4	92
of which Retail – Secured by real estate SMEs		15,451	1	3	96
of which Retail – Secured by real estate non-SMEs		335,524	1	4	95
of which Retail – Qualifying revolving					
of which Retail – Other SMEs		7,602	14	26	60
of which Retail – Other non-SMEs		36,102	31	7	62
Equity					
Other non-credit obligation assets					
Total	**1,171,428**	**1,423,201**	**25**	**2**	**73**

EU CR6-A – Scope of the use of IRB and SA approaches

2021

PD Scale	Exposure value as defined in Article 166 CRR for exposures subject to IRB approach	Total exposure value for exposures subject to the Standardised approach and to the IRB approach	Percentage of total exposure value subject to the permanent partial use of the SA (%)	Percentage of total exposure value subject to a roll-out plan (%)	Percentage of total exposure value subject to IRB Approach (%)
Central governments or central banks	189,265	310,321	100		
Of which Regional governments or local authorities		44,689	100		
Of which Public sector entities		12,902	100		
Institutions	65,273	91,554			99
Corporates	479,757	541,164	1	1	98
Of which Corporates - Specialised lending, excluding slotting approach		124,673		2	98
Of which Corporates - Specialised lending under slotting approach					
Retail	382,788	384,407	4	5	91
of which Retail – Secured by real estate SMEs		13,968	1	4	96
of which Retail – Secured by real estate non-SMEs		326,462	1	4	95
of which Retail – Qualifying revolving					
of which Retail – Other SMEs		7,473	12	27	61
of which Retail – Other non-SMEs		36,504	31	8	61
Equity					
Other non-credit obligation assets					
Total	**1,117,084**	**1,327,447**	**25**	**2**	**73**

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 approach – Credit risk exposures by exposure class and PD range

2022

PD Scale	On-balance sheet exposures	Off-balance-sheet exposures pre-CCF	Exposure weighted average CCF	Exposure post CCF and post CRM	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	Exposure weighted average maturity (years)	Risk weighted exposure amount after supporting factors	Density of risk weighted exposure amount	Expected loss amount	Value adjust-ments and provisions
Institutions												
0.00 to <0.15	29,142	50,007	0.06	32,363	0.07	2,686	26.26	3	4,834	0.15	5	-5
0.00 to <0.10	24,643	43,012	0.07	27,567	0.06	2,262	26.24	3	3,798	0.14	4	-2
0.10 to <0.15	4,500	6,995	0.04	4,796	0.12	424	26.39	2	1,036	0.22	2	-2
0.15 to <0.25	4,376	5,884	0.25	5,828	0.21	607	9.74	2	546	0.09	1	-1
0.25 to <0.50	6,464	7,387	0.31	8,787	0.34	971	8.49	2	1,179	0.13	3	-2
0.50 to <0.75	28	3	0.29	29	0.68	35	17.49	3	14	0.47		
0.75 to <2.50	587	1,440	0.07	695	1.17	366	25.25	1	403	0.58	2	-1
0.75 to <1.75	553	1,439	0.07	661	1.11	305	25.73	1	385	0.58	2	-1
1.75 to <2.5	34	2	0.10	34	2.36	61	15.90	2	18	0.53		
2.50 to <10.00	1,019	1,610	0.03	1,064	5.24	245	27.47	2	993	0.93	16	-5
2.5 to <5	916	827	0.03	941	4.73	181	25.44	2	752	0.80	11	-3
5 to <10	103	783	0.02	122	9.14	64	43.13	1	241	1.97	5	-1
10.00 to <100.00	65	1,148	0.03	102	18.85	5,015	16.45	3	97	0.96	4	-2
10 to <20	53	1,147	0.03	90	16.30	4,980	12.00	3	61	0.68	2	-1
20 to <30	1		0.39	1	25.26	30	28.75	2	1	1.83		
30.00 to <100.00	11	1	0.20	11	38.50	5	50.63	1	35	3.03	2	-2
100.00 (Default)	6	102	0.46	53	100.00	163	3.43	1	16	0.31	1	-1
	41,687	**67,582**	**0.11**	**48,921**	**0.40**	**10,088**	**21.17**	**2**	**8,083**	**0.17**	**33**	**-15**

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

2022

PD Scale	On-balance sheet exposures	Off-balance-sheet exposures pre-CCF	Exposure weighted average CCF	Exposure post CCF and post CRM	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	Exposure weighted average maturity (years)	Risk weighted exposure amount after supporting factors	Density of risk weighted exposure amount	Expected loss amount	Value adjust-ments and provisions
Corporates Spec lending												
0.00 to <0.15	12,037	8,177	0.50	16,149	0.12	724	24.53	3	3,561	0.22	5	-6
0.00 to <0.10	3,220	2,708	0.74	5,235	0.08	145	26.09	3	800	0.15	1	-2
0.10 to <0.15	8,817	5,469	0.38	10,914	0.14	579	23.78	3	2,761	0.25	3	-4
0.15 to <0.25	16,816	19,422	0.24	21,451	0.21	1,045	23.22	3	5,320	0.25	10	-6
0.25 to <0.50	38,237	25,280	0.37	47,541	0.37	2,867	18.46	3	16,475	0.35	32	-28
0.50 to <0.75	42	16	0.57	51	0.68	107	17.55	3	17	0.33		
0.75 to <2.50	17,471	8,090	0.36	20,392	1.04	2,762	15.04	3	7,930	0.39	32	-31
0.75 to <1.75	16,380	7,864	0.36	19,187	0.95	2,484	14.93	3	7,249	0.38	27	-24
1.75 to <2.5	1,090	225	0.50	1,205	2.36	278	16.85	3	681	0.56	5	-7
2.50 to <10.00	2,099	1,052	0.40	2,521	4.49	455	17.56	3	1,627	0.65	20	-17
2.5 to <5	1,864	944	0.41	2,254	4.04	359	17.14	3	1,344	0.60	15	-13
5 to <10	235	108	0.29	267	8.33	96	21.16	2	284	1.06	5	-3
10.00 to <100.00	1,188	417	0.25	1,293	22.52	1,902	17.81	3	1,643	1.27	54	-49
10 to <20	497	289	0.26	572	16.32	1,808	14.40	2	459	0.80	14	-5
20 to <30	522	117	0.22	547	25.06	82	20.83	4	928	1.70	29	-35
30.00 to <100.00	170	11	0.32	173	35.00	12	19.52	2	257	1.48	12	-9
100.00 (Default)	1,956	374	0.28	2,060	100.00	177	29.87	2	2,282	1.11	768	-768
	89,846	**62,827**	**0.34**	**111,458**	**2.62**	**10,039**	**19.81**	**3**	**38,856**	**0.35**	**920**	**-904**

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

2022

PD Scale	On-balance sheet exposures	Off-balance-sheet exposures pre-CCF	Exposure weighted average CCF	Exposure post CCF and post CRM	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	Exposure weighted average maturity (years)	Risk weighted exposure amount after supporting factors	Density of risk weighted exposure amount	Expected loss amount	Value adjust-ments and provisions
Corporates-SME												
0.00 to <0.15	859	310	0.47	1,005	0.11	1,871	24.37	3	134	0.13		
0.00 to <0.10	25		0.66	25	0.08	19	20.00	4	3	0.14		
0.10 to <0.15	834	310	0.47	980	0.11	1,852	24.48	3	131	0.13		
0.15 to <0.25	3,443	946	0.48	3,905	0.22	5,931	24.80	3	826	0.21	2	-1
0.25 to <0.50	2,251	882	0.49	2,688	0.39	4,121	28.06	3	771	0.29	3	-1
0.50 to <0.75	3,188	1,131	0.44	3,700	0.65	5,078	26.02	3	1,222	0.33	6	-4
0.75 to <2.50	9,154	2,331	0.43	10,188	1.40	11,398	23.90	3	4,635	0.45	34	-16
0.75 to <1.75	6,654	1,698	0.43	7,394	1.14	7,598	23.66	3	3,307	0.45	20	-9
1.75 to <2.5	2,500	633	0.44	2,794	2.07	3,800	24.53	3	1,328	0.48	14	-8
2.50 to <10.00	2,664	680	0.51	3,030	4.50	4,091	25.28	3	1,835	0.61	34	-21
2.5 to <5	1,963	534	0.50	2,246	3.66	3,019	25.67	3	1,326	0.59	21	-12
5 to <10	701	146	0.53	784	6.92	1,072	24.15	3	509	0.65	13	-9
10.00 to <100.00	1,022	156	0.55	1,115	18.44	1,812	25.23	3	1,132	1.02	52	-33
10 to <20	674	93	0.54	728	13.45	1,214	25.08	3	704	0.97	24	-17
20 to <30	280	54	0.60	314	24.97	471	25.47	3	357	1.14	20	-11
30.00 to <100.00	69	9	0.35	73	40.11	127	25.67	2	72	0.98	8	-5
100.00 (Default)	741	79	0.74	836	100.00	1,063	34.63	2	414	0.49	301	-250
	23,323	**6,514**	**0.47**	**26,466**	**5.15**	**35,365**	**25.32**	**3**	**10,971**	**0.41**	**433**	**-326**

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

2022

PD Scale	On-balance sheet exposures	Off-balance-sheet exposures pre-CCF	Exposure weighted average CCF	Exposure post CCF and post CRM	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	Exposure weighted average maturity (years)	Risk weighted exposure amount after supporting factors	Density of risk weighted exposure amount	Expected loss amount	Value adjust-ments and provisions
Corporates-Other												
0.00 to <0.15	90,140	58,164	0.33	109,205	0.09	1,516	15.02	2	9,530	0.09	13	-9
0.00 to <0.10	50,750	33,628	0.29	60,557	0.07	567	15.41	2	4,789	0.08	5	-4
0.10 to <0.15	39,390	24,536	0.38	48,648	0.12	949	14.53	2	4,741	0.10	8	-5
0.15 to <0.25	93,489	47,857	0.32	108,802	0.19	2,968	12.47	1	12,238	0.11	26	-16
0.25 to <0.50	49,642	31,975	0.32	59,904	0.38	4,824	19.44	2	15,852	0.26	42	-28
0.50 to <0.75	3,126	1,587	0.41	3,783	0.63	2,516	28.04	3	1,988	0.53	7	-4
0.75 to <2.50	31,721	16,581	0.36	37,717	1.28	9,454	25.93	2	25,222	0.67	129	-140
0.75 to <1.75	26,654	14,679	0.36	31,872	1.09	7,333	25.10	2	19,602	0.62	88	-68
1.75 to <2.5	5,067	1,902	0.41	5,845	2.29	2,121	30.42	3	5,620	0.96	41	-72
2.50 to <10.00	10,697	4,312	0.29	11,973	5.66	3,434	18.98	2	8,187	0.68	106	-124
2.5 to <5	6,363	3,763	0.30	7,492	3.85	2,660	24.33	3	6,200	0.83	70	-73
5 to <10	4,335	549	0.26	4,481	8.70	774	10.04	1	1,986	0.44	36	-51
10.00 to <100.00	4,754	2,415	0.25	5,358	24.31	9,037	33.33	2	10,557	1.97	446	-483
10 to <20	1,515	1,235	0.19	1,754	15.42	8,317	27.67	2	2,746	1.57	75	-58
20 to <30	2,638	1,072	0.30	2,961	26.64	526	36.42	2	6,507	2.20	287	-338
30.00 to <100.00	602	108	0.38	642	37.83	194	34.52	2	1,304	2.03	84	-87
100.00 (Default)	3,584	410	0.34	3,815	100.00	2,245	39.48	2	4,388	1.15	1,607	-1,557
	287,154	**163,301**	**0.33**	**340,556**	**2.01**	**35,994**	**17.04**	**2**	**87,962**	**0.26**	**2,376**	**-2,361**

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

2022

PD Scale	On-balance sheet exposures	Off-balance-sheet exposures pre-CCF	Exposure weighted average CCF	Exposure post CCF and post CRM	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	Exposure weighted average maturity (years)	Risk weighted exposure amount after supporting factors	Density of risk weighted exposure amount	Expected loss amount	Value adjust-ments and provisions
Retail - Secured by immovable property SME												
0.00 to <0.15	2,583	217	0.87	2,771	0.08	12,989	19.94		96	0.03		
0.00 to <0.10	2,318	148	0.87	2,446	0.08	11,423	18.80		75	0.03		
0.10 to <0.15	264	69	0.88	325	0.11	1,566	28.48		21	0.06		
0.15 to <0.25	3,450	212	0.85	3,631	0.20	16,869	21.48		257	0.07	2	-1
0.25 to <0.50	1,495	222	0.82	1,677	0.37	8,661	25.19		233	0.14	2	-1
0.50 to <0.75	1,449	210	0.82	1,621	0.63	6,940	23.80		317	0.20	2	-1
0.75 to <2.50	3,022	324	0.83	3,291	1.35	15,047	25.93		1,222	0.37	12	-7
0.75 to <1.75	2,570	278	0.82	2,800	1.23	13,320	25.31		962	0.34	9	-5
1.75 to <2.5	452	45	0.87	492	2.08	1,727	29.45		260	0.53	3	-2
2.50 to <10.00	1,101	110	0.84	1,193	4.19	5,391	25.58		801	0.67	13	-10
2.5 to <5	852	85	0.89	928	3.36	4,144	25.35		565	0.61	8	-6
5 to <10	249	25	0.64	265	7.09	1,247	26.36		236	0.89	5	-4
10.00 to <100.00	373	20	0.84	391	22.95	1,892	25.54		478	1.22	23	-16
10 to <20	200	14	0.85	212	14.91	1,059	26.47		267	1.26	8	-7
20 to <30	105	5	0.81	110	24.55	483	23.93		133	1.21	6	-5
30.00 to <100.00	68	1	0.87	69	45.02	350	25.23		78	1.13	8	-5
100.00 (Default)	367	6	0.92	383	100.00	1,654	38.99		317	0.83	127	-70
	13,841	**1,321**	**0.84**	**14,958**	**3.96**	**69,443**	**23.72**		**3,721**	**0.25**	**181**	**-108**

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

2022

PD Scale	On-balance sheet exposures	Off-balance-sheet exposures pre-CCF	Exposure weighted average CCF	Exposure post CCF and post CRM	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	Exposure weighted average maturity (years)	Risk weighted exposure amount after supporting factors	Density of risk weighted exposure amount	Expected loss amount	Value adjust-ments and provisions
Retail - Secured by immovable property non-SME												
0.00 to <0.15	158,976	9,257	0.76	166,446	0.09	980,813	18.04		7,203	0.04	28	-6
0.00 to <0.10	64,419	6,125	0.90	70,288	0.05	479,101	18.26		2,063	0.03	7	-2
0.10 to <0.15	94,558	3,132	0.49	96,158	0.13	501,712	17.88		5,140	0.05	21	-4
0.15 to <0.25	64,126	2,480	0.61	65,630	0.18	348,139	23.10		6,193	0.09	27	-8
0.25 to <0.50	38,273	1,505	0.68	39,375	0.34	199,092	21.38		5,393	0.14	28	-6
0.50 to <0.75	19,417	605	0.75	19,907	0.58	104,213	21.10		4,083	0.21	23	-4
0.75 to <2.50	12,117	372	0.86	12,457	1.14	67,992	22.72		4,221	0.34	30	-10
0.75 to <1.75	11,211	294	0.83	11,472	1.06	64,102	23.17		3,853	0.34	27	-9
1.75 to <2.5	906	78	0.96	984	2.07	3,890	17.54		368	0.37	4	-1
2.50 to <10.00	6,481	94	0.76	6,563	4.15	38,975	21.83		4,481	0.68	55	-21
2.5 to <5	5,219	63	0.78	5,274	3.29	31,404	22.30		3,364	0.64	37	-14
5 to <10	1,262	31	0.73	1,289	7.64	7,571	19.91		1,117	0.87	18	-7
10.00 to <100.00	2,681	29	0.73	2,705	24.49	14,637	19.93		3,224	1.19	129	-48
10 to <20	1,239	22	0.70	1,255	14.15	6,431	22.41		1,564	1.25	40	-16
20 to <30	567	3	0.86	571	23.18	3,289	16.89		660	1.16	24	-8
30.00 to <100.00	874	4	0.82	878	40.13	4,917	18.37		1,000	1.14	65	-24
100.00 (Default)	2,627	12	0.76	2,650	100.00	15,567	24.77		4,522	1.71	333	-237
	304,698	**14,354**	**0.73**	**315,731**	**1.35**	**1,769,428**	**20.04**		**39,321**	**0.12**	**654**	**-341**

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

2022

PD Scale	On-balance sheet exposures	Off-balance-sheet exposures pre-CCF	Exposure weighted average CCF	Exposure post CCF and post CRM	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	Exposure weighted average maturity (years)	Risk weighted exposure amount after supporting factors	Density of risk weighted exposure amount	Expected loss amount	Value adjust-ments and provisions
Retail Other SME												
0.00 to <0.15	214	316	0.51	374	0.10	22,304	36.26		28	0.07		
0.00 to <0.10	94	87	0.59	145	0.08	16,424	32.81		8	0.06		
0.10 to <0.15	120	229	0.47	229	0.11	5,880	38.44		20	0.09		
0.15 to <0.25	467	190	0.69	599	0.22	25,980	32.44		69	0.12		
0.25 to <0.50	479	544	0.81	921	0.37	43,942	47.37		246	0.27	2	-2
0.50 to <0.75	332	278	0.82	559	0.66	25,542	44.14		196	0.35	2	-3
0.75 to <2.50	892	587	0.84	1,387	1.34	86,791	45.61		668	0.48	8	-11
0.75 to <1.75	739	528	0.84	1,184	1.22	78,677	46.62		576	0.49	7	-9
1.75 to <2.5	153	60	0.83	203	2.06	8,114	39.71		92	0.45	2	-1
2.50 to <10.00	443	150	0.78	561	4.38	41,201	42.98		304	0.54	11	-14
2.5 to <5	306	114	0.79	397	3.57	32,434	42.28		207	0.52	6	-8
5 to <10	137	36	0.72	163	6.36	8,767	44.71		96	0.59	5	-6
10.00 to <100.00	167	36	0.79	197	19.85	38,673	41.30		156	0.79	16	-18
10 to <20	118	30	0.79	142	15.14	34,412	42.92		113	0.79	9	-12
20 to <30	30	4	0.82	33	24.36	3,158	37.22		26	0.79	3	-3
30.00 to <100.00	19	2	0.79	21	44.32	1,103	36.85		17	0.80	3	-3
100.00 (Default)	178	23	0.87	215	100.00	20,367	67.47		232	1.08	128	-84
	3,172	**2,125**	**0.76**	**4,812**	**6.35**	**304,800**	**43.90**		**1,898**	**0.39**	**167**	**-132**

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

2022

PD Scale	On-balance sheet exposures	Off-balance-sheet exposures pre-CCF	Exposure weighted average CCF	Exposure post CCF and post CRM	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	Exposure weighted average maturity (years)	Risk weighted exposure amount after supporting factors	Density of risk weighted exposure amount	Expected loss amount	Value adjust-ments and provisions
Retail Other non-SME												
0.00 to <0.15	2,072	10,274	0.75	10,075	0.06	4,981,793	71.68		1,397	0.14	4	-2
0.00 to <0.10	352	8,418	0.77	7,065	0.03	3,840,945	71.68		645	0.09	2	
0.10 to <0.15	1,720	1,856	0.64	3,011	0.12	1,140,848	71.67		752	0.25	2	-2
0.15 to <0.25	2,275	119	0.64	2,351	0.21	215,066	68.30		863	0.37	3	-3
0.25 to <0.50	2,779	782	0.66	3,476	0.39	821,724	75.97		2,009	0.58	10	-8
0.50 to <0.75	1,751	232	0.58	1,886	0.65	223,656	70.05		1,403	0.74	9	-6
0.75 to <2.50	3,563	516	0.68	4,102	1.46	932,949	68.91		4,022	0.98	42	-42
0.75 to <1.75	2,580	374	0.64	2,941	1.20	610,222	65.53		2,560	0.87	23	-20
1.75 to <2.5	983	142	0.78	1,162	2.14	322,727	77.46		1,462	1.26	19	-23
2.50 to <10.00	1,114	161	0.62	1,290	4.97	403,852	44.23		1,079	0.84	32	-40
2.5 to <5	749	139	0.64	902	3.52	260,607	36.81		601	0.67	11	-13
5 to <10	365	22	0.53	388	8.33	143,245	61.51		478	1.23	20	-27
10.00 to <100.00	287	25	0.71	333	27.52	115,146	59.41		619	1.86	55	-43
10 to <20	92	17	0.81	131	15.09	82,976	58.93		188	1.43	12	-10
20 to <30	78	1	0.52	78	27.53	17,805	62.48		156	1.99	14	-18
30.00 to <100.00	118	6	0.48	124	40.61	14,365	57.98		276	2.22	29	-15
100.00 (Default)	589	16	0.07	593	100.00	183,946	75.63		2,921	4.93	253	-242
	14,431	**12,124**	**0.73**	**24,107**	**3.51**	**7,878,132**	**69.83**		**14,313**	**0.59**	**407**	**-387**

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). For instance in Corporates-Other, cashpool activities from BMG are included causing a low RWA density. 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.

The overall RWA amount increased from EUR 180.2 billion in 2021 to EUR 205.3 in 2022. The increase is mainly witnessed in Corporate others (EUR 8.3 billion) and Specialised lending (EUR 9.2 billion). The RWA density was 23%, the highest density was in Retail-other SME 59%.

EU CR7 – IRB approach – Effect on the RWEAs of credit derivatives used as CRM techniques

		2022 Pre-credit derivatives risk weighted exposure amount	2022 Actual risk weighted exposure amount
1	**Exposures under F-IRB**		
2	Central governments and central banks		
3	Institutions		
4	Corporates		
4	of which Corporates - SMEs		
4	of which Corporates - Specialised lending		
5	**Exposures under A-IRB**	**205,493**	**205,124**
6	Central governments and central banks		
7	Institutions	8,085	8,083
8	Corporates	138,156	137,788
8	of which Corporates - SMEs	10,971	10,971
8	*of which Corporates - Specialised lending*	38,856	38,856
8	of which Corporates - Other	88,330	87,962
9	*Retail*	59,253	59,253
9	*of which Retail – SMEs - Secured by immovable property collateral*	3,721	3,721
9	*of which Retail – non-SMEs - Secured by immovable property collateral*	39,321	39,321
9	*of which Retail – Qualifying revolving*		
9	*of which Retail – SMEs - Other*	1,898	1,898
10	*of which Retail – Non-SMEs- Other*	14,313	14,313
10	**TOTAL (including F-IRB exposures and A-IRB exposures)**	**205,493**	**205,124**

EU CR7 – IRB approach – Effect on the RWEAs of credit derivatives used as CRM techniques

		2021 Pre-credit derivatives risk weighted exposure amount	2021 Actual risk weighted exposure amount
1	**Exposures under F-IRB**		
2	Central governments and central banks		
3	Institutions		
4	Corporates		
4	*of which Corporates - SMEs*		
4	*of which Corporates - Specialised lending*		
5	**Exposures under A-IRB**	**180,387**	**179,864**
6	Central governments and central banks		
7	Institutions	6,829	6,797
8	Corporates	120,279	119,786
8	*of which Corporates - SMEs*	11,674	11,674
8	*of which Corporates - Specialised lending*	29,665	29,665
8	*of which Corporates - Other*	78,939	78,447
9	Retail	53,280	53,280
9	*of which Retail – SMEs - Secured by immovable property collateral*	3,201	3,201
9	*of which Retail – non-SMEs - Secured by immovable property collateral*	34,129	34,129
9	*of which Retail – Qualifying revolving*		
9	*of which Retail – SMEs - Other*	2,258	2,258
10	*of which Retail – Non-SMEs- Other*	13,692	13,692
10	**TOTAL (including F-IRB exposures and A-IRB exposures)**	**180,387**	**179,864**

EU CR7-A – IRB approach – Disclosure of the extent of the use of CRM techniques

2022	Total exposures	Credit risk Mitigation techniques											Credit risk Mitigation methods in the calculation of RWEAs	
		Funded credit Protection (FCP)									Unfunded credit Protection (UFCP)			
		Part of exposures covered by Financial Collaterals (%)	Part of exposures covered by Other eligible collaterals (%)				Part of exposures covered by Other funded credit protection (%)				Part of exposures covered by Guarantees (%)	Part of exposures covered by Credit Derivatives (%)	RWEA without substitution effects (reduction effects only)	RWEA with substitution effects (both reduction and sustitution effects)
				Part of exposures covered by Immovable property Collaterals (%)	Part of exposures covered by Receivables (%)	Part of exposures covered by Other physical collateral (%)		Part of exposures covered by Cash on deposit (%)	Part of exposures covered by Life insurance policies (%)	Part of exposures covered by Instruments held by a third party (%)				
1 Central governments and central banks														
2 Institutions	48,921	11.45 %	94.87 %	5.97 %	85.08 %	3.82 %					7.94 %	0.20 %	8,083	8,083
3 Corporates	478,480	41.61 %	59.06 %	28.67 %	6.30 %	24.09 %					15.96 %	0.29 %	137,788	137,788
Of which Corporates – SMEs	26,466	2.25 %	143.70 %	93.25 %	6.92 %	43.53 %					16.98 %		10,971	10,971
Of which Corporates – Specialised lending	111,458	3.26 %	116.31 %	76.05 %	6.46 %	33.80 %					22.53 %	0.03 %	38,856	38,856
Of which Corporates – Other	340,556	57.22 %	33.74 %	8.15 %	6.20 %	19.39 %					13.73 %	0.39 %	87,962	87,962
4 Retail	359,609	1.84 %	190.88 %	189.69 %	0.15 %	1.04 %					6.67 %		59,253	59,253
Of which Retail – Immovable property SMEs	14,958	1.41 %	169.79 %	158.54 %	2.02 %	9.24 %					8.06 %		3,721	3,721
Of which Retail – Immovable property non-SMEs	315,731	1.46 %	208.61 %	208.54 %	0.06 %	0.01 %					6.80 %		39,321	39,321
Of which Retail – Qualifying revolving														
Of which Retail – Other SMEs	4,812	14.48 %	48.98 %		1.21 %	47.77 %					26.92 %		1,898	1,898
Of which Retail – Other non-SMEs	24,107	4.57 %	0.16 %		0.01 %	0.15 %					0.12 %		14,313	14,313
5 **Total**	**887,009**	**23.82 %**	**114.48 %**	**92.70 %**	**8.15 %**	**13.62 %**					**11.75 %**	**0.17 %**	**205,124**	**205,124**

EU CR7-A – IRB approach – Disclosure of the extent of the use of CRM techniques

2021	Total exposures	**Credit risk Mitigation techniques**											**Credit risk Mitigation methods in the calculation of RWEAs**	
		Funded credit Protection (FCP)									Unfunded credit Protection (UFCP)			
		Part of exposures covered by Financial Collaterals (%)	Part of exposures covered by Other eligible collaterals (%)				Part of exposures covered by Other funded credit protection (%)				Part of exposures covered by Guarantees (%)	Part of exposures covered by Credit Derivatives (%)	RWEA without substitution effects (reduction effects only)	RWEA with substitution effects (both reduction and sustitution effects)
				Part of exposures covered by Immovable property Collaterals (%)	Part of exposures covered by Receivables (%)	Part of exposures covered by Other physical collateral (%)		Part of exposures covered by Cash on deposit (%)	Part of exposures covered by Life insurance policies (%)	Part of exposures covered by Instruments held by a third party (%)				
1 Central governments and central banks														
2 Institutions	46,122	11.54 %	86.99 %	5.05 %	79.42 %	2.50 %					10.95 %	0.33 %	6,797	6,797
3 Corporates	451,190	39.63 %	55.80 %	29.63 %	6.18 %	19.78 %					15.71 %	0.28 %	119,786	119,786
Of which Corporates – SMEs	27,900	2.84 %	145.55 %	90.70 %	7.93 %	46.72 %					16.73 %		11,674	11,674
Of which Corporates – Specialised lending	107,248	4.26 %	116.57 %	75.27 %	5.77 %	34.80 %					21.44 %		29,665	29,665
Of which Corporates – Other	316,042	54.89 %	27.25 %	8.75 %	6.16 %	12.31 %					13.67 %	0.40 %	78,447	78,447
4 Retail	349,963	2.30 %	193.03 %	191.91 %	0.16 %	0.96 %					7.15 %		53,280	53,280
Of which Retail – Immovable property SMEs	13,509	1.72 %	168.08 %	156.77 %	1.93 %	9.38 %					9.50 %		3,201	3,201
Of which Retail – Immovable property non-SMEs	307,236	1.65 %	211.79 %	211.71 %	0.07 %	0.01 %					7.31 %		34,129	34,129
Of which Retail – Qualifying revolving														
Of which Retail – Other SMEs	4,852	19.01 %	43.43 %		1.55 %	41.88 %					26.12 %		2,258	2,258
Of which Retail – Other non-SMEs	24,367	7.44 %	0.17 %		0.02 %	0.16 %					0.14 %		13,692	13,692
5 **Total**	**847,275**	**22.68 %**	**114.18 %**	**95.32 %**	**7.68 %**	**11.07 %**					**11.91 %**	**0.17 %**	**179,864**	**179,864**

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 2022 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 2016 until 2021. 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 CR9.1 –IRB approach – Back-testing of PD per exposure class (only for PD estimates)

2022

PD Range	External rating equivalent	Number of obligors at the end of the year		Observed average default rate (%)	Average PD (%)	Average historical annual default (%)
			of which: number of obligors which defaulted during the year			
Institutions						
0.00 - 0.01	AAA	16		0.00	0.03	0.00
0.01 - 0.02	AA+	21		0.00	0.03	0.00
0.02 - 0.03	AA	61		0.00	0.03	0.82
0.03 - 0.04	AA-	100		0.00	0.04	0.00
0.04 - 0.05	A+	1,242	1	0.08	0.05	0.13
0.05 - 0.07	A	718		0.00	0.07	0.03
0.07 - 0.11	A-	259		0.00	0.10	0.17
0.11 - 0.17	BBB+	406		0.00	0.14	0.24
0.17 - 0.27	BBB	424	1	0.24	0.22	0.76
0.27 - 0.44	BBB-	651	3	0.00	0.32	0.33
0.44 - 0.73	BB+	315	2	0.63	0.46	0.80
0.73 - 1.26	BB	192	5	2.60	0.83	2.21
1.26 - 2.24	BB-	180		0.00	1.44	2.00
2.24 - 4.09	B+	176	11	6.25	2.58	8.29
4.09 - 7.66	B	99	7	7.07	4.52	6.16
7.66 - 14.78	B-	57	2	3.51	8.78	7.85
14.78 - 22.73	CCC	89	5	5.62	16.71	6.13
22.73 - 29.58	CC	12	2	16.67	26.63	36.66
29.58 - 100.00	C	8	1	12.50	39.14	19.73

EU CR9.1 –IRB approach – Back-testing of PD per exposure class (only for PD estimates)

2022

PD Range	External rating equivalent	Number of obligors at the end of the year	of which: number of obligors which defaulted during the year	Observed average default rate (%)	Average PD (%)	Average historical annual default (%)
Corporates Spec lending						
0.00 - 0.01						
0.01 - 0.02						
0.02 - 0.03	AA	10		0.00	0.03	0.00
0.03 - 0.04	AA-	5		0.00	0.04	0.00
0.04 - 0.05	A+	12		0.00	0.05	0.09
0.05 - 0.07	A	30		0.00	0.06	0.00
0.07 - 0.11	A-	132		0.00	0.09	0.08
0.11 - 0.17	BBB+	535		0.00	0.17	0.04
0.17 - 0.27	BBB	901	1	0.11	0.22	0.14
0.27 - 0.44	BBB-	1,486	29	1.95	0.34	0.61
0.44 - 0.73	BB+	1,445	21	1.45	0.46	0.46
0.73 - 1.26	BB	1,593	5	0.31	0.83	0.44
1.26 - 2.24	BB-	1,126	9	0.80	1.42	0.69
2.24 - 4.09	B+	397	5	1.26	2.52	1.11
4.09 - 7.66	B	228	6	2.63	4.44	2.55
7.66 - 14.78	B-	112	2	1.79	8.42	4.95
14.78 - 22.73	CCC	81	4	4.94	17.80	8.07
22.73 - 29.58	CC	65	6	9.23	22.83	14.92
29.58 - 100.00	C	23	7	30.43	31.69	34.00

EU CR9.1 –IRB approach – Back-testing of PD per exposure class (only for PD estimates)

2022

PD Range	External rating equivalent	Number of obligors at the end of the year	of which: number of obligors which defaulted during the year	Observed average default rate (%)	Average PD (%)	Average historical annual default (%)
Corporates-SME						
0.00 - 0.01	AAA					
0.01 - 0.02	AA+					
0.02 - 0.03	AA	1		0.00	0.03	0.00
0.03 - 0.04	AA-	1		0.00	0.04	0.00
0.04 - 0.05	A+	936	7	0.75	0.05	0.34
0.05 - 0.07	A	366	1	0.27	0.07	0.23
0.07 - 0.11	A-	842	3	0.36	0.11	0.35
0.11 - 0.17	BBB+	5,167	22	0.43	0.14	0.41
0.17 - 0.27	BBB	2,683	11	0.41	0.21	0.54
0.27 - 0.44	BBB-	4,705	19	0.40	0.31	0.57
0.44 - 0.73	BB+	3,780	28	0.74	0.45	0.67
0.73 - 1.26	BB	5,847	56	0.96	0.81	1.07
1.26 - 2.24	BB-	5,934	61	1.03	1.39	1.42
2.24 - 4.09	B+	3,643	94	2.58	2.40	2.66
4.09 - 7.66	B	2,704	81	3.00	4.31	3.96
7.66 - 14.78	B-	931	74	7.95	8.44	7.66
14.78 - 22.73	CCC	672	77	11.46	15.72	13.08
22.73 - 29.58	CC	212	51	24.06	23.31	19.15
29.58 - 100.00	C	232	51	21.98	38.31	26.90

EU CR9.1 –IRB approach – Back-testing of PD per exposure class (only for PD estimates)

2022

PD Range	External rating equivalent	Number of obligors at the end of the year	of which: number of obligors which defaulted during the year	Observed average default rate (%)	Average PD (%)	Average historical annual default (%)
Corporates-Other						
0.00 - 0.01	AAA	4		0.00	0.03	0.00
0.01 - 0.02	AA+	12		0.00	0.03	0.00
0.02 - 0.03	AA	31		0.00	0.03	0.49
0.03 - 0.04	AA-	28		0.00	0.04	0.00
0.04 - 0.05	A+	221		0.00	0.05	0.39
0.05 - 0.07	A	235	1	0.43	0.07	0.18
0.07 - 0.11	A-	479	1	0.21	0.10	0.45
0.11 - 0.17	BBB+	2,467	11	0.45	0.16	0.51
0.17 - 0.27	BBB	2,304	11	0.48	0.23	0.47
0.27 - 0.44	BBB-	4,458	27	0.61	0.35	0.56
0.44 - 0.73	BB+	4,034	36	0.89	0.48	0.77
0.73 - 1.26	BB	4,713	25	0.53	0.83	0.94
1.26 - 2.24	BB-	4,865	55	1.13	1.42	1.56
2.24 - 4.09	B+	3,030	70	2.31	2.51	3.00
4.09 - 7.66	B	2,385	48	2.01	4.43	3.30
7.66 - 14.78	B-	930	45	4.84	8.57	7.69
14.78 - 22.73	CCC	893	74	8.29	16.89	12.54
22.73 - 29.58	CC	372	40	10.75	24.92	14.58
29.58 - 100.00	C	247	43	17.41	35.59	24.28

EU CR9.1 –IRB approach – Back-testing of PD per exposure class (only for PD estimates)

2022

PD Range	External rating equivalent	Number of obligors at the end of the year	of which: number of obligors which defaulted during the year	Observed average default rate (%)	Average PD (%)	Average historical annual default (%)
Retail - Secured by immovable property SME						
0.00 - 0.01	AAA					
0.01 - 0.02	AA+					
0.02 - 0.03	AA	637		0.00	0.03	0.00
0.03 - 0.04	AA-	2,393	1	0.04	0.04	0.08
0.04 - 0.05	A+	1,176	2	0.17	0.05	0.17
0.05 - 0.07	A	472	1	0.21	0.07	0.04
0.07 - 0.11	A-	7,811	6	0.08	0.10	0.19
0.11 - 0.17	BBB+	10,033	23	0.23	0.17	0.30
0.17 - 0.27	BBB	4,865	19	0.39	0.24	0.42
0.27 - 0.44	BBB-	7,756	20	0.26	0.39	0.54
0.44 - 0.73	BB+	7,167	39	0.54	0.56	0.78
0.73 - 1.26	BB	6,837	55	0.80	1.03	0.91
1.26 - 2.24	BB-	6,027	56	0.93	1.47	1.01
2.24 - 4.09	B+	3,304	55	1.66	2.65	2.01
4.09 - 7.66	B	1,456	43	2.95	4.74	3.49
7.66 - 14.78	B-	817	63	7.71	8.65	7.56
14.78 - 22.73	CCC	685	91	13.28	16.43	10.53
22.73 - 29.58	CC	171	42	24.56	25.83	18.77
29.58 - 100.00	C	271	77	28.41	41.08	30.78

EU CR9.1 –IRB approach – Back-testing of PD per exposure class (only for PD estimates)

2022

PD Range	External rating equivalent	Number of obligors at the end of the year	of which: number of obligors which defaulted during the year	Observed average default rate (%)	Average PD (%)	Average historical annual default (%)
Retail - Secured by immovable property non-SME						
0.00 - 0.01	AAA	65,202	9	0.01	0.03	0.01
0.01 - 0.02	AA+	69,952	30	0.04	0.03	0.07
0.02 - 0.03	AA	73,699	45	0.06	0.04	0.11
0.03 - 0.04	AA-	56,645	40	0.07	0.05	0.09
0.04 - 0.05	A+	32,513	20	0.06	0.05	0.07
0.05 - 0.07	A	119,687	121	0.10	0.06	0.08
0.07 - 0.11	A-	248,406	305	0.12	0.10	0.12
0.11 - 0.17	BBB+	260,457	896	0.34	0.13	0.37
0.17 - 0.27	BBB	309,023	808	0.26	0.18	0.25
0.27 - 0.44	BBB-	251,893	1,011	0.40	0.29	0.47
0.44 - 0.73	BB+	133,966	754	0.56	0.50	0.73
0.73 - 1.26	BB	37,384	291	0.78	0.83	1.10
1.26 - 2.24	BB-	27,871	380	1.36	1.23	1.50
2.24 - 4.09	B+	18,577	378	2.03	2.80	2.78
4.09 - 7.66	B	5,495	204	3.71	5.14	6.21
7.66 - 14.78	B-	10,938	536	4.90	7.90	5.64
14.78 - 22.73	CCC	5,193	501	9.65	16.39	12.03
22.73 - 29.58	CC	1,740	265	15.23	27.00	21.66
29.58 - 100.00	C	4,026	1,074	26.68	44.50	32.40

EU CR9.1 –IRB approach – Back-testing of PD per exposure class (only for PD estimates)

2022

PD Range	External rating equivalent	Number of obligors at the end of the year	of which: number of obligors which defaulted during the year	Observed average default rate (%)	Average PD (%)	Average historical annual default (%)
Retail Other SME						
0.00 - 0.01	AAA					
0.01 - 0.02	AA+					
0.02 - 0.03	AA	3,670	1	0.03	0.03	0.08
0.03 - 0.04	AA-	2,114	2	0.09	0.04	0.09
0.04 - 0.05	A+	6,959	10	0.14	0.06	0.16
0.05 - 0.07	A	2,935	7	0.24	0.07	0.18
0.07 - 0.11	A-	18,340	29	0.16	0.10	0.18
0.11 - 0.17	BBB+	28,133	162	0.58	0.23	0.49
0.17 - 0.27	BBB	27,155	121	0.45	0.27	0.41
0.27 - 0.44	BBB-	29,247	254	0.87	0.51	0.76
0.44 - 0.73	BB+	27,608	419	1.52	0.62	1.14
0.73 - 1.26	BB	30,972	911	2.94	1.11	2.69
1.26 - 2.24	BB-	34,561	3,070	8.88	1.48	7.68
2.24 - 4.09	B+	33,070	4,705	14.23	2.83	14.14
4.09 - 7.66	B	11,059	1,367	12.36	4.86	11.93
7.66 - 14.78	B-	5,220	661	12.66	8.85	11.57
14.78 - 22.73	CCC	2,981	588	19.72	16.22	23.48
22.73 - 29.58	CC	928	335	36.10	25.75	33.95
29.58 - 100.00	C	1,158	529	45.68	44.67	48.84

EU CR9.1 –IRB approach – Back-testing of PD per exposure class (only for PD estimates)

2022

PD Range	External rating equivalent	Number of obligors at the end of the year	of which: number of obligors which defaulted during the year	Observed average default rate (%)	Average PD (%)	Average historical annual default (%)
Retail Other non-SME						
0.00 - 0.01	AAA	2,090,723	1,136	0.05	0.03	0.06
0.01 - 0.02	AA+	817,666	885	0.11	0.03	0.14
0.02 - 0.03	AA	32,152	35	0.11	0.03	0.07
0.03 - 0.04	AA-	632,163	663	0.10	0.04	0.13
0.04 - 0.05	A+	17,587	34	0.19	0.06	0.11
0.05 - 0.07	A	12,083	17	0.14	0.08	0.10
0.07 - 0.11	A-	211,076	515	0.24	0.10	0.18
0.11 - 0.17	BBB+	991,989	2,363	0.24	0.13	0.24
0.17 - 0.27	BBB	392,173	1,251	0.32	0.24	0.25
0.27 - 0.44	BBB-	253,203	1,377	0.54	0.34	0.54
0.44 - 0.73	BB+	336,017	21,679	6.45	0.50	5.26
0.73 - 1.26	BB	314,662	2,805	0.89	0.77	0.78
1.26 - 2.24	BB-	486,124	13,351	2.75	1.51	2.13
2.24 - 4.09	B+	420,977	7,464	1.77	2.58	1.55
4.09 - 7.66	B	101,839	3,977	3.91	4.07	4.21
7.66 - 14.78	B-	81,777	6,602	8.07	8.30	8.65
14.78 - 22.73	CCC	40,608	6,642	16.36	16.61	13.04
22.73 - 29.58	CC	2,058	655	31.83	29.23	29.23
29.58 - 100.00	C	19,097	4,471	23.41	36.41	32.34

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.

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 CR10.5 – Equity exposures under the simple risk-weighted approach

	Equity exposures under the simple risk-weighted approach								
	On balance sheet amount		RW	Exposure amount		RWA		Capital requirements	
Categories	2022	2021		2022	2021	2022	2021	2022	2021
Private equity exposures	165	630	290 %	165	630	480	1,828	38	146
Exchange-traded equity exposures	542	483	190 %	542	483	1,029	917	82	73
Other equity exposures			370 %						
Total	**707**	**1,113**		**707**	**1,113**	**1,509**	**2,745**	**121**	**220**

In 2022, the total value of ING equity investments reported under simple risk weighted approach decreased by EUR 406 million to EUR 707 million (2021: EUR 1,113 million). As a result, the total value of RWA under simple risk weight method and the total value of regulatory capital decreased by EUR 1,236 million and EUR 121 million respectively.

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 CRM effects

2022	Exposures before CCF and before CRM		Exposures post CCF and post CRM		RWAs and RWAs density	
Exposure classes	On-Balance Sheet exposures	Off-Balance Sheet exposures	On-Balance Sheet exposures	Off-Balance Sheet exposures	RWAs	RWAs density (%)
Central governments or central banks	156,122	294,252	156,449	2,750	1,588	1.00
Regional government or local authorities	36	38	37		31	85.69
Public sector entities						
Multilateral development banks	3,163	7,110	3,378	4		
International organisations	2,159	9,519	2,159			
Institutions	236	185	3,020	20	675	22.20
Corporates	5,573	4,552	5,603	455	5,542	91.48
Retail	12,688	3,929	10,067	1,620	8,321	71.20
Secured by mortgages on immovable property	19,994	1,662	19,892	594	9,545	46.59
Exposures in default	624	96	465	19	598	123.27
Exposures associated with particularly high risk	230	54	209	23	337	145.21
Covered bonds						
Institutions and corporates with a short-term credit assessment						
Collective investment undertakings						
Equity						
Other items						
TOTAL	**200,825**	**321,396**	**201,279**	**5,486**	**26,636**	**13**

EU CR4 – standardised approach – Credit risk exposure and CRM effects						
2021	Exposures before CCF and before CRM		Exposures post CCF and post CRM		RWAs and RWAs density	
Exposure classes	On-Balance Sheet exposures	Off-Balance Sheet exposures	On-Balance Sheet exposures	Off-Balance Sheet exposures	RWAs	RWAs density (%)
Central governments or central banks	167,513	194,640	167,630	2,882	2,403	1.41
Regional government or local authorities	40	29	41		29	69.36
Public sector entities						
Multilateral development banks	3,146	4,406	3,473	5		
International organisations	2,167	9,567	2,167	5		
Institutions	163	138	3,797	28	904	23.63
Corporates	5,055	4,273	5,260	475	5,222	91.05
Retail	12,741	4,531	9,732	1,505	7,943	70.69
Secured by mortgages on immovable property	20,245	1,793	20,196	710	10,293	49.23
Exposures in default	594	83	507	18	648	123.39
Exposures associated with particularly high risk	149	49	135	13	222	150.00
Covered bonds						
Institutions and corporates with a short-term credit assessment						
Collective investment undertakings						
Equity						
Other items						
TOTAL	**211,813**	**219,508**	**212,937**	**5,642**	**27,663**	**12.66**

The total SA exposure increased to EUR 522.2 billion in 2022 and was mainly witnessed in Off-Balance sheet exposure for Central government or central banks with a zero or low risk weight. The overall RWA decreased to EUR 26.6 billion also witnessed in Central government or Central banks .

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

2022	Risk weight															Total	Of which unrated
Exposure classes	0 %	2 %	4 %	10 %	20 %	35 %	50 %	70 %	75 %	100 %	150 %	250 %	370 %	1250 %	Others		
Central governments or central banks	157,495						287			1,363	54					**159,199**	
Regional government or local authorities					2		7			27						**37**	
Public sector entities																	
Multilateral development banks	3,382															**3,382**	
International organisations	2,159															**2,159**	
Institutions		1			2,896		98			47						**3,041**	
Corporates					270		127			5,661						**6,058**	
Retail exposures						196			11,491							**11,687**	
Exposures secured by mortgages on immovable property						13,483	3,922			3,081						**20,486**	
Exposures in default										259	226					**485**	
Exposures associated with particularly high risk											232					**232**	
Covered bonds																	
Exposures to institutions and corporates with a short-term credit assessment																	
Units or shares in collective investment undertakings																	
Equity exposures																	
Other items																	
TOTAL	**163,037**	**1**			**3,167**	**13,679**	**4,441**		**11,491**	**10,438**	**512**					**206,766**	

EU CR5:Standardised approach Post-CCF and Post-CRM Techniques																
2021	Risk weight														Total	Of which unrated
Exposure classes	0 %	2 %	4 %	10 %	20 %	35 %	50 %	70 %	75 %	100 %	150 %	250 %	370 %	1250 %	Others		
Central governments or central banks	167,792						641			2,071	7					**170,512**	
Regional government or local authorities					7		14			20						**41**	
Public sector entities																	
Multilateral development banks	3,478															**3,478**	
International organisations	2,172															**2,172**	
Institutions					3,410		386			28						**3,825**	
Corporates					322		130			5,283						**5,735**	
Retail exposures						351			10,887							**11,237**	
Exposures secured by mortgages on immovable property						13,227	3,799			3,880						**20,906**	
Exposures in default										280	246					**525**	
Exposures associated with particularly high risk											148					**148**	
Covered bonds																	
Exposures to institutions and corporates with a short-term credit assessment																	
Units or shares in collective investment undertakings																	
Equity exposures																	
Other items																	
TOTAL	**173,442**				**3,739**	**13,577**	**4,971**		**10,887**	**11,562**	**401**					**218,579**	

Also here, the exposure of the SA portfolio is mainly witnessed in Central governments or central banks with a low risk weight.

Counterparty Credit Risk

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 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 tables below, ING's counterparty credit risk portfolio is presented. The tables are reported following the implementation of the updated reporting requirements under CRR2, as a result comparative numbers are not available for all the templates. Under Pillar 1 ING uses the Standardized Approach for Counterparty Credit Risk (SA-CCR) (in line with CRR art. 274). In June 2021 ING went live with the SA-CCR, which replaced the current exposure method (CEM)/ mark-to-market method. 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 SA-CCR, the regulatory exposure at default (READ) measure consists of the replacement cost and potential future exposure components. 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.

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

2022		Risk Weight											
	Exposure Class	0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Others	Total
1	Central governments or central banks	15,654					3			126			**15,783**
2	Regional government or local authorities												
3	Public sector entities												
4	Multilateral development banks	7,771											**7,771**
5	International organisations	13											**13**
6	Institutions		17				17			3			**37**
7	Corporates									57	6		**64**
8	Retail												
9	Institutions and corporates with a short-term credit assessment												
10	Other items												
11	**Total exposure value**	**23,438**	**17**				**20**			**186**	**6**		**23,667**

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

2021		Risk Weight											
	Exposure Class	0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	Others	Total
1	Central governments or central banks	2,260					9			201			**2,469**
2	Regional government or local authorities												
3	Public sector entities												
4	Multilateral development banks	1,718											**1,718**
5	International organisations	80											**80**
6	Institutions		17			1	32						**50**
7	Corporates						4			231	1		**236**
8	Retail								2				**2**
9	Institutions and corporates with a short-term credit assessment												
10	Other items												
11	**Total exposure value**	**4,058**	**17**			**1**	**45**		**2**	**433**	**1**		**4,556**

The 100% risk weight exposures to central governments or central banks contain mainly FX swaps with central monetary institutions.

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 approach – CCR exposures by exposure class and PD scale

2022 PD Scale	Exposure value	Exposure weighted average PD (%)	Number of obligors	Exposure weighted average LGD (%)	Exposure weighted average maturity (years)	RWEA	Density of risk weighted exposure amounts
Corporates - Other							
0.00 to <0.15	8,158	0.10	634	34.04	2	1,651	0.20
0.15 to <0.25	1,696	0.19	787	45.21	2	660	0.39
0.25 to <0.50	2,673	0.36	1,235	37.44	1	1,221	0.46
0.50 to <0.75	7	0.63	232	45.44	3	6	0.87
0.75 to <2.50	1,003	1.11	1,224	37.49	2	771	0.77
2.50 to <10.00	164	4.08	515	51.74	1	262	1.59
10.00 to <100.00	64	24.73	374	58.89	1	213	3.33
100.00 (Default)	10	100.00	68	42.80	3	46	4.68
sub-total	**13,774**	**0.47**	**5,069**	**36.66**	**2**	**4,830**	**0.35**
Corporates - SME							
0.00 to <0.15	3	0.12	188	59.57	1	1	0.33
0.15 to <0.25	5	0.22	307	65.13	2	2	0.36
0.25 to <0.50	11	0.38	323	109.05	2	11	0.99
0.50 to <0.75	2	0.66	211	40.37	2	1	0.45
0.75 to <2.50	12	1.55	444	50.98	1	11	0.88
2.50 to <10.00	6	4.33	185	49.05	2	7	1.10
10.00 to <100.00	3	13.93	41	32.91	5	4	1.27
100.00 (Default)		100.00	23	27.94	3		0.85
Sub-total	**42**	**2.35**	**1,722**	**66.69**	**2**	**36**	**0.86**
Corporates - Specialised lending							
0.00 to <0.15	686	0.14	178	40.54	4	410	0.60
0.15 to <0.25	283	0.21	265	50.94	3	180	0.63
0.25 to <0.50	454	0.35	607	42.50	4	413	0.91
0.50 to <0.75							
0.75 to <2.50	455	0.85	247	21.06	1	179	0.39
2.50 to <10.00	21	4.36	16	51.75	4	57	2.69
10.00 to <100.00	13	33.25	34	34.22	2	38	2.82
100.00 (Default)	11	100.00	14	28.73	5	74	6.75
Total	**1,924**	**1.21**	**1,362**	**37.94**	**3**	**1,351**	**0.70**
Institutions							
0.00 to <0.15	12,828	0.08	1,017	36.05	1	2,573	0.20
0.15 to <0.25	815	0.21	159	37.76	1	269	0.33
0.25 to <0.50	189	0.35	307	52.63	1	127	0.67
0.50 to <0.75							
0.75 to <2.50	163	1.21	502	48.34		155	0.95
2.50 to <10.00	18	4.47	135	40.01		22	1.24
10.00 to <100.00	2	17.29	96	45.68	3	6	2.86
100.00 (Default)							
Total	**14,016**	**0.11**	**2,221**	**36.52**	**1**	**3,152**	**0.22**
Retail - Other							
0.00 to <0.15	5	0.05	113	140.58		1	0.23
0.15 to <0.25	1	0.24	42	140.58		1	0.68
0.25 to <0.50		0.36	13	140.58			0.89
0.50 to <0.75			7				
0.75 to <2.50	1	1.61	53	140.58		1	1.79
2.50 to <10.00		4.28	9	140.58			2.17
10.00 to <100.00	1		77			3	
100.00 (Default)							
Sub-total	**8**	**3.03**	**314**	**133.50**		**6**	**0.74**
Retail - SME							
0.00 to <0.15	1	0.08	81	138.31			0.24
0.15 to <0.25	1	0.17	95	89.83			0.31
0.25 to <0.50	2	0.37	152	113.47		1	0.57
0.50 to <0.75	1	0.71	45	54.21			0.47
0.75 to <2.50	1	0.87	166	117.24		1	0.91
2.50 to <10.00		4.98	63	88.85			1.13
10.00 to <100.00		16.32	84	46.28			0.79
100.00 (Default)			28				
Sub-total	**6**	**0.68**	**714**	**108.27**		**3**	**0.49**
Total	**29,770**	**0.35**	**11,402**	**36.76**	**2**	**9,378**	**0.32**

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

RWA density is the average risk weight.

Collateral held on exposure values

Collateral

The composition of collated ING posted/received used in CCR exposures and related to SFT transactions can be observed in the following table.

EU CCR5 – Composition of collateral for CCR exposures

2022	Collateral used in derivative transactions				Collateral used in SFTs			
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received		Fair value of posted collateral	
Collateral type	Segregated	Un-Segregated	Segregated	Un-Segregated	Segregated	Un-Segregated	Segregated	Un-Segregated
Cash – domestic currency	4,559	2,934	658	3,879	17	257		837
Cash – other currencies	1,442	1,392	5,152	1,548		623		927
Domestic sovereign debt	500	90	3,898	67		25,206	105	31,744
Other sovereign debt	1,281	926	1,147	82		44,356	86	34,059
Government agency debt						469		462
Corporate bonds	146	493	395			8,517	84	23,194
Equity securities						21,320		24,395
Other collateral	36	86				46,450		65,976
Total	**7,963**	**5,920**	**11,249**	**5,577**	**17**	**147,199**	**275**	**181,595**

Excluding exposure class securitization

EU CCR5 – Composition of collateral for CCR exposures

2021	Collateral used in derivative transactions				Collateral used in SFTs			
	Fair value of collateral received		Fair value of posted collateral		Fair value of collateral received		Fair value of posted collateral	
Collateral type	Segregated	Un-Segregated	Segregated	Un-Segregated	Segregated	Un-Segregated	Segregated	Un-Segregated
Cash – domestic currency	1,054	2,656	2,111	4,179		452		1,840
Cash – other currencies	688	673	1,703	835		297		740
Domestic sovereign debt	865	68	2,300	1,615		18,264	116	18,968
Other sovereign debt	1,055	386	1,006	63		35,287	49	26,788
Government agency debt						326		319
Corporate bonds	67	38	57			9,194		35,532
Equity securities						25,641	76	23,918
Other collateral	28	380				10,135		57,456
Total	**3,757**	**4,202**	**7,177**	**6,692**		**99,596**	**241**	**165,560**

Excluding exposure class securitization

The bulk of collateral posted/received is in cash and government bonds for OTC derivatives. For SFT's the majority of collateral received is sovereign debt, while the collateral posted is predominately sovereign debt, corporate bonds and other collateral.

Central Counterparties

In line with EMIR regulation - for standard products - the use of Central Clearing Parties (CCPs) is mandatory and thus a large part of the portfolio has been shifted from bilateral trades to CCPs in recent years

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

EU CCR8 – Exposures to CCPs

	2022		2021	
	Exposure value	RWEA	Exposure value	RWEA
Exposures to QCCPs (total)		333		295
Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	2,712	54	2,216	44
(i) OTC derivatives	1,946	39	1,586	32
(ii) Exchange-traded derivatives	123	2	112	2
(iii) SFTs	644	13	519	10
(iv) Netting sets where cross-product netting has been approved				
Segregated initial margin				
Non-segregated initial margin				
Prefunded default fund contributions	400	279	280	251
Unfunded default fund contributions				
Exposures to non-QCCPs (total)		**535**		
Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which	176	523		
(i) OTC derivatives				
(ii) Exchange-traded derivatives				
(iii) SFTs	176	522		
(iv) Netting sets where cross-product netting has been approved				
Segregated initial margin				
Non-segregated initial margin				
Prefunded default fund contributions	1	6		
Unfunded default fund contributions	1	6		

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 CCPs 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.

CVA risk

The CRR/CRD IV introduced a 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 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 – Transactions subject to own funds requirements for CVA risk

		2022		2021	
		Exposure value	RWAs	Exposure value	RWAs
1	Total transactions subject to the Advanced method				
2	(i) VaR component (including the 3× multiplier)				
3	(ii) stressed VaR component (including the 3× multiplier)				
4	Transactions subject to the Standardised method	6,526	863	6,606	584
EU-4	Transactions subject to the Alternative approach (Based on the Original Exposure Method)				
5	**Total transactions subject to own funds requirements for CVA risk**	**6,526**	**863**	6,606	584

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

	2022		2021	
	Protection bought	Protection sold	Protection bought	Protection sold
Notionals				
Single-name credit default swaps	10,574	8,154	11,722	7,279
Index credit default swaps	3,320	3,259	3,085	2,256
Total return swaps	4,268		3,967	
Credit options				
Other credit derivatives				
Total notionals	**18,162**	**11,412**	**18,774**	**9,535**
Fair values				
Positive fair value (asset)	146	72	178	132
Negative fair value (liability)	-244	-7	-283	-9

For ING's credit derivative positions as of 31 December 2022, the largest notional is under single-name credit default swap (CDS).

EU CCR1 – Analysis of CCR exposure by approach

2022		Replacement cost (RC)	Potential future exposure (PFE)	EEPE	Alpha used for computing regulatory exposure value	Exposure value pre-CRM	Exposure value post-CRM	Exposure value	RWEA
EU-1	EU - Original Exposure Method (for derivatives)				1.4				
EU-2	EU - Simplified SA-CCR (for derivatives)				1.4				
1	SA-CCR (for derivatives)	9,619	10,823		1.4	37,422	28,440	28,249	7,786
2	IMM (for derivatives and SFTs)								
2a	Of which securities financing transactions netting sets								
2b	Of which derivatives and long settlement transactions netting sets								
2c	Of which from contractual cross-product netting sets								
3	Financial collateral simple method (for SFTs)								
4	Financial collateral comprehensive method (for SFTs)					34,240	25,172	25,172	1,797
5	VaR for SFTs								
6	**Total**					**71,662**	**53,612**	**53,420**	**9,583**

EU CCR1 – Analysis of CCR exposure by approach

2021		Replacement cost (RC)	Potential future exposure (PFE)	EEPE	Alpha used for computing regulatory exposure value	Exposure value pre-CRM	Exposure value post-CRM	Exposure value	RWEA
EU-1	EU - Original Exposure Method (for derivatives)				1.4				
EU-2	EU - Simplified SA-CCR (for derivatives)				1.4				
1	SA-CCR (for derivatives)	6,879	10,984		1.4	32,312	24,918	24,762	10,005
2	IMM (for derivatives and SFTs)								
2a	*Of which securities financing transactions netting sets*								
2b	*Of which derivatives and long settlement transactions netting sets*								
2c	*Of which from contractual cross-product netting sets*								
3	Financial collateral simple method (for SFTs)								
4	Financial collateral comprehensive method (for SFTs)					21,494	12,686	12,686	1,616
5	VaR for SFTs								
6	**Total**					**53,805**	**37,604**	**37,449**	**11,621**

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). ING is also an originator or sponsor of securitisations and the latter through its support of the ABCP conduit MontBlanc. ING does not re-securitise its securitisations exposure and even though ING hedges its securitisation positions, such instruments are not recognised 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.

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'.

Valuation and accounting policies

ING's activities regarding securitisations are described in Note 49 'Structured entities' in the annual accounts. The applicable accounting policies are included in Note 1 'Basis of preparation and accounting policies' in the ING Financial Statements. The most relevant accounting policies for ING's own originated securitisation programmes are 'Derecognition of financial assets' and 'Consolidation'. Where ING acts as investor in securitisation positions, the most relevant accounting policy is 'Classification and measurement of financial instruments'.

Regulatory capital methodology

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.

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.

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.

ING uses the Internal Assessment Approach (IAA) for the liquidity 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. 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.

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-IRBA, SEC-SA, SEC-ERBA or SEC-IAA. As of 1-1-2020 all securitisation positions will be reported under the SEC-IRBA, 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.

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 invests in securitisation positions in order to facilitate client business from Wholesale Banking Securitisation department.

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 (SSPE). 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 SSPE 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.

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 Securitisation Special Purpose Entity (SSPE) 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.

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.

Securitisation Exposure

In the table below, the securitisations are given, broken down by underlying exposure. The total position of our securitisations in 2022 is EUR 13.9 billion. The underlying exposures are residential mortgages and Lease and receivables.

EU-SEC1: Securitisation exposures in the non-trading book

2022	Institution acts as originator							Institution acts as sponsor				Institution acts as investor			
	Traditional				Synthetic			Traditional				Traditional			
	STS		Non-STS			of which SRT	Sub-total	STS	Non-STS	Synthetic	Sub-total	STS	Non-STS	Synthetic	Sub-total
		of which SRT		of which SRT											
Total exposures					**2,649**	**2,649**	**2,649**	**1,737**	**4,775**		**6,512**	**2,855**	**2,998**		**5,853**
Retail (total)					2,141	2,141	2,141	564	2,687		3,252	1,183	208		1,392
residential mortgage					2,141	2,141	2,141	6	480		486	401	162		563
credit card								158	1,084		1,243				
other retail exposures								400	1,123		1,524	782	46		829
re-securitisation															
Wholesale (total)					508	508	508	1,173	2,087		3,260	1,671	2,790		4,461
loans to corporates															
commercial mortgage									210		210				
lease and receivables					508	508	508	1,173	1,877		3,050	1,671	2,766		4,437
other wholesale													24		24
re-securitisation															

EU-SEC1: Securitisation exposures in the non-trading book

2021	Institution acts as originator							Institution acts as sponsor				Institution acts as investor			
	Traditional				Synthetic			Traditional				Traditional			
	STS		Non-STS			of which SRT	Sub-total	STS	Non-STS	Synthetic	Sub-total	STS	Non-STS	Synthetic	Sub-total
		of which SRT		of which SRT											
Total exposures					**2,805**	**2,805**	**2,805**	**1,931**	**3,435**		**5,366**	**2,328**	**3,228**		**5,556**
Retail (total)					2,805	2,805	2,805	615	1,663		2,278	939	33		972
residential mortgage					2,805	2,805	2,805	57	569		626	213			213
credit card								158	548		706				
other retail exposures								400	546		946	725	33		758
re-securitisation															
Wholesale (total)								1,316	1,772		3,088	1,389	3,195		4,585
loans to corporates															
commercial mortgage									4		4				
lease and receivables								1,316	1,768		3,084	1,389	3,145		4,534
other wholesale													50		50
re-securitisation															

As we do not have securitization exposures in the trading book, this template is not included in the Pillar 3 report.

The following tables provides the breakdown of current exposures by risk weight bands and by regulatory approach.

EU-SEC3: Securitisation exposures in the non-trading book and associated regulatory capital requirements - institution acting as originator or as sponsor																
2022	Exposure values (by RW bands/deductions)					Exposure values (by regulatory approach)				RWEA (by regulatory approach)				Capital charge after cap		
	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW/ deductions	SEC-IRBA	SEC-IRBA	SEC-ERBA (including IAA)	1250%/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions
Total exposures	**6,296**	**366**		**7**	**1**	**2,141**	**23**	**4,504**	**1**	**347**	**2**	**752**	**8**	**28**		**60**	**1**
Traditional transactions	3,653	366			1		23	3,996	1		2	641	8			51	1
Securitisation	3,653	366			1		23	3,996	1		2	641	8			51	1
Retail	2,622	266			1			2,888	1			490	8			39	1
Of which STS	564							564				56				5	
Wholesale	1,031	100					23	1,108			2	151				12	
Of which STS	585						20	565			2	58				5	
Re-securitisation																	
Synthetic transactions	2,643			7		2,141		508		347		111		28		9	
Securitisation	2,643			7		2,141		508		347		111		28		9	
Retail underlying	2,141					2,141				347				28			
Wholesale	501			7				508				111				9	
Re-securitisation																	

EU-SEC3: Securitisation exposures in the non-trading book and associated regulatory capital requirements - institution acting as originator or as sponsor

2021	Exposure values (by RW bands/deductions)					Exposure values (by regulatory approach)				RWEA (by regulatory approach)				Capital charge after cap			
	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW/ deductions	SEC-IRBA	SEC-IRBA	SEC-ERBA (including IAA)	1250%/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions
Total exposures	**5,291**	**280**			**6**	**2,805**	**57**	**2,715**		**421**	**87**	**415**		**34**	**7**	**33**	
Traditional transactions	2,486	280			6		57	2,715			87	415			7	33	
Securitisation	2,486	280			6		57	2,715			87	415			7	33	
Retail	1,524	180						1,704				287				23	
Of which STS	615							615				62				5	
Wholesale	962	100			6		57	1,011			87	128			7	10	
Of which STS	647				6		36	617			83	63			7	5	
Re-securitisation																	
Synthetic transactions	2,805					2,805				421				34			
Securitisation	2,805					2,805				421				34			
Retail underlying	2,805					2,805				421				34			
Wholesale																	
Re-securitisation																	

EU-SEC4: Securitisation exposures in the non-trading book and associated regulatory capital requirements - institution acting as investor

2022	Exposure values (by RW bands/deductions)					Exposure values (by regulatory approach)				RWEA (by regulatory approach)				Capital charge after cap			
	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions
Total exposures	**5,565**	**218**	**1**	**69**			**2,566**	**3,287**			**263**	**667**			**21**	**53**	
Traditional securitisation	5,565	218	1	69			2,566	3,287			263	667			21	53	
Securitisation	5,565	218	1	69			2,566	3,287			263	667			21	53	
Retail underlying	1,376	15					1,185	207			125	31			10	2	
Of which STS	1,168	15					1,183				123				10		
Wholesale	4,188	203	1	69			1,381	3,080			138	636			11	51	
Of which STS	1,671						1,381	290			138	34			11	3	
Re-securitisation																	
Synthetic securitisation																	
Securitisation																	
Retail underlying																	
Wholesale																	
Re-securitisation																	

EU-SEC4: Securitisation exposures in the non-trading book and associated regulatory capital requirements - institution acting as investor

2021	Exposure values (by RW bands/deductions)					Exposure values (by regulatory approach)				RWEA (by regulatory approach)				Capital charge after cap			
	≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions	SEC-IRBA	SEC-ERBA (including IAA)	SEC-SA	1250%/ deductions
Total exposures	**5,140**	**389**		**28**			**2,265**	**3,291**			**230**	**703**			**18**	**56**	
Traditional securitisation	5,140	389		28			2,265	3,291			230	703			18	56	
Securitisation	5,140	389		28			2,265	3,291			230	703			18	56	
Retail underlying	971	1					972				100				8		
Of which STS	939						939				94				8		
Wholesale	4,169	389		27			1,293	3,291			129	703			10	56	
Of which STS	1,389						1,293	96			129	14			10	1	
Re-securitisation																	
Synthetic securitisation																	
Securitisation																	
Retail underlying																	
Wholesale																	
Re-securitisation																	

The table below provides the exposures in default for securitisations where ING acts as originator or as sponsor.

EU-SEC5: Exposures securitised by the institution - Exposures in default and specific credit risk adjustments

2022	Exposures securitised by the institution - Institution acts as originator or as sponsor		
	Total outstanding nominal amount		Total amount of specific credit risk adjustments made during the period
		Of which exposures in default	
Total exposures	**45,575**	**565**	
Retail (total)	12,259	108	
residential mortgage	7,804	108	
credit card	4,454		
other retail exposures			
re-securitisation			
Wholesale (total)	33,317	457	
loans to corporates	200		
commercial mortgage	117		
lease and receivables	33,000	457	
other wholesale			
re-securitisation			

EU-SEC5: Exposures securitised by the institution - Exposures in default and specific credit risk adjustments

2021	Exposures securitised by the institution - Institution acts as originator or as sponsor		
	Total outstanding nominal amount		Total amount of specific credit risk adjustments made during the period
		Of which exposures in default	
Total exposures	**40,553**	**447**	
Retail (total)	13,184	129	
residential mortgage	8,491	111	
credit card	3,600		
other retail exposures	1,093	18	
re-securitisation			
Wholesale (total)	27,369	318	
loans to corporates	200		
commercial mortgage	87		
lease and receivables	27,081	318	
other wholesale			
re-securitisation			

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 meeting IFRS and CRR requirements. Based on IFRS rules, the fair value adjustments booked through P&L or OCI reflect the fair exit price. Additionally, based on CRR Article 105 and Article 34, the Additional Valuation Adjustment (AVA) that captures the 90% confidence prudency in the fair value are deducted from the Common Equity Tier 1 capital.

EU PV1: Prudent valuation adjustments (PVA)

amounts in EUR thousands										2022			2021
	Risk Category					Category level AVA - Valuation uncertainty							
	Equity	Interest Rates	Foreign exchange	Credit	Commodities	Unearned credit spreads AVA	Investment and funding costs AVA	Total category level post-diversification	Of which: Total core approach in the trading book	Of which: Total core approach in the banking book	Total category level post-diversification	Of which: in the trading book	Of which: in the banking book
Market price uncertainty		23,484	1,522	150,468		6,832	479	119,020	39,797	79,222	95,281	20,556	74,725
Close-out cost	8,768	10,787	1,322	26,679	1,560	6,823	286	43,601	30,954	12,647	22,234	21,591	643
Concentrated positions	12,614	3,498		18,574				34,686	1,076	33,610	29,601	1,533	28,068
Early termination													
Model risk	7,173	34,758		37,832	527	47,701		109,076	83,006	26,070	48,381	40,502	7,879
Operational risk													
Future administrative costs													
Total Additional Valuation Adjustments (AVAs)								**609,499**	**154,834**	**454,664**	**467,114**	**84,182**	**382,933**

The difference between the total AVA and the sum of the underlying components (internal models) is the fall-back approach.

As of 31 December 2022, the total Additional Valuation Adjustments (AVAs) is EUR 609.5 million (before tax). This total amount contains EUR 303.1 million of AVA for the fall-back approach. The move/increase is mainly driven by the higher model risk, increase in market price uncertainty and close-out cost mainly driven by the positions, MTM and spread movements and the fall-back AVA mainly driven by positions and MTM movements. On a quarterly basis the fair value adjustments and prudent valuation AVA are discussed and approved in the Global Valuation and Impairment Committee (GV&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 2022 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

								2022		2021
		VaR	SVaR	IRC	Comprehensive risk measure	Other	Total RWEAs	Total own funds requirements	Total RWEAs	Total own funds requirements
1	**RWEAs at previous period end**	**1,179**	**6,336**	**1,314**		**200**	**9,029**	**722**	**8,925**	**714**
1a	Regulatory adjustment	912	4,930	144			5,986	479	5,852	468
1b	RWEAs at the previous quarter-end (end of the day)	267	1,406	1,170		200	3,043	243	3,073	246
2	Movement in risk levels	342	-526	-217		-167	-568	-45	-30	-2
3	Model updates/changes					483	483	39		
4	Methodology and policy									
5	Acquisitions and disposals									
6	Foreign exchange movements									
7	Other									
8a	disclosure period (end	609	880	953		516	2,958	237	3,043	243
8b	Regulatory adjustment	2,123	2,547	981			5,651	452	5,986	479
8	**RWEAs at the end of the disclosure period**	**2,732**	**3,427**	**1,934**		**516**	**8,609**	**689**	**9,029**	**722**

1 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.

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

Key changes

The ING Bank Market RWA under Internal Model Approach decreased to EUR 8.6 billion in 2022 from EUR 9 billion in 2021 (EUR 0.4 billion). The 10D HVaR increased by EUR 1.5 billion while 10D SVaR decreased by EUR 2.9 billion.

Interest rate risk in the banking book (IRRBB)

EU IRRBB1 - Interest rate risks of non-trading book activities

					2022
		Changes of the economic value of equity		Changes of the net interest income*	
	Supervisory shock scenarios	Current period	Last period	Current period	Last period
1	Parallel up	-3,848	-2,738	142	166
2	Parallel down	764	55	-142	-162
3	Steepener	315	185		
4	Flattener	-1,473	-1,107		
5	Short rates up	-2,251	-1,636		
6	Short rates down	827	614		

EU IRRBB1 - Interest rate risks of non-trading book activities

					2021
		Changes of the economic value of equity		Changes of the net interest income*	
	Supervisory shock scenarios	Current period	Last period	Current period	Last period
1	Parallel up	-6,538	-6,686	232	227
2	Parallel down	962	959	-226	-212
3	Steepener	-1,522	-1,827		
4	Flattener	-452	-155		
5	Short rates up	-1,512	-1,396		
6	Short rates down	607	371		

* Change of the Net Interest Income (NII) measures the impact of changing interest rates on net interest income (before tax) of the banking book. This excludes credit spread sensitivity and fees. The reported figures reflect the outcome of ramped interest rate shocks (1-in-10 year scenario: ≈ +/- 100bps) based on dynamic balance sheet assumption with a time horizon of one year. This is in line with ING's internal management view, pending the publication by the EBA of the Implementation Technical Standards (ITS) on the Public Disclosure on IRRBB.

Table EU IRRBBA - Qualitative information on interest rate risks of non-trading book activities

(a)	A description of how the institution defines IRRBB for purposes of risk control and measurement.	Interest rate risk in the banking book is defined as the exposure of a bank's earnings, capital, and market value to adverse movements in interest rates originated from positions in the banking book. ING uses risk measures based on both an earnings perspective and a value perspective. The following (sub-)risk types are considered for the measurement of the interest rate risk in the banking book: Gap Risk, Customer Behaviour Risk, Tenor Basis Risk, Currency Diversion Risk, Vega Optionality Risk and IFRS P&L Volatility. Next to this, ING measures Credit spread Risk, Equity Investment Risk, FX Risk and Market Risk Economic Capital for the banking book. ING recognises the importance of sound market risk management and bases its market risk management framework on the need to identify, assess, control, and manage market risks. The approach consists of a cycle of five recurring activities: risk identification, risk assessment, risk control, risk monitoring and risk reporting. ▪ Risk identification is a joint effort of the first and second lines of defence. The goal of risk identification is to detect potential new risks and any changes in known risks. ▪ Identified risks are assessed and measured by means of various risk metrics to determine the importance of the risk to ING and subsequently to identify the control measures needed. ▪ Risk control measures used by ING include policies, procedures, minimum standards, limit frameworks, management buffers to cover for uncertainties and stress tests. ▪ Risk monitoring occurs to check if the implemented risk controls are executed, complied with across the organisation, and are effective. ▪ Market risk management results and findings are reported to the necessary governing departments and approval bodies.	Article 448.1 (e), first paragraph
(b)	A description of the institution's overall IRRBB management and mitigation strategies.	The IRRBB strategy links the overarching ING business strategy to the acceptable level for IRRBB, expressed in the Risk Appetite Statements. The Risk Appetite Statements are translated into metrics and limits to enable allocation, implementation, and monitoring. The IRRBB risk appetite is set or updated at least annually and must be based on strategic objectives, identified IRRBB risks and regulatory requirements. The limits are defined at the consolidated level and across the different risk categories and cascaded down into the organisation. The Management Board Bank has delegated this task to Asset and Liability Committee Bank (ALCO Bank). ALCO Bank discusses and steers, monthly, the overall risk profile of all ING Bank's balance sheet and capital management risks. This includes the IRRBB metrics (on total as well as per sub-risk type) for Net Interest Income-at-Risk, Net Present Value-at-Risk, Revaluation Reserve-at-Risk, IFRS P&L volatility and Economic Value of Equity as well as the other market risk measures like Credit Spread Risk, Equity Investment Risk, FX Risk and Market Risk Economic Capital for the banking book. The management of interest rate risk follows the IRRBB framework as approved by ALCO Bank. This framework describes roles, responsibilities, risk metrics, and the policies and procedures related to interest rate risk management. As a result of this framework, ING centralises interest rate risk management from commercial books (that capture the interest rate risks in the products sold to clients) to globally managed interest rate risk books within Group Treasury. The IRRBB framework distinguishes different views for the measurement of IRRBB that are applied: ▪ Sensitivity view: to measure all risk types, individually. The sensitivity view includes the IRRBB-specific regulatory measures and the risk measures used for internal management. ▪ Integrated view: all IRRBB risk types must be measured in coherence, from both an earnings perspective and/or value perspective. This includes economic capital, internal stress testing and regulatory stress testing. ▪ Specific (for example product specific) stress testing. ING implements hedging and risk mitigation strategies that range from the use of traditional market instruments, such as interest rate swaps, to more sophisticated hedging strategies to address a combination of risk factors arising at the portfolio level. Furthermore, ING's model risk and related control structure is based on the three model lines of defence (MLoD) approach. This approach aims to provide a sound governance framework for model risk management by defining and implementing three different management layers with distinct roles and oversight responsibilities. In this structure, models used in the IRRBB domain, globally or locally, are subject to regular validations/audits by Independent Model Validation (2nd MLOD) and Corporate Audit Service (3rd MLOD).	Article 448.1 (f)

(c)	The periodicity of the calculation of the institution's IRRBB measures, and a description of the specific measures that the institution uses to gauge its sensitivity to IRRBB.	**IRRBB measures:** ▪ Net Interest Income-at-Risk measures the impact of changing interest rates on net interest income (before tax) of the banking book with a time horizon of one year (expanding to a horizon of three years). This excludes credit spread sensitivity and fees. ▪ Net Present Value-at-Risk measures the impact of changing interest rates on value. The NPV-at-Risk is defined as the outcome of an instantaneous increase and decrease in interest rates from applying currency-specific scenarios. ▪ Economic Value of Equity is a regulatory metric that measures changes in the net present value of the interest rate sensitive instruments. ▪ Customer Behaviour Risk measures the sensitivity of NII and NPV to modelled customer behaviour by shifting the parameters of behavioural models. ▪ Tenor basis risk measures the sensitivity of NII and NPV to changes in the basis spread between different swap curves where the basis spreads relative to the most liquid swap curve are shifted. ▪ Vega optionality risk measures the impact of changes in interest rate volatilities on the NPV. ▪ Currency diversion risk measures the effect on the NII and NPV of a movement of the interest rates of a currency relative to the EUR. ▪ IFRS P&L Volatility measures the fair value sensitivities of derivatives in the banking book. The measure provides insight in the P&L impact of fair market value changes of these instruments. ▪ Revaluation Reserve-at-Risk (RR-at-Risk) is defined as a specific subset of the NPV-at-Risk that is based on the accounting treatment Hold-to-Collect & Sell of the banking book positions. ▪ IRRBB metrics are calculated managed and reported on a monthly/quarterly basis. **Other measures:** ▪ Credit spread risk from the banking book measures the sensitivity of the HTC&S portfolio to fluctuations in the level of credit spreads over the standard reference curve measured from a value perspective. Credit spread risk is measured and reported to ALCO Bank on a monthly basis, and more frequently (daily, weekly) for internal management purposes. ▪ From an Economic Capital perspective, IRRBB is also measured as it is covered by Market Risk EC. This is measured and reported to ALCO Bank on a monthly basis. ▪ FX Risk and Equity Investment Risk do not contain sensitivity to IRRBB	Article 448.1 (e) (i) and (v); Article 448.2
(d)	A description of the interest rate shock and stress scenarios that the institution uses to estimate changes in the economic value and in net interest income (if applicable).	▪ In total, 25 scenarios are defined for gap risk. NII-at-Risk scenarios consist of four parallel up/down scenarios (for internal and regulatory management) and six non-parallel scenarios (short rate up, short rate down, long rate up, long rate down, flattening, steepening all for internal management). In addition 3 'narrative' based scenarios are calculated for NII-at-Risk. For NPV-at-Risk, six parallel scenarios (two up and down scenarios for internal management and up & down for regulatory management) and six non-parallel scenarios (short rate up, short rate down, long rate up, long rate down, flattening, steepening all for internal management). ▪ For the regulatory view, 8 scenarios are defined for Economic Value of Equity, four parallel scenarios (up and down), and four non-parallel scenarios (short rate up, short rate down, flattening, steepening). ▪ For both the earnings and the value perspectives each, two scenarios are defined for Customer Behaviour Risk: this includes up- and down scenarios for the mortgage prepayment model and the savings model. ▪ Two scenarios (tightening and widening) are defined for Tenor Basis Risk to measure the sensitivity of NII and NPV each. ▪ For Vega Optionality, one scenario is applied in which a parallel increase of the normal volatility surface is considered to measure the sensitivity of Net Present Value. ▪ Two scenarios defined for Currency diversion risk are parallel increases and decreases of the swap curves for the specified dimensions.	Article 448.1 (e) (iii); Article 448.2

(e)	A description of the key modelling and parametric assumptions different from those used for disclosure of template EU IRRBB1 (if applicable).	The reported figures for NII are derived from internal measurement system. For this measure, the following key modelling and parametric assumptions are applied based on the management judgement and analysis: - The NII-at-Risk figures are measured based on the assumption of the balance sheet development in line with the dynamic plan. - Straight aggregation across currency is applied. - For NII-at-Risk, it is assumed that the projections of the balance sheet development don't change under the alternative scenarios. - Currency specific interest rate gradual movements (1-in-10 year scenario: EUR and USD 110bps) are applied. - NII-at-Risk is defined as the outcome of a ramped (i.e. gradual) increase and decrease in interest rates versus a base scenario - Post-shock interest rate floors are not considered. - The base case scenario for yield curve development is based on the assumption of a static yield curve.	Article 448.1 (e) (ii); Article 448.2
(f)	A high-level description of how the bank hedges its IRRBB, as well as the associated accounting treatment (if applicable).	ING uses derivatives for economic hedging purposes to manage its asset and liability portfolios and structural risk positions. The primary objective of ING's hedging activities is to manage the risks which arises from structural imbalances in the duration and other profiles of its assets and liabilities in accordance with its risk appetite. The main risks which are being hedged are interest rate risk and foreign currency exchange rate risk. These risks are primarily hedged with interest rate swaps, cross currency swaps and foreign exchange forwards/swaps. In its interest rate management ING uses [interest rate] swaps. For these swaps different hedge accounting programs are used to align the accounting classification of hedged items with the hedging derivatives. ING uses the following hedge accounting programs in relation to IRRBB: - Fair Value Hedge Accounting: ING's fair value hedges principally consist of interest rate swaps that are used to protect against changes in the fair value of fixed-rate instruments due to movements in market interest rates. ING applies fair value hedge accounting on micro level in which one hedged item is hedged with one or multiple hedging instruments as well as on macro level whereby a portfolio of items is hedged with multiple hedging instruments. - Cash Flow Hedge Accounting: ING's cash flow hedges mainly consist of interest rate swaps and cross-currency swaps that are used to protect against the exposure to variability in future cash flows on non-trading assets and liabilities that bear interest at variable rates or are expected to be refunded or reinvested in the future.	Article 448.1 (e) (iv); Article 448.2
(g)	A description of key modelling and parametric assumptions used for the IRRBB measures in template EU IRRBB1 (if applicable).	The key modelling and parametric assumptions used, aim at: - Reporting Economic Value of Equity in line with the regulatory requirements. Behavioural assumptions for savings (client rate and volume modelling) and Loans/ Mortgages which are modelled based on interest rate dependent or constant prepayment modelling. - Modelling customer behaviour in relation to mortgages, loans, savings, and demand deposits, based on extensive research. Per business unit and product type, exposures are typically segmented into different portfolios based on expected client behaviour. For the segments, model parameters for example for the pass-through rate and customer behaviour are determined based on historical data and expert opinion. - Applying behavioural modelling to its non-maturity deposits that reflects the product characteristics of the deposits, such as rate-sensitivity, volume stability and depositor type. Additionally, a distinction in modelling approach exists between transactional, rate-insensitive deposits (primarily current accounts), which are modelled using an unconditional cash flow approach and non-transactional, rate-sensitive deposits (primarily savings), where the modelled cash flows are conditional on the interest rate scenario. - Using behavioural modelling to estimate loan prepayments. The modelling approach is based on the incentive of clients to prepay their loans. A distinction in modelling approach exists between rate-insensitive loans (primarily floating rate loans), which are modelled using an unconditional cash flow approach, and rate-sensitive loans (primarily fixed rate loans), where the modelled cash flows are conditional on the interest rate scenario. Depending on the portfolio, there can be additional prepayment drivers such as seasonal patterns and the age of the loan. - Both asset- and liability behavioural models are reviewed at least annually.	Article 448.1 (c); Article 448.2

(h)	Explanation of the significance of the IRRBB measures and of their significant variations since previous disclosures	▪ ΔEVE in absolute terms has increased over the reporting period for the BCBS scenarios, though it remains well within internal risk appetite and regulatory boundaries. The evolution can be attributed to a decrease in duration of savings and current account portfolios as a result of strongly increasing interest rates in ING's material currencies as well as an update of parameters used in the hedging process of a large fixed-rate mortgage portfolio during 2022Q3. ▪ Since the last disclosure, NII sensitivity remained stable and limited (less than 2% of the realized interest income over the year in the reported scenarios) in accordance with the risk strategy of the Bank. Periodical modelling updates as well as changes in the market rates environment were factored in the hedging activities aiming to ensure margin stability.	Article 448.1 (d)
(i)	Any other relevant information regarding the IRRBB measures disclosed in template EU IRRBB1 (optional)		
(1) (2)	Disclosure of the average and longest repricing maturity assigned to non-maturity deposits	The behavioural modelling outcomes of non-maturity deposits are translated into replicating portfolios, which represent the repricing maturities assigned to the non-maturity deposits. The volume-weighted average repricing maturity of non-maturity deposits in scope of behavioural modelling is 2.8 years. While it should be noted that the longest assigned repricing maturity depends on the characteristics of each individual segment, ING Bank-wide the longest assigned repricing maturity is 15 years.	Article 448.1 (g)

Funding and liquidity risk

Funding and liquidity risk is the risk that ING 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 Annual Report.

Asset encumbrance

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

In 2022, the median asset encumbrance ratio for ING Bank is 22.7%.

EU AE1 - Encumbered and unencumbered assets

2022	Carrying amount of encumbered assets		Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets	
median in EUR million		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 the reporting institution	**161,906**	**13,404**			**852,121**	**165,502**		
Equity instruments	6,660	3,965	6,660	3,965	6,211	2,071	6,211	2,071
Debt securities	17,003	9,038	16,713	8,518	70,892	43,870	68,123	41,029
of which: covered bonds	2,677	2,136	2,528	2,069	5,088	3,875	6,424	3,773
of which: securitisations	200	156	192	144	5,677	4,512	5,667	4,458
of which: issued by general governments	7,171	5,460	6,919	5,314	55,056	29,226	52,803	26,070
of which: issued by financial corporations	9,339	3,977	9,397	3,722	12,056	10,779	11,532	10,693
of which: issued by non-financial corporations	675	350	673	346	1,126	364	1,116	349
Other assets	138,243	386			773,082	118,321		

EU AE1 - Encumbered and unencumbered assets

2021 median in EUR million	Carrying amount of encumbered assets	Of which notionally eligible EHQLA and HQLA	Fair value of encumbered assets	Of which notionally eligible EHQLA and HQLA	Carrying amount of unencumbered assets	Of which EHQLA and HQLA	Fair value of unencumbered assets	Of which EHQLA and HQLA
Assets of the reporting institution	**147,554**	**23,858**			**830,757**	**147,233**		
Equity instruments	6,443	4,656	6,443	4,656	11,272	4,965	11,272	4,965
Debt securities	22,337	18,422	22,476	18,395	67,425	29,574	67,829	27,945
of which: covered bonds	3,054	3,054	3,095	3,054	3,925	3,430	3,760	3,441
of which: asset-backed securities	209	196	209	196	5,539	4,963	5,488	4,963
of which: issued by general governments	11,234	9,780	11,278	9,834	53,311	14,907	53,739	14,984
of which: issued by financial corporations	9,318	5,894	9,246	5,894	11,108	9,775	11,010	9,809
of which: issued by non-financial corporations	775	670	794	670	338	162	341	165
Other assets	120,294	923			756,384	108,204		

EU AE2 - Collateral received and own debt securities issued

2022			Unencumbered	
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 the reporting institution	**95,883**	**72,467**	**30,359**	**25,764**
Loans on demand				
Equity instruments	22,049	8,391	3,055	1,997
Debt securities	73,099	64,076	27,622	24,719
of which: covered bonds	373	91	340	42
of which: securitisations	5,412	5,412	60	
of which: issued by general governments	61,839	55,725	16,114	15,884
of which: issued by financial corporations	9,646	6,561	6,073	5,576
of which: issued by non-financial corporations	1,310	1,236	2,534	1,228
Loans and advances other than loans on demand				
Other collateral received				
Own debt securities issued other than own covered bonds or securitisations				
Own covered bonds and asset-backed securities issued and not yet pledged			**34,342**	
TOTAL ASSETS, COLLATERAL RECEIVED AND OWN DEBT SECURITIES ISSUED	**257,789**	**85,871**		

EU AE2 - Collateral received and own debt securities issued

2021	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	
median in EUR million		Of which notionally eligible EHQLA and HQLA		Of which EHQLA and HQLA
Collateral received by the reporting institution	**88,375**	**68,527**	**27,125**	**22,825**
Loans on demand				
Equity instruments	21,309	8,753	5,143	3,248
Debt securities	67,668	60,324	21,997	19,577
of which: covered bonds	247	205	180	161
of which: securitisations	5,654	5,654	8	8
of which: issued by general governments	55,650	51,891	13,370	13,349
of which: issued by financial corporations	10,208	7,023	4,647	3,296
of which: issued by non-financial corporations	1,782	1,335	2,232	2,042
Loans and advances other than loans on demand				
Other collateral received				
Own debt securities issued other than own covered bonds or securitisations				
Own covered bonds and asset-backed securities issued and not yet pledged			**33,437**	
TOTAL ASSETS, COLLATERAL RECEIVED AND OWN DEBT SECURITIES ISSUED	**237,282**	**97,437**		

EU AE3 - Sources of encumbrance

	2022		2021	
median in EUR million	Matching liabilities, contingent liabilities or securities lent	Collateral received and own debt securities issued other than covered bonds and securitisations encumbered	Matching liabilities, contingent liabilities or securities lent	Collateral received and own debt securities issued other than covered bonds and securitisations encumbered
Carrying amount of selected financial liabilities	185,486	227,563	178,718	209,318

EU AE4 - Accompanying narrative information

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

The amounts are presented as the median of the four quarter end values of the reporting year. The median is calculated as the average of the two values in the middle of the order of four quarter end values.

Encumbered assets on ING Bank'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 collateralised deposits. Of the total encumbered assets of the Bank, EUR 136 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 Bank. The issued securitisations and especially the covered bonds have over-collateralisation, meaning that the assets in the cover pool are higher than the issuance.

(b) 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.

To optimise the usage of collateral between the entities of the Bank ING has significant intraBank encumbrance

Environmental social and governance risk

Qualitative disclosures

The purpose of the tables below is to describe, in accordance with of Article 449a of Regulation (EU) No 575/2013, in:

- table 1: the integration of environmental risks, including specific information on climate change risks and on other environmental risks, in their business strategy and processes, governance and risk management;
- table 2: the integration of social risks in their business strategy and processes, governance and risk management; and
- table 3: the integration of governance risks in their governance and risk management.

As this information is already disclosed in various places, we have opted to create a navigation map to guide the readers.

Table 1 - Qualitative information on Environmental risk		
	Business strategy and processes	**Sources:**
(a)	Institution's business strategy to integrate environmental factors and risks, taking into account the impact of environmental factors and risks on institution's business environment, business model, strategy and financial planning	"Sustainability at the heart" part of the annual report 2022; "Climate risk" part of the ESG risk chapter in the Risk Management section of the annual report 2022.
(b)	Objectives, targets and limits to assess and address environmental risk in short-, medium-, and long-term, and performance assessment against these objectives, targets and limits, including forward-looking information about the design of business strategy and processes	Environmental and social risk (ESR) framework on ing.com
(c)	Current investment activities and (future) investment targets towards environmental objectives and EU Taxonomy-aligned activities	"ESG risk chapter" part of the Risk management section of the annual report
(d)	Policies and procedures relating to direct and indirect engagement with new or existing counterparties on their strategies to mitigate and reduce environmental risks	Environmental and social risk (ESR) framework on ing.com, Sustainable Business
	Governance	
(e)	Responsibilities of the management body for setting the risk framework, supervising and managing the implementation of the objectives, strategy and policies in the context of environmental risk management covering relevant transmission channels	"Risk governance" part of the Risk management in the annual report, "ESG Governance" part of the ESG risk chapter in the Risk management section of the annual report 2022; "ESG governance" part of the Sustainability at the Heart in the annual report 2022.
(f)	Management body's integration of short-, medium- and long-term effects of environmental factors and risks, organisational structure both within business lines and internal control functions	"ESG governance" in the 2022 Climate Report
(g)	Integration of measures to manage environmental factors and risks in internal governance arrangements, including the role of committees, the allocation of tasks and responsibilities, and the feedback loop from risk management to the management body covering relevant transmission channels	Climate risk governance' within 'ESG governance' in the 2022 Climate Report, "ESG Governance" part of the ESG risk chapter in the Risk management section of the annual report 2022; "ESG governance" part of the Sustainability at the Heart in the annual report 2022.
(h)	Lines of reporting and frequency of reporting relating to environmental risk	Governance and strategy sections of 2022 Climate report
(i)	Alignment of the remuneration policy with institution's environmental risk-related objectives	(i) "Remuneration report" and "How we are making differences" in the annual report 2022. (ii) Capital Requirements Regulation (CRR) Remuneration Disclosure
	Risk management	
(j)	Integration of short-, medium- and long-term effects of environmental factors and risks in the risk framework	4
(k)	Definitions, methodologies and international standards on which the environmental risk management framework is based	Risk management in 2022 Climate Report
(l)	Processes to identify, measure and monitor activities and exposures (and collateral where applicable) sensitive to environmental risks, covering relevant transmission channels	ESR Framework on ing.com; "Terra approach' in 2022 Climate Report
(m)	Activities, commitments and exposures contributing to mitigate environmental risks	"Managing climate and environmental risks" in 2022 Climate Report"
(n)	Implementation of tools for identification, measurement and management of environmental risks	Risk management, metrics and targets in 2022 Climate Report
(o)	Results and outcome of the risk tools implemented and the estimated impact of environmental risk on capital and liquidity risk profile	Not present
(p)	Data availability, quality and accuracy, and efforts to improve these aspects	"Next Steps and Strategy" in 2022 Climate Report
(q)	Description of limits to environmental risks (as drivers of prudential risks) that are set, and triggering escalation and exclusion in the case of breaching these limits	"Metrics and targets" part of the 2022 Climate Report
(r)	Description of the link (transmission channels) between environmental risks with credit risk, liquidity and funding risk, market risk, operational risk and reputational risk in the risk management framework	Embedded in the different risk chapters in the Risk Management in the annual report, and "Metrics and Targets" in 2022 Climate Report

Table 2 - Qualitative information on Social risk		
	Business strategy and processes	**Sources:**
(a)	Adjustment of the institution's business strategy to integrate social factors and risks taking into account the impact of social risk on the institution's business environment, business model, strategy and financial planning	Partially covered in 2022 Human Rights Report
(b)	Objectives, targets and limits to assess and address social risk in short-term, medium-term and long-term, and performance assessment against these objectives, targets and limits, including forward-looking information in the design of business strategy and processes	Partially covered in 2022 Human Rights Report
(c)	Policies and procedures relating to direct and indirect engagement with new or existing counterparties on their strategies to mitigate and reduce socially harmful activities	ESR framework on ing.com
	Governance	
(d)	Responsibilities of the management body for setting the risk framework, supervising and managing the implementation of the objectives, strategy and policies in the context of social risk management covering counterparties' approaches to:	ESR framework (section 3) on ing.com, section "sustainability at the heart"in the annual report 2022, human rights report,
(i)	Activities towards the community and society	
(ii)	Employee relationships and labour standards	
(iii)	Customer protection and product responsibility	
(iv)	Human rights	
(e)	Integration of measures to manage social factors and risks in internal governance arrangements, including the role of committees, the allocation of tasks and responsibilities, and the feedback loop from risk management to the management body	"The Road Ahead" in 2022 Human Rights Report
(f)	Lines of reporting and frequency of reporting relating to social risk	Human rights report, section "Sustainability at the Heart" in the annual report 2022.
(g)	Alignment of the remuneration policy in line with institution's social risk-related objectives	(i) "Remuneration report" and "How we are making differences" in the annual report 2022. (ii) Capital Requirements Regulation (CRR) Remuneration Disclosure
	Risk management	
(h)	Definitions, methodologies and international standards on which the social risk management framework is based	ESR framework (section 3) on ing.com
(i)	Processes to identify, measure and monitor activities and exposures (and collateral where applicable) sensitive to social risk, covering relevant transmission channels	
(j)	Activities, commitments and assets contributing to mitigate social risk	
(k)	Implementation of tools for identification and management of social risk	
(l)	Description of setting limits to social risk and cases to trigger escalation and exclusion in the case of breaching these limits	(i) "Human Rights engagement tool" in 2022 Human Rights Report, (ii) ESR Client Assessment guidance (section track record - social)
(m)	Description of the link (transmission channels) between social risks with credit risk, liquidity and funding risk, market risk, operational risk and reputational risk in the risk management framework	ESR framework on ing.com

Table 3 - Qualitative information on Governance risk

	Governance	Sources:
(a)	Institution's integration in their governance arrangements of the governance performance of the counterparty, including committees of the highest governance body, committees responsible for decision-making on economic, environmental, and social topics	ESR screening process (section 2 in ESR framework on ing.com)
(b)	Institution's accounting of the counterparty's highest governance body's role in non-financial reporting	Not present
(c)	Institution's integration in governance arrangements of the governance performance of their counterparties including:	(i) ESR Client Assessment guidance and (ii) ESR screening process (section 2 in ESR framework on ing.com)
(i)	Ethical considerations	
(ii)	Strategy and risk management	
(iii)	Inclusiveness	
(iv)	Transparency	
(v)	Management of conflict of interest	
(vi)	Internal communication on critical concerns	
	Risk management	
(d)	Institution's integration in risk management arrangements the governance performance of their counterparties considering:	(i) ESR Client Assessment guidance and (ii) ESR screening process (section 2 in ESR framework on ing.com)
(i)	Ethical considerations	
(ii)	Strategy and risk management	
(iii)	Inclusiveness	
(iv)	Transparency	
(v)	Management of conflict of interest	
(vi)	Internal communication on critical concerns	

Climate change Transition risk

'Transition risk' is defined as the risk of losses arising from any negative financial impact on the institution stemming from the current or prospective impacts of the transition to an environmentally sustainable economy on its counterparties or invested assets. Transition risks in the context of climate change arises mainly from the transition to a low-carbon and climate-resilient economy.

Templates 1, 2 and 4 as disclosed hereunder are providing information on indicators of potential climate change transition risk of the banking book of ING. For template 3, we reference to the Climate report of September 2022 noting that the scope and methodology differ from the P3 ESG ITS.

Credit quality of exposures

The purpose of Template 1 of the Pillar 3 ESG ITS is to show information on those assets prone to risks related to the transition to a low-carbon and climate-resilient economy, i.e. transition risk. In particular, institutions must disclose information on their exposures towards non-financial corporations that operate in sectors that contribute highly to climate change and in carbon-related sectors, and on the quality of those exposures, including credit quality information on non-performing exposures, stage 2 exposures and related impairments and provisions.

In particular, institutions must disclose in this template information on the gross carrying amount of loans and advances, debt securities and equity instruments provided to non-financial corporates, other than those included in the held-for-trading or held-for-sale portfolios, classified by NACE economic sector. The sectors have been determined by EBA as the climate-relevant or carbon-intensive.

In addition, institutions must provide in column b ("Of which exposures towards companies excluded from EU Paris-aligned Benchmarks in accordance with points (d) to (g) of Article 12.1 and in accordance with Article 12.2 of Climate Benchmark Standards Regulation") of the template a further breakdown of exposures towards fossil fuel companies, towards companies operating in other carbon-related sectors as well as towards companies excluded from EU Paris-aligned Benchmarks.

The empty columns in the table below are not required for year-end 2022, reason to keep them as is. This is the case for climate change mitigation (CCM) and greenhouse gas (GHG) financed emissions related columns. On the latter, the scope 3 GHG emissions of our counterparties should further be improved prior to disclosing this information in Pillar 3.

For the maturity buckets, the following assumptions have been used:

- Where the amount is repaid in installments, the exposure shall be allocated in the maturity bucket corresponding to the last installment (in line with ITS Annex II instructions).
- Where the amount is on demand such as interbank loans, the exposure shall be allocated in the shortest maturity bucket "< 5 years".
- Where an exposure has no stated maturity for reasons other than the counterparty having the choice of the repayment date, or in the case of equity holdings, the amount of this exposure shall be disclosed in the largest maturity bucket "> 20 years" in line with ITS Annex II instructions.

For any implication that these exposures may have in terms of credit, market, operational, reputational and liquidity risks, we refer to the ESG chapter (section Climate risk) of the annual report 2022. In the table below, the stage 2 ratio and NPL ratio for the exposures towards sectors that highly contribute to climate change is 14.1% and 2.9% respectively.

Template 1: Banking book- Climate Change transition risk: Credit quality of exposures by sector, emissions and residual maturity

	2022	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	Sector/subsector	**Gross carrying amount (Mln EUR)**					**Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions (Mln EUR)**			**GHG financed emissions (scope 1, scope 2 and scope 3 emissions of the counterparty) (in tons of CO2 equivalent)**							
			Of which exposures towards companies excluded from EU Paris-aligned Benchmarks in accordance with points (d) to (g) of Article 12.1 and in accordance with Article 12.2 of Climate Benchmark Standards Regulation	Of which environmentally sustainable (CCM)	Of which stage 2 exposures	Of which non-performing exposures		Of which Stage 2 exposures	Of which non-performing exposures		Of which Scope 3 financed emissions	GHG emissions (column i): gross carrying amount percentage of the portfolio derived from company-specific reporting	<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years	Average weighted maturity
1	**Exposures towards sectors that highly contribute to climate change***	**192,106**	**19,799**		**27,048**	**5,484**	**3,006**	**710**	**2,144**				**140,872**	**36,852**	**10,841**	**3,540**	**4**
2	A - Agriculture, forestry and fishing	3,612			602	302	96	10	82				1,693	1,663	132	125	6
3	B - Mining and quarrying	9,915	7,837		1,529	824	442	146	288				7,472	1,987	455	1	3
4	*B.05 - Mining of coal and lignite*	79				63	34		34				79				3
5	*B.06 - Extraction of crude petroleum and natural gas*	3,621	4,691		270	214	93	9	80				2,289	1,158	174		4
6	*B.07 - Mining of metal ores*	1,874			832	32	118	103	13				1,610	197	67		4
7	*B.08 - Other mining and quarrying*	1,192			251	394	130	32	98				1,048	129	16		3
8	*B.09 - Mining support service activities*	3,149	3,146		176	121	67	2	64				2,447	504	198	1	3
9	C - Manufacturing	48,421	2,920		7,046	1,187	878	311	519				40,051	6,720	529	1,121	3
10	*C.10 - Manufacture of food products*	7,045			1,124	257	123	30	86				5,757	887	137	264	3
11	*C.11 - Manufacture of beverages*	1,169			353	10	12	6	6				926	109	128	5	3
12	*C.12 - Manufacture of tobacco products*	26											26				
13	*C.13 - Manufacture of textiles*	504			83	35	24	2	21				367	114	18	4	3
14	*C.14 - Manufacture of wearing apparel*	119			43	7	4		3				107	1	1	10	3
15	*C.15 - Manufacture of leather and related products*	97			16	2	2		1				92	3	1		2

16	*C.16 - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials*	837		193	25	14	2	11	411	383	23	20	5
17	*C.17 - Manufacture of pulp, paper and paperboard*	907		125	9	12	4	6	666	233	6	2	3
18	*C.18 - Printing and service activities related to printing*	573		89	12	7	1	5	441	112	14	5	3
19	*C.19 - Manufacture of coke oven products*	2,109	2,188	155	92	33	1	32	1,316	457	16	320	5
20	*C.20 - Production of chemicals*	4,722	718	858	33	81	65	12	4,026	631	5	59	3
21	*C.21 - Manufacture of pharmaceutical preparations*	937		82	42	18	2	15	817	114	2	3	4
22	*C.22 - Manufacture of rubber products*	2,546	7	388	22	34	15	14	2,068	393	9	76	3
23	*C.23 - Manufacture of other non-metallic mineral products*	1,670		388	16	19	3	14	1,404	240	5	21	3
24	*C.24 - Manufacture of basic metals*	5,108		772	33	140	111	23	4,229	849	4	26	2
25	*C.25 - Manufacture of fabricated metal products, except machinery and equipment*	2,769		416	95	50	11	37	2,034	590	48	98	4
26	*C.26 - Manufacture of computer, electronic and optical products*	5,277	2	347	48	27	6	19	4,894	343	5	35	2
27	*C.27 - Manufacture of electrical equipment*	2,237		275	14	11	5	5	2,054	161	11	12	2
28	*C.28 - Manufacture of machinery and equipment n.e.c.*	2,363		382	70	36	6	28	1,731	523	25	84	4
29	*C.29 - Manufacture of motor vehicles, trailers and semi-trailers*	2,517		73	57	18	1	16	2,449	62	2	4	2
30	*C.30 - Manufacture of other transport equipment*	708		149	69	36	9	27	633	59	3	14	3
31	*C.31 - Manufacture of furniture*	415		79	50	27	1	26	269	120	15	11	4
32	*C.32 - Other manufacturing*	3,758	4	655	191	149	31	113	3,331	332	49	46	3
33	*C.33 - Repair and installation of machinery and equipment*	6		2					3	3	1		6
34	D - Electricity, gas, steam and air conditioning supply	17,557	4,491	1,707	368	184	39	132	10,036	3,808	3,514	199	6
35	*D35.1 - Electric power generation, transmission and distribution*	16,656	4,100	1,658	352	167	38	116	9,199	3,746	3,513	199	6
36	*D35.11 - Production of electricity*	1,603							1,218	50	330	5	5
37	*D35.2 - Manufacture of gas; distribution of gaseous fuels through mains*	626	391	48	16	16		16	615	11			1
38	*D35.3 - Steam and air conditioning supply*	275		1		1			222	51	1		4
39	E - Water supply; sewerage, waste management and remediation activities	2,462		98	25	15	3	10	1,878	394	173	17	4
40	F - Construction	9,414		1,640	353	210	29	171	6,220	1,741	1,259	194	5
41	*F.41 - Construction of buildings*	5,457		853	200	124	14	104	3,641	902	807	107	5
42	*F.42 - Civil engineering*	1,665		420	65	42	5	35	1,139	269	231	27	5

43	*F.43 - Specialised construction activities*	2,292		366	88	45	9	32		1,440	570	221	61	5
44	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	38,497	2,086	5,077	1,335	703	78	590		31,564	4,576	897	1,460	4
45	H - Transportation and storage	24,587	2,466	3,009	332	198	44	140		14,352	8,304	1,749	181	5
46	*H.49 - Land transport and transport via pipelines*	6,897	2,218	1,007	140	96	32	57		4,786	1,457	542	112	5
47	*H.50 - Water transport*	10,034	187	646	122	68	1	65		5,290	4,456	274	14	5
48	*H.51 - Air transport*	2,052		293	8	4	2	1		656	924	470	2	7
49	*H.52 - Warehousing and support activities for transportation*	5,387	61	965	59	28	8	15		3,436	1,442	458	50	5
50	*H.53 - Postal and courier activities*	217		99	4	2		1		183	26	6	3	3
51	I - Accommodation and food service activities	2,522		1,012	239	113	31	78		1,779	581	133	28	5
52	L - Real estate activities	35,120		5,327	518	165	21	135		25,828	7,079	2,000	213	4
53	**Exposures towards sectors other than those that highly contribute to climate change***	**45,353**	**541**	**5,695**	**1,065**	**617**	**123**	**446**		**30,296**	**9,248**	**4,569**	**1,240**	**5**
54	K - Financial and insurance activities	15	121	11	1	1		1		15				39
55	Exposures to other sectors (NACE codes J, M - U)	45,338	420	5,684	1,064	615	123	445		30,281	9,248	4,569	1,240	5
56	**TOTAL**	**237,459**	**20,340**	**32,742**	**6,549**	**3,622**	**834**	**2,590**		**171,168**	**46,100**	**15,410**	**4,780**	**4**

* In accordance with the Commission Delegated Regulation EU) 2020/1818 supplementing Regulation (EU) 2016/1011 as regards minimum standards for EU Climate Transition Benchmarks and EU Paris-aligned Benchmarks -Climate Benchmark Standards Regulation - Recital 6: Sectors listed in Sections A to H and Section L of Annex I to Regulation (EC) No 1893/2006

Loans collateralised by immovable property collateral – Energy efficiency of the collateral

The purpose of template 2 of the Pillar 3 ESG ITS shows the gross carrying amount of loans collateralised with immovable property and of repossessed real estate collaterals with a breakdown by EPC label of the collateral. The information on the level of energy efficiency of the collaterals is key to determine the climate change transition risk faced by these exposures.

The template consists of two main sections:

- Level of energy efficiency based on Energy Performance in kWh/m² of the collateral;
- Level of energy efficiency based on EPC labels of the collateral. Only collateral that could have an EPC label that meet the Energy Performance of Buildings Directive are reported in this section. For instance, a (piece of) land might be given as collateral but is not eligible for EPC.

In line with the ITS instructions, the Energy Performance in kwh/m² is determined based on the EPC label or estimated in the absence of the EPC label. The extent to which this data is estimated and not based on EPC labels is visible in row 5 for EU area and row 10 for non-EU area.

In countries where EPC labels are issued with a higher level than A, these have been included in the column A. Same, in countries where EPC labels are present that are lower than G, these have been added to the column G. On the collected labels, only valid labels have been considered meaning labels that have been issued by the authorized authority and not older than 10 years.

Template 2: Banking book - Climate change transition risk: Loans collateralised by immovable property - Energy efficiency of the collateral

	2022	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
	Counterparty sector	Total gross carrying amount amount (in MEUR)															
			Level of energy efficiency (EP score in kWh/m² of collateral)						Level of energy efficiency (EPC label of collateral)							Without EPC label of collateral	
			0; <= 100	> 100; <= 200	> 200; <= 300	> 300; <= 400	> 400; <= 500	> 500	A	B	C	D	E	F	G		Of which level of energy efficiency (EP score in kWh/m² of collateral) estimated
1	**Total EU area**	**357,794**	**54,528**	**100,072**	**107,957**	**54,551**	**40,264**	**422**	**29,912**	**18,590**	**26,297**	**12,670**	**17,612**	**12,022**	**16,412**	**224,280**	**99 %**
2	Of which Loans collateralised by commercial immovable property	63,370	3,562	18,991	15,375	8,469	16,808	166	5,561	2,201	2,344	1,365	1,259	957	2,405	47,278	95 %
3	Of which Loans collateralised by residential immovable property	294,415	50,966	81,077	92,578	46,081	23,456	256	24,350	16,389	23,953	11,306	16,353	11,064	14,006	176,993	100 %
4	Of which Collateral obtained by taking possession: residential and commercial immovable properties	9		4	4	1										9	100 %
5	Of which Level of energy efficiency (EP score in kWh/m² of collateral) estimated	268,455	44,297	62,491	82,028	43,130	36,425	84								202,398	100 %
6	**Total non-EU area**	**46,621**	**35,214**	**9,932**	**1,435**	**5**	**13**	**22**	**142**	**603**	**355**	**215**	**231**			**45,075**	**100 %**
7	Of which Loans collateralised by commercial immovable property	9,727	633	8,950	104	5	13	22	142	569	334	215	231			8,237	100 %
8	Of which Loans collateralised by residential immovable property	36,894	34,582	982	1,331					35	21	1				36,838	100 %
9	Of which Collateral obtained by taking possession: residential and commercial immovable properties																
10	Of which Level of energy efficiency (EP score in kWh/m² of collateral) estimated	46,593	35,214	9,904	1,435	5	13	22								45,075	100 %

Top 20 carbon-intensive firms in the world

The template 4 below is showing aggregated information of ING's exposures towards the top 20 carbon-intensive companies in the world. It includes information on the average maturity of the exposures, providing some insight on how these exposures may be impacted by longer-term climate change transition risks. For more information on our decarbonizing strategy for the Oil & Gas sector we refer you to the Climate report.

As required by the ITS, the information used as basis in the table below is a publicly available reputable and accurate data source. ING decided to use the most recent published list by CDP (The Carbon Majors Database - CDP Carbon Majors Report 2017) and more particularly the sample emission from 2015.

The column CCM is not required per year-end 2022, hence reported empty in the table below.

Template 4: Banking book - Climate change transition risk: Exposures to top 20 carbon-intensive firms

	a	b	c	d	e
	Gross carrying amount (aggregate)	Gross carrying amount towards the counterparties compared to total gross carrying amount (aggregate)	Of which environmentally sustainable (CCM)	Weighted average maturity	Number of top 20 polluting firms included
1	3,855	1.6 %	N/A	1.4	11

Climate change physical risk

'Physical risk' is defined as the risk of losses arising from any negative financial impact on the institution stemming from the current or prospective impacts of the physical effects of environmental factors on the institution's counterparties or invested assets.

Template 5 discloses hereunder provide information on the indicators of potential climate change physical of the banking book of ING.

Exposures subject to physical risk

Template 5 provides information on exposures in the banking book (including loans and advances, debt securities and equity instruments not held for trading and not held for sale) towards non financial corporates, on loans collateralised by immovable property and on repossessed real estate collateral that are exposed to chronic and/or acute climate-related hazards, with a breakdown by NACE economic sector.

Further, the ITS mentions that a breakdown of the exposures by geography of location of the activity of the counterparty or of the collateral should be disclosed. For this year (2022) disclosures, based on a best effort basis, we used for the NACE sectors the country of residence of the counterparty to define the geographical breakdown rather than the requested location of the activity.

Determination of geographical areas

The ITS stipulates that the breakdown shall cover the geographical area exposed to negative impact from climate change physical events. Based on this, ING decided to disclose separate template for The Netherlands, United States, Australia and Spain besides the consolidated template reflecting the entire ING portfolio.

Sensitivity methodology

In absence of clear guidance whether banks should report physical risk excluding or including supporting measures (i.e. inherent or residual risks) such as insurance coverage or government schemes, and based on the discussions in the industry, we decided to disclose the inherent risk (also market practice) as information on the supporting measures is not readily available for all the physical risk factors or all exposures. Besides, residual risk would not provide the risk level of information to determine which exposures are physical at risk.

In terms of methodology, for the NACE sectors (rows 1 to 9 and 13 to 16), we have used our Climate & Environmental heatmap. The C&E risk heatmap is one of the tools used by ING to identify and assess C&E risks. For physical risk, the heatmap lists 26 individual climate change related physical risk hazards (both acute and chronic weather patterns) and environmental risk drivers (water stress, resource scarcity, biodiversity loss, pollution and waste). For each of the factors under consideration, a low, medium or high score is given based on a qualitative assessment taking into account industry standards following a three to five-year horizon. This assessment is performed at the level of the individual sectors of ING's WB portfolio. The geographic distribution of ING's clients is therefore implicitly taken into account but not assessed on an individual client basis. Conducting the assessment for medium and long-term horizons and applying a quantitative counterparty assessment approach, could potentially result in different sector scoring and exposure sensitive to physical risk.

Any exposure at medium risk and above is considered to be sensitive to physical risk. This aggregation methodology was approved by GCTP for the credit risk RAS (Risk Appetite Statement) in December 2021 and the outcome was reported in the 2022 in Climate report.

For P3 ESG purpose, to be able to use this assessment for our reporting, some adjustments have been made to the C&E heatmaps to align it to the ITS requirements. (i) Focus for P3 is only on climate risk factors (10 factors) rather than all the climate and environmental risk factors (26 factors) used for the heatmap. (ii) The risk scores for the 10 climate risk factors were mapped and aggregated into acute and/or chronic risks drivers rather than solely looking at an aggregated 'physical risk' level as in the Climate Report.

Compared to the Climate report, this report shows a higher amount for portfolio exposed to physical risk due to differences in the scope:

- Risk hazards: In the climate and environmental heatmap 26 physical risk hazards are considered whereas in the P3 only 10 climate physical risk hazards had to be considered.
- Risk type: The template 5 requires performing a breakdown of exposures sensitive to acute, chronic, or acute and chronic risk drivers. However, the aggregated sensitivity score for the full scope of acute, chronic and environmental physical risks is reported in the 2022 Climate Report.

For the loans collateralized by immovable property (row 10 and 11) and repossessed collaterals (row 12), we collected granular location data and matched it with individual climate hazards provided by Royal HaskoningDHV, in partnership with Ambiental, a company of Royal HaskoningDHV. During this process, the collaterals were assessed against 16 different climate risk hazards using their geographical location. Like the heatmaps, the climate risk hazards have been be mapped and aggregated into acute and/or chronic events as required in the ITS. Each climate risk hazard gets a risk score from 0 - Low to 5 – Extreme and if 1 risk hazard has a high (4) or very high (5) score, the collateral was considered sensitive to physical risk.

Consolidated table and breakdown per sensitive geographical area

The table below represents the sensitivity exposure for the consolidated ING portfolio. Eur 53.5 billion of our portfolio is sensitive to physical risk with Eur 37.1 billion (69%) being sensitive to acute climate change events. Based on the sensitivity analysis of our portfolio, the Netherlands, United States, Australia and Spain, covering more than 50% of our portfolio, are the most sensitive countries to physical risk. In line with the ITS requirements, separate tables for these countries have been included below.

Template 5: Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
			Gross carrying amount (Mln EUR)												
			of which exposures sensitive to impact from climate change physical events												
	Consolidated		Breakdown by maturity bucket					of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from acute climate change events	of which exposures sensitive to impact both from chronic and acute climate change events	Of which Stage 2 exposures	Of which non-performing exposures	Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		
			<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years	Average weighted maturity							of which Stage 2 exposures	Of which non-performing exposures
1	A - Agriculture, forestry and fishing	3,612	33	7				41			23		1		
2	B - Mining and quarrying	9,915	1,083	562	119				1,764		94	122	20	2	16
3	C - Manufacturing	48,421	8,144	1,295	29			2,368	7,101		1,338	174	110	25	74
4	D - Electricity, gas, steam and air conditioning supply	17,557		8	75			83			75				
5	E - Water supply; sewerage, waste management and remediation activities	2,462													
6	F - Construction	9,414	3,368	385	321				4,073		796	155	110	16	88
7	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	38,497	3,559	329	50			1,510	2,428		504	186	114	7	100
8	H - Transportation and storage	24,587	3,507	1,834	810				6,151		809	93	68	25	39
13	I - Accomodation and food service activities	2,522	1,148	183	4				1,335		480	172	94	28	64
9	L - Real estate activities	35,120	1,688	298	19				2,005		248	150	73	5	66
14	M - Professional, scientific and technical activities	4,955	428	54	1				483		123	34	29	5	23
15	N - Administrative and support service activities	11,705	2,457	766	12			794	2,441		671	121	101	29	70
16	R - Arts, entertainment and recreation	392	341	14	2				358		196	9	10	6	4

17	S - Other service activities	313													
18	T - Activities of households as employers; producing activities of households for own use	4													
10	Loans collateralised by residential immovable property	331,323	272	659	3,911	12,667		9,307	7,026	1,175	446	248	54	6	44
11	Loans collateralised by commercial immovable property	76,352	1,714	305	357	690		931	1,924	212	581	17	5	1	4
12	Repossessed colalterals	9	—	—	—	—		—	—	—	—	—	—	—	—

The Netherlands

For The Netherlands, EUR 5.7 billion of our portfolio is sensitive to physical risk with EUR 4.8 billion being sensitive to acute climate change events.

Template 5: Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
			Gross carrying amount (Mln EUR)												
			of which exposures sensitive to impact from climate change physical events												
	The Netherlands		Breakdown by maturity bucket					of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from acute climate change events	of which exposures sensitive to impact both from chronic and acute climate change events	Of which Stage 2 exposures	Of which non-performing exposures	Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		
			<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years	Average weighted maturity							of which Stage 2 exposures	Of which non-performing exposures
1	A - Agriculture, forestry and fishing	251	3	6				9			1				
2	B - Mining and quarrying	1,043		25					25						
3	C - Manufacturing	6,647	1,513	117				85	1,545		103		2	1	
4	D - Electricity, gas, steam and air conditioning supply	857													
5	E - Water supply; sewerage, waste management and remediation activities	127													
6	F - Construction	938	698	167	51				916		109	15	7	1	4
7	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	6,284	1,035	75	46			579	577		231	103	53	5	47

8	H - Transportation and storage	2,077	295	55					349		46	3	1		
13	I - Accomodation and food service activities	178	150	27	1				178		110	15	6	1	5
9	L - Real estate activities	839	716	122	1				839		5	1	1		
14	M - Professional, scientific and technical activities	722	51	8					59		17	1	1		
15	N - Administrative and support service activities	2,666	287	47	1			252	83		78	12	10	4	6
16	R - Arts, entertainment and recreation	150	119	11	1				130		116	6	4	1	2
17	S - Other service activities	99													
18	T - Activities of households as employers; producing activities of households for own use														
10	Loans collateralised by residential immovable property	115,104		2	16	22			39		2				
11	Loans collateralised by commercial immovable property	28,400	21	13	1				35		1				
12	Repossessed collaterals														

United States

For The United States, Eur 6.6 billion of our portfolio is sensitive to physical risk with Eur 5.3 billion being sensitive to acute climate change events.

Template 5: Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
	United States	**Gross carrying amount (Mln EUR)**													
			of which exposures sensitive to impact from climate change physical events												
			Breakdown by maturity bucket					of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from acute climate change events	of which exposures sensitive to impact both from chronic and acute climate change events	Of which Stage 2 exposures	Of which non-performing exposures	**Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions**		
			<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years	Average weighted maturity							of which Stage 2 exposures	Of which non-performing exposures
1	A - Agriculture, forestry and fishing	281	18					18			18				
2	B - Mining and quarrying	1,784	684	149	42				875		93	15	6	2	2
3	C - Manufacturing	6,466	1,875	212				882	1,205		446		18	16	
4	D - Electricity, gas, steam and air conditioning supply	2,597													
5	E - Water supply; sewerage, waste management and remediation activities	40													
6	F - Construction	249	237	12					249		13		4	3	
7	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	3,352	669	58				36	690		36		1		
8	H - Transportation and storage	2,206	828	297	87				1,211		146		4	2	
13	I - Accomodation and food service activities	230	230						230			7	3	1	1
9	L - Real estate activities	87	87						87						
14	M - Professional, scientific and technical activities	1,027	140	29					169		81		5	5	
15	N - Administrative and support service activities	2,004	695	41				214	522		277	23	27	10	16
16	R - Arts, entertainment and recreation	47	47						47		47		2	2	

17	S - Other service activities	15													
18	T - Activities of households as employers; producing activities of households for own use														
10	Loans collateralised by residential immovable property	1,102	58					31	23	4	9				
11	Loans collateralised by commercial immovable property	1,884	95	5				53	40	7	39	2			
12	Repossessed collaterals														

Australia

For Australia, EUR 8.5 billion of our portfolio is sensitive to physical risk with EUR 5.7 billion being sensitive to chronic climate change events.

Template 5: Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
		Gross carrying amount (Mln EUR)													
			of which exposures sensitive to impact from climate change physical events												
			Breakdown by maturity bucket					of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from acute climate change events	of which exposures sensitive to impact both from chronic and acute climate change events	Of which Stage 2 exposures	Of which non-performing exposures	Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		
	Australia		<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years	Average weighted maturity							of which Stage 2 exposures	Of which non-performing exposures
1	A - Agriculture, forestry and fishing														
2	B - Mining and quarrying	837		202					202			202			
3	C - Manufacturing	316	41						41			41			
4	D - Electricity, gas, steam and air conditioning supply	1,742													
5	E - Water supply; sewerage, waste management and remediation activities	19													
6	F - Construction	132	131	1					132		5	132			

7	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	167	39						39			39			
8	H - Transportation and storage	396	179	76					255			255			
13	I - Accomodation and food service activities														
9	L - Real estate activities														
14	M - Professional, scientific and technical activities	22	14						14			14			
15	N - Administrative and support service activities	344	45						45			45			
16	R - Arts, entertainment and recreation														
17	S - Other service activities														
18	T - Activities of households as employers; producing activities of households for own use														
10	Loans collateralised by residential immovable property	35,399	29	33	1,034	6,147		5,487	1,447	310	187	90	5		4
11	Loans collateralised by commercial immovable property	4,280	396	29	85		5		334	3	116	4			
12	Repossessed collaterals														

Spain

For Spain, EUR 6.5 billion of our portfolio is sensitive to physical risk with EUR 4.4 billion being sensitive to chronic climate change events.

Template 5: Banking book - Climate change physical risk: Exposures subject to physical risk

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
		Gross carrying amount (Mln EUR)													
			of which exposures sensitive to impact from climate change physical events												
	Spain		**Breakdown by maturity bucket**					of which exposures sensitive to impact from chronic climate change events	of which exposures sensitive to impact from acute climate change events	of which exposures sensitive to impact both from chronic and acute climate change events	Of which Stage 2 exposures	Of which non-performing exposures	**Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions**		
			<= 5 years	> 5 year <= 10 years	> 10 year <= 20 years	> 20 years	Average weighted maturity							of which Stage 2 exposures	Of which non-performing exposures
1	A - Agriculture, forestry and fishing														
2	B - Mining and quarrying														
3	C - Manufacturing	356	25						25		5				
4	D - Electricity, gas, steam and air conditioning supply	669													
5	E - Water supply; sewerage, waste management and remediation activities	122													
6	F - Construction	331	331						331		12				
7	G - Wholesale and retail trade; repair of motor vehicles and motorcycles	363	6						6		6				
8	H - Transportation and storage	643	88	14					103			47	28		28
13	I - Accomodation and food service activities	60	60						60		60				
9	L - Real estate activities	1	1						1						
14	M - Professional, scientific and technical activities														
15	N - Administrative and support service activities	108	5						5			5	5		5
16	R - Arts, entertainment and recreation	3	3						3		3				

17	S - Other service activities														
18	T - Activities of households as employers; producing activities of households for own use														
10	Loans collateralised by residential immovable property	18,945	46	208	1,177	3,519		3,765	385	800	74	22	10	3	6
11	Loans collateralised by commercial immovable property	4,117	244	25	195	593		632	230	194	141	2	1		
12	Repossessed collaterals														

Other risks

Non-financial risk

AMA

Article 446 of the CRR requires institutions to disclose information on the approaches for the management of operational risk that should help to understand the assessment of own funds requirements for operational risk. This information is disclosed in the 'Risk management' section of the annual report. The table below provides information on the calculation of own funds requirements for operational risk management.

EU OR1 - Operational risk own funds requirements and risk-weighted exposure amounts

Banking activities	Relevant indicator			Own funds requirements	Risk weighted exposure amount
2022	Year-3	Year-2	Last year		
Banking activities subject to basic indicator approach (BIA)					
Banking activities subject to standardised (TSA) / alternative standardised (ASA) approaches					
Subject to TSA:					
Subject to ASA:					
Banking activities subject to advanced measurement approaches AMA	18,384	18,061	18,461	2,800	35,000

EU OR1 - Operational risk own funds requirements and risk-weighted exposure amounts

Banking activities	Relevant indicator			Own funds requirements	Risk weighted exposure amount
2021	Year-3	Year-2	Last year		
Banking activities subject to basic indicator approach (BIA)					
Banking activities subject to standardised (TSA) / alternative standardised (ASA) approaches					
Subject to TSA:					
Subject to ASA:					
Banking activities subject to advanced measurement approaches AMA	18,032	18,384	18,061	2,844	35,550

Compliance risk

Whistleblower

ING deems it's important that ING employees, former employees, candidates, and parties with whom ING has a business relationship (such as contractors, subcontractors and suppliers) can report, anonymously or not, alleged irregularities ('Concerns') regarding accounting or auditing matters, as well as any suspected or actual criminal conduct, unethical conduct or other misconduct, including a (suspected) breach of (EU) law, within the company, in accordance with its Whistleblower Policy. ING exercises the utmost care to protect the confidentiality of such a report and the anonymity of the Whistleblower, within the limits as defined by applicable laws and regulations. ING will not discharge, demote, suspend, threaten, harass or in any other way harm a whistleblower who has reported a Concern in good faith or of any person 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 below. The overview is limited to concerns reported through the dedicated whistleblower channels as alternative to standard reporting and escalation channels. The Concerns are reported periodically (in numbers and on content) via the Chief Compliance Officer up to the level of the Supervisory Board.

Whistleblower concerns	
Number of cases reported	**2022**
Aggression	7
Breach of data privacy or (client/employee) confidentiality	7
Bribery / Corruption	1
Bullying	17
Conflict of interest	8
Discrimination	11
Financial Economic Crime	1
Fraud / Theft	6
Harassment	
Market Abuse	1
Other undesirable Behaviour	22
Other: Breach of any ING Policy OR external Law or Regulation	7
Retaliation	4
Sexual intimidation / Harassment	5
Unfair customer treatment	1
Work pressure / non-realistic targets	5
Total	**103**

Whistleblower concerns	
Number of cases reported	**2021**
Aggression	1
Breach of data privacy or (client/employee) confidentiality	2
Bribery / Corruption	3
Bullying	3
Conflict of interest	9
Discrimination	7
Financial Economic Crime	1
Fraud / Theft	3
Harassment	2
Market Abuse	
Other undesirable Behaviour	15
Other: Breach of any ING Policy OR external Law or Regulation	10
Retaliation	1
Sexual intimidation / Harassment	1
Unfair customer treatment	1
Work pressure / non-realistic targets	15
Total	**74**

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General information

Disclaimer

Certain of the statements contained herein are not historical facts, including, without limitation, certain statements made of future expectations and other forward-looking statements that are based on management's current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in such statements. 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