OP Financial Group's Report by the Board of Directors and Financial Statements 2019

OP

Contents

Notes to assets

Notes to liabilities and equity capital

Other notes to the balance sheet

Notes to contingent liabilities and derivatives

Other notes

Notes to risk management

Risk exposure of Retail and Corporate Banking

Risk exposure by Insurance

Capital adequacy and capital base

OP Financial Group's Report by the Board of Directors 1 January–31 December 2019:

Earnings before tax EUR 838 million – income increased by 10% and comparable expenses decreased

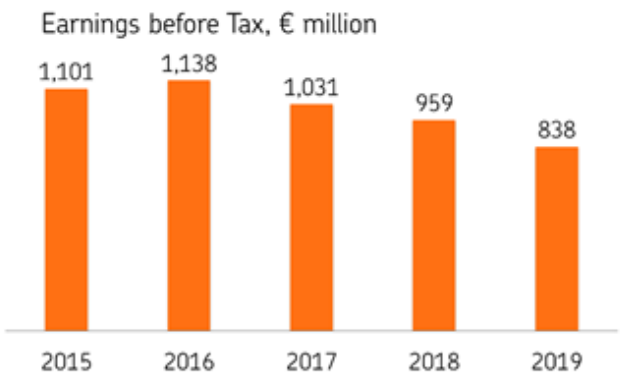
Earnings before tax Q1–4/2019	Net interest income Q1–4/2019	Net insurance income Q1–4/2019	Net commissions and fees Q1–4/2019	CET1 ratio 31 Dec 2019
€838 million	+5%	–26%	+6%	19.5%

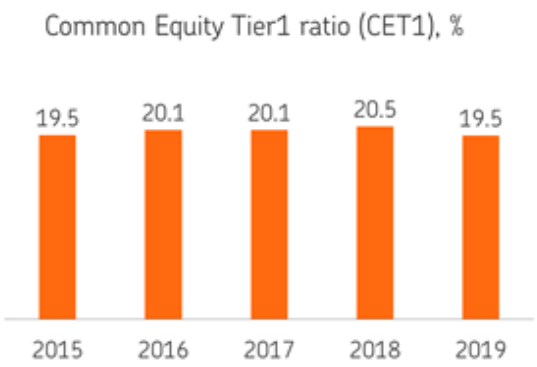
- Earnings before tax amounted to EUR 838 million (959).
- Net interest income increased by 5% to EUR 1,241 million and net commissions and fees by 6% to EUR 936 million. Net insurance income decreased by 26% to EUR 421 million.
- Investment income rose year on year by EUR 214 million, to EUR 425 million.
- Income increased by a total of 10% (by 6% including the overlay approach).
- Total expenses increased by 13% to EUR 1,903 million. OP Financial Group transferred the management of the majority of the personnel's statutory earnings-related pension insurance and the related portfolio to Ilmarinen Mutual Pension Insurance Company at the end of 2018, which lowered expenses by EUR 286 million in that year's income statement. In view of this, comparable expenses decreased by 3% to EUR 1,903 million.
- Impairment loss on receivables was EUR 87 million (46).
- OP Financial Group's loan portfolio grew by 5% to EUR 91 billion and the deposit portfolio by 4% to EUR 64 billion.
- The CET1 ratio was strong at 19.5% (20.5). The planned adoption of a new definition of default in March 2020 is expected to weaken the CET1 ratio by 1.3 percentage points.
- **Retail Banking** earnings before tax decreased by 44% to EUR 235 million. Excluding the effect of the transfer of earnings-related pension liability, earnings before tax increased by 6%. Net interest income increased by 4% and net commissions and fees by 5%. Net investment income decreased by EUR 26 million. The loan portfolio increased by 5% and deposits by 7%.
- **Corporate Banking** earnings before tax decreased by 24% to EUR 311 million. Excluding the effect of the transfer of earnings-related pension liability, earnings before tax decreased by 17%. Net interest income increased by 10%, but net commissions and fees decreased by 3% and net investment income fell by 28%. The lower net investment income is explained by changes in Credit Valuation Adjustment (CVA) in derivatives owing to market changes and by changes in the valuation models of derivatives made at the beginning of the year. The loan portfolio increased by 6%.
- **Insurance** earnings before tax increased by 43% to EUR 373 million. Net insurance income decreased by 26% to EUR 431 million. The reduction in the discount rate for insurance liability reduced net insurance income by EUR 136 million. Investment income rose by EUR 239 million to EUR 331 million. The operating combined ratio was 92.7% (92.0).
- **Other Operations** earnings before tax were EUR –37 million (–64).
- During the financial year, OP Financial Group invested EUR 313 million (384) in business development and improving customer experience.
- OP bonuses totalled EUR 254 million.
- During the financial year, OP Financial Group achieved its strategic target of 2 million owner-customers in OP cooperative banks. The Group had a total of 1.2 million joint banking and insurance customers.
- On 31 January 2020, OP Cooperative, OP Financial Group's central cooperative, sold the Vallila property to a South Korean-Finnish consortium. The sale of the property will improve OP Financial Group's CET1 ratio by some 0.2 percentage points.
- Earnings before tax for 2020 are expected to be at about the same level as in 2019. For more detailed information on the outlook, see "Outlook for 2020".

OP Financial Group's key indicators

	Q1–4/2019	Q1–4/2018	Change, %
Earnings before tax, € million	838	959*	-12.6
Retail Banking	235	421	-44.2
Corporate Banking	311	408	-23.8
Insurance	373	260	43.1
Other Operations	-37	-64	-
New OP bonuses accrued to owner-customers	-254	-230	10.7
Return on economic capital, %***	17.2	20.8	-3.6**
Return on equity (ROE), %	5.5	6.5	-1.0**
Return on equity, excluding OP bonuses, %	7.1	8.1	-1.0**
Return on assets (ROA), %	0.47	0.54	-0.1**
Return on assets, excluding OP bonuses, %	0.60	0.67	-0.1**
	31 Dec 2019	31 Dec 2018	Change, %
CET1 ratio, %	19.5	20.5	-1.0**
Ratio of capital base to minimum amount of capital base (under the Act on the Supervision of Financial and Insurance Conglomerates, or Fico), % ****	138	147	-9**
Loan portfolio, € billion	91.5	87.0	5.1
Deposits, € billion	64.0	61.3	4.4
Ratio of non-performing receivables to loan and guarantee portfolio, %*****	1.1	1.0	0.1**
Owner-customers (1,000)	2,003	1,911	4.8

*During the financial year, OP Financial Group adopted an amortisation-based revenue recognition method for the customer margin related to a derivative clause attached to loans with an interest rate cap or interest rate collar. The effect of this change was adjusted retrospectively in OP Financial Group's retained earnings (under equity). In addition, the income statement and balance sheet for 2018 were restated to reflect the new revenue recognition practice. The change had no effect on segment reporting. Capital adequacy measurement was not adjusted retrospectively.
**Change in ratio
***12-month rolling
****The FiCo ratio has been calculated for insurance companies using transition provisions included in solvency regulation.
*****Non-performing receivables refer to receivables that are more than 90 days past due, other receivables classified as risky and forborne receivables related to such receivables due to the customer's financial difficulties.





Comments by President and Group Chief Executive Officer Timo Ritakallio

Our customer business continued to develop favourably in 2019. Income increased by 10% year on year, and our market share developed positively in home loans and corporate loans as well as in the non-life insurance business. Our loan portfolio grew by 5% to EUR 91 billion and deposit portfolio by 4% to EUR 64 billion. Investment income was excellent, thanks to favourable market developments.

We have also managed to cut down our expenses. Comparable expenses decreased by 3% year on year. Impairment loss on receivables increased clearly in 2019 but still remained low.

Earnings before tax for 2019 amounted to EUR 838 million, which was EUR 121 million lower than the year before. In 2018, earnings were higher due to the transfer of the statutory earnings-related pension liability to Ilmarinen. In comparable terms, excluding the effect of the pension liability transfer, the earnings for 2019 increased by EUR 165 million.

Our capital ratio (CET1) remained strong at 19.5%.

At the end of 2019, the number of OP Financial Group's owner-customers exceeded two million. During the year, we got 92,000 new owner-customers. In the future, we aim to ensure that we provide our owner-customers with the best benefits in banking and insurance services.

We have taken determined steps to improve customer experience and managed to shorten response times in our telephone services and to improve customer satisfaction. More than one million of our customers have adopted the Mobile key, a secure identification method. In January 2020, the use of the Mobile key was extended to op.fi.

At OP Financial Group's central cooperative, we have implemented a more self-directed way of working. The purpose of this change is to achieve better customer and employee experience and cost savings. This has required us to revise job descriptions in all of our business segments. At the end of the year, we completed the Information and Consultation of Employees process in centres of excellence and in the service centre. Approximately 1,900 employees worked in the functions affected by the process. As a result, around 460 roles ceased to exist and some 190 new roles were created. The negotiations were held in good cooperation with employee representatives.

In 2020, cost management will be our challenge. Banks' results will be under pressure due to low interest rates and tightening banking regulation. This year, we expect our earnings to be at about the same level as in 2019.

In 2019, political uncertainty had a negative impact on the world economy and global trade suffered from the expanding trade war. In financial markets, sentiments varied sharply, but eventually the year was favourable for investors. Measures taken by central banks supported financial markets and bolstered confidence in the world economy.

Economic growth in Finland decelerated only slightly, thanks to the favourable development of the service sector. The overall economic picture remained relatively positive, although consumer confidence declined during the year.

Economic risks have decreased since last year's gloomiest sentiment. However, the outlook is subdued, and we can expect slow growth. There is no favourable economic situation to boost economic policy. Many long-term challenges remain to be solved, and new ones arise due to issues such as climate change. This is a challenging operating environment, both for governments and businesses.

Business environment

World economic growth slowed down gradually during 2019 and remained on average the slowest since the beginning of the decade. Developments in global trade, in particular, were weak, partly due to the trade war. With lukewarm economic growth, inflation remained subdued.

In September, the ECB cut its deposit rate from –0.4 per cent to –0.5 per cent. At the beginning of November, the ECB also resumed buying assets worth EUR 20 billion a month.

Short-term market rates decreased slightly during 2019. Longer-term market rates decreased more markedly but recovered from the late summer's pessimistic mood towards the year end. Stock prices rose in the latter part of the year when larger risks were seen to be lessened. Stock markets strengthened markedly during the year.

According to preliminary information, Finnish economic growth slowed from the previous year. Economic growth was sustained by consumption and service exports. Goods exports suffered from faltering export markets. Growth in construction slowed down and fixed investments, by and large, were sluggish. The housing market picked up towards the year end. Demand focused on smaller flats and prices rose only slightly on average.

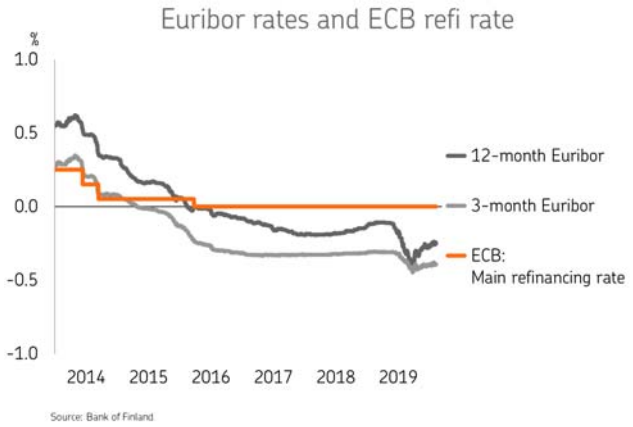
Economic growth is expected to remain subdued in Finland's main export markets. The European Central Bank has stated that the main refinancing rates will remain unchanged or lower until the inflation outlook is in line with the inflation target. Finnish economic growth is expected to be slow as exports are assumed to slacken and construction activity to fall. However, consumer demand should be supported by developments in real wages and the labour market that is assumed to remain relatively strong. The outlook for the housing market too is expected to remain steadily favourable.

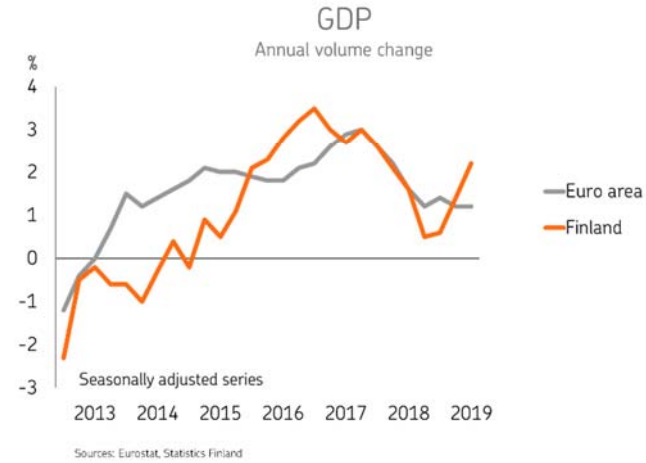
In the fourth quarter of the year, growth in total consumer loans accelerated to 3.0%. Greater demand for home loans supported this positive development. Based on the statistics of the Bank of Finland, the growth rate of consumer loans slowed to 4.3%. This growth in consumer loans came solely from unsecured loans. Corporate and housing company loans increased by 7.3%. The banking barometer anticipates moderate growth in consumer loans whereas the growth outlook for corporate loans is expected to be weaker.

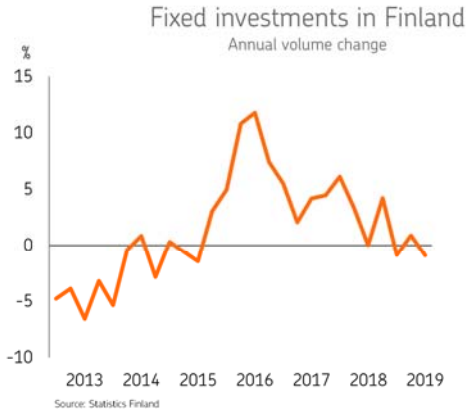
Total deposits increased by 4.3% over the previous year. The annual growth rate of household deposits decelerated to 6.6%. Corporate deposits increased by 5.0% over the previous year whereas the volume of deposits by public-sector entities decreased.

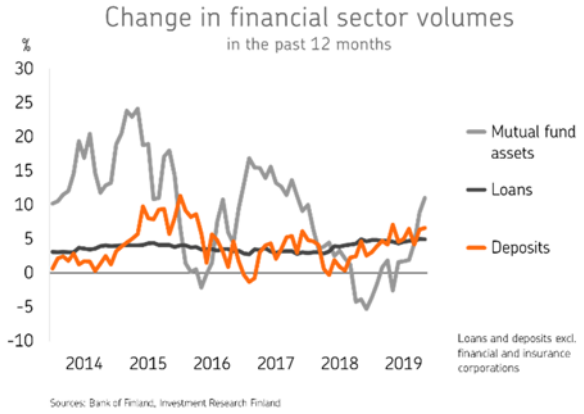
The value of mutual funds registered in Finland rose to EUR 124.7 billion at the end of 2019. Favourable developments in the investment environment increased the values of equity funds and bond funds.

Premiums written in the insurance sector increased by over 3% in 2019. The uncertain economic outlook, weak returns on fixed income investments and claims incurred on the rise will cast a shadow over the favourable development.









Earnings analysis and balance sheet

Earnings analysis, € million	Q1–4/2019	Q1–4/2018	Change, %
Earnings before tax	838	959	-12.6
Retail Banking	235	421	-44.2
Corporate Banking	311	408	-23.8
Insurance	373	260	43.1
Other Operations	-37	-64	-
Income			
Net interest income	1,241	1,186	4.6
Net insurance income	421	566	-25.7
Net commissions and fees	936	887	5.5
Net investment income	530	185	186.9
Other operating income	53	61	-12.7
Total income	3,181	2,885	10.3
Expenses			
Personnel costs (excl. transfer of earnings-related pension liability)	781	803	-2.6
Transfer of statutory earnings-related pension liability	-	-286	-
Depreciation/amortisation and impairment loss	278	325	-14.6
Other operating expenses	844	839	0.5
Total expenses	1,903	1,681	13.2
Impairment loss on receivables	-87	-46	-
Overlay approach	-105	26	-496.4
New OP bonuses accrued to owner-customers	-254	-230	-

During the financial year, OP Financial Group adopted an amortisation-based revenue recognition method for the customer margin related to a derivative clause attached to loans with an interest rate cap or interest rate collar. The effect of this change was adjusted retrospectively in OP Financial Group's retained earnings (under equity). In addition, the income statement and balance sheet for 2018 were restated to reflect the new revenue recognition practice. The segment figures for 2018 have been changed to correspond to the new segments. In addition, the comparatives have been changed as a result of the change in presentation of trading interest income and expenses. More details are available in the Notes to the financial statements.

Key indicators, € million	31 Dec 2019	31 Dec 2018	Change, %
Loan portfolio	91,456	87,016	5.1
Home loans	39,572	38,558	2.6
Corporate loans	22,509	21,136	6.5
Housing company and other loans	29,375	27,323	7.5
Deposits	63,998	61,327	4.4
Assets under management (gross)	81,187	71,850	13.0
Mutual funds	25,610	22,653	13.1
Institutional clients	22,543	21,505	4.8
Private Banking	22,181	17,887	24.0
Unit-linked insurance savings	10,852	9,805	10.7
Balance sheet total	147,023	140,294	4.8
Investment assets	23,509	23,050	2.0
Total insurance liabilities	20,338	19,288	5.4
Debt securities issued to the public	34,369	30,458	12.8
Equity	12,570	11,742	7.1

January–December

OP Financial Group's earnings before tax amounted to EUR 838 million (959). The figure decreased by EUR 121 million over the previous year. Net interest income, net commissions and fees and net investment income increased. The earnings were reduced by lower net insurance income and higher impairment loss on receivables. OP Financial Group transferred the management of the majority of the personnel's statutory earnings-related pension insurance and the related portfolio to Ilmarinen Mutual Pension Insurance Company at the end of 2018, which lowered expenses by EUR 286 million in that year's income statement. Excluding the effect of this transfer, expenses decreased by 3.3% year on year.

Net interest income increased by 4.6% to EUR 1,241 million. Net interest income reported by the Retail Banking segment increased by EUR 36 million and that by the Corporate Banking segment by EUR 33 million. OP Financial Group's loan portfolio grew by 5.1% to EUR 91.5 billion and deposits by 4.4% to EUR 64.0 billion.

Net insurance income totalled EUR 421 million (566). The Insurance segment's non-life insurance premium revenue increased by 0.9% to EUR 1,479 million. Excluding the Baltic business sold in 2018, non-life insurance premium revenue increased by 4.0%. Claims incurred increased by 17.4% to EUR 1,077 million. The reduction in the discount rate for insurance liability increased claims incurred by EUR 136 million (0). The operating combined ratio was 92.7% (92.0).

Net commissions and fees were EUR 936 million, or EUR 49 million higher than the year before. Net commissions and fees for payment transfer services increased by EUR 17 million, those for lending by EUR 6 million and asset management fees by EUR 23 million.

Net investment income increased by EUR 345 million to EUR 530 million. Net income from financial assets recognised at fair value through profit or loss totalled EUR 726 million (115). Derivatives have been used to hedge against interest rate risk associated with non-life insurance liability. As a result of this, an item worth EUR 136 million (0), which corresponds to the reduction in the discount rate, is shown as a positive value change in net investment income. An overlay approach is applied to certain equity instruments of insurance companies. Changes in the fair value of investments within the scope of the overlay approach are presented under the fair value reserve under equity. Total investment income grew by 101.5% year on year, to EUR 425 million. Capital gains recognised totalled EUR 197 million (36). The combined return on investments at fair value of OP Financial Group's insurance companies was 8.9% (0.7). The net change in the short-term life insurance supplementary interest rate provision decreased earnings by EUR 2 million. In the previous year, the net change in the short-term supplementary interest rate provision improved earnings by EUR 43 million. Value changes in Credit Valuation Adjustment (CVA) in derivatives owing to market changes decreased earnings by EUR 21 million over the previous year.

Other operating income fell by EUR 8 million year on year to EUR 53 million. The sale of occupational healthcare service business to Mehiläinen in the second quarter increased other operating income. A year ago, the entire share capital of the Baltic subsidiary Seesam Insurance AS was sold to Vienna Insurance Group (VIG). OP Financial Group recognised a total of EUR 16 million in non-recurring capital gain on the sale.

Total expenses increased by 13.2% to EUR 1,903 million. Excluding the effect of the transfer of earnings-related pension liability, total expenses decreased by 3.3% to EUR 1,903 million, personnel costs decreased by 2.6% to EUR 781 million and pension costs decreased by 26.2% to EUR 114 million. At the beginning of 2019, accounting for pensions transferred to Ilmarinen changed from defined benefit plans to defined contribution plans.

Development costs were EUR 183 million (203). Depreciation/amortisation and impairment loss on PPE and intangible assets decreased by 14.6% to EUR 278 million. Planned depreciation/amortisation increased by 11.7% to EUR 244 million. This increase resulted from higher development expenditure recognised for prior years and from the adoption of IFRS 16 Leases on 1 January 2019. Impairment write-downs decreased by EUR 73 million year on year.

Other operating expenses increased by 0.5% to EUR 844 million. ICT production costs increased by EUR 24 million. Lease expenses decreased by EUR 16 million due to the application of IFRS 16 in 2019.

Impairment losses on loans and receivables and on investments recognised under various income statement items that reduced earnings amounted to EUR 111 million (70), of which EUR 87 million (46) concerned loans and receivables. Changes in credit risk parameters, final loan losses, growth in the loan portfolio and the transfer of loans between impairment stages affected the increase in impairment loss on receivables. The ratio of non-performing receivables in loans and receivables to the loan and guarantee portfolio was low, at 1.1% (1.0).

OP Financial Group's income tax for the financial year amounted to EUR 168 million (212). The effective tax rate was 20.1% (22.1).

In the third quarter, the Vallila property was classified as a non-current asset held for sale. The property's assets recognised in the balance sheet totalled EUR 314 million and liabilities EUR 6 million at the end of the financial year. The Vallila property comprises a block located in Vallila, Helsinki.

OP Financial Group's equity amounted to EUR 12.6 billion (11.7). Equity included EUR 3.0 billion (3.0) in Profit Shares, terminated Profit Shares accounting for EUR 0.2 billion (0.3). The return target for Profit Shares for 2019 was 3.25%. Interest payable on Profit Shares accrued during the financial year is estimated to total EUR 97 million. The amount of interest paid for 2018 in June 2019 totalled EUR 94 million. The fair value reserve grew by EUR 244 million to EUR 251 million.

Key income statement items by quarter

				2019	2019	2018	Change
€ million	Q1	Q2	Q3	Q4	Q1–4	Q1–4	%
Net interest income	294	309	321	318	1,241	1,186	4.6
Net insurance income	109	165	138	9	421	566	-25.7
Net commissions and fees	234	216	229	257	936	887	5.5
Net investment income	145	73	54	257	530	185	186.9
Other operating income	9	26	6	12	53	61	-12,7
Total income	790	790	748	854	3,181	2,885	10.3
Personnel costs	197	208	169	208	781	516	51.3
Depreciation/amortisation and impairment loss	59	69	62	88	278	325	-14.6
Other operating expenses	210	212	181	242	844	839	0.5
Total expenses	465	488	411	538	1,903	1,681	13.2
Impairment loss on receivables	-11	-28	3	-51	-87	-46	88.8
Temporary exemption (overlay approach)	-55	-12	2	-40	-105	26	-496.4
OP bonuses to owner-customers	-64	-60	-62	-63	-249	-226	-10.4
Earnings before tax	194	202	280	161	838	959	-12.6

2019 highlights

New segments

At its meeting on 6 June 2018, the Supervisory Board of OP Financial Group's central cooperative decided on a new division of responsibilities of the central cooperative's Executive Board, which changed the segment structure as of the beginning of 2019. The new OP Financial Group segments are Retail Banking (Banking Private and SME Customers), Corporate Banking (Banking Corporate and Institutional Customers), Insurance (Insurance Customers), and Other Operations.

Retail Banking segment consists of banking and asset management services for private and SME customers at OP cooperative banks and at the central cooperative. Corporate Banking consists of banking and asset management for corporate and institutional customers. Insurance comprises life and non-life insurance plus the health and wellbeing business. Other Operations consists of functions that support other segments as well as Treasury.

Decision by the Competition and Consumer Authority

On 11 February 2019, the Competition and Consumer Authority (FCCA) completed an extensive investigation related to OP Financial Group's customer benefits scheme, as well as operations in retail banking services and the non-life insurance market. The FCCA concluded that OP Financial Group operates in compliance with the Competition Act and OP's bonus scheme is not contrary to the Competition Act. The FCCA considers that OP's operations have no effect that would lead to market foreclosure in the non-life insurance market. As a result of the investigation, the FCCA has closed the case.

Pohjola Hospital's new strategy

Pohjola Hospital sharpened its strategy and will focus on orthopaedics and sports clinic activities. As part of this change, Pohjola Hospital sold its occupational healthcare service business to Mehiläinen on 1 June 2019.

Classification of the Vallila property as a non-current asset held for sale

Based on decisions made, OP Financial Group classified the Vallila property in the third quarter as a non-current asset held for sale. The Vallila property owned by OP Financial Group comprises a block located in Vallila, Helsinki, which was completed in 2017. After completion of the sale on 31 January 2020, OP Financial Group will continue operating in the property under a long-term lease agreement.

OP Cooperative's new governance structure

At its meeting on 30 October 2019, OP Cooperative's Supervisory Board (as of 1 January 2020, the Supervisory Council) decided on the conditional composition of OP Cooperative's new Board of Directors. As proposed by the Nomination Committee set up by OP Cooperative's Supervisory Board, ten (10) members were appointed to the new Board of Directors. The Supervisory Council confirmed the appointments on 1 January 2020 when OP Cooperative adopted a new three-tier governance structure.

On 11 December 2019, OP Cooperative's Supervisory Board elected from among its members a new Chair and Vice Chairs. The new Chairs assumed their responsibilities on 1 January 2020.

OP Financial Group's strategic targets and focus areas

Strategy 2016

Below are the strategic targets based on OP Financial Group's strategy confirmed in 2016 and the outcomes during the strategy period 2016–2019.

OP Financial Group's strategic targets	31 Dec 2019	31 Dec 2018	Target 2019
Customer experience, Net Promoter Score (NPS) (-100–+100)			
Brand	26	23	25
Service encounter	62	61	70
CET1 ratio, %	19.5	20.5	22
Return on economic capital, % (12-month rolling)	17.2	20.8	22
Expenses of present-day business (12-month rolling), € million	1,827	1,833	Expenses for 2020 at 2015 level (1,500)
Owner-customers, million	2.0	1.9	2.0

Strategy 2019

At its meeting on 12 June 2019, the Supervisory Board of OP Financial Group's central cooperative confirmed the Group's updated strategy. OP Financial Group has adopted a new type of strategy process in which it assesses, reshapes and implements its strategy on an ongoing basis. The Group will systematically assess its business environment and operating model to be able to make and implement new strategic choices when needed.

At the same time, the Supervisory Board confirmed OP Financial Group's vision for future direction, to be "the leading and most appealing financial services group in Finland", and a more detailed content of the vision. The Group has created the strategy and the content of the vision together with OP cooperative banks, governing bodies and personnel.

OP Financial Group's core values are People First, Responsibility, and Succeeding Together. The Group somewhat simplified its

mission: "We promote the sustainable prosperity, security and wellbeing of our owner-customers and ."

Furthermore, the Supervisory Board adopted OP Financial Group's strategic priorities for 2020:

- Best customer experience
- More benefit for owner-customers
- Excellent employee experience
- Faster growth in profits than in expenses
- Productive development.

The priorities reviewed annually will help achieve the shared vision.

On 30 November 2019, the Supervisory Board of OP Financial Group's central cooperative confirmed OP Financial Group's new, Group-level strategic long-term targets. The new targets will enter into force as of 1 January 2020.

OP Financial Group's new strategic long-term targets are as follows:

Indicator	Target
Return on equity (ROE excluding OP bonuses)	8% in 2025
CET1 ratio	To be determined later
Brand recommendations, NPS (Net Promoter Score, private and corporate customers)	30 in 2025

The CET1 target will be determined later as the effects of the regulatory and supervisory environment become clearer. In OP Financial Group's view, the most significant open changes in the regulatory and supervisory environment include the amendments to the Act on Credit Institutions that will enter into force at the end of 2020, the obligations, if any, imposed by the supervisor due to the ECB's targeted review of internal (IRBA) models (TRIM), and obligations imposed by the supervisor due to the new definition of default. In addition, OP Financial Group's credit rating target is at least AA-/Aa3.

Promotion of the success of owner-customers and operating region

OP Financial Group's mission is to promote the sustainable prosperity, security and wellbeing of its owner-customers and operating region. OP's operations are based on cooperative values, a strong capital base, capable risk management and customer respect. The Group's core values are People First, Responsibility, and Succeeding Together.

Allocation of earnings

As a cooperative business, OP Financial Group aims not to maximise profits for its owners but to provide, as efficiently as possible, the services which the cooperative's owner-customers need. The shared success will be used for the benefit of owner-customers in the form of loyalty benefits and other financial benefits as well as the maintenance and further development of service capabilities.

OP Financial Group's estimated earnings allocation for the financial year that is to be confirmed after the end of the financial year:

*) Customers = OP bonuses, discounts and interest on contributions made by owner-customers

Implementing OP Financial Group's mission successfully requires a strong capital base which the requirements set by the authorities also necessitate. OP Financial Group uses a significant amount of its earnings to enhance its capital base. That will require efficiency and earnings power of the Group in the years to come too.

A considerable amount of earnings is returned to the owner-customers in the form of OP bonuses and other benefits and discounts. According to the fundamental cooperative business principle, benefits are allocated on the basis of the extent to which each member uses the cooperative's services. OP's loyalty benefit programme consists of OP bonuses – generated in proportion to almost all of a person's transactions with OP – as well as benefits and discounts related to OP's banking services, insurance contracts and saving and investment services. Furthermore, some service packages are available only to owner-customers. Owner-customers also have the opportunity to contribute capital to their own OP cooperative bank through Profit Shares. Interest will be annually paid on Profit Shares as the banks' profit distribution.

OP Financial Group is one of the largest tax payers in Finland measured by tax on profits. By paying taxes in Finland, OP is contributing to prosperity in the whole of Finland.

Customer relationships and customer benefits

During the financial year, OP Financial Group achieved its strategic target of two million owner-customers in OP cooperative banks. During the year, the number of owner-customers increased by 92,000.

The number of banking customers totalled 3.6 million (3.6) at the end of December. Private customers numbered 3.3 million (3.3) and corporate customers 0.3 (0.3) million.

Based on a revised calculation method, the number of joint banking and insurance customers totalled 1.2 million at the end of December.

Contributions made by OP cooperative banks' owner-customers to the banks' Profit Shares and cooperative shares totalled EUR 3.2 billion (3.2) on 31 December 2019.

OP cooperative banks' owner-customers earn OP bonuses through banking, insurance and asset management transactions. The value of new OP bonuses accrued in January–December totalled EUR 254 million (230). During the same period, a total of EUR 113 million (111) of bonuses were used to pay for

banking and asset management services and EUR 129 million (118) to pay non-life insurance premiums.

During the financial year, owner-customers benefitted EUR 32 million (31) from the reduced price of the daily retail banking package. Owner-customers were provided with EUR 69 million (67) in non-life insurance loyalty discounts. In addition, owner-customers bought, sold and switched the majority of the mutual funds without separate charges. The value of this benefit amounted to EUR 5 million (6).

The abovementioned OP bonuses and customer benefits totalled EUR 360 million (334), accounting for 30.1% (25.8) of OP Financial Group's earnings before tax and granted benefits.

Interest payable on Profit Shares accrued during the financial year is estimated to total EUR 97 million (94). The return target for Profit Shares for 2019 was an interest rate of 3.25% (3.25). Similarly, the return target for Profit Shares for 2020 is an interest rate of 3.25%.

Corporate responsibility

Corporate responsibility is an integral part of OP Financial Group's business and strategy. Corporate responsibility activities take economic, social and environmental responsibility into consideration. OP Financial Group's aim is to be a forerunner in corporate responsibility within its sector in Finland. OP undertakes to comply with the ten principles of the UN Global Compact initiative in the areas of human rights, labour rights, the environment and anti-corruption. OP has agreed to follow the UN Principles for Responsible Investment since 2009.

To promote diversity, OP Financial Group's objective is that the proportion of both genders in defined managerial positions is at least 40%. Women accounted for 26% (24) at the end of December.

2019 highlights

In February, OP issued its first green bond according to OP Financial Group's Green Bond Framework. The green bond of EUR 500 million is targeted at international responsible institutional investors. Proceeds raised with the green bond are allocated to sustainable corporate lending. Eligible sectors to be funded include renewable energy, green buildings and sustainable land use through sustainable forestry.

Based on the MSCI ESG rating, OP improved its rating from BB to A in March. In the most recent imug sustainability rating, OP Mortgage Bank's rating improved from the previous rating CC (neutral) to rating B (positive) in March.

OP was the first financial sector company in Finland to publish a data balance sheet in March. The data balance sheet describes the significance of data, its responsible processing, utilisation and strategic management at OP. Publishing the data balance sheet forms part of OP Financial Group's corporate responsibility and open and transparent practices.

In May, OP granted its first sustainable loan to a customer. The loan granted to Nokian Tyres Plc amounted to EUR 100 million. The loan margin increases or decreases based on how well Nokian Tyres achieves its three sustainability targets. In June, OP and Finnfund announced that they would establish Finland's first global impact fund investing in emerging markets. OP Finnfund Global Impact Fund I will promote the achievement of the UN Sustainable Development Goals in a measurable way.

OP is the main partner of the national Financial Literacy Competition. Some 25,000 ninth-graders participated in the Competition in April and the finals took place in Vallila, Helsinki, on 23 May 2019. During the spring of 2019, OP contributed to the financial literacy of 6,000 young students in cooperation with Economy and Youth TAT in the "Mun elämä mun työ" (My life, my work) tour. Promoting the financial literacy among young people forms an important part of OP Financial Group's corporate responsibility. During the year, OP aims to reach a total of 60,000 youngsters with its financial literacy work.

In its annual campaign of "Summer jobs paid for by OP", OP cooperative banks across Finland donated a total of 700,000 euros to support youth summer employment by non-profit associations. In 2019, a total of 1,700 two-week summer jobs in the third sector were available to those aged 15–17.

In September, OP Financial Group became a Founding Signatory of the Principles for Responsible Banking under the United Nations Environment Programme Finance Initiative (UNEP FI). The Principles set out the banking industry's responsibility in shaping a sustainable future and aligning the sector with the objectives of the UN Sustainable Development Goals and the Paris Agreement. The 130 signatory banks are committed to promoting sustainable development. Together with 31 banks, OP Financial Group also signed the Collective Commitment to Climate Action in which OP undertakes to align its lending to reflect the principles of the Paris Agreement on a sustainable, low-carbon economy.

OP Cooperative's Supervisory Board confirmed the new Group-level CR programme on 11 December 2019. The updated CR programme is framed around four key themes and commitments, which guide our actions toward the programme goals:

- We improve financial literacy in Finland: We promote the management of personal finances and prosperity in all age groups.
- We foster a sustainable economy: We support sustainable development, and mitigating climate change and adapting to it.
- We support local vitality and communities: We provide jobs, promote physical activity, provide security, and create wellbeing in Finland. We promote local economic vitality.
- We use our information capital responsibly: We use customer data and artificial intelligence transparently, in the best interest of our customers. Accessibility and having the best customer experience are at the core of developing our services across all channels.

To carry out its CR programme update, OP executed a stakeholder survey in summer 2019 and, based on its results, a materiality analysis. The purpose of the CR materiality analysis was to identify those aspects of CR that are the most central to OP and its stakeholders.

Multichannel services

OP Financial Group has a multichannel service network comprising branch, online, mobile and telephone services. OP-mobile is the main channel for customers' daily banking. In December 2019, the number of active OP-mobile users exceeded one million. The Group provides personal customer service both at branches and digitally. The Group seeks to provide the best multichannel customer experience in the sector by creating ongoing and relevant encounters in all channels.

Mobile and online services, no. of logins (million)	Q1–4/2019	Q1–4/2018	Change, %
OP-mobile	302.3	235.9	28%
OP Business mobile	10.2	6.0	69%
Pivo	52.7	33.9	55%
Op.fi	102.0	107.7	-5%
	31 Dec 2019	31 Dec 2018	Change, %
Siirto payment, registered customers	666,321	522,972	27%

The new Payment Services Directive (PSD2) entered into force on 14 September 2019, bringing changes to web and mobile authentication. On OP-mobile and OP Business mobile, customers identify themselves with the Mobile key, which fulfils the requirements of strong customer authentication. The Mobile key already has over one million users. Customers continue to log into the op.fi service and confirm payments by using a username, password, a key code list and, if necessary, an SMS confirmation. Since January 2020, customers have been able to identify themselves to the op.fi online service also by using the Mobile key.

My financial balance, a feature supporting the management of personal finances, was introduced on OP-mobile in October 2019. The app sorts account transactions automatically and provides an overview of the customer's spending.

Despite the expansion of mobile and online services, OP Financial Group still has Finland's most extensive branch network with 352 branches (365) across the country. The Group's own branch network is further supported by a comprehensive agency and partnership network, which is particularly important in terms of the sale of non-life insurance policies.

OP Financial Group has extensive presence in the most common social media channels where it has around 480,000 followers (420,000). In addition to OP Financial Group's national social media accounts, many OP cooperative banks have their own Facebook pages where they share publications targeted at local customers.

Report on non-financial information

OP Financial Group is made up of 147 OP cooperative banks and the central cooperative (OP Cooperative) with its subsidiaries and affiliates. OP cooperative banks and therefore the entire OP Financial Group, which employed 12,226 people at the end of 2019, are owned by approximately two million owner-customers. OP Financial Group's business consists of the following three business segments: Retail Banking (Banking Private and SME Customers), Corporate Banking (Banking Corporate and Institutional Customers, and Insurance (Insurance Customers). OP Financial Group's main area of operation is Finland. In addition, OP Corporate Bank operates in Estonia, Latvia and Lithuania.

OP Financial Group's corporate responsibility work is based on its mission and core values that are supported by the customer-owned business model. The business must promote the wellbeing, security and sustainable prosperity of the customers and operating region. OP Financial Group aims to be a forerunner in corporate responsibility in the financial sector. OP Financial Group's Code of Conduct contains its corporate responsibility and environmental principles, which all those employed by the Group must observe, regardless of their role, position or location. The Code is supplemented by more detailed rules and guidelines. The Supplier Code of Conduct is binding on all of the Group's service providers, other suppliers and partners. The most important international commitments include the UN Global Compact Initiative, the UN Principles for Responsible Investment and, since the autumn of 2019, the UN Principles for Responsible Banking. OP is also one of the founding members of Finland's Sustainable Investment Forum (FINSIF).

In December 2019, OP Cooperative's Supervisory Board confirmed the new Group-level corporate responsibility programme. The programme is built around four themes: We help increase financial literacy in Finland, We foster a sustainable economy, We support local communities and measures to boost vitality, and We use our information capital responsibly. The programme themes derive from the materiality assessment of the responsibility perspectives.

OP Financial Group will publish its Corporate Responsibility Report for 2019 as part of its Annual Review in February 2020. As regards the reporting framework, we will report in accordance with the GRI Standards: Core option.

Environmental aspects

Environmental impacts arise in OP Financial Group's own operations, supply chain and investments. The Group seeks to build a sustainable economy while supporting the prevention of climate change and adjusting to it. The Group develops products and services which will encourage its customers to act in a responsible and environment-friendly manner. In addition, the Group takes into account the effects of its operations on biodiversity. OP Financial Group wants to reduce risk caused by climate change to its customers by providing information on climate change and solutions for reducing its negative effects. The Code of Business Ethics contains OP Financial Group's key environmental and climate objectives.

The ESG (Environment, Social, Governance) analysis for corporate financing, developed in 2019, takes account of a wide range of environmental aspects based on the table of material aspects determined by OP Corporate Bank. The analysis is based on aspects that are the most material for businesses in each sector. In corporate financing, OP Corporate Bank assesses a company's impact on climate change, the relevance of the company's measures to mitigate climate change and the impacts of climate change on the company. If the company itself hasn't performed a systematic analysis of climate risks, or if the analysis should be complemented, OP Corporate Bank's experts will suggest improvements to the analysis. Corporate financing

monitors the total amount of green and sustainability-linked loans. The amount of such loans granted in 2019 totalled approximately EUR 730 million.

In its investment operations, OP Financial Group mostly manages its short-term and long-term climate risks by not investing actively or directly in mining companies or electricity producers that rely heavily on coal. Tracking companies' climate performance is an integral part of portfolio management at OP Asset Management. Portfolio managers and ESG experts have access to company-specific ESG analyses by an independent service provider, which cover the most important climate change risks and opportunities of each company. OP Asset Management became a public supporter of the international Task Force on Climate-related Financial Disclosures (TCFD) in 2019.

Investment operations cause indirect greenhouse gas emissions. A carbon footprint figure published biannually is used as an indicator for equity and bond funds managed by OP Fund Management. In addition, OP publishes fund-specific ESG analyses of OP equity funds that show, for example, the positive environmental impact of each fund. At the end of 2019, OP Asset Management commissioned an external service provider to study the climate risks of its direct equity and fixed income investments relative to a reference portfolio. The results of this study are presented in the OP Year 2019 report.

OP Property Management Ltd carries out energy efficiency audits on buildings before purchasing any new property. OP Property Management also explores the possibility of installing a renewable energy production system based on geothermal heat pumps or solar panels in connection with every renovation project and new development. At the end of 2019, a total of 16 of our properties were equipped with geothermal heat pumps and 17 with solar panels.

OP Financial Group aims to become carbon neutral in its own operations by 2025 while helping its supply chain reduce their emissions. The most significant direct and indirect emission effects are caused by the consumption of heating and electrical energy on premises. Among the measures to achieve its emission goals, OP Financial Group uses renewable energy on its premises. In 2019, renewable electrical energy accounted for 34% (31) of the entire Group's electricity consumption. The Group calculates emissions in accordance with the Greenhouse Gas Protocol (GHG), and greenhouse gases are indicated as CO_2 equivalents. In 2019, comparable direct (scope1) and indirect (scope2) emissions decreased by 2% from the previous year, totalling 23,762 CO_2e tonnes (24,326).

In addition to its annual GRI sustainability reporting, OP evaluates its impacts on climate change in the annual CDP survey. In the CDP survey for 2019, OP Financial Group achieved for the first time the pioneer level by reaching the score A-.

Social aspects and aspects related to personnel

OP Financial Group wants to be an attractive employer. Excellent employee experience is one of OP Financial Group's five strategic priorities. Our goal is to have satisfied, motivated and competent employees who are capable of delivering the best customer experience. In improving employee experience in 2019, OP Financial Group's key themes included employee wellbeing, meaningfulness of work, developing operations together and streamlining working practices. Employee experience is measured through, for example, a personnel survey and by monitoring the health rate indicator. The next personnel survey will be conducted in 2020. In 2019, OP Financial Group introduced a new indicator called the 'health rate' (percentage of personnel with no sickness absences), which was 44 per cent.

OP Financial Group considers diversity to be an asset and guarantees equal opportunities, rights and fair treatment for everyone. Employees are treated equally in areas such as remuneration, recruitment and career advancement. To promote diversity, OP Financial Group's objective is to increase the proportion of both genders in defined managerial positions to at least 40%. The proportion of women in these positions was 26% (24) at the end of 2019. OP monitors on an annual basis the distribution of personnel in various task groups by factors such as gender, pay and age.

OP Financial Group requires of its personnel competencies in various fields, in addition to regulatory requirements. The Group supervises these competencies and reports them through online courses, according to various needs. Online courses shared by all OP Financial Group employees include Anti-money laundering, Code of Business Ethics, Workplace data security and Security induction.

Increasing financial literacy in Finland is one of OP Financial Group's corporate responsibility priorities. In 2019, OP Financial Group helped to boost the financial literacy of more than 70,000 (42,000) children and young people. The cornerstones of the financial literacy campaign are visits by representatives of OP cooperative banks to schools and other educational institutions, as well as banks' open days, during which OP representatives met 46,000 children and adolescents around Finland. In 2019, more than 1,000 events promoting the digital literacy of elderly people were arranged, attracting a total of 28,000 senior citizens.

OP Financial Group's charity donations in 2019 totalled around EUR 2.1 million (2.9). The donations were channelled in line with themes that support OP's corporate responsibility programme and core values.

Aspects related to human rights

OP Financial Group respects human rights and aims to prevent discrimination in all its activities. The Group's own operations do not involve any significant human rights risks or impacts. Indirectly, such impacts may arise from the supply chain or from the operations of investees and financed parties. OP Financial Group's Supplier Code of Conduct requires suppliers to ensure that human rights are fulfilled in their operational chain. As indicators, OP Financial Group measures this by monitoring the number of discrimination incidents and the number of reports filed through the whistle blowing channel.

In 2019, OP Corporate Bank developed ESG analyses enabling it to systematically assess companies' social impacts and risks, in addition to environmental matters. Human rights aspects are also included in OP Asset Management's process of keeping up with and influencing international standards. OP does not make active direct investments in companies that have violated

international norms and where engagement in terms of corrective measures has been unsuccessful.

In 2020, OP Financial Group will publish its second data balance sheet, which describes the key principles and procedures that OP follows in respect of personal data processing. The most important objective of our internal data protection procedures is to ensure that all our stakeholders can trust the way in which OP Financial Group manages data protection matters and processes customer data responsibly. OP Financial Group was the first Finnish company to publish its ethical guidelines for artificial intelligence.

Among its initiatives to promote equal access to banking services, OP Financial Group has launched a simplified online platform called OP Accessible. This plain-language online service is designed for customers with visual and hearing impairments, limited mobility or other disabilities.

Anti-corruption and anti-bribery

OP Financial Group is committed to acting on the Code of Business Ethics. Responsibility involves managing conflicts of interest and abolishing corruption. The Code of Business Ethics is supplemented by more detailed rules and guidelines. OP Financial Group has compiled a compulsory online course for all Group employees to ensure that the Code of Business Ethics is observed. The course must be taken every two years. In 2018–2019, a total of 100% (98) of OP cooperative banks' employees and 96% (83) of the central cooperative's employees had passed the Code of Business Ethics online course.

OP Financial Group companies and business segments regularly analyse the risks involved in their respective businesses, including risks related to corruption, in accordance with the Application guide on operational risk management procedures. As required by regulation and guidelines issued by authorities, OP Financial Group has drawn up policies and procedures for knowing its customers and performing ongoing customer due diligence as well as for staff training, guidelines and protection. Any suspicious transactions will be reported to the Financial Intelligence Unit in line with regulatory requirements. Internal control is complemented by the opportunity of anyone employed by OP Financial Group to report through an independent channel if they suspect discrimination or a violation of rules or regulations (whistleblowing). Actions that are against OP Financial Group's core values can also be reported.

Risks and their management in respect of non-financial information

OP Financial Group's Risk and Compliance organisations also oversee risks and conformity related to non-financial matters. Environmental risks may arise from, for example, weather conditions that may result in flood claims targeted at the insurance portfolio. From social and employee perspectives, risks may arise from projects being financed and the availability of skilled workforce. From a human rights perspective, risks may arise from, for example, investments. Corruption and bribery risks may arise in connection with financing decisions or due to negligence in customer due diligence procedures. Materialisation of non-financial risks would deteriorate OP Financial Group's reputation and might cause harm to customer and stakeholder relations. The Group manages these kinds of non-financial risks, for example, by paying attention to them in business risk assessments. In addition, the Group performs risk assessments on new products, services and operating models, and attempts to eliminate the identified risks as far as possible. In part, OP Financial Group also reduces risk by ensuring that its personnel is aware of, and complies with, the guidelines related to the matters mentioned above. As regards corporate loans, the Group aims to systematically identify non-financial risks that affect corporate financing customers' credit risk.

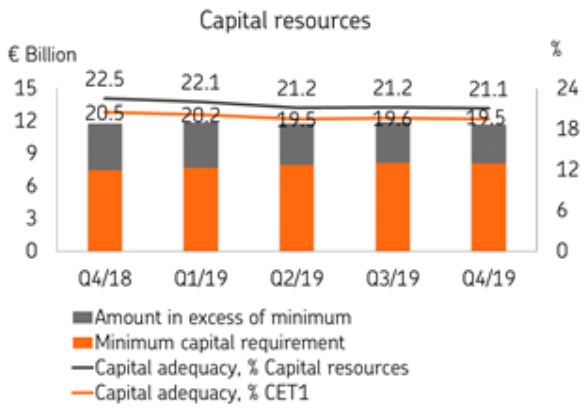
Capital adequacy and capital base

Capital adequacy under the Act on the Supervision of Financial and Insurance Conglomerates

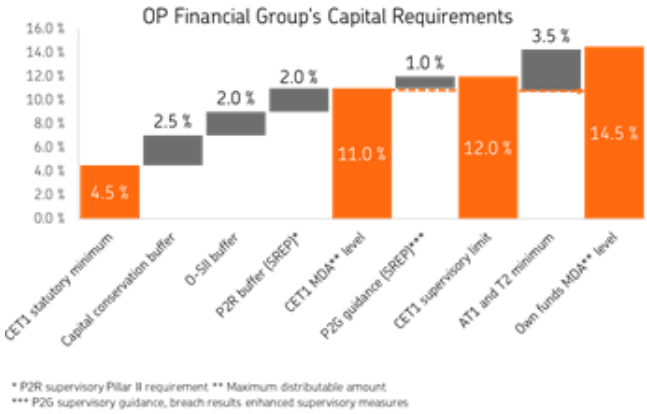
OP Financial Group's capital base, calculated according to the Act on the Supervision of Financial and Insurance Conglomerates (FiCo), exceeded the minimum amount specified in the Act by EUR 3.2 billion (3.7). Banking capital requirement rose to 14.5% (14.3), calculated on risk-weighted assets. The ratio of the Group capital base to the minimum capital requirement was 138% (147). As a result of the buffer requirements for banking and the solvency requirements for insurance companies, the minimum FiCo solvency of 100% reflects the level within which the conglomerate can operate without regulatory obligations resulting from buffers below the required level.

Capital adequacy for credit institutions

OP Financial Group's CET1 ratio was 19.5% (20.5). The lower ratio was affected by an increase in the loan portfolio and a rise in the risk weights of retail exposures.

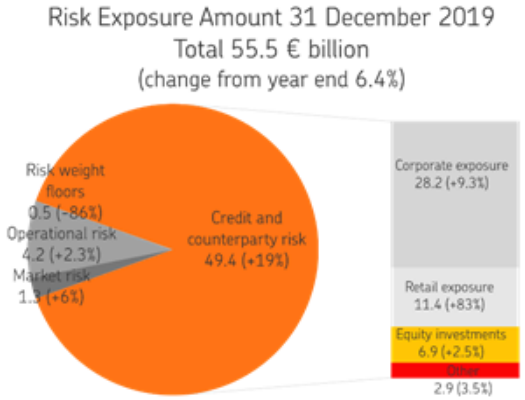


As a credit institution, OP Financial Group's capital adequacy is on a solid basis compared to the statutory requirements and those set by the authorities. The statutory minimum for the capital adequacy ratio is 8% and for the CET1 ratio 4.5%. The requirement for the capital conservation buffer of 2.5% under the Act on Credit Institutions, the O-SII buffer of 2% and the ECB's P2R requirement increase in practice the minimum capital adequacy ratio to 14.5% and the CET1 ratio to 11%.



OP Financial Group's CET1 capital was EUR 10.8 billion (10.7). The CET1 capital was increased by banking earnings and decreased by a higher expected loss (EL) caused by growth in risk parameters and by the change in the accounting policy applied to certain income from derivatives, which was not restated in the comparatives for capital adequacy measurement. The amount of Profit Shares in CET1 capital was EUR 2.9 billion (2.9).

The risk exposure amount (REA) totalled EUR 55.5 billion (52.1), or 7% higher than on 31 December 2018. The risk-weight floor for retail exposures set by the ECB decreased to EUR 0.5 billion, due to an increase in the risk weights of mortgage-backed retail exposures. The average risk weights of retail exposures increased as a result of added conservatism in risk parameters and of risk parameter factors set by the ECB. The loan portfolio grew in corporate and retail exposures.



OP Financial Group treats insurance holdings within the financial and insurance conglomerate as risk-weighted assets, based on permission from the European Central Bank (ECB). Equity investments include EUR 6.4 billion in risk-weighted assets of the Group's internal insurance holdings with a risk weight of around 280%.

The Finnish Financial Supervisory Authority (FIN-FSA) makes a macroprudential policy decision on a quarterly basis. In December 2019, the Financial Supervisory Authority reiterated its decision not to impose a countercyclical capital buffer requirement on banks. The risk weight floor of 15% set for home loans will be effective until the end of 2020. After the risk weights for home loans increased, the FSA's risk weight floor has no material effect on capital adequacy.

The upcoming EU regulation includes a requirement for measuring the degree of indebtedness, the leverage ratio. The leverage ratio of OP Financial Group's banking operations is estimated at about 8.3% (8.6) based on the existing interpretations, calculated using the December-end figures. According to the draft rules, the minimum ratio is 3%.

In OP Financial Group's view, the most significant open changes in the regulatory and supervisory environment affecting capital adequacy for credit institutions include obligations, if any, imposed by the supervisor due to ECB's targeted review of internal (IRBA) models (TRIM), and obligations imposed by the supervisor due to the new definition of default.

The process based on the new definition of default recognises defaulted customers earlier, for example, based on information in external credit registers or in retail customers by extending the default to cover all exposures of an individual obligor. This new definition is expected to mean a larger number of default observations and to weaken credit risk parameters. OP Financial Group will apply a so-called two-step approach. The first step involves the change of the definition of default, which is planned to take place in March 2020. The second step to be taken later involves the calibration of credit risk parameters. The supervisory obligation related to the adoption of the new definition of default is expected to weaken OP Financial Group's CET1 ratio by 1.3 percentage points in the first step. Growth in the expected credit losses (ECL) caused by the change in the definition of default has been taken into account in the effect on capital adequacy. The growth is estimated to be less than 10% of the total amount of the ECL on 31 December 2019.

The effects of the ECB's targeted review of internal (IRBA) models (TRIM) on corporate exposures are still open. More detailed information on the effects is expected in the first half of 2020.

Insurance

The solvency of non-life and life insurance companies was strong. The increased value of investments strengthened the capital base. Meanwhile, a fall in interest rates increased insurance liabilities and reduced the capital base, especially in life insurance. Similarly, the increased value of investments raised the solvency requirement.

	Non-life insurance		Life insurance	
	31 Dec 2019	31 Dec 2018	31 Dec 2019	31 Dec 2018
Capital base, € mill.*	1,008	818	1,423	1,297
Solvency capital requirement, € mill.*	699	621	687	578
Solvency ratio, %*	144	132	207	225
Solvency ratio, % (excl. transitional provision)	144	132	170	176

*including transitional provisions

ECB's supervision

OP Financial Group is supervised by the European Central Bank (ECB). On 2 February 2017, OP Financial Group received the ECB's decision to set risk weight floors for OP Financial Group's retail exposures. The relevant risk weight floors for retail exposures set by the ECB are 15.4% for mortgage-backed exposures and 32.7% for other private customer exposures.

On 25 April 2019, OP Financial Group received the ECB's decision on increases in the risk weights of mortgage-backed retail exposures as part of the targeted review of internal models (TRIM). These risk weight increases will be valid until further notice, until the qualitative requirements set out in the decision have been met. The decision has no substantial effect on OP Financial Group's capital adequacy in the current situation where both the IRBA risk weight floor set previously by the ECB and the 15% risk weight floor on home loans set by the Finnish Financial Supervisory Authority are in force.

The ECB has set a capital requirement for OP Financial Group based on the supervisory review and evaluation process (SREP). The capital buffer requirement (P2R) set by the ECB and effective as of 1 March 2019 was 2% (1.75). In addition, the ECB has set on OP Financial Group a capital adequacy guidance (P2G) of 1.0%. Failure to meet this guidance would not affect profit distribution, for example. The capital buffer requirement set for OP Financial Group is slightly below average among the banks supervised by the ECB. As of 1 January 2020, the ECB has set the capital buffer requirement (P2R) at 2.25%. Accordingly, the new minimum CET1 ratio will be 11.3% and the new minimum capital adequacy ratio 14.8%.

Liabilities under the Resolution Act

Under regulation applied to crisis resolution of credit institutions and investment firms, the resolution authority is authorised to intervene in the terms and conditions of investment products issued by a bank in a way that affects an investor's position. The EU's Single Resolution Board (SRB) based in Brussels is OP Financial Group's resolution authority. The SRB has set OP Financial Group's Minimum Requirement for own funds and Eligible Liabilities (MREL) at EUR 13.4 billion, accounting for 27.3% of the total risk exposure amount at the end of 2017. OP Financial Group aims to meet the requirements under the MREL with its capital base and other subordinated debt. OP Financial Group's MREL ratio was an estimated 43% at the end of the financial year. The SRB has confirmed a resolution strategy for OP Financial Group whereby the resolution measures would apply to OP Corporate Bank acting as a Single Point of Entry.

Key principles of risk management

The objective of risk management is to secure OP Financial Group's and its companies' sufficient risk-bearing capacity and to ensure that any business risks taken do not threaten profitability, capital adequacy, liquidity or the achievement of strategic targets and thereby to secure business continuity.

Each OP Financial Group company focuses on carrying out its role according to its service capabilities and risk-bearing capacities in accordance with the intra-Group division of responsibilities.

The key tasks of the risk management process are to identify, assess, measure and limit risks and to determine the need for risk capacity and to allocate it to the business lines based on the strategy.

Tolerances, limits and control limits are used to direct and restrict risk-taking within OP Financial Group and its companies and to ensure compliance with the Risk Appetite Statement. For 2019, OP Cooperative's Supervisory Board confirmed tolerances for OP Financial Group's capital adequacy and liquidity and for the Group's risks which have been defined as significant.

The central cooperative's Risk Management is responsible for OP Financial Group's risk management process and for ensuring that the Group's risk management procedures are sufficient and appropriate. Business divisions are responsible for daily operational risk management within the framework of the risk management process.

The central cooperative issues Group companies with guidelines for ensuring risk management, and controls that the companies operate in accordance with official regulations, their own rules, guidelines issued by the central cooperative, OP Financial Group's internal procedures and procedures that are appropriate and ethically sound for customer relationships.

A more detailed description of the risk management principles can be found in Note 2 "OP Financial Group's risk management principles".

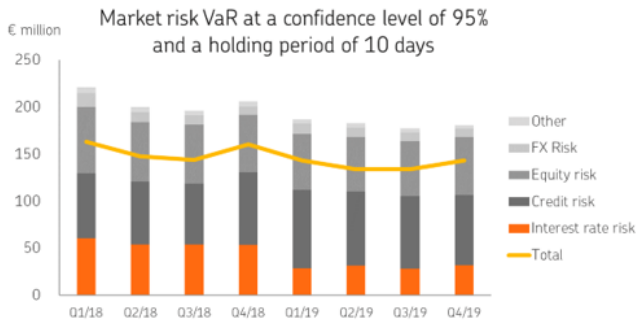
Risk exposure

OP Financial Group's risk exposure has remained unchanged. Risk-bearing capacity is strong and secures conditions for the Group's business.

The strong risk-bearing capacity and moderate target risk exposure level maintained the Group's credit risk exposure stable.

OP Financial Group's funding position and liquidity is good. The availability of funding has remained good. During the financial year, OP Financial Group issued long-term bonds worth EUR 6.7 billion (3.3). The loan-to-deposit ratio remained stable during the financial year.

The Group's market risk decreased during the financial year. The Group's VaR, a measure of market risk, was EUR 143 million (160) on 31 December 2019. It includes the balance sheet total of the insurance institutions, trading, liquidity buffer and the Group Treasury's interest rate risk exposure.



In the financial year, the operational risk level increased due to the occurrence of an individual major risk event. Materialised operational risks resulted in EUR 15 million (6) in gross costs during the financial year.

Retail Banking and Corporate Banking

Major risks in banking are associated with credit risk arising from customer business, and market risk.

Credit risk exposure by Banking remained stable and credit risk remained moderate.

	OP Financial Group		Retail Banking		Corporate Banking	
	31 Dec 2019	31 Dec 2018	31 Dec 2019	31 Dec 2018	31 Dec 2019	31 Dec 2018
Exposures*, € billion	118.1	110.1	79.3	74.1	38.8	36.0
private customer exposure, € billion	59.9	56.4	57.7	54.5	2.2	1.9
in the highest borrower grades**, %	82.7	84.7	85.2	87.0	17.6	17.8
in other borrower grades (excluding default), %	16.6	14.7	14.2	12.3	81.6	81.6
classified as default, %	0.6	0.6	0.6	0.6	0.8	0.6
classified as default***, € billion	0.4	0.4	0.4	0.3	0	0.0
corporate customer exposure, € billion	51.7	48.5	19.7	18.1	32.0	30.4
in the highest borrower grades**, %	51.8	54.3	37.6	38.3	60.6	63.8
in other borrower grades (excluding default), %	46.9	44.7	60.5	59.9	38.6	35.7
classified as default, %	1.3	1.0	1.9	1.9	0.8	0.5
classified as default***, € billion	0.6	0.5	0.4	0.3	0.3	0.1
other exposures, € billion	6.7	5.2	1.9	1.5	4.6	3.7
Doubtful receivables****, € billion	3.1	3.1	2.8	2.9	0.2	0.1
Ratio of doubtful receivables to loan and guarantee portfolio, %	3.2	3.4	4.1	4.5	0.9	0.6
Ratio of non-performing receivables to loan and guarantee portfolio, %	1.1	1.0	1.3	1.3	0.5	0.4
Ratio of performing forborne exposures to loan and guarantee portfolio, %	2.2	2.4	2.8	3.2	0.4	0.2
Ratio of performing forborne exposures to doubtful receivables, %	66.5	69.5	68.6	71.1	42.8	36.6

*Exposures do not include OP Financial Group's credit institutions with subsidiaries or equity investments. The figures a year ago have been adjusted to be in accordance with the current monitoring.
**Private customer contracts in borrower grades A+–B-, customer exposures of corporate customers in borrower grades 1–5.5 (IG)
***Private customer contracts in borrower grade F, customer exposures of corporate customers in borrower grades 11–12
****Doubtful receivables refer to receivables that are more than 90 days past due, other receivables classified as risky and forborne receivables due to the customer's financial difficulties. Forbearance measures consist of concessions agreed at the customers' initiative to contractual payment terms towards the customer to make it easier for them to manage through temporary payment difficulties. Performing forborne exposures include forborne exposures reclassified as performing ones during their probation period or forbearance measures made into a performing agreement. Loan modifications due to reasons other than the customer's financial difficulties are not classified as doubtful receivables.

No single customer's exposure exceeded 10% of the capital base after allowances and other recognition of credit risk mitigation. The capital base covering customer exposure amounted to EUR 11.8 billion (11.4).

The most significant sectors in corporate and housing company exposures	31 Dec 2019	31 Dec 2018**
Renting and operating of residential real estate*, %	18.1	18.3
Renting and operating other real property, %	10.8	10.0
Services, %	10.6	10.1
Other sectors, %	60.6	61.6
Total, %	100	100

*A total of 93.9% of exposures within Renting and Operating of Residential Real Estate were those by housing companies and 10.0% were those guaranteed by general government.
**The figures a year ago have been adjusted to be in accordance with the current monitoring.

Retail Banking's interest rate risk measured as the effect of a one-percentage point decrease on 12-month net interest income was EUR –40 million (–48) at the end of December. Interest income risk is calculated for a one-year period by dividing the sum of the interest income risk for the next three years by three. The comparative data has been calculated as the effect of a one-percentage point interest rate decrease for the next 12-month net interest income.

Deposits within the scope of deposit guarantee (deposit insurance) managed by OP Financial Group totalled EUR 38.0 billion (36.0) at the end of December. The Deposit Guarantee

Fund compensates a maximum of EUR 100,000 for each OP Financial Group customer.

Insurance

Non-life insurance

Major risks within non-life insurance include underwriting risks associated with claims developments, market risks associated with investments covering insurance liabilities, a faster-than-expected increase in life expectancy of the beneficiaries related to insurance liability for annuities, interest rates used in insurance liability valuation and the difference between the discount rate applied to insurance liabilities and market interest rates.

A one-year increase in life expectancy would increase insurance liability for annuities by EUR 48 million (45). A 0.1 percentage point decrease in interest rates used in insurance liability valuation would increase insurance liabilities by EUR 26 million (23).

No significant changes took place in non-life insurance's underwriting risks. Non-life insurance's most significant market risk is associated with increasing insurance liability value and capital requirement resulting from lower market interest rates. The non-life insurance discount rate was decreased from 1.5% to 1.0% at the end of November. Derivatives were used to hedge against interest rate risk associated with non-life insurance liability. As a result, an item which corresponds to the change in the discount rate is shown as a positive value change in net investment income.

The Group still uses bond investments and derivative contracts to dampen earnings volatility caused by changes in interest rates used in insurance liability valuation.

The risk exposure of investments was stable during the financial year. The VaR, a measure of market risk, was EUR 54 million (50) on 31 December 2019. No major changes took place in the investment portfolio's asset class allocation. Interest rate derivatives have been used to hedge against interest rate risk associated with insurance liability. The portfolio's interest rate and credit risk remained stable.

Life insurance

The key risks associated with life insurance are the market risks of life insurance's investment assets, the interest rate used for the valuation of insurance liabilities and a faster-than-expected life expectancy increase among those insured.

A one-year increase in life expectancy would increase insurance liability by EUR 26 million (26). A 0.1 percentage point decrease in interest rates used in insurance liability valuation would increase insurance liabilities by EUR 31 million (29).

Investment risks associated with separated insurance portfolios transferred from Suomi Mutual and risks associated with changes in customer behaviour have been buffered. The buffer is sufficient to cover a significant negative return on the investment assets included in the separate portfolios, after which OP Financial Group will bear the risks associated with the portfolios. The buffers totalled EUR 327 million (289) on 31 December 2019.

The risk exposure of investments was stable during the financial year. The VaR, a measure of market risk, was EUR 58 million (56) on 31 December 2019. No major changes took place in the investment portfolio's asset class allocation. Interest rate derivatives have been used to hedge against interest rate risk associated with insurance liability. The portfolio's interest rate and credit risk remained stable.

Other Operations

Major risks related to Other Operations include credit and market risks associated with the liquidity buffer, and liquidity risks. The most significant market risk factor is the effect of credit spread changes on the value of notes and bonds included in the liquidity buffer.

The market risk in proportion to the market value of notes and bonds in the liquidity buffer (VaR with 95% confidence) remained stable during the financial year. No major changes occurred in the asset class allocation.

OP Financial Group secures its liquidity through a liquidity buffer which consists mainly of deposits with central banks and receivables eligible as collateral for central bank refinancing. The liquidity buffer is sufficient to cover the need for short-term funding for known and predictable payment flows and in a liquidity stress scenario.

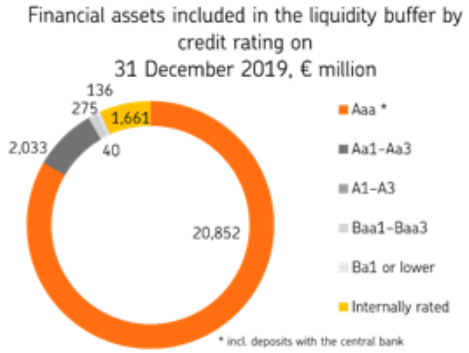
OP Financial Group monitors its liquidity and the adequacy of its liquidity buffer using, for example, the LCR (Liquidity Coverage Ratio). According to regulation, the LCR must be at least 100%. OP Financial Group's LCR was 141% (143).

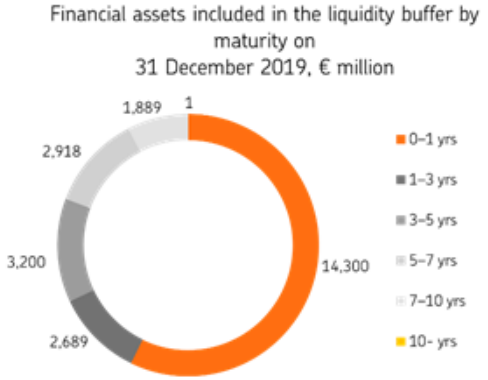
OP Financial Group monitors its long-term funding sufficiency, for example, by means of the Net Stable Funding Ratio (NSFR) which measures structural funding risk. In regulation, no minimum requirement for the NSFR has been set as yet. Based on the present interpretations, OP Financial Group's NSFR was 112% (111).

Liquidity buffer

€ billion	31 Dec 2019	31 Dec 2018	Change, %
Deposits with central banks	11.9	12.2	-2.5
Notes and bonds eligible as collateral	11.1	9.2	20.9
Corporate loans eligible as collateral	0.0		
Total	23.0	21.4	7.6
Receivables ineligible as collateral	2.0	1.3	48.9
Liquidity buffer at market value	25.0	22.7	10.0
Collateral haircut	-0.8	-0.7	22.6
Liquidity buffer at collateral value	24.2	22.0	9.6

The liquidity buffer comprises notes, bonds and securitised assets issued by governments, municipalities, financial institutions and companies all showing good credit ratings.





Credit ratings

31 Dec 2019

Rating agency	Short-term debt	Outlook	Long-term debt	Outlook
Standard & Poor's	A-1+	Stable	AA-	Stable
Moody's	P-1	Stable	Aa3	Stable

OP Corporate Bank plc has credit ratings affirmed by Standard & Poor's Global Ratings Europe Limited and Moody's Investors Service (Nordics) AB. When assessing OP Corporate Bank's credit rating, credit rating agencies take account of the entire OP Financial Group's financial position.

The credit ratings did not change during the financial year.

Financial performance by segment

OP Financial Group's business segments are Retail Banking (Banking Private and SME Customers), Corporate Banking (Banking Corporate and Institutional Customers) and Insurance (Insurance Customers). The health and wellbeing business is included in the Insurance segment. Non-business segment operations are presented under the Other Operations segment. OP Financial Group prepares its segment reporting in compliance with its accounting policies.

Retail Banking

- Earnings before tax amounted to EUR 235 million (421). Excluding the effect of the transfer of earnings-related pension liability, earnings before tax increased by EUR 13 million.
- Total income increased by 1.4%. Net interest income increased by 4.0% year on year and net commissions and fees by 4.6%.
- Total expenses increased by 18.7% to EUR 1,172 million. Excluding the effect of the transfer of earnings-related pension liability in 2018, expenses decreased by 1.2% and personnel costs were EUR 426 million (424). Depreciation/amortisation and impairment loss decreased by 34.7%; the figure a year earlier included EUR 45.6 million in impairment write-downs. Other operating expenses increased by 2.0% due to ICT costs and higher volumes.
- The loan portfolio increased by 4.7% and the deposit portfolio by 7.2%.
- Impairment loss on receivables were EUR 36 million (33). Non-performing receivables accounted for 1.3% (1.3) of the loan and guarantee portfolio.
- The most significant Retail Banking development investments involved the upgrades of payment and finance systems.

Key figures and ratios

€ million	Q1–4/2019	Q1–4/2018	Change, %
Net interest income	922	886	4.0
Net commissions and fees	708	677	4.6
Net investment income	-17	9	-286.0
Other income	43	62	-30.3
Total income	1,657	1,635	1.4
Personnel costs (excl. transfer of earnings-related pension liability)	426	424	0.4
Transfer of statutory earnings-related pension liability		-199	
Depreciation/amortisation and impairment loss	55	84	-34.7
Other operating expenses	692	678	2.0
Total expenses	1,172	987	18.7
Impairment loss on receivables	-36	-33	-
OP bonuses to owner-customers	-214	-194	-
Earnings before tax	235	421	-44.2
Cost/income ratio, %	70.7	60.4	10.3*
Ratio of non-performing receivables to loan and guarantee portfolio, %	1.3	1.3	0.0*
Return on assets (ROA), %	0.24	0.43	-0.20*
Return on assets, excluding OP bonuses, %	0.45	0.63	-0.19*
€ million			
Home loans	7,799	7,633	2.2
Corporate loans	2,729	2,335	16.9
No. of brokered residential property and property transactions	12,139	12,158	-0.2
€ billion	31 Dec 2019	31 Dec 2018	Change, %
Loan portfolio			
Home loans	39.6	38.6	2.6
Corporate loans	8.1	7.4	9.2
Housing company and other loans	20.4	19.1	7.2
Total loan portfolio	68.1	65.0	4.7
Guarantee portfolio	0.8	0.6	21.4
Deposits			
Current and payment transfer	35.4	32.6	8.5
Investment deposits	19.0	18.1	4.8
Total deposits	54.4	50.8	7.2

*Change in ratio

OP Financial Group's Retail Banking segment consists of banking and asset management services for private and SME customers at OP cooperative banks and at the central cooperative consolidated.

The loan portfolio grew by 4.7% to EUR 68.1 billion. In January–December, new home loan drawdowns increased by 2.2% year on year. The home loan portfolio grew by 2.6% to EUR 39.6 billion. Customers showed continued interest in protecting home loans and housing company loans against risks. At the end of the financial year, 24.5% (20.1) of private customer home loans were covered by interest rate protection.

The corporate loan portfolio grew strongly despite the weaker-than-average economic growth. The portfolio increased by 9.2% to EUR 8.1 billion.

The deposit portfolio grew by 7.2% to EUR 54.4 billion. Most of this increase came from current and payment transfer accounts, but also from investment deposits, with household deposits showing the strongest growth. Following a strong growth rate in the first half of 2019, the growth in corporate customer deposits continued to level off.

The aggregate number of investor and saver customers grew by almost 34,000 in the financial year, totalling around 829,000 on 31 December 2019.

In the fourth quarter, the volume of homes and real property sold and bought through the OP Koti real estate agents increased by 3.5% year on year. The volume of transactions brokered in January–December remained at the previous year's level.

OP has been involved in developing a digital platform for selling and purchasing a home (DIAS), together with other banks, real estate businesses, a technology firm and authorities. The digitalisation of the system for selling and purchasing housing company shares started in the beginning of 2019 and will progress in stages. At the end of the year, housing company shares were bought and sold digitally on a daily basis.

An extensive PSD2 regulatory changes project was completed during the financial year. This included the implementation of external account and payment interfaces and changes in strong electronic authentication. Furthermore, OP Financial Group's card renewals progressed as planned.

Earnings

Retail Banking earnings before tax were EUR 235 million (421). As a result of an increase in the loan portfolio and a decrease in funding costs, net interest income grew by 4.0% to EUR 922 million (886). Net commissions and fees rose by 4.6% to EUR 708 million (677). Net investment income and other income decreased year on year. Income increased by a total of 1.4%.

Total expenses increased by 18.7% to EUR 1,172 million (987). Excluding the effect of the transfer of earnings-related pension liability, which was carried out in 2018, total expenses decreased by 1.2%. Comparable personnel costs totalled EUR 426 million, remaining at the previous year's level (424). Depreciation/amortisation and impairment loss decreased by 34.7%; the figure a year earlier included EUR 45.6 million in impairment write-downs. Other operating expenses increased by 2.0% to EUR 692 million (678). Other operating expenses were increased by a 17-million euro rise in ICT costs. The EU stability contribution decreased by EUR 2 million year on year. The cost/income ratio was 70.7% (60.4).

Impairment loss on receivables increased to EUR 36 million (33). Non-performing receivables accounted for 1.3% (1.3) of the loan and guarantee portfolio.

Corporate Banking

- Earnings before tax amounted to EUR 311 million (408). Excluding the effect of the transfer of earnings-related pension liability, earnings before tax decreased by EUR 65 million.
- Total income decreased by 1.4%. Net interest income increased by 9.6% and net commissions and fees decreased by 3.3%. Net investment income fell by 27.6% as result of changes in the valuation models of derivatives, CVA valuation and lower capital gains than a year ago.
- Total expenses increased to EUR 277 million (232). Other operating expenses rose by 9.5% due to higher ICT costs.
- The loan portfolio increased by 6.2% and the deposit portfolio decreased by 0.3%. Assets under management increased by 12.2%.
- Impairment losses amounted to EUR 51 million (12). Non-performing receivables accounted for 0.5% (0.4) of the loan and guarantee portfolio.
- The most significant Corporate Banking segment's development investments involved the upgrades of payment, finance and asset management systems.

Key figures and ratios

€ million	Q1–4/2019	Q1–4/2018	Change, %
Net interest income	383	350	9.6
Net commissions and fees	125	130	-3.3
Net investment income	119	165	-27.6
Other income	27	20	34.7
Total income	655	664	-1.4
Personnel costs (excl. transfer of earnings-related pension liability)	76	77	-2.0
Transfer of statutory earnings-related pension liability		-32	
Depreciation/amortisation and impairment loss	20	21	-3.7
Other operating expenses	182	166	9.5
Total expenses	277	232	19.7
Impairment loss on receivables	-51	-12	-
OP bonuses to owner-customers	-16	-14	-
Earnings before tax	311	408	-23.8
Cost/income ratio, %	42.3	34.9	-7.5*
Ratio of non-performing receivables to loan and guarantee portfolio, %	0.5	0.4	0.1*
Return on assets (ROA), %	0.85	1.43	-0.58*
Return on assets, excluding OP bonuses, %	0.90	1.47	-0.57*
€ billion	31 Dec 2019	31 Dec 2018	Change, %
Loan portfolio			
Corporate loans	14.5	13.8	5.1
Housing company and other loans	9.2	8.5	8.2
Total loan portfolio	23.7	22.3	6.2
Deposits	11.2	11.2	-0.3
Assets under management (gross)			
Mutual funds	25.6	22.7	13.1
Institutional clients	22.5	21.5	4.8
Private Banking	9.9	7.6	30.6
Total (gross)	58.0	51.7	12.2
€ million	Q1–4/2019	Q1–4/2018	Change, %
Net inflows			
Private Banking clients	49	67	-26.0
Institutional clients	-49	363	-
Total	1	430	-99.8

*Change in ratio

OP Financial Group's Corporate Banking segment consists of banking and asset management services for corporate and institutional customers. The segment comprises OP Corporate Bank plc's banking, OP Asset Management Ltd, OP Fund Management Company Ltd and OP Property Management Ltd.

The loan portfolio grew by 6.2% to EUR 23.7 billion. The deposit portfolio decreased by 0.3% to EUR 11.2 billion. Demand for capital market products increased from the previous year.

The most significant Corporate Banking development investments involved the upgrades of payment, finance and asset management systems. During the financial year, OP expanded the OP Car Finance service to also cover car sales between consumers. OP Car Finance is granted by OP Corporate Bank plc.

In April, OP introduced incoming SEPA instant credit transfers to its customers that enable them to receive real-time SEPA instant credit transfers from other financial institutions within the SEPA. In October, OP began to offer its customers both incoming and outgoing real-time SEPA instant credit transfers. The change will be carried out in stages in different channels.

In November, OP Corporate Bank plc was ranked the best bank in the Corporate Banking 2019 Finland survey conducted by Prospera among the mid-size companies category or those with net sales of EUR 0.5–1.5 billion.

In November, The Banker again rated OP as the number one bank in Finland in its Bank of the Year 2019 competition.

Within asset management, net assets inflow decreased year on year, to EUR 1 million. Assets under management increased by 12.2% to EUR 58.0 billion. Assets under management included about EUR 11 billion (11) in assets of the companies belonging to OP Financial Group.

During the financial year, the number of OP Mutual Fund unitholders increased in gross terms by about 71,000, to 849,000 unitholders. The Morningstar rating for OP Mutual Funds was 3.21 (3.04).

Investors have shown increasing interest in sustainability themed funds. During the financial year, OP and Finnfund announced that they would establish Finland's first global impact fund investing in emerging markets. OP Finnfund Global Impact Fund I will promote the achievement of the UN Sustainable Development Goals in a measurable way.

Earnings

Corporate Banking earnings before tax were EUR 311 million (408). Total income amounted to EUR 655 million (664) and total expenses to EUR 277 million (232). Excluding the effect of the transfer of earnings-related pension liability, total expenses increased by EUR 13 million to EUR 277 million. The cost/income ratio weakened to 42.3% (34.9). Mainly as a result of an increase in the loan portfolio, net interest income grew by 9.6% to EUR 383 million.

Net commissions and fees totalled EUR 125 million (130). Asset management net commissions and fees accounted for 0.18% of the gross amount of the assets under management. A decrease in other net commissions and fees is mainly due to OP Financial Group's internal charges.

Corporate Banking segment's net commissions and fees

€ million	Q1–4/2019	Q1–4/2018	Change, %
Mutual funds	105	103	1.4
Asset management	24	21	4.2
Other	-4	5	-
Total	125	130	-3.3

Net investment income fell by 27.6% to EUR 119 million. Net investment income a year ago was increased by EUR 15 million in a non-recurring capital gain. CVA valuation weakened earnings by EUR 12 million whereas a year ago it improved earnings by EUR 9 million. Changes made in the valuation models of derivatives reduced net investment income by EUR 25 million.

Total expenses increased to EUR 277 million (232). Excluding the effect of the transfer of earnings-related pension liability, personnel expenses decreased by EUR 2 million to EUR 76 million. A year ago, the transfer of the earnings-related pension liability improved earnings before tax by EUR 32 million. Other operating expenses increased by 9.5% to EUR 182 million. ICT costs increased by EUR 19 million.

Impairment loss on receivables was EUR 51 million (12). Non-performing receivables accounted for 0.5% (0.4) of the loan and guarantee portfolio.

Insurance

- Earnings before tax amounted to EUR 373 million (260), improved by higher net investment income.
- Insurance premium revenue by non-life insurance increased by 0.9% (excluding the Baltic business sold in 2018, it increased by 4.0%). The non-life insurance discount rate was decreased from 1.5% to 1.0%, which reduced net insurance income by EUR 136 million.
- Investment income totalled EUR 331 million (92), including the overlay approach. Net return on investments at fair value reported by non-life insurance was EUR 96 million (14) and that by life insurance EUR 72 million (53).
- The operating combined ratio was 92.7% (92.0) and operating risk ratio 65.1% (64.5). The operating cost ratio was 27.7% (27.4).
- In life insurance, unit-linked insurance savings increased by 10.7% to EUR 10.9 billion.
- Development investments focused on development of electronic services and the core system upgrade.

Key figures and ratios

€ million	Q1–4/2019	Q1–4/2018	Change, %
Insurance premium revenue	1,479	1,466	0.9
Claims incurred	1,077	917	17.4
Life insurance, net risk results	29	29	0.0
Net insurance income	431	578	-25.4
Life insurance, net commissions and fees	135	115	18.1
Non-life insurance, net commissions and fees	-49	-50	-1.7
Health and wellbeing, net commissions and fees	13	11	18.0
Net commissions and fees	99	75	31.2
Net investment income	435	63	589.9
Other net income	4	14	-71.3
Total income	969	730	32.8
Personnel costs (excl. transfer of earnings-related pension liability)	133	130	1.9
Transfer of statutory earnings-related pension liability		-3	
Depreciation/amortisation and impairment loss	71	89	-20.1
Other operating expenses	269	263	2.2
Total expenses	473	480	-1.3
OP bonuses to owner-customers	-19	-18	-
Temporary exemption (overlay approach)	-104	29	-457.9
Earnings before tax	373	260	43.1
Return on assets (ROA), %	1.29	0.91	0.38*
Return on assets, excluding OP bonuses, %	1.36	0.98	0.38*
Operating combined ratio (non-life), %	92.7	92.0	
Operating risk ratio (non-life), %	65.1	64.5	
Operating cost ratio (non-life), %	27.7	27.4	
Operating ratio (life), %	35.5	36.4	

*Change in ratio

OP Financial Group's Insurance segment comprises life and non-life insurance plus the health and wellbeing business. The segment includes Pohjola Insurance Ltd, A-Insurance Ltd, OP Life Assurance Company Ltd and Pohjola Hospital Ltd. Eurooppalainen Insurance Company Ltd merged into Pohjola Insurance Ltd on 31 October 2019.

OP Financial Group adopted the Pohjola brand in its non-life insurance business from 1 June 2019 when the business name of OP Insurance Ltd was changed to Pohjola Insurance Ltd. At the same time, the business name of Pohjola Health Ltd was changed to Pohjola Hospital Ltd.

Key development investments focused on the development of electronic transaction and purchase services, the conversion of the separated individual life insurance portfolio into a new management system and the non-life insurance core system upgrade initiated. A new 24/7 emergency service for managing comprehensive motor vehicle insurance losses was launched for motor vehicle insurance policyholders. The Insurance segment actively further developed and rejuvenated electronic services, investment products and savings products for saving through insurance.

Unit-linked insurance savings increased by 10.7% to EUR 10.9 billion, as a result of the favourable value performance of assets. Net assets inflow of unit-linked insurance contracts amounted to

EUR –278 (434) million. The amount of life insurance surrenders was exceptionally high as customers prepared for the amendments to the Income Tax Act effective on 1 January 2020.

Pohjola Hospital has sharpened its strategy and will focus on orthopaedics and sports clinic activities. As part of this change, Pohjola Hospital sold its occupational healthcare service business to Mehiläinen on 1 June 2019.

Customers have been satisfied with services provided by Pohjola Hospital. Among surgery customers, the NPS figure was 97 (96) in January–December.

Earnings

Earnings before tax amounted to EUR 373 million (260). Net insurance income totalled EUR 431 million (578). The non-life insurance discount rate was decreased from 1.5% to 1.0%, which reduced net insurance income by EUR 136 million. Derivatives were used to hedge against interest rate risk associated with non-life insurance liability. As a result of this, an item, which corresponds to the change in the discount rate is shown as a positive value change in net investment income. The figure a year ago included EUR 16 million in net insurance income of the sold Baltic business.

Non-life insurance premium revenue

€ million	Q1–4/2019	Q1–4/2018	Change, %
Private Customers	826	798	3.6
Corporate Customers	653	624	4.6
Baltics	-	44	-
Total	1,479	1,466	0.9

Insurance premium revenue from both private and corporate customers increased in non-life insurance. It increased by 4.0%, excluding the sold Baltic business included in the figure a year ago.

Claims incurred, excluding the reduction in the discount rate and the Baltic figures, increased by 5.6%. The reported number of new large claims under property and business liability insurance (in excess of EUR 0.3 million) amounted to 87 (96) in January–December, with their claims incurred retained for own account totalling EUR 80 million (107). Changes in the provision for outstanding claims under statutory pensions reduced earnings by EUR 4 million (1).

Changes in claims for previous years, excluding the effect of the discount rate change, improved the balance on technical account by EUR 24 million (42). The non-life insurance operating risk ratio excluding indirect loss adjustment expenses was 65.1% (64.5).

Net commissions and fees rose by 31.2% to EUR 99 million. Life insurance commissions and fees increased as a result of performance-based fees paid on net investment income shown on separated balance sheets.

Investment income

€ million	Q1–4/2019	Q1–4/2018
At fair value through other comprehensive income	217	107
At fair value through profit or loss	389	-8
Amortised cost	1	7
Life insurance items*	-161	-39
Unwinding of discount (non-life)	-27	-28
Associated companies	17	24
Net investment income	435	63
Temporary exemption	-104	29
Total	331	92

*Include credited interest on customers' insurance savings, changes in supplementary interest rate provisions and other technical items as well as changes in the fair value of unit-linked and separated balance sheet's investments.

In capital markets, 2019 was a very good year. Investment income totalled EUR 331 million (92), including the overlay approach. Capital gains on investment amounted to EUR 90 million (–5) in non-life insurance and to EUR 96 million (–3) in life insurance.

Interest rate risk associated with insurance liability has been hedged through supplementary interest rate provisions and interest rate derivatives. The net change in the short-term life insurance supplementary interest rate provision decreased earnings by EUR 2 million. In the previous year, the net change in the short-term supplementary interest rate provision improved earnings by EUR 43 million. Accrued supplementary interest rate provisions related to insurance liabilities (excluding the separated balance sheets) totalled EUR 426 million (341) on 31 December 2019. Short-term supplementary interest rate provisions accounted for EUR 46 million (44) of these provisions.

Total expenses decreased by 1.3% to EUR 473 million. The figure a year ago included EUR 8.7 million in operating expenses of the Baltic business sold in 2018. Total expenses included EUR 16 million in impairment write-downs (22). In non-life insurance, the operating cost ratio (including indirect loss adjustment expenses) was 27.7% (27.4).

The operating combined ratio, excluding the reduction in the discount rate, was 92.7% (92.0). The operating ratios exclude amortisation on intangible assets arising from corporate acquisitions, and the changed discount rate.

Investment

Non-life insurance: key investment indicators

€ million	Q1–4/2019	Q1–4/2018
Net return on investments at fair value, € million*	96	14
Return on investments at fair value, %	8.4	0.1
Fixed income investments' running yield, %	1.3	1.5
	31 Dec 2019	31 Dec 2018
Investment portfolio, € million	3,952	3,730
Investments within the investment grade category, %	92	94
A-rated receivables, minimum, %	61	62
Modified duration, %	4.0	4.3

*Net return on investments at fair value is calculated by deducting the value change in market-consistent insurance liability from income from total investment assets.

Life insurance: key investment indicators*

€ million	Q1–4/2019	Q1–4/2018
Net return on investments at fair value, € million**	72	53
Return on investments at fair value, %	9.4	1.7
Fixed income investments' running yield, %	1.2	1.4
	31 Dec 2019	31 Dec 2018
Investment portfolio, € million	3,619	3,644
Investments within the investment grade category, %	88	95
A-rated receivables, minimum, %	64	66
Modified duration, %	2.9	4.1

*Excluding the separated balance sheets
**Net return on investments at fair value is calculated by deducting the value change in market-consistent insurance liability from income from total investment assets. These investments exclude separated balance sheets.

Other Operations

Key figures and ratios

€ million	Q1–4/2019	Q1–4/2018	Change, %
Net interest income	-59	-48	-
Net commissions and fees	6	6	1.0
Net investment income	38	21	84.1
Other operating income	593	548	8.3
Total income	578	527	9.8
Personnel costs (excl. transfer of earnings-related pension liability)	148	173	-14.3
Transfer of statutory earnings-related pension liability	0	-52	-
Depreciation/amortisation and impairment loss	132	131	0.3
Other operating expenses	336	339	-0.8
Total expenses	616	590	4.3
Impairment loss on receivables	0	1	-
Earnings before tax	-37	-64	-

The Other Operations segment consists of functions that support the business segments. The segment includes the majority of OP Cooperative, OP Services Ltd and OP Corporate Bank plc's treasury functions.

Earnings

Earnings before tax amounted to EUR –37 million (–64). An increase in net investment income and other operating income improved earnings. Total income increased by 9.8% to EUR 578 million.

Net interest income was EUR –59 million (–48). Wholesale funding and liquidity costs decreased net interest income over the previous year. Net investment income increased by 84.1% to EUR 38 million. The earnings effect of EUR 16 million arising from early repayment between September and December of TLTRO II funding and the discontinuance of related fair value hedge accounting improved net investment income. Early repayment of funding totalled EUR 2.0 billion in September and EUR 2.0 billion in December. Meanwhile, a fall of capital gains by EUR 13 million decreased net investment income.

Other operating income rose by 8.3% to EUR 593 million due to higher intra-Group charges.

Total expenses increased by 4.3% year on year to EUR 616 million. The transfer of statutory earnings-related pension liability at the end of 2018 reduced year-on-year pension costs by EUR 52 million. Excluding the effect of the pension liability transfer, personnel costs decreased by 14.3% to EUR 148 million. Depreciation/amortisation and impairment loss on PPE and intangible assets increased by 0.3% to EUR 132 million. Planned depreciation/amortisation increased by 29.7% to EUR 96 million. This increase resulted from higher development expenditure recognised for prior years and from the adoption of IFRS 16 Leases on 1 January 2019. Impairment write-downs decreased by EUR 28 million year on year.

Other operating expenses fell by 0.8% to EUR 336 million. Rental expenses decreased by EUR 7 million due to the application of IFRS 16 in 2019.

In the third quarter, the Vallila property was classified as a non-current asset held for sale. The property's assets recognised in the balance sheet totalled EUR 314 million and liabilities EUR 6 million at the end of the year. The Vallila property comprises a block located in Vallila, Helsinki.

In December 2019, the average margin of OP Financial Group's senior and senior non-preferred wholesale funding, TLTRO-II funding and covered bonds was 19 basis points (14). The new senior non-preferred bond issues increased the cost. Covered bonds are reported as part of the Retail Banking segment.

OP Financial Group issued long-term senior bonds worth EUR 1.2 billion between January and December. Of those bonds, the Group issued in the international capital market a senior unsecured green bond of EUR 500 million with a maturity of five years. The inaugural green bond is targeted at international responsible institutional investors. Proceeds raised with the green bond are allocated to sustainable corporate lending. Eligible sectors to be funded include renewable energy, green buildings and sustainable land use through sustainable forestry.

In June, OP Financial Group issued its first new senior non-preferred bond of EUR 500 million with a maturity of five years. In November, OP Financial Group issued a second senior non-preferred bond of EUR 500 million with a maturity of ten years. During the financial year, OP Financial Group issued new senior non-preferred bonds worth a total of EUR 1.2 billion. The senior non-preferred bonds meet the minimum requirement for own funds and eligible liabilities (MREL) of OP Financial Group set by the SRB.

In February, OP Financial Group issued a covered bond of EUR 1.25 billion and, in November, a covered bond of EUR 1.0 billion with a maturity of ten and seven years, respectively.

In December, OP Financial Group participated in the third series of the ECB's targeted longer-term refinancing operations (TLTRO-III) with a total of EUR 2.0 billion.

Service development

OP Financial Group invests in developing its operations and improving customer experience on an ongoing basis. The central cooperative with its subsidiaries is responsible for OP Financial Group's service development. ICT investments make up a significant portion of the costs of developing these services.

OP Financial Group's development expenditure for January–December totalled EUR 313 million (384). These include licence fees, purchased services, other external costs related to projects and in-house work. The capitalised development expenditure totalled EUR 130 million (182).

In the spring of 2019, OP Financial Group concluded a five-year agreement with Tata Consultancy Services Ltd (TCS) on the production of ICT services. The agreement involves ICT infrastructure services used by OP, such as mainframe, server and capacity services. The agreement also includes data centre and cloud services.

More detailed information on OP Financial Group's investments can be found under each business segment's section in this Report by the Board of Directors.

Personnel

On 31 December 2019, OP Financial Group had 12,226 employees (12,066). The number of employees averaged 12,376 (12,339).

Personnel at year-end

	31 Dec 2019	31 Dec 2018
Retail Banking	7,230	7,515
Corporate Banking	907	780
Insurance	2,015	1,872
Other Operations	2,074	1,899
Total	12,226	12,066

During the financial year, 306 OP Financial Group employees (318) retired at an average age of 61.8 years (61.8).

In 2019, the Group further strengthened its risk management resources by recruiting more than 100 persons for tasks such as anti-money laundering, risk management and compliance.

In order to support the implementation of its strategy and vision, OP Financial Group began to reform its practices in autumn 2018. A new agile way of working strengthens the experience of the meaningfulness of work and is based on self-managed teams. This change in the way of working is aimed at increasing the meaningfulness of work and wellbeing at work and thereby also improving customer experience and enhancing operational efficiency. Supported by this new concept, OP Financial Group also aimed to reduce the central cooperative consolidated's total annual costs by EUR 100 million by the end of 2019. The measures taken generated cost savings of EUR 102 million by the end of 2019.

The Information and Consultation of Employees process regarding OP Financial Group's Corporate Banking and Insurance segments started on 26 August 2019 and ended on 8 October 2019. The segments' organisational structures will be amended to support the new self-directed practices. Approximately 3,000 employees work in the organisations covered by the process. As a result of the negotiations, 300 jobs ceased to exist, while 185 new roles were created. The organisations that follow the new practices took effect on 1 January 2020.

The Information and Consultation of Employees process launched in OP Financial Group's central cooperative on 7 October 2019 was completed on 12 November 2019. The central cooperative's structure will be simplified, and self-management will be increased in support functions, too. The purpose is to support businesses in responding to customer needs and streamlining processes. Approximately 1,900 employees work in the functions covered by the process. As a result of the negotiations, 460 roles ceased to exist, while around 190 new roles were created. It is estimated that these changes will bring cost savings of approximately EUR 18 million by the end of 2020.

Sakari Lehtinen (49), M.Sc. (Econ. & Bus. Adm.) and CIA, was appointed OP Financial Group's Chief Audit Executive as of 1 May 2019. He reports to OP Financial Group's President and Group Chief Executive Officer Timo Ritakallio and to the Audit Committee of OP Cooperative's Board of Directors.

Tony Vepsäläinen, Vice Chair of the Executive Board of OP Financial Group's central cooperative, Deputy to President and Group Chief Executive Officer, and Executive Vice President, Group Services, retired on 31 December 2019. Vepsäläinen was a member of the Executive Board since 2006.

On 11 December 2019, OP Cooperative's Supervisory Board appointed Chief Human Resources Officer Hannakaisa Länsisalmi as member of the Executive Management Team, and Executive Vice President, Insurance Customers Olli Lehtilä as Deputy to the President and Group Chief Executive Officer as of 1 January 2020.

OP Financial Group maintained its position as the most appealing employer in the financial services sector, based on Universum's annual employer branding survey among students conducted in May. Students in commercial studies, law and humanities voted OP as the most appealing employer in the financial sector. In October, OP Financial Group was again ranked the most appealing employer in the financial sector based on the annual Employer Branding Survey conducted by Universum among professionals in commerce, law, IT and humanities.

OP Financial Group's scheme for variable remuneration comprises short-term company-specific remuneration and long-term Group-wide remuneration. The long-term remuneration scheme for the entire OP Financial Group consists of a management incentive scheme and a personnel fund for other staff.

A long-term management remuneration scheme has been confirmed for 2017–2019. OP Financial Group's personnel fund remuneration scheme continues with one-year performance periods.
In drawing up the incentive schemes, OP has taken account of the regulation regarding the financial sector's remuneration schemes. As a rule, the remuneration scheme for 2017–2019

follows the principles observed during the previous three-year performance period.

OP Cooperative's Supervisory Board (currently the Supervisory Council) has set the following long-term target performance metrics: OP Financial Group's EBT, customer experience and growth in the use of mobile services (digital services). The Group-level targets are the same in the management incentive scheme and in OP Financial Group's Personnel Fund.

On 12 June 2019, the Supervisory Board of OP Financial Group's central cooperative decided that the remuneration scheme for all personnel be updated as of 2020. OP Financial Group's variable remuneration will comprise short-term remuneration and the personnel fund. Group-level strategic goals and targets will be taken into account in the metrics of short-term remuneration and the personnel fund.

Executive Board members' executive contracts

The Nomination and Remuneration Committee of the Board of Directors of OP Cooperative determines the remuneration and other benefits to OP Cooperative's Executive Management Team members. A written executive contract, approved by the Supervisory Board, stipulates the terms governing each of the above-mentioned persons' employment.

Information required by the EU capital requirements regulation and directive concerning the remuneration of OP Financial Group's identified staff are published annually on OP Financial Group's website.

In 2019, OP Financial Group's President and Group Executive Chair Timo Ritakallio received EUR 781,515 in salary, EUR 26,280 in fringe benefits and EUR 47,667 in bonuses for 2018. A total of EUR 111,222 of bonuses for 2018 will be paid in 2020–2025 under the deferral procedure that complies with regulations.

Other Executive Board members received a total of EUR 2,715,466 in salary and EUR 77,411 in fringe benefits. In 2019, a total of EUR 608,375 of bonuses earned in 2018 and bonuses accrued for 2014–2016 under the long-term management remuneration scheme were paid out. Salaries and bonuses paid to other Executive Board members totalled EUR 3,401,252. A total of EUR 817,919 of bonuses earned in 2018 and bonuses accrued for 2014–2016 under the long-term management remuneration scheme will be paid out in 2020–2025 under the deferral procedure that complies with regulations.

The salaries and bonuses include the portion of the performance-based bonuses earned in 2018 and paid in 2019 as well as the portion of bonuses, based on the long-term management remuneration scheme, earned between 2014–2016 and paid in 2019. The deferral procedure is based on a procedure prescribed in the Act on Credit Institutions (610/2014), which is described in Note 48 of OP Financial Group's 2019 IFRS Financial Statements on variable remuneration.

The supplementary pension insurance of the President and Group Executive Chair did not incur costs in 2019. In 2019, contributions paid into the supplementary pension insurance for the Executive Board members totalled EUR 541,766.

The retirement age of OP Financial Group's President and Group Executive Chair Timo Ritakallio is 65 years. The retirement age of Olli Lehtilä and Harri Nummela is 63 years. The retirement age of other Executive Board members is determined as specified in applicable pension laws. Pension benefits are determined in accordance with pension laws and OP Financial Group's own pension plans.

In 2019, contributions paid into the supplementary pension insurance under the defined benefit plan totalled EUR 278,398. In 2019, contributions paid into the supplementary pension insurance under the defined contribution plan totalled EUR 263,368.

Supplementary pension costs have been published in the credit institutions' remuneration data collected annually by the European Banking Authority (EBA) in accordance with the capital requirements regulation (EU 575/2013) and directive (2013/36/EU, CRD IV) of the European Parliament and of the Council.

The period of notice for the President and Group Executive Chair, other Executive Board members and the Chief Audit Executive is 6 months. Upon termination of employment in cases specifically stipulated in their executive contracts, the President and Group Executive Chair is entitled to a severance pay and a sum equivalent to a maximum of 12 months' pay, while other Executive Board members and the Chief Audit Executive are entitled to a sum equivalent to a maximum of 6 months' pay.

	Regular pay	Fringe benefits	Performance-based bonus earned in 2018 and paid in 2019	Portion of bonus under the long-term remuneration scheme earned between 2014 and 2016 and paid in 2019	Total salaries, bonuses and fringe benefits paid in 2019	Deferred performance-based bonuses earned in 2018 and bonuses earned in 2014–2016 under the long-term remuneration scheme, to be paid in 2020–2025
Timo Ritakallio, President and Group Executive Chair	781,515	26,280	47,667	-	855,461	111,222
Tony Vepsäläinen	617,997	13,200	23,778	221,825	876,801	394,745
Vesa Aho	343,040	240	-	-	343,280	-
Katja Keitaanniemi	412,920	240	-	-	413,160	-
Olli Lehtilä	388,289	40,751	42,614	108,333	579,987	165,685
Juho Malmberg	314,160	240	15,696	13,593	343,689	36,624
Harri Nummela	404,220	11,580	15,669	120,507	551,975	220,865
Tiia Tuovinen	234,840	11,160	46,360	-	292,360	-

Changes in OP Financial Group's structure

OP Financial Group's consolidated financial statements at the end of the financial year included the accounts of 147 OP cooperative banks (156) and OP Cooperative Consolidated. The number of OP cooperative banks decreased during the financial year period due to mergers.

Mellilän Osuuspankki merged into Niinijoen Osuuspankki. Following the merger, the business name of Niinijoen Osuuspankki changed to Niinijokivarren Osuuspankki. The execution of the merger was registered on 28 February 2019.

Merimaskun Osuuspankki merged into Turun Seudun Osuuspankki. The execution of the merger was registered on 30 April 2019.

Kalkkisten Osuuspankki merged into Järvi-Hämeen Osuuspankki. The execution of the merger was registered on 30 April 2019.

Akaan Seudun Osuuspankki and Valkeakosken Osuuspankki merged into Urjalan Osuuspankki. Consequently, the business name of Urjalan Osuuspankki changed to Etelä-Pirkanmaan Osuuspankki. The execution of the merger was registered on 31 August 2019.

Länsi-Uudenmaan Osuuspankki merged into Keski-Uudenmaan Osuuspankki. Consequently, the business name of Keski-Uudenmaan Osuuspankki changed to Uudenmaan Osuuspankki. The execution of the merger was registered on 30 September 2019.

Sonkajärven Osuuspankki merged into Ylä-Savon Osuuspankki. The execution of the merger was registered on 30 September 2019.

Pihtiputaan Osuuspankki merged into Keski-Suomen Osuuspankki. The execution of the merger was registered on 31 October 2019.

Metsämaan Osuuspankki merged into Humppilan Osuuspankki. Consequently, the business name of Humppilan Osuuspankki changed to Humppilan-Metsämaan Osuuspankki. The execution of the merger was registered on 31 December 2019.

On 24 September 2019, Köyliön Osuuspankki, Vampulan Osuuspankki and Säkylän Osuuspankki accepted a merger plan, according to which Köyliön Osuuspankki and Vampulan Osuuspankki will merge into Säkylän Osuuspankki. Consequently, the business name of Säkylän Osuuspankki will change to Ala-Satakunnan Osuuspankki. The planned date for registration of the merger is 29 February 2020.

On 24 September 2019, Kihniön Osuuspankki and Virtain Osuuspankki, as well as Virtain Osuuspankki and Ruoveden Osuuspankki, accepted merger plans, according to which Kihniön Osuuspankki will merge into Virtain Osuuspankki, after which, on the same day, Virtain Osuuspankki will merge into Ruoveden Osuuspankki. Consequently, the business name of Ruoveden Osuuspankki will change to Ylä-Pirkanmaan Osuuspankki. The planned date for registration of the mergers is 29 February 2020.

On 9 December 2019 and 10 December 2019, Kannuksen Osuuspankki and Suomenselän Osuuspankki accepted a merger plan, according to which the former will merge into the latter. The planned date for registration of the merger is 31 March 2020.

On 28 November 2019, Kesälahden Osuuspankki and Pohjois-Karjalan Osuuspankki accepted a merger plan, according to which the former will merge into the latter. The planned date for registration of the merger is 30 April 2020.

On 21 January 2020, Parikkalan Osuuspankki, Simpeleen Osuuspankki and Etelä-Karjalan Osuuspankki accepted merger plans, according to which Parikkalan Osuuspankki and Simpeleen Osuuspankki will merge into Etelä-Karjalan Osuuspankki. The planned date for registration of the mergers is 31 August 2020.

Simplifying OP Cooperative Consolidated's structure

The legal restructuring of OP Financial Group's central cooperative consolidated streamlines the group structure, simplifies management and makes the cost structure slimmer.

Eurooppalainen Insurance Company Ltd merged into Pohjola Insurance Ltd. The execution of the merger was registered on 31 October 2019.

Pohjola Insurance Ltd and A-Insurance Ltd accepted a merger plan on 29 May 2019, according to which the latter will merge into the former. The Finnish Financial Supervisory Authority approved the merger on 10 December 2019. The planned date for registration of the merger is 31 March 2020.

OP Customer Services Ltd merged into OP Card Company Plc. The execution of the merger was registered on 30 November 2019.

The planned merger of OP Corporate Bank plc and Checkout Finland Oy has been cancelled.

OP Cooperative sold the entire share capital of OP Custody Ltd to OP Corporate Bank plc. The transaction was completed on 31 August 2019.

OP Corporate Bank plc transferred (business transfer) its securities´ custody, clearing and custodian business to OP Custody Ltd. The business transfer was executed on 1 November 2019.

Governance of OP Cooperative

OP Financial Group's central cooperative (OP Cooperative) held its Annual Cooperative Meeting on 20 March 2019.

The Meeting re-elected for the term of three years ending in 2022 the following members to the Supervisory Board (as of 1 January 2020, the Supervisory Council) who were due to resign: entrepreneur Leif Enberg, Attorney Taija Jurmu, Senior Lecturer Marja-Liisa Kaakko, Professor Petri Sahlström and Senior Lecturer Mervi Väisänen.

New Supervisory Board members elected were Managing Director Mika Helin, Managing Director Saila Rosas, entrepreneur Carolina Sandell and agriculture and forestry entrepreneur Timo Saukkonen. With the exception of Mika Helin and Saila Rosas, the term of office of the new Supervisory Board members is 2019–2022. The terms of office of Mika Helin and Saila Rosas are 2019–2020 and 2019–2021, respectively.

The Supervisory Board comprised 36 members.

At its reorganising meeting, the Supervisory Board elected the presiding officers of the Supervisory Board. Professor of Economics Jaakko Pehkonen was re-elected the Chair and Senior Lecturer in Marketing Mervi Väisänen and Managing Director Olli Tarkkanen Vice Chairs.

Along with the presiding officers, the Supervisory Board's five committees had a key role in Supervisory Board work. The Supervisory Board Chair chaired the Supervisory Board Working Committee, Remuneration Committee and the central cooperative consolidated Executive Board's Nomination Committee. The Supervisory Board Audit Committee was chaired by Riitta Palomäki, M.Sc. (Econ. & Bus. Adm.), and the Risk Management Committee by Arto Ylimartimo, M.Sc. (Econ. & Bus. Adm.), Chair of the Board of Directors.

The Annual Cooperative Meeting re-elected KPMG Oy Ab, an audit firm, to act as the auditor for the financial year 2019, with Juha-Pekka Mylén, APA, acting as the chief auditor, appointed by KPMG Oy Ab.

The Annual Cooperative Meeting of 20 March 2019 decided to alter the central cooperative's Bylaws. The purpose of the alteration is to adopt a three-tier governance structure (Supervisory Council – Board of Directors – President and Group Chief Executive Officer). This means that, instead of the current internal Executive Board, the central cooperative will have a Board of Directors consisting of members who are not directors of the central cooperative. The Executive Board will continue as an operational Executive Management Team that supports the President and Group Chief Executive Officer. In the new structure, the Board of Directors will be responsible for the central cooperative's decision-making, except for decisions of principle which are significant to the entire OP Financial Group and defined in the Bylaws as requiring the Supervisory Council's approval. The Board of Directors will also be responsible for central cooperative supervision. The Supervisory Board's current committees (Risk Management, Audit and Remuneration Committees) will become the committees of the Board of Directors. The adopted Bylaws and the new governance structure entered into force on 1 January 2020.

At its meeting of 30 October 2019, OP Cooperative's Supervisory Board (as of 1 January 2020, the Supervisory Council) decided on the conditional composition of OP Cooperative's new Board of Directors. The Supervisory Council confirmed the appointments after the new Bylaws had entered into force on 1 January 2020.

The following persons were appointed to the Board of Directors: Leif Enberg (b. 1954, M.Sc., Econ. & Bus. Adm., Approved Board Member), Jarna Heinonen (b. 1965, D.Sc., Econ. & Bus. Adm.), Jari Himanen (b. 1962, Diploma in Bus. & Adm., eMBA), Kati Levoranta (b. 1970, LL.M., MBA), Pekka Loikkanen (b. 1959, M.Sc., Econ. & Bus. Adm., Authorised Public Accountant), Riitta Palomäki (b. 1957, M.Sc., Econ. & Bus. Adm.), Jaakko Pehkonen (b. 1960, D.Sc., Econ. & Bus. Adm.), Timo Ritakallio (b. 1962, LL.M., MBA, D.Sc., Tech.), Olli Tarkkanen (b. 1962, LL.M., eMBA) and Mervi Väisänen (b. 1963, M.Sc., Econ. & Bus. Adm., Approved Board Member). At the beginning of 2020, the Board of Directors elected Jaakko Pehkonen as Chair and Jarna Heinonen as Vice Chair of the Board of Directors.

On 11 December 2019, OP Cooperative's Supervisory Board (as of 1 January 2020, the Supervisory Council) elected from among its members Director of Administration Annukka Nikola to act as Chair and Professor Markku Sotarauta and Managing Director

Ari Väänänen to act as Vice Chairs. The new Chairs assumed their responsibilities on 1 January 2020.

Due to the new, three-tiered governance structure, CFO Vesa Aho's position as OP Cooperative's CEO ceased to exist on 1 January 2020. Since that date, President and Group Chief Executive Officer Timo Ritakallio has acted as OP Cooperative's CEO.

Legal structure of OP Financial Group

OP Financial Group and the amalgamation of cooperative banks

The amalgamation of OP Financial Group member cooperative banks is formed by OP Cooperative (central cooperative), companies belonging to its consolidation group, the central cooperative's member credit institutions and companies belonging to their consolidation groups, and credit institutions, financial institutions and service companies in which the abovementioned entities together hold more than half of the total votes.

OP Financial Group is comprised of the amalgamation of cooperative banks and those non-amalgamation entities of which entities belonging to the amalgamation hold more than half of the total votes. The extent of OP Financial Group differs from that of the amalgamation of cooperative banks in that OP Financial Group subsumes companies other than credit institutions, financial institutions or service companies. The most important of these are the insurance companies with which the amalgamation forms a financial conglomerate.

Control, risk management and capital adequacy of the amalgamation of cooperative banks

The central cooperative controls its member credit institutions in accordance with the Act on the Amalgamation of Deposit Banks and acts as OP Financial Group's strategic owner institution.

Pursuant to the Act on the Amalgamation of Deposit Banks, the consolidated capital base and liquidity of the companies within the amalgamation are controlled on a consolidated basis. The central cooperative is under an obligation to supervise its member credit institutions, issue instructions to them on risk management, good corporate governance and internal control to secure liquidity and capital adequacy, as well as instructions on compliance with standardised accounting policies in the preparation of the consolidated financial statements. In the manner as specified in its Bylaws, the central cooperative may also confirm general principles to be followed by its member credit institutions in operations relevant to their amalgamation.

However, the obligation to issue guidelines and exercise supervision does not authorise the central cooperative to dictate the course of the member credit institutions' business operations. Each member credit institution carries on its business independently within the scope of its own resources and guidelines provided by the central cooperative.

A company belonging to the amalgamation may not, in the course of its operations, take any risk of such magnitude that it poses a substantial danger to the combined capital base or liquidity of the companies within the amalgamation. The central cooperative must by law pursue good corporate governance that enables effective risk management and have in place adequate internal control and risk management systems in view of the performance of the amalgamation. The risk management principles applied to the amalgamation of cooperative banks are included in OP Financial Group's Risk Appetite Statement and Risk Appetite Framework document and these are described in greater detail in other parts of the Report by the Board of Directors and OP Financial Group's IFRS Financial Statements.

The amalgamation must fulfil the legal requirements concerning its financial position. The amalgamation must have the minimum capital base specified in chapter 10, section 1 of the Act on Credit Institutions.

Member credit institutions' capital adequacy and its supervision

In accordance with the Act on the Amalgamation of Deposit Banks, the supervisor may give the central cooperative permission to decide on exceptions to its member credit institutions related to the capital base amount and capital requirements, customer risks and liquidity and the qualitative management of risks.

The central cooperative may not make an exception to a member credit institution that has to a significant extent or repeatedly failed to comply with guidelines issued by the central cooperative pursuant to section 17 of the Act on Credit Institutions or the member credit institution's obligations prescribed in section 23 or issued pursuant to said supervisor's regulation. Such exception may be granted for a maximum period of three years. The central cooperative has enabled exceptions, authorised by the supervisor, with regard to member credit institutions' customer exposure, liquidity and qualitative management of risks.

A member credit institution is under no obligation to publish an interim report in accordance with chapter 12, section 12 of the Act on Credit Institutions. Member credit institutions are under no obligation to publish capital adequacy information (Pillar III disclosures) in their entirety; such information is disclosed on the amalgamation of cooperative banks.

Supervision of the amalgamation of cooperative banks

The central cooperative and the amalgamation of cooperative banks is supervised by the European Central Bank (ECB), while the central cooperative's member credit institutions are supervised by the ECB and the central cooperative.

The central cooperative exercises oversight to ensure that the companies within the amalgamation operate in compliance with the laws, decrees and regulations issued by the relevant authorities governing financial markets, and with their own bylaws or articles of associations and the instructions issued by the central cooperative by virtue of section 17 of the Act on the Amalgamation of Deposit Banks. Furthermore, the central cooperative supervises the financial position of the companies within the amalgamation.

The ECB oversees the central cooperative so that it controls and supervises the member credit institutions in accordance with the provisions of the Act on the Amalgamation of Deposit Banks and that the companies within the amalgamation fulfil their legal requirements.

The internal audit of companies belonging to OP Financial Group is carried out by Internal Audit, which reports to OP Financial Group's President and Group Executive Chair. It is responsible for the internal audit of the central cooperative's member credit institutions and companies belonging to their consolidation groups and the central cooperative and its subsidiaries.

Internal Audit is a function independent of business lines that audits the effectiveness and adequacy of OP Financial Group's internal control systems, risk management as well as management and governance processes.

Audits are carried out by adhering to international standards for internal audits, and to good auditing practices.

Joint and several liability of member credit institutions, and the central cooperative's liability for debt

As a support measure referred to in the Act on the Amalgamation of Deposit Banks, the central cooperative is liable to pay any of its member credit institutions an amount that is necessary to prevent the credit institution from being placed in liquidation. The central cooperative is also liable for the debts of a member credit institution which cannot be paid using the member credit institution's assets.

Each member credit institution is liable to pay a proportion of the amount which the central cooperative has paid to either another member credit institution as part of support action or to a creditor of such member credit institution in payment of an amount overdue which the creditor has not received from the member credit institution. Furthermore, in the case of the central cooperative's default, a member credit institution has unlimited refinancing liability for the central cooperative's debts as referred to in the Co-operatives Act.

Each member credit institution's liability for the amount the central cooperative has paid to the creditor on behalf of a member credit institution is divided between the member credit institutions in proportion to their last adopted balance sheets. The combined annual amount collected from each member credit institution in order to prevent liquidation of one of the member credit institutions may in each financial year account for a maximum of five thousandths of the last adopted balance sheet of each member credit institution.

Joining the amalgamation of cooperative banks and withdrawal from its membership

Central cooperative members may include credit institutions if their bylaws or articles of association correspond to what is prescribed by the Act on the Amalgamation of Deposit Banks and if their bylaws or articles of association have been approved by the central cooperative. The central cooperative's Supervisory Board decides on admitting members.

A member credit institution has the right to withdraw from its membership of the central cooperative. Even if a member credit institution withdraws from membership, the aggregate amount of capital resources of companies belonging to the amalgamation must be maintained at the level as required by the Act on the Amalgamation of Deposit Banks.

A member credit institution may also be expelled from membership of the central cooperative in accordance with the Co-operatives Act. A member credit institution may also be expelled if it has not complied with instructions issued by the central cooperative by virtue of section 17 of the Act on the Amalgamation of Deposit Banks in a way that significantly jeopardises liquidity or capital adequacy management, the application of the standardised principles related to the preparation of financial statements or the supervision of adherence to them within the amalgamation. Expulsion is also possible if a member credit institution is in material breach of the amalgamation's general principles approved by the central cooperative.

The provisions of the Act on the Amalgamation of Deposit Banks governing payment liability of a member credit institution shall also apply to a former member credit institution which has withdrawn or expelled from the central cooperative, if less than five years have passed from the end of the calendar year of the member credit institution's withdrawal or expulsion from the central cooperative when a demand regarding payment liability is presented to the member credit institution.

OP Financial Group's financial statements and audit

According to the Act on the Amalgamation of Deposit Banks, OP Financial Group's financial statements must be prepared in compliance with the International Financial Reporting Standards, as referred to in the Accounting Act. The supervisory authority has issued more detailed regulations on the preparation of OP Financial Group's financial statements. The accounting policies applied are presented in the notes to OP Financial Group's financial statements.

The central cooperative has a statutory obligation to issue instructions to the member credit institutions on observing uniform accounting policies in preparing the OP Financial Group's financial statements. The member credit institutions are obliged to provide the central cooperative with the information necessary for the consolidation of OP Financial Group's financial statements. The central cooperative's auditors are authorised to obtain a copy of the documents relating to a member credit institution's audit for auditing OP Financial Group's financial statements.

The central cooperative's auditors audit OP Financial Group's financial statements observing, as appropriate, the provisions of the Act on Credit Institutions. The financial statements are presented and distributed to the Annual Cooperative Meeting of the central cooperative.

Protection afforded by the Deposit Guarantee Fund and the Investors' Compensation Fund

According to the law governing the Deposit Guarantee Fund, the deposit banks belonging to the amalgamation of cooperative

banks are considered to constitute a single bank in respect of deposit guarantee. The Deposit Guarantee Fund reimburses a maximum total of 100,000 euros to an individual account holder who has receivables from deposit banks belonging to the amalgamation of cooperative banks.

Under the law governing the Investors' Compensation Fund, the amalgamation of cooperative banks is also considered to constitute a single credit institution in respect of investors' compensation. The Investors' Compensation Fund's assets may be used to compensate an investor's receivables from companies belonging to the amalgamation of cooperative banks up to a total maximum of 20,000 euros.

The Financial Stability Authority manages the Financial Stability Fund outside the government budget. The Fund consists of a resolution fund financed through stability contributions and a deposit guarantee fund financed through deposit guarantee contributions.

Financial conglomerate

OP Financial Group forms a financial conglomerate as defined in the Act on the Supervision of Financial and Insurance Conglomerates. The amalgamation's central cooperative operates as the company heading the amalgamation pursuant to Section 3 of said Act.

The Act stipulates a specific capital adequacy requirement for a financial conglomerate. OP Financial Group's capital adequacy is stated as the amount of its capital base in excess of the minimum capital requirement and as a ratio of the total capital base to the minimum required capital base.

The set of norms governing financial statements under the Act on the Supervision of Financial and Insurance Conglomerates does not apply to OP Financial Group on the basis of section 30 of the Act, because the Group prepares its financial statements in compliance with IFRS.

Events after the balance sheet date

On 31 January 2020, OP Cooperative, OP Financial Group's central cooperative, sold the Vallila property to a South Korean-Finnish consortium which includes Varma Mutual Pension Insurance Company, NH Investment & Securities (NHIS) and Shinhan Investment Corp. The value of the transaction is 480 million euros. OP Financial Group will continue operating in the property under a long-term lease agreement. The sale of the property will improve OP Financial Group's CET1 ratio by some 0.2 percentage points. A capital gain of approximately 97 million euros will be recognised on the sale in OP Financial Group's first quarter results 2020.

On 7 January 2020, OP Cooperative's Board of Directors elected from among its members the chairs, vice chairs and other members to the statutory Board Committees. The regulatory authority has approved the composition of OP Cooperative's Board of Directors.

Outlook for 2020

Risks in financial markets were seen to ease during the latter half of the year. Interest rates rose from the August bottom but remained lower than in early 2019. Stock prices continued their rise in the fourth quarter. Stock markets strengthened markedly during the year. The European Central Bank (ECB) cut the deposit rate from –0.4% to –0.5% in September and began in early November its asset purchases worth EUR 20 billion a month. The ECB announced that it would keep the main refinancing rate unchanged or lower until the inflation outlook is in line with the inflation target. Prolonged exceptionally low interest rates are a strain on financial institutions.

OP Financial Group expects its earnings before tax for 2020 to be at about the same level as in 2019. The most significant uncertainties in respect of the financial performance relate to interest rates, developments in capital markets and impairment losses.

All forward-looking statements in this Report by the Board of Directors expressing the management's expectations, beliefs, estimates, forecasts, projections and assumptions are based on the current view on developments in the economy, and actual results may differ materially from those expressed in the forward-looking statements.

Key income statement and balance sheet items, and financial indicators

€ million	2019	2018	2017	2016	2015
Key income statement items, € million					
Net interest income	1,241	1,186	1,102	1,058	1,026
Net insurance income	421	566	478	558	527
Net commissions and fees	936	887	879	859	855
Net investment income	530	211	522	391	441
Other operating income	53	61	83	122	46
Personnel costs	781	516	758	762	781
Depreciation/amortisation and impairment loss	278	325	246	160	162
Other operating expenses	844	839	764	646	577
Impairment loss on receivables	-87	-46	-48	-77	-78
OP bonuses to owner-customers	-249	-226	-217	-206	-195
Temporary exemption (overlay approach)	-105	26	-	-	-
Earnings before tax	838	959	1,031	1,138	1,101
Key balance sheet items – assets, € million					
Cash and cash equivalents	11,988	12,350	12,937	9,471	8,619
Derivative contracts	4,824	3,581	3,412	4,732	5,072
Receivables from credit institutions	246	183	504	337	425
Receivables from customers	91,463	87,026	82,193	78,604	75,192
Investment assets	23,509	23,050	23,324	25,887	21,803
Assets covering unit-linked contracts	10,831	9,771	10,126	9,168	8,640
Intangible assets and property, plant and equipment	1,930	2,227	2,353	2,345	2,238
Other items	2,232	2,107	2,355	3,203	2,465
Total assets	147,024	140,294	137,205	133,747	124,455
Key balance sheet items – liabilities and equity, € million					
Liabilities to credit institutions	2,632	4,807	5,157	4,669	1,673
Derivative contracts	3,316	2,992	3,026	4,044	4,678
Liabilities to customers	68,289	66,112	65,549	60,077	58,220

Insurance liabilities	9,476	9,476	9,950	10,586	7,705
Liabilities from unit-linked insurance and investment contracts	10,862	9,812	10,158	9,205	8,666
Debt securities issued to the public	34,369	30,458	26,841	28,287	27,706
Other liabilities	5,510	4,896	5,440	6,642	6,483
Equity capital	12,570	11,742	11,084	10,237	9,324
Total liabilities and equity	147,024	140,294	137,205	133,747	124,455
Figures and ratios					
Return on equity, ROE, %	5,5	6.5	7.7	9.4	10.3
Return on assets, ROA, %	0,5	0.5	0.6	0.7	0.7
Cost/income ratio, %	60	58	58	52	53
Average personnel**	12,376	12,339	12,212	12,271	12,174
Common Equity Tier 1 (CET1) capital ratio, %	19.5	20.5	20.1	20.1	19.5
Capital adequacy ratio, %	21.1	22.1	22.5	23.1	22.9
Capital adequacy under the Act on the Supervision of Financial and Insurance Conglomerates, %*	138	147	148	170	191

*Figures for 2015–2016 are presented under Solvency II. Transitional provisions have been taken into account in figures.
**Figures for 2015–2017 exclude summer employees.

Formulas for key figures and ratios

The Alternative Performance Measures are presented to illustrate the financial performance of business operations and to improve comparability between reporting periods. The formulas for the used Alternative Performance Measures are presented below.

Alternative Performance Measures

Return on equity (ROE), %	$\frac{\text{Profit for the financial year}}{\text{Equity capital (average of the beginning and end of the period)}} \times 100$
Return on equity (ROE) excluding OP bonuses, %	$\frac{\text{Profit for the financial year + OP bonuses after tax}}{\text{Equity capital (average of the beginning and end of the period)}} \times 100$
Return on assets (ROA), %	$\frac{\text{Profit for the financial year}}{\text{Average balance sheet total (average of the beginning and end of the period)}} \times 100$
Return on assets (ROA), excluding OP bonuses, %	$\frac{\text{Profit for the financial year + OP bonuses after tax}}{\text{Average balance sheet total (average of the beginning and end of the period)}} \times 100$
Cost/income ratio, %	$\frac{\text{Total expenses}}{\text{Total income}} \times 100$
Investment income	Net investment income + Overlay approach
Total insurance liabilities	Insurance liabilities + Liabilities from unit-linked insurance and investment contracts
Ratio of non-performing receivables to loan and guarantee portfolio, %	$\frac{\text{Non-performing receivables (net)}}{\text{Loan and guarantee portfolio at end of financial year}} \times 100$
Coverage ratio, %	$\frac{\text{Loss allowance}}{\text{Receivables from customers (on-balance-sheet and off-balance-sheet items)}} \times 100$
Default capture rate, %	$\frac{\text{New defaulted contracts in stage 2 a year ago}}{\text{New defaulted contracts in financial year}} \times 100$
Non-life insurance:	
Operating loss ratio, %	$\frac{\text{Claims incurred, excl. changes in reserving bases and amortisation on intangible assets arising from company acquisitions}}{\text{Insurance premium revenue, excl. net changes in reserving bases}} \times 100$
Operating expense ratio, %	$\frac{\text{Operating expenses}}{\text{Insurance premium revenue, excl. net changes in reserving bases}} \times 100$
Operating combined ratio, %	Operating loss ratio + operating expense ratio Operating risk ratio + operating cost ratio
Operating risk ratio (excl. unwinding of discount), %	$\frac{\text{Claims excl. loss adjustment expenses and changes in reserving bases}}{\text{Net insurance premium revenue, excl. changes in reserving bases}} \times 100$

Operating cost ratio, %

$$\frac{\text{Operating expenses and loss adjustment expenses}}{\text{Net insurance premium revenue, excl. changes in reserving bases}} \times 100$$

Life Insurance:

Operating ratio, %

$$\frac{\text{Total expenses}}{\text{Expense loading + refund of management fee}} \times 100$$

Indicators based on a separate calculation

Capital adequacy ratio, %

$$\frac{\text{Total capital}}{\text{Total risk exposure amount}} \times 100$$

Tier 1 ratio, %

$$\frac{\text{Total Tier 1 capital}}{\text{Total risk exposure amount}} \times 100$$

CET1 ratio, %

$$\frac{\text{CET1 capital}}{\text{Total risk exposure amount}} \times 100$$

Solvency ratio, %

$$\frac{\text{Capital base}}{\text{Solvency capital requirement (SCR)}} \times 100$$

Leverage ratio, %

$$\frac{\text{Tier 1 capital (T1)}}{\text{Exposure amount}} \times 100$$

Liquidity coverage requirement (LCR), %

$$\frac{\text{Liquid assets}}{\text{Liquidity outflows - liquidity inflows under stressed conditions}} \times 100$$

Net stable funding ratio (NSFR), %

$$\frac{\text{Available stable funding}}{\text{Required stable funding}} \times 100$$

Capital adequacy ratio under the Act on the Supervision of Financial and Insurance Conglomerates

$$\frac{\text{Conglomerate's total capital base}}{\text{Conglomerate's total minimum capital requirement}} \times 100$$

Non-life insurance operating result

€ million	Q1–4/2019	Q1–4/2018	Change, %
Insurance premium revenue	1,478	1,465	0.9
Claims incurred	1,060	1,039	2.0
Operating expenses	311	308	0.9
Amortisation adjustment of intangible assets		18	
Balance on technical account	107	136	-20.8
Reduction in the discount rate	-136		
Net investment income	307	2	-
Other income and expenses	-23	-31	-
Earnings before tax	255	106	139.4
Temporary exemption (overlay approach)	-65	23	
Earnings before tax	190	130	46.6

The non-life insurance financial indicators are calculated using expenses by function applied by non-life insurance companies, which are not presented on the same principle as in the Consolidated Income Statement.

Income statement

EUR million	Notes	2019	2018
Net interest income	4	1,241	1,186
Net insurance income	5	421	566
Net commissions and fees	6	936	887
Net investment income	7	530	185
Other operating income	8	53	61
Total income		**3,181**	**2,885**
Personnel costs *	9	781	516
Depreciation/amortisation	10	278	325
Other expenses	11	844	839
Total expenses		**1,903**	**1,681**
Impairments loss on receivables	12	-87	-46
OP bonuses to owner-customers	13	-249	-226
Temporary exemption (overlay approach)	14	-105	26
Earnings before tax		**838**	**959**
Income tax expense	15	168	212
Profit for the period		**670**	**747**
Attributable to:			
Profit for the period attributable to owners		663	739
Profit for the period attributable to non-controlling interest		6	8
Profit for the period		**670**	**747**

* OP Financial Group transferred the management of and the majority of the personnel's statutory earnings-related pension insurance and the related portfolio to Ilmarinen Mutual Pension Insurance Company at the end of 2018. The transfer reduced OP Financial Group's 2018 pension costs and improved earnings before tax by EUR 286 million.

Statement of comprehensive income

EUR million	Notes	2019	2018
Profit for the period		**670**	**747**
Items that will not be reclassified to profit or loss			
Gains/(losses) arising from remeasurement of defined benefit plans	34	15	88
Items that may be reclassified to profit or loss			
Change in fair value reserve			
Measurement at fair value	36	62	-172
Cash flow hedge	36	135	22
Temporary exemption (overlay approach)	36	108	-26
Translation differences		0	0
Income tax			
Items that will not be reclassified to profit or loss			
benefit plans	27	-3	-18
Items that may be reclassified to profit or loss			
Measurement at fair value	36	-12	34
Cash flow hedge	36	-27	-4
Temporary exemption (overlay approach)	36	-22	5
Total comprehensive income for the period		**926**	**676**
Attributable to:			
Total comprehensive income for the period attributable to owners		920	668
Total comprehensive income for the period attributable to non-controlling interests		6	8
Total comprehensive income for the period		**926**	**676**

Balance sheet

EUR million	Notes	31 Dec 2019	31 Dec 2018
Cash and cash equivalents	16	11,988	12,350
Receivables from credit institutions	17	246	183
Derivative contracts	18	4,824	3,581
Receivables from customers	19	91,463	87,026
Investment assets	20	23,509	23,050
Assets covering unit-linked contracts	21	10,831	9,771
Intangible assets	23	1,406	1,490
Property, plant and equipment (PPE)	24	524	737
Other assets	26	1,684	1,875
Tax assets	27	235	232
Non-current assets held for sale		314	
Total assets		**147,024**	**140,294**
Liabilities to credit institutions	28	2,632	4,807
Derivative contracts	29	3,316	2,992
Liabilities to customers	30	68,289	66,112
Insurance liabilities	31	9,476	9,476
Liabilities from unit-linked insurance and investment contracts	32	10,862	9,812
Debt securities issued to the public	33	34,369	30,458
Provisions and other liabilities	34	3,163	2,617
Tax liabilities	27	1,050	921
Subordinated liabilities	35	1,290	1,358
Liabilities associated with non-current assets held for sale		6	
Total liabilities		**134,454**	**128,552**
Equity capital			
Share of OP Financial Group's owners			
Cooperative capital			
Cooperative share		209	199
Profit shares		3,029	3,042
Fair value reserve		251	7
Other reserves		2,185	2,183
Retained earnings		6,730	6,157
Non-controlling interests		**166**	**154**
Total equity capital	36	**12,570**	**11,742**
Total liabilities and equity capital		**147,024**	**140,294**

Statement of changes in equity capital

EUR million	Attributable to owners					Non-controlling interests	Total equity capital
	Coope-rative capital	Fair value reserve	Other reserves	Retained earnings	Total		
Balance at 31 December 2017	**3,097**	**176**	**2,173**	**5,536**	**10,982**	**101**	**11,084**
2018		-28		-33	-61		-61
Change in accounting policies				-46	-46		-46
Balance at 1 January 2018	**3,097**	**148**	**2,173**	**5,457**	**10,875**	**101**	**10,976**
Total comprehensive income for the period		-141		810	**668**	8	**676**
Profit for the period				739	**739**	8	**747**
Other comprehensive income		-141		70	**-71**		**-71**
Profit distribution				-90	**-90**	-13	**-103**
Change in membership and profit shares	144				**144**		**144**
Transfer of reserves			10	-10	**0**		**0**
Other				-10	**-10**	58	**49**
Balance at 31 December 2018	**3,241**	**7**	**2,183**	**6,156**	**11,587**	**154**	**11,742**

EUR million	Attributable to owners					Non-controlling interests	Total equity capital
	Coope-rative capital	Fair value reserve	Other reserves	Retained earnings	Total		
Balance at 1 January 2019	**3,241**	**7**	**2,183**	**6,157**	**11,588**	**154**	**11,742**
Total comprehensive income for the period		244	0	675	**920**	6	**926**
Profit for the period				663	**663**	6	**670**
Other comprehensive income		244		12	**256**		**256**
Profit distribution				-94	**-94**	-9	**-104**
Change in membership and profit shares	-3				**-3**		**-3**
Transfer of reserves			2	-2	**0**		**0**
Other				-6	**-6**	15	**9**
Balance at 31 December 2019	**3,238**	**251**	**2,185**	**6,730**	**12,404**	**166**	**12,570**

Cash flow statement

EUR million	Notes	Q1–4 2019	Q1–4 2018
Cash flow from operating activities			
Profit for the period		670	747
Adjustments to profit for the period		126	-61
Increase (-) or decrease (+) in operating assets		**-4,266**	**-4,942**
Receivables from credit institutions	17	43	88
Derivative contracts	18	-25	-89
Receivables from customers	19	-4,418	-4,910
Non-life insurance assets	21	254	-299
Investment assets	20	131	68
Other assets	26	-250	200
Increase (+) or decrease (-) in operating liabilities		**325**	**44**
Liabilities to credit institutions	28	-2,347	-420
Derivative contracts	29	13	-5
Liabilities to customers	30	2,177	562
Insurance liabilities	31	-25	46
Liabilities from unit-linked insurance and investment contracts	32	262	102
Provisions and other liabilities	34	246	-242
Income tax paid		-116	-145
Dividends received		76	106
A. Net cash from operating activities		**-3,185**	**-4,251**
Cash flow from investing activities			
Acquisition of subsidiaries, net of cash acquired	22	0	0
Disposal of subsidiaries, net of cash disposed		0	67
Purchase of PPP and intangible assets	23, 24	-168	-228
Proceeds from sale of PPE and intangible assets	23, 24	50	16
B. Net cash used in investing activities		**-118**	**-145**
Cash flow from financing activities			
Increases in debt securities issued to the public	33	29,830	27,986
Decreases in debt securities issued to the public	33	-26,664	-24,465
Increases in cooperative and share capital		480	659
Decreases in cooperative and share capital		-485	-515
Dividends paid and interest on cooperative capital		-94	-90
Lease liabilities		-19	
C. Net cash used in financing activities		**3,048**	**3,575**
Net change in cash and cash equivalents (A+B+C)		**-256**	**-821**
Cash and cash equivalents at period-start		**12,423**	**13,245**
Cash and cash equivalents at period-end		**12,168**	**12,423**
Interest received		**1,987**	**2,012**
Interest paid		**-612**	**-829**

Adjustments to profit for the financial year

Non-cash items and other adjustments		
Impairment losses on receivables	110	61
Unrealised net earnings in insurance operations	-704	-243
Change in fair value for trading	313	-95
Unrealised net gains on foreign exchange operations	-35	-32
Change in fair value of other investments	-181	-76
Defined benefit pension plans	0	-286
Planned amortisation and depreciation	278	325
Share of associates' profits/losses	-2	-39
OP bonuses to owner-customers	249	226
Income tax paid	116	145
Dividends received	-76	-106
Other	57	76
Items presented outside cash flow from operating activities		
Capital gains, share of cash flow from investing activities	0	-18
Total adjustments	**126**	**-61**

Cash and cash equivalents		
Liquid assets	11,988	12,350
Receivables from credit institutions payable on demand	180	74
Total	**12,168**	**12,423**

Segment reporting

At its meeting on 6 June 2018, the Supervisory Board of OP Financial Group's central cooperative decided on a new division of responsibilities of the central cooperative's Executive Management Team, which changed the segment structure as of the beginning of 2019. In its interim reports and financial statements, OP Financial Group began financial reporting based on its new segments as of the first interim report of 2019. The 2018 segment information has been restated to correspond to the new segments.

Segment information

OP Financial Group's business segments are Retail Banking, Corporate Banking, and Insurance. Non-business segment operations are presented under the Other Operations segment. OP Financial Group prepares its segment reporting in compliance with its accounting policies. Defining segments and presentation are based on management reporting. The segments' earnings and profitability is assessed in terms of earnings before tax.

Companies in the Retail Banking segment include OP cooperative banks, OP Koti real estate agencies, OP Card Company Plc, OP Mortgage Bank, Pivo Wallet Oy and OP Co-ride Ltd. Net interest income forms the most significant income item of the segment. Income also comes from commissions and fees and investment. Expenses arise mainly from personnel and ICT costs and the costs of the branch network and OP bonuses to owner-customers. The most significant risk category pertains to credit risk but business also involves market risks and operational risks.

Companies in the Corporate Banking segment include OP Corporate Bank plc (excl. treasury functions), OP Custody Ltd, OP Asset Management Ltd, OP Property Management Ltd, Checkout Finland Oy and OP Fund Management Company Ltd. Net interest income forms the most significant income item of the segment. Income also comes from banking and wealth management in terms of commission income and from investment operations. Expenses mainly come from personnel and ICT costs. The most significant risk category pertains to credit risk but business also involves market risks and operational risks.

The Insurance segment encompasses OP Financial Group's non-life insurance companies, i.e. Pohjola Insurance Ltd, A-Insurance Ltd and OP Life Assurance Company Ltd. The segment's products include non-life and life insurance products sold to corporate and private customers. Income generated by the segment derives mainly from income from insurance premium revenue, commission income and net investment income. The segment also includes Pohjola Hospital Ltd whose earnings come from doctor's fees and income from treatment and diagnostics. The Insurance segment's most significant risks are underwriting and investment risks. Risks related to statutory defined benefit pension plans for OP Financial Group's personnel only affect the Insurance segment. However, the related risk level is moderate.

The Other Operations segment consists of functions that support other segments. The segment includes the majority of OP Cooperative, OP Services Ltd and OP Corporate Bank plc's treasury functions. Costs of the services for the business segments are allocated to the segments in the form of internal service charges. Income from the Other Operations segment mainly consists of Treasury income and OP Financial Group's internal charges recognised in other operating income.

Segment accounting policies

OP Financial Group's segment reporting is based on accounting policies applied in its financial statements. Income, expenses, assets and liabilities which have been considered to relate directly to and be reasonably attributable to the segments are allocated to the segments. Income, expenses, investments and capital which have not been allocated to segments, and inter-segment Group eliminations are reported under 'Group eliminations'.

Segment capitalisation is based on OP Financial Group's capital adequacy measurement in accordance with the Act on Credit Institutions. Capital requirements according to capital adequacy measurement are allocated among the business segments. Capital has been allocated to the Retail Banking and Corporate Banking segments in such a way that the CET1 ratio is 22% (21). Capital has been allocated to the Insurance segment in such a way that the non-life insurance solvency ratio (SII) is 120% (120) and the life insurance solvency ratio is 130% (130). Capital allocation has an effect on the Group's internal interest amounts paid by the segment concerned. The allocation of equity capital to the business segments is carried out through OP Financial Group's Treasury under Other Operations, which means that any earnings effect of equity capital differing from the target level is shown under Other operations.

Q1–4 earnings 2019, EUR million	Retail Banking	Corporate Banking	Insurance	Other operations	Eliminations	OP Financial Group
Net interest income	922	383	-12	-59	7	1,241
of which internal net income before tax	1	-3	-11	13		
Net insurance income			431		-10	421
Net commissions and fees	708	125	99	6	-3	936
Net investment income	-17	119	435	38	-46	530
Other operating income	43	27	16	593	-626	53
Total income	**1,657**	**655**	**969**	**578**	**-678**	**3,181**
Personnel costs	426	76	133	148	-1	781
Depreciation/amortisation	55	20	71	132	0	278
Other operating expenses	692	182	269	336	-635	844
Total expenses	**1,172**	**277**	**473**	**616**	**-635**	**1,903**
Impairments loss on receivables	-36	-51	0	0	0	-87
OP bonuses to owner-customers	-214	-16	-19		0	-249
Temporary exemption (overlay approach)			-104		-1	-105
Earnings before tax	**235**	**311**	**373**	**-37**	**-43**	**838**

Net income from the Baltic countries came to EUR 11 million.

Q1–4 earnings 2018, EUR million	Retail Banking	Corporate Banking	Insurance	Other operations	Eliminations	OP Financial Group
Net interest income	886	350	-10	-48	7	1,186
of which internal net income before tax	0	-1	-9	10		
Net insurance income			578		-12	566
Net commissions and fees	677	130	75	6	-2	887
Net investment income	9	165	63	21	-73	185
Other operating income	62	20	23	548	-592	61
Total income	**1,635**	**664**	**730**	**527**	**-671**	**2,885**
Personnel costs	225	45	127	120	-1	516
Depreciation/amortisation	84	21	89	131	0	325
Other operating expenses	678	166	263	339	-607	839
Total expenses	**987**	**232**	**480**	**590**	**-608**	**1,681**
Impairments loss on receivables	-33	-12	0	-1	0	-46
OP bonuses to owner-customers	-194	-14	-18		0	-226
Temporary exemption (overlay approach)			29		-3	26
Earnings before tax	**421**	**408**	**260**	**-64**	**-66**	**959**

Net income from the Baltic countries came to EUR 10 million.

Balance sheet 31 December 2019, EUR million	Retail Banking	Corporate Banking	Insurance	Other operations	Eliminations	OP Financial Group
Cash and cash equivalents	71	19	1,506	11,891	-1,499	11,988
Receivables from credit institutions	12,785	130	23	9,577	-22,269	246
Derivative contracts	507	4,384	379	468	-913	4,824
Receivables from customers	67,985	24,502	0	95	-1,118	91,463
Investment assets	316	1,006	9,798	17,626	-5,236	23,509
Assets covering unit-linked contracts			10,831			10,831
Intangible assets	43	221	791	354	-3	1,406
Property, plant and equipment (PPE)	355	2	134	43	-11	524
Other assets	247	376	869	407	-216	1,684
Tax assets	103	4	45	39	42	235
Non-current assets held for sale				314		314
Total assets	**82,411**	**30,645**	**24,376**	**40,814**	**-31,223**	**147,024**
Liabilities to credit institutions	8,965	757		15,511	-22,601	2,632
Derivative contracts	323	3,657	109	195	-968	3,316
Liabilities to customers	54,434	11,290		4,664	-2,100	68,289
Insurance liabilities			9,476			9,476
Liabilities from unit-linked insurance and investments contracts			10,862			10,862
Debt securities issued to the public	11,574	1,441		21,449	-94	34,369
Provisions and other liabilities	642	801	767	1,120	-167	3,163
Tax liabilities	483	5	201	363	-1	1,050
Subordinated liabilities	-18	9	380	1,314	-395	1,290
Liabilities associated with non-current assets held for				6		6
Total liabilities	**76,403**	**17,960**	**21,795**	**44,622**	**-26,326**	**134,454**
Equity						**12,570**

Balance sheet 31 December 2018, EUR million	Retail Banking	Corporate Banking	Insurance	Other operations	Eliminations	OP Financial Group
Cash and cash equivalents	82	19	685	12,199	-634	12,350
Receivables from credit institutions	10,820	125	21	10,109	-20,892	183
Derivative contracts	275	3,448	156	185	-483	3,581
Receivables from customers	64,914	23,009	0	15	-911	87,026
Investment assets	358	908	10,246	17,625	-6,088	23,050
Assets covering unit-linked contracts			9,771			9,771
Intangible assets	49	230	806	408	-3	1,490
Property, plant and equipment (PPE)	362	0	139	248	-11	737
Other assets	217	-153	971	1,299	-459	1,875
Tax assets	112	3	17	66	35	232
Total assets	**77,189**	**27,589**	**22,811**	**42,153**	**-29,447**	**140,294**
Liabilities to credit institutions	9,612	606		15,802	-21,214	4,807
Derivative contracts	157	3,025	37	259	-486	2,992
Liabilities to customers	50,792	11,382		5,089	-1,152	66,112
Insurance liabilities			9,476			9,476
Liabilities from unit-linked insurance and investments contracts			9,812			9,812
Debt securities issued to the public	10,120	1,011		19,492	-165	30,458
Provisions and other liabilities	554	642	788	1,029	-396	2,617
Tax liabilities	433	3	119	365	0	921
Subordinated liabilities	41	-24	380	1,356	-395	1,358
Total liabilities	**71,709**	**16,645**	**20,612**	**43,394**	**-23,808**	**128,552**
Equity						**11,742**

Notes to financial statements

Contents

Note 1. OP Financial Group's accounting policies under IFRS

General information

OP Financial Group is a financial entity as referred to in §9 of the Act on the Amalgamation of Deposit Banks. OP Financial Group's financial statements have been prepared as a combination of the financial statements and consolidated financial statements of OP Cooperative and its subsidiaries and member credit institutions.

OP Financial Group does not form a consolidation group, as referred to in the Accounting Act, because OP Cooperative and its member cooperative banks do not have control over each other, as referred to in general consolidated accounting policies. For this reason, a technical parent company has been determined for OP Financial Group.

OP Cooperative acts as the entire OP Financial Group's strategic owner institution and as a central cooperative in charge of Group control and supervision.

The Act on the Amalgamation of Deposit Banks requires OP Financial Group's central cooperative, OP Cooperative, to prepare consolidated financial statements for OP Financial Group. OP Cooperative's Board of Directors is responsible for preparing the financial statements in accordance with applicable regulations.

OP Cooperative is domiciled in Helsinki and the address of its registered office is Gebhardinaukio 1, FI-00510 Helsinki.

A copy of OP Financial Group's consolidated financial statements is available at www.op.fi or the Group's office at Gebhardinaukio 1, FI-00510 Helsinki.

The Board of Directors of OP Cooperative approved OP Financial Group's financial statements bulletin for issue on 4 February 2020 and the Board of Directors approved the financial statements on 18 February 2020.

1 Basis of preparation

OP Financial Group's financial statements were prepared in accordance with the International Financial Reporting Standards (IFRS), applying IASs, IFRSs and SIC and IFRIC interpretations effective on 31 December 2019. The International Financial Reporting Standards refer to standards and their interpretations adopted in accordance with Regulation (EU) No. 1606/2002 of the European Parliament and of the Council. OP Financial Group's obligation to prepare its financial statements in accordance with IFRS is based on the Act on the Amalgamation of Deposit Banks. OP Financial Group's notes also conform to the requirements of Finnish accounting and company legislation that complement IFRS regulations.

In 2019, OP Financial Group adopted the following standards and interpretations:

- IFRS 16 Leases as of 1 January 2019. OP Financial Group applied a retrospective approach in the transition to a limited extent, in which case comparatives were not restated and any accrued transition effect were recognised in adjustments to retained earnings in equity on 1 January 2019. The effects of the transition to IFRS 16 are presented in Note 3. Changes in accounting policies and presentation.

- In September 2019, the IASB published a document entitled Interest Rate Benchmark Reform that amended IFRS9, IAS 39 and IFRS 7. The European Union adopted the amendments on 15 January 2020 and they are effective for accounting periods beginning on or after 1 January 2020. Earlier application is allowed. OP Financial Group already applied amendments to IAS 39 during the financial year 2019. The effects of the transition are presented in Note 3. Changes in accounting policies and presentation.

- Annual improvements to IFRS for cycles 2015–2017 (applicable mainly to accounting periods beginning on or after 1 January 2019). Minor amendments are annually made to standards through the Annual Improvements process. The effects of the amendments vary by standard but they are not significant.

- Amendment to IFRS 9 Financial Instruments as of 1 January 2019:"Prepayment features with negative compensation". This amendment enables entities to measure at amortised cost some prepayable financial assets with so-called negative compensation. The amendment did not have any major effect on OP Financial Group's financial statements.

- A new IFRIC interpretation 23 that became effective on 1 January 2019. The amendment did not have any major effect on OP Financial Group's financial statements.

OP Financial Group's consolidated financial statements were prepared at historical cost, with the exception of financial assets and liabilities at fair value through profit or loss, financial assets at fair value through other comprehensive income, hedged items in fair value hedging (for hedged risk) and investment property measured at fair value.

The financial statements are presented in millions of euro. Number zero in the tables in Notes means that the item contains some balance but it is rounded off to zero. If nothing (blank) is presented in the item, the balance of the item is zero.

According to the Act on the Amalgamation of Deposit Banks and IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors, OP Cooperative's Board of Directors must confirm

any applicable accounting policies for which the IFRSs provide no guidelines. In accordance with the above, OP Cooperative's Board of Directors has confirmed the principle that OP Financial Group's technical parent company consists of OP Financial Group member cooperative banks.

OP Financial Group presents Pillar III disclosures in compliance with EU Regulation No. 575/2013 of the European Parliament and of the Council in a separate OP Amalgamation Capital Adequacy Report. A summary of capital adequacy is presented in OP Financial Group's financial statements.

2 Use of estimates

The preparation of the financial statements in conformity with IFRS requires the management to make judgements, estimates and assumptions in the application of the accounting policies. Section 20 "Critical accounting estimates and judgements" provides more detailed information on applying accounting policies requiring management assessment and judgement.

3 Consolidation principles

3.1 Technical parent company

The Act on the Amalgamation of Deposit Banks Act prescribes that the consolidated financial statements of OP Financial Group must be a combination of the financial statements or consolidated financial statements of OP Cooperative and its member credit institutions. The consolidated financial statements also include the accounts of entities over which the abovementioned entities jointly have control as prescribed in the Accounting Act. OP Financial Group's cooperative capital comprises such cooperative contributions paid by members of cooperative banks which the member banks have an unconditional right to refuse the redemption. In accordance with the above principles, OP Financial Group has formed a technical parent company.

Within the technical parent company, intra-Group holdings, transactions, receivables and liabilities, distribution of profit and margins are eliminated.

3.2 Subsidiaries, associates and joint arrangements

The financial statements of the technical parent company and companies over which it exercises control are consolidated into those of OP Financial Group. OP Financial Group has control over an entity if it is exposed, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity (including structured entities). Most of the subsidiaries are wholly owned by OP Financial Group, which means that the Group's control is based on votes.

OP Financial Group acts as investor and manages various mutual funds in order to gain investment income and various commissions. Funds that have been classified as structured entities have been consolidated into the Group's financial statements when OP Financial Group's control is not based on votes but the control of significant operations, exposure to variable returns from the fund, and organising the fund's management. Changes in control concerning various fund investments consolidated into OP Financial Group are monitored quarterly. When estimating the amount of control, the Group takes into account the investor's power to direct relevant activities over an investee and the investor's exposure to varying returns. When OP Financial Group ceases to have control any retained interest in the entity is remeasured to its fair value at the date when control is lost, with the change in carrying amount recognised in the income statement. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial assets. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if OP Financial Group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognised in other comprehensive income are reclassified to the income statement.

Intra-Group holdings have been eliminated using the acquisition method. The consideration transferred and the acquiree's identifiable assets acquired and liabilities assumed are measured at fair value at the time of acquisition. Acquisition cost in excess of net assets is presented under goodwill. If the acquisition cost is lower than the fair value of net assets, the difference is recognised in profit and loss.

Acquisition-related costs are expensed as incurred. Any contingent consideration is measured at fair value and classified as a liability or equity. Contingent consideration classified as a liability is measured at fair value in the income statement on the balance sheet date.

Associated companies over which OP Financial Group companies exercise significant influence are accounted for using the equity method. Significant influence generally arises if the Group holds 20–50% of the other company's votes or otherwise exercises influence, not control, over the company. Under the equity method, the investment is initially recognised at cost, and the carrying amount is increased or decreased to recognise the investor's share of the profit or loss of the investee after the date of acquisition. OP Financial Group's investment in associates includes goodwill identified on the acquisition date. If the consolidation group's share of losses in an associate exceeds its interest in the associate, the investment is entered in the balance sheet at zero value, and further losses exceeding the carrying amount are not recognised unless OP Financial Group is committed to fulfil the obligations of associates. Private equity funds treated as associates are measured at fair value through profit or loss in compliance with IFRS 9 as permitted by IAS 28.

A joint arrangement is an arrangement of which two or more parties have joint control. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control. A joint arrangement is either a joint operation or a joint venture. A

joint venture is an arrangement in which OP Financial Group has rights to the arrangement's net assets, while in a joint operation OP Financial Group has both rights to assets and obligations for the liabilities relating to the arrangement. Property companies are incorporated into OP Financial Group's financial statements as joint operations by consolidating the proportionate share of OP Financial Group's holding of the property company's assets and liabilities.

Subsidiaries, associates or joint arrangements acquired during the financial year are consolidated from the date on which control or significant influence is transferred to OP Financial Group while those that have been sold are de-consolidated from the date on which control or significant influence ceases.

Intra-Group transactions, receivables, liabilities and profit distribution are eliminated in the preparation of the financial statements.

3.3 Non-controlling interests

Profit for the financial year attributable to the technical owners of the parent and non-controlling interests is presented in the income statement, and total comprehensive income attributable to the owners of the parent and non-controlling interests is presented in the statement of comprehensive income. Profit shown in the income statement and the statement of comprehensive income for the financial year is also attributed to non-controlling interests in the event that their share, as a result, would become negative. Non-controlling interests are presented as part of equity capital in the balance sheet. If the investee's equity does not fulfil the equity classification criteria under IAS 32, the non-controlling parties' share of the net assets is presented as liability.

Non-controlling interests in an acquiree are measured either at fair value or as the proportionate share of net assets of the acquiree. The valuation principle applied is determined separately for each acquiree.

4 Foreign currency translation

OP Financial Group's financial statements are presented in euros, which is the functional and presentation currency of the parent. Non-euro transactions are recognised in euros at the exchange rate quoted on the transaction date or at the average exchange rate of the month of recognition. On the balance sheet date, non-euro monetary balance sheet items are translated into euros at the exchange rate quoted on the balance sheet date. Non-monetary balance sheet items measured at cost are presented at the exchange rate quoted on the transaction date.

The exchange rate differences arising from the translation of non-euro transactions and monetary balance sheet items into euros are recognised as foreign exchange gains or losses under "Net investment income" in the income statement.

5 Financial instruments

5.1 Fair value determination

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants on the measurement date.

The fair value of financial instruments is determined using either prices quoted in an active market or the company's own valuation techniques where no active market exists. Markets are deemed to be active if price quotes are easily and regularly available and reflect real and regularly occurring market transactions on an arm's length basis. The current bid price is used as the quoted market price of financial assets.

If the market has a commonly used valuation technique applied to a financial instrument to which the fair value is not directly available (e.g. OTC derivatives), the fair value is based on a commonly used valuation technique and market quotations of the inputs used by the technique.

If the valuation technique is not a commonly used technique in the market, a valuation model created for the instrument in question will be used to determine the fair value. Valuation models are based on widely used measurement techniques, incorporating all factors that market participants would consider in setting a price, and are consistent with accepted economic methodologies for pricing financial instruments.

The valuation techniques used include prices of market transactions, the discounted cash flow method and reference to the current fair value of another instrument that is substantially the same on the balance sheet date. The valuation techniques take account of estimated credit risk, applicable discount rates, the possibility of early repayment and other factors affecting the reliable measurement of the fair value of financial instruments.

The fair values of financial instruments are categorised into three hierarchy levels, depending on the inputs used in valuation techniques:

- Quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1)
- Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices) (Level 2)
- Inputs for the asset or liability that are not based on observable market data (Level 3).

If the inputs used to measure fair value are categorised into different levels of the fair value hierarchy, the fair value measurement is categorised in its entirety at the same level as the lowest level input that is significant to the entire

measurement. The significance of inputs has been assessed on the basis of the fair value measurement in its entirety.

It is typical of illiquid instruments that their price calculated using a pricing model differs from the actual transaction price. However, the actual transaction price is the best evidence of the instrument's fair value. The Day 1 profit/loss, based on the difference between the actual transaction price and the price deriving from the pricing model that uses market prices, is recognised in the income statement over the term of the agreement. However, the non-recognised amount will be recognised as soon as there is a genuine market price for the instrument or a well-established pricing practice is created in the market.

The amount of illiquid financial assets is insignificant in OP Financial Group's balance sheet.

The illiquid financial liabilities (investment contracts) of the Group's life insurance operations are measured at fair value according to IFRS 9. The investment contracts' fair value is measured using a valuation technique which takes account, for example, of the time value of money and the fair value of financial assets that are used to cover them. However, the value of the liability may not be lower than the contract's surrender value. These contracts have been categorised on Level 3 in the fair value hierarchy.

5.2 Financial assets and liabilities

5.2.1. Amortised cost

Amortised cost is the amount at which the financial asset or financial liability is measured at initial recognition minus the principal repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity amount and, for financial assets, adjusted for any loss allowance.

The effective interest method uses the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial asset or financial liability to the gross carrying amount of a financial asset or to the amortised cost of a financial liability. When calculating the effective interest rate, the central cooperative consolidated shall estimate the expected cash flows by considering all the contractual terms of the financial instrument excluding the expected credit losses (ECL). The calculation includes all fees and points paid or received between parties to the contract that are an integral part of the effective interest rate, transaction costs, and all other premiums or discounts.
Fees that are an integral part of the rate of a financial instrument include office and origination fees related to loan drawdown and they are amortised over the expected life of the financial instrument or a shorter period if that is appropriate. Fees that are not an integral part of the effective interest rate of a financial instrument and are accounted for in accordance with IFRS 15 include fees charged for servicing a loan, for example.

OP Financial Group incorporates the impact of expected credit losses in the estimated future cash flows when calculating the credit-adjusted effective interest rate for financial assets that are considered to be purchased or originated credit-impaired at initial recognition (POCI).

Interest revenue

Interest revenue has been calculated by applying the effective interest rate to the gross carrying amount of a financial asset except for:

a) purchased or originated credit-impaired financial assets. For those financial assets, OP Financial Group applies the credit-adjusted effective interest rate to the amortised cost of the financial asset from initial recognition.
b) financial assets that are not purchased or originated credit-impaired financial assets but subsequently have become credit-impaired financial assets (or that are in stage 3). For those financial assets, OP Financial Group applies the effective interest rate to the amortised cost of the financial asset (i.e. to the net carrying amount after the deduction of the expected credit loss).

5.2.2. Initial recognition and measurement

At initial recognition, OP Financial Group measures a financial asset or financial liability at its fair value plus or minus, in the case of a financial asset or financial liability not at fair value through profit or loss, transaction costs that are incremental and directly attributable to the acquisition or issue of the financial asset or financial liability. Immediately after initial recognition, an expected credit loss allowance of a financial asset will be recognised if the financial asset is measured at amortised cost or at fair value through other comprehensive income. This results in accounting loss recognition for newly originated or newly purchased financial assets in the income statement.

5.3 Classification and subsequent measurement of financial assets

OP Financial Group classifies financial assets into the following categories:

- Fair value through profit or loss (FVTPL)
- Fair value through other comprehensive income (FVOCI)
- Amortised cost.

5.3.1 Loans and notes and bonds

The classification and subsequent measurement of loans and notes and bonds depend on the following factors:

a) OP Financial Group's business model for managing the financial assets
b) the contractual cash flow characteristics of the financial asset.

On the basis of these factors, OP Financial Group classifies loans and notes and bonds into the following three measurement categories:

1) Financial assets measured at amortised cost shall be held within a business model whose objective is to hold financial assets in order to collect contractual cash flows that are solely payments of principal and interest on the principal amount outstanding. The financial asset's carrying amount is adjusted by any allowance for expected credit losses and interest revenue is recognised in interest revenue using the effective interest method.

2) Financial assets recognised at fair value through other comprehensive income are held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets. In addition, the contractual terms of the financial asset specify cash flows occurring on specific dates which are solely payments of principal and interest on the principal amount outstanding. Changes in the fair value are recognised in the fair value reserve. Impairment gains or losses and foreign exchange gains or losses are recognised in profit or loss. When a financial asset is derecognised, the cumulative profit or loss in the fair value reserve is reclassified from equity to profit or loss in net investment income as a reclassification adjustment. Interest calculated using the effective interest method is recognised in interest revenue or net investment income (insurance company investments).

3) Financial assets measured at fair value through profit or loss are held for trading or if the financial asset does not meet the criteria for amortised cost or FVOCI. Gains and losses are recognised in net investment income. Interest income and expenses of held-for-trading notes and bonds and derivatives are presented in net investment income since.

Business model

A business model refers to how OP Financial Group manages its financial assets in order to generate cash flows. OP Financial Group's business model determines whether cash flows will result solely from collecting contractual cash flows or from collecting contractual cash flows and cash flows and by selling a financial assets, or whether the purpose is held for trading. Financial assets within the trading business model are measured through profit or loss. When assessing the business model, OP Financial Group takes account of future measures to achieve the objective of the business model. The assessment includes previous experience in collecting cash flows, how the performance of the business model and the financial assets held within that business model are evaluated and reported to the entity's key management personnel, how risks are managed and how managers of the business are compensated. For example, OP financial Group holds home loans it has granted to collect contractual cash flows. They can be sold only in rare cases between OP Financial Group companies, for example, to guarantee covered bonds issued by OP Mortgage Bank or in a stress case liquidity crisis scenario. The objective of the business model of OP Financial Group's liquidity buffer is to collect contractual cash flows and to sell financial assets.

Change in the business model

Changes in the business model are expected rarely as a result of internal or external changes and they must be significant in terms of OP Financial Group's operations. OP Cooperative's Board of Directors decides on changes in the business model. The business model changes in case OP Financial Group acquires or transfers a business area or closes down it. The business model change is appropriately documented by the business unit concerned and is handled by Finance and Risk Management to determine the related accounting effects (incl. the effects on the ECL). The change of the objective of the entity's business model must be executed before the date of the reclassification.

The reclassification is applied prospectively from the reclassification date onwards. The reclassification date is the first date of the following reporting period, before which a decision on the reclassification has been made. Prior reporting periods are not adjusted retrospectively.

The table below shows the effects of various reclassifications on accounting:

Initial measurement category	New measurement category	Accounting effect
Amortised cost	FVTPL	Fair value is determined on the reclassification date. Any gain or loss on the difference that may arise between a financial asset previously measured at amortised cost and the fair value is recognised through profit or loss.
FVTPL	Amortised cost	The fair value on the reclassification date becomes a new gross carrying amount. The effective interest rate is determined based on the fair value on the reclassification date.
Amortised cost	FVOCI	Any gain or loss on the difference that may arise between a financial asset previously measured at amortised cost and the fair value is recognised in other comprehensive income. The effective interest rate and the amount of expected

		credit losses are not adjusted as a result of the reclassification.
FVOCI	Amortised cost	The fair value on the reclassification date becomes a new amortised cost. A gain or loss previously recognised in other comprehensive income is, however, derecognised from equity and recognised to adjust the fair value of a financial asset on the reclassification date. The effective interest rate and the amount of expected credit losses are not adjusted as a result of the reclassification.
FVTPL	FVOCI	The fair value on the reclassification date becomes a new carrying amount. The effective interest rate is determined based on the fair value on the reclassification date.
FVOCI	FVTPL	The fair value on the reclassification date becomes a new carrying amount. A gain or loss previously recognised in other comprehensive income is transferred as an adjustment due to the reclassification from equity through profit or loss on the reclassification date.

Cash flow characteristics

When OP Financial Group's business model is other than trading, OP Financial Group assesses whether contractual cash flows are consistent with a basic lending arrangement. In the basic lending arrangement, contractual cash flows are solely payments or principal and interest on the principal amount outstanding (SPPI) where consideration for the time value of money, credit risk, lending risks and profit margin are typically the most significant elements of interest. The majority of OP Financial Group's financial assets are basic lending arrangements.

All loans to private customers and some corporate loans granted by OP Financial Group contain the option for early repayment. The terms and conditions are, however, consistent with the basic lending arrangement because the prepayment amount substantially represents the contractual par amount and accrued (but unpaid) contractual interest, which may include reasonable additional compensation for the early termination of the contract.

OP Financial Group uses Bloomberg's SPPI Test solution to test the cash flow characteristics of notes and bonds. On the basis of its test result (pass/fail), the SPPI test is either passed or failed with no further reviews or the Group reviews the cash flow characteristics using OP's internal guidelines before the decision on classification (further review required as the result). The solution identifies various elements in contract terms that affect whether the SPPI definition is satisfied.

When contractual cash flows are exposed, for example, to change in stock prices or a borrower's financial result, this is no basic lending arrangement and such financial assets are measured through profit or loss. These are typically various mutual fund investments which do not fulfil the definition of equity in the issuer's financial statements under IAS 32.

Embedded derivatives included in financial assets are not separated from the host contract but they are considered in the overall assessment of contractual cash flows.

If OP Financial Group has to change its business model for managing financial assets, it may have to reclassify financial assets. The reclassification must be applied prospectively from the reclassification date. Such changes are expected to be very infrequent.

5.3.2 Equity instruments

Equity instruments are instruments that evidence a residual interest in the assets of a company after deducting all of its liabilities. These are typically equity investments.

Equity instruments are subsequently measured at fair value through profit or loss, except when OP Financial Group has made an irrevocable election at initial recognition for particular investments in equity instruments that would otherwise be measured at fair value through profit or loss to present subsequent changes in fair value in other comprehensive income. Such investments do not currently exist. Capital gains or losses on these investments are not recognised through profit or loss but their dividends are recognised in other operating income. Dividends of equity instruments held for trading are recognised in net investment income in the income statement.

5.3.3 Modification of contractual cash flows

Modifications in the contractual payment terms are made as a normal measure related to the management of customer relationship but also in situations where the customer's repayment capacity has deteriorated. In such a case, a concession resulting from weaker repayment capacity has to be given to the loan terms – such as a repayment holiday – for a limited period. Generally in these cases, the contractual cash flows of a loan are renegotiated or otherwise modified and the renegotiation or modification does not result in the derecognition of that loan. Modifications in payment terms are subject to regular monitoring and reporting to the management as an indicator anticipating customers' solvency.

If modifications to the loan terms are significant or the loan is renegotiated, OP Financial Group derecognises the original loan and recognises the modified new loan in the balance sheet. The date of renegotiation is consequently considered to be the date of initial recognition for the impairment calculation purposes. This typically means measuring the loss allowance at an amount equal to 12-month expected credit losses. OP Financial Group uses internal rating to classify reasons for modifications and severity classes to monitor whether there has been evidence that the new loan recognised has deemed to be credit-impaired at initial recognition. Accordingly, it is recognised as an originated credit-impaired financial asset. This might occur, for example, in a situation in which there was a substantial modification of a distressed asset.

Otherwise, OP Financial Group derecognises financial assets when the contractual rights to the cash flows from the financial asset expire or it transfers the financial asset to another party and the transfer qualifies for derecognition.

5.3.4 Insurance companies' financial assets measured at fair value through profit or loss

A financial asset is measured at fair value through profit or loss unless it is measured at amortised cost or at fair value through other comprehensive income. OP Financial Group has designated financial assets as measured at fair value through profit or loss (fair value option) if doing so eliminates or reduces the so-called accounting mismatch in the measurement of financial assets and related financial liabilities.

Investments covering life-insurance unit-linked policies and those in the so-called separated balance sheets are designated investments as measured at fair value through profit or loss because the related insurance liability or investment contract liability is recognised at fair value through profit or loss.

5.3.5 Overlay approach

Equity instruments and mutual fund investments related to OP Financial Group's non-life and life insurance investment operations are classified as financial assets measured at fair value through profit or loss. OP Financial Group applies an overlay approach to a considerable proportion of these equity instruments, which will restore the profit/loss impact of these instruments to be aligned with IAS 39. These investments are treated as available-for-sale financial assets under IAS 39. Changes in the fair value of investments within the scope of the overlay approach are presented under the fair value reserve under equity. The Group will stop applying the overlay approach at the latest when IFRS 17 Insurance Contracts becomes effective. The overlay approach is aimed at reconciling temporary earnings volatility resulting from the different dates of entry into force of IFRS 9 and IFRS 17 when investments are measured at fair value through profit or loss in accordance with IFRS 9 but the related insurance liability can not yet be measured at fair value through profit or loss in accordance with IFRS 17.

At the time of their acquisition, available-for-sale financial assets under IAS 39 are recognised at cost, which equals the fair value of the consideration paid plus transaction costs directly attributable to their acquisition. Available-for-sale financial assets are subsequently measured at fair value.

Any changes in their fair value are recognised in other comprehensive income, from where they are transferred to the income statement when the asset is derecognised or there is objective evidence that the asset is impaired. In the case of available-for-sale financial assets, a significant or prolonged decline in the equity instrument's fair value below its cost, constitutes objective evidence.

If a security's market value continues to fall following impairment recognition, the impairment loss will be recognised in the income statement. If the fair value of an impaired equity instrument increases subsequently, this increase will be recognised in other comprehensive income.

5.4 Impairment

Expected credit losses are calculated on all balance sheet items amortised at cost and those recognised at fair value through other comprehensive income (FVOCI) (instruments other than equity instruments) and on off-balance-sheet loan commitments and financial guarantee contracts. Expected credit losses are recognised at each reporting date, reflecting:

a) an unbiased and probability-weighted amount that is determined by evaluating a range of possible outcomes
b) the time value of money and
c) reasonable and supportable information that is available without undue cost or effort at the reporting date about past events, current conditions and forecasts of future economic conditions.

5.4.1 Classification of contracts into three impairment stages

Contracts are classified into three stages. The different stages reflect credit deterioration since initial recognition.

- Stage 1: contracts whose credit risk has not increased significantly since initial recognition and for which a 12-month ECL is calculated.
- Stage 2: contracts whose credit risk has increased significantly since initial recognition and for which a lifetime ECL is calculated.
- Stage 3: defaulted contracts for which a lifetime ECL is also calculated.

In addition, originated credit-impaired contracts are always within the scope of the lifetime expected credit loss (POCI).

Definition of default

In the IFRS 9 based calculation, OP Financial Group applies the same definition of default as in internal credit risk models (IRB).

OP Financial Group assesses default using its internal rating system based on payment behaviour. Default as definition for private customers is applied on a contract-by-contract basis whereas corporate customers are reviewed in terms of a group of connected clients. A customer is classified as a default customer when it is probable that the customer will not pay his loan obligations in full without OP Financial Group resorting to measures (e.g. realisation of collateral) or no later than when payment related to financial assets is more than 90 days past due.

The definition of default is based on Article 178 of Regulation No. 575/2013 (CRR) of the European Parliament and of the Council.

The customer's default ends when it no longer meets the criteria for the definition of default. After that, the payment behavioural category will be restored with a delay of 6 months.

Significant increase in credit risk

The expected credit losses are calculated for each contract for 12 months or lifetime, depending on whether the instrument's credit risk on the reporting date has increased significantly since initial recognition. Both qualitative and quantitative criteria are used to assess whether the credit risk has increased significantly. Forbearance is regarded as a qualitative criterion. Other qualitative factors consist of various credit risk indicators (e.g. breach of covenants) to be taken into account in credit rating models or in the assessment of the payment behavioural category.

OP Financial Group has included relative and absolute thresholds for the determination of significant quantitative increases in credit risk considering all reasonable and supportable information.

A quantitative change is assessed based on the relative change in lifetime PD figures (PD curve). The original lifetime PD curve is calculated on the origination date of the loan taking account of macroeconomic factors. Next, the acceptable natural range of variation is determined for the limits within which the credit risk is not considered to increase significantly during the remaining maturity of the loan. The acceptable range has been modelled separately for private customers and corporate customers. This yields a so-called threshold value curve. On each reporting date, the current lifetime PD curve is compared to the threshold value curve. If the threshold value is exceeded, the credit risk has increased significantly and a credit loss (calculated for the entire remaining maturity of the loan) is recognised. In addition to this limit of the relative change, a further requirement is that a borrower grade has deteriorated since initial recognition so that shifting to the lifetime ECL calculation does not occur only on the basis of the passage of time. In addition, an absolute threshold is used for the weakest borrower grades.

In addition to the aforementioned criteria, credit risk on a financial asset has increased significantly since initial recognition when contractual payments are more than 30 days past due or forbearance has been granted on the loan.

In the assessment of a significant increase in credit risk, OP Financial Group has not applied a transitional rule on the assumption of low credit risk permitted by IFRS 9 to contracts, for which it is not possible without undue cost or effort, to calculate the original lifetime PDs.

OP Financial Group monitors regularly how effectively the abovementioned criteria perceive a significant increase in credit risk before contractual payments have been over 30 days past due and that the contracts do not generally move from impairment stage 1 directly to impairment stage 3, and performs the required calibrations to the calculation method of the relative change.

5.4.2 Measurement methods

Expected credit losses are mainly measured on a system basis using the PD/LGD method on a contract-specific basis for all private and corporate customer exposures.
Additionally, the cash flow based ECL measurement method based on expert judgement is used for the largest corporate exposures in stage 3.

5.4.2.1 PD/LGD method

Expected credit losses are calculated using modelled risk parameters with the formula probability of default (PD) x loss given default (LGD) x exposure at default (EAD) for majority of portfolios per contract and they reflect expectations of future credit losses at the reporting date. PD describes probability of default according to the definition of default. LGD describes the share of an asset if a borrower defaults. It is affected, for example, by the quantity and type of collateral securities and various financial guarantees. EAD describes the exposure amount at default, including exposure in the balance sheet (capital and accrued interest) and expected use of off-balance-sheet items at default.

The ECL calculation is based on three different scenarios. Risk parameters PD, LGD and EAD are calculated for yearly time buckets in each scenario. Yearly ECL figures are discounted to the reporting date and a probability-weighted ECL is calculated from the figures of different scenarios. The contract's effective interest or its estimate is used as the discount factor. The contract's maximum residual term to maturity is limited to 30 years in the measurement.

The lifetime probability of default (lifetime PD) models for a contract have been prepared separately for private customers and corporate customers. The PD models are substantially affected by the contract's credit rating, loan age (private customers) as well as the model's sub-segment, which is determined for corporate customers on the basis the rating model and for private customers on the basis of the product type. In addition, PD estimates are dependent on macroeconomic factors and their forecasts in each scenario.

The lifetime LGD consists of the following three components: 1) cure rate, 2) collateral return and 3) non-collateral return. The values of the different components depend substantially on the product type, industry (companies) and the type of collateral.

The macroeconomic factors and their forecasts affect the first two components.

The lifetime exposure at default (lifetime EAD) for a contract is based on contractual cash flows, utilisation rate, prepayment rate and maturity model, depending on the product type.

Determining the period of a contract

The period of a contract for promissory notes is a contractual maturity that takes account of repayments under the payment terms. The prepayment model applies to secured promissory notes (excl. default). It does not reduce the contractual maturity but is taken into account as part of the contract's EAD.

Revolving credit facilities (such as credit cards) are contracts valid until further notice and an expected maturity has been modelled for them. The modelled maturity depends on the product type and borrower grade, averaging some 15 years.

Forward-looking information

The calculation model includes forward-looking information and macroeconomic scenarios. OP Financial Group's economists update macroeconomic scenarios on a quarterly basis and the scenarios are the same that OP Financial Group uses otherwise in its financial annual planning. Macroeconomic forecasts span five years and have been extrapolated for up to 30 years ahead using a production function. The macroeconomic factors used are: GDP growth, unemployment rate, investment growth rate, inflation rate, change in income level and 12-month Euribor rate. In addition, the house price index is used in LGD models. Three scenarios are used: baseline, upside and downside. Scenarios also include probability weights.

Preparing macroeconomic forecasts and projecting them into the future up to 30 years involves a large amount of uncertainty, which is why actual results may differ significantly from the forecasts. OP Financial Group has analysed that the relationship of the change in the components of risk parameters and macroeconomic factors used in the ECL calculation is not linear. Accordingly, the macroeconomic forecasts represent OP Financial Group's best view of potential scenarios and outcomes.

5.4.2.2 Cash flow based ECL method based on customer-specific expert assessment

For the largest corporate exposures in stage 3 within the R rating model, the ECL is calculated as an expert assessment using the cash flow based customer-specific ECL method. Such expert assessment is performed in connection with a rating or credit decision.

The forward-looking information used in the calculation is part of the credit rating assessment and rating proposal by a credit analyst that cover developments in business, markets, competitive situation and the forecast cash flow.
The calculation also takes account of the scenarios describing the effect of macroeconomic variables (upside, baseline and downside), on the basis of which the customer's weighted expected credit loss is calculated. The scenarios used in the PD/LGD model are utilised in the determination of the scenarios.
When the customer included in the ECL measurement based on the customer-specific expert assessment does no longer meet the criteria for default and has been identified and classified as a "performing" obligor, it is excluded from this method and returns to be included in the ECL measurement based on the normal PD/LGD model.

5.4.3 Impairment of notes and bonds

The expected loss on notes and bonds recognised through other comprehensive income are recognised through profit or loss and to adjust the fair value reserve.

OP Financial Group avails itself of two separate models in the calculation of the expected credit loss on notes and bonds, with the primary model being the Bloomberg tool. For the bonds that the Bloomberg tool does not support on each ECL measurement date, the Group uses OP's own tool based on credit rating information.

5.4.3.1 Bloomberg tool

Expected credit losses are calculated using the formula PD x LGD x EAD for all portfolios per purchase lot and they reflect expectations of future credit losses at the reporting date.

In the case of listed companies, OP Financial Group uses the Merton distance-to-default (DD) model as the basis for probability of default (PD), whose outcome will be converted into the PD value based on the model's historical outcome. The figure is adjusted with indicators from companies' financial statements data describing the strength of the balance sheet, liquidity risk and earnings power. These indicators have, in turn, been normalised according to the estimated effect of off-balance-sheet items.

In the case of private companies, PD modelling is based on financial indicators collected from their financial statements and on the average risk modelled for the sector.

The definition of default is consistent with that required by international regulators, covering bankruptcy, non-payment, distressed exchanges and government bail-out.

The cure rate in the LGD model is based on historical realised recovery rates of default bonds. The cure rate is defined as the trading price of the defaulted bond. It takes account of payment rank, issuer's creditworthiness, nature of the industry, credit cycle, type of collateral, region etc.

5.4.3.2 Model based on credit rating information

In the model, credit ratings are sought for purchase lots on the purchase date and the reporting date, and they are converted into PD figures. The Group primarily uses the averages of external credit rating and secondarily internal credit rating, in case no external credit ratings exist.

The PDs correspond to the actual historical default rates by credit rating for each period from the date of issuing the credit rating. The historical data, for which the determined correspondence is based on, is comprehensive and on a long-term basis. The LGDs also correspond to the studied historical actuals by investment class/collateral type and these are not separately assessed by issuer or investment. Because external credit ratings measure total credit risk (ECL), not PD, the LDG in these cases affect only the division of the ECL between PD and LGD components.

5.4.3.3 Classification of notes and bonds into impairment stages

In both calculation models, a significant increase in credit risk is identified by means of consistent criteria as in transfers to stage 3.

Investments whose 12-month PD has doubled in such a way that the change is at least 0.2 percentage points, an investment is subject to forbearance measures or its payments are over 30 days past due are transferred to stage 2. Investments related to an issuer in default are classified into stage 3 if its payments are over 90 days past due or if the customer is a default customer.

5.4.4 Impairment of off-balance-sheet items

Several products provided by OP Financial Group include a limit, credit facility or another off-balance-sheet loan commitment as a standard feature or a feature in some stage of the product lifecycle. For example, revolving credit facilities, such as credit cards and accounts with credit facility, include both a loan and an undrawn commitment component. Moreover, OP Financial Group is an issuer in various guarantee contracts, such as financial guarantees and other commercial guarantees or guarantees given to authorities, to all of which IFRS 9 impairment rules apply. For loan commitments and financial guarantee contracts, the date that OP Financial Group becomes a party to the irrevocable commitment shall be considered to be the date of initial recognition for the purposes of applying the impairment requirements. Accordingly, only OP Financial Group's binding items are taken into account in the calculation of expected credit losses.

The expected credit loss is calculated for these items using the same principles as for loans. Likewise, increases in significant credit risk are assessed on the same grounds. The Group models EAD for such products that forecasts exposure at default. It includes both the utilisation rate and credit conversion factor. In addition, a maturity model is applied to contracts valid until further notice. The model takes account of cases where OP Financial Group has a contractual ability to demand repayment and cancel the undrawn commitment but it does not limit the Group's exposure to credit losses during the contractual notice period.

5.4.5 Recognition of expected credit losses

The Group mainly recognises a loss allowance for expected credit losses on a loan in a separate account. For loan commitments and financial guarantee contracts the loss allowance is recognised as a provision. For products that include both a loan (i.e. financial asset) and an undrawn commitment (i.e. loan commitment) component and OP Financial Group cannot separately identify the expected credit losses on the loan commitment component from those on the financial asset component, the expected credit losses on the loan commitment are recognised together with the loss allowance for the financial asset.

5.4.6 Write-off

A write-off constitutes a derecognition event. When the Group has no reasonable expectations of recovering a financial asset in its entirety or a portion thereof, it directly reduces the gross carrying amount of the financial asset.

A loan is derecognised when collateral securities have been realised or when the final meeting of the bankruptcy estate has been held, debt rescheduling or financial restructuring has come to an end or when collection measures have ended. Payments received after the derecognition are recognised as an adjustment to impairment losses on receivables.

5.5 Cash and cash equivalents

Cash and cash equivalents consist of cash and receivables from credit institutions repayable on demand.

5.6 Classification and subsequent measurement of financial liabilities

Financial liabilities comprise deposits and other liabilities to credit institutions and customers, debt securities issued to the public and other financial liabilities.

Financial liabilities are classified at amortised cost using the effective interest method, except for derivative liabilities measured at fair value through profit or loss. In addition, investment contracts with no entitlement to discretionary participation feature issued by insurance companies are designated as measured at fair value through profit or loss. Liabilities held for trading also include obligations to deliver securities the counterparty which have been sold but which are not owned at the time of selling (short selling).

Upon initial recognition, OP Financial Group has not designated financial liabilities as measured at fair value through profit or loss.

OP Financial Group derecognises a financial liability (or a part of a financial liability) when it is extinguished – i.e. when the obligation specified in the contract is discharged or cancelled or expires.

An exchange between OP Financial Group and original lenders of financial liabilities with substantially different terms must be accounted for as an extinguishment of the original financial liability. In such a case, any costs or fees incurred are recognised as part of the gain or loss on the extinguishment. If the exchange or modification is not accounted for as an extinguishment, the amortised cost of the modified financial liability will be recalculated by discounting the modified contractual cash flows using the original effective interest rate. Changes in the amortised cost of the financial liability is recognised through profit or loss. Costs or fees incurred adjust the carrying amount of the liability and are amortised over the remaining term of the modified liability. OP Financial Group has not made any exchanges of financial liabilities for the existing financial liabilities.

5.7 Netting

Financial assets and liabilities are offset in the balance sheet if OP Financial Group currently has a legally enforceable right of set-off in the normal course of business and in the event of default, insolvency or bankruptcy, and intends to settle the asset and liability on a net basis. OTC interest rate derivatives for central counterparty clearing are offset in the balance sheet, which are cleared in the daily clearing process with London Clearing House or ICE Clear Europe. The settled-to-market (STM) approach or collateralized to market (CTM) is used as a settlement accounting method.

5.8 Derivative contracts

Derivative contracts are classified as hedging derivative contracts and derivative contracts held for trading, containing interest rate, currency, equity, commodity and credit derivatives. Derivatives are measured at fair value at all times.

The fair value of OTC interest rate derivatives for central counterparty clearing is cleared in cash on a daily basis. In the balance sheet, these cleared derivatives are netted and shown as a net change in cash and cash equivalents. Other derivatives are presented in the balance sheet on a gross basis, in which case positive value changes are presented as derivative contracts under assets and negative value changes as derivative contracts under liabilities.

5.8.1 Hedging derivatives

OP Financial Group has prepared methods and internal principles used for hedge accounting, whereby a financial instrument can be defined as a hedging instrument. In accordance with the hedging principles, OP Financial Group can hedge against interest rate risk, currency risk and price risk by applying fair value hedge or cash flow hedge. Fair value hedging refers to hedging against changes in the fair value of the hedged asset, and cash flow hedging to hedging against changes in future cash flows. In OP Financial Group, the hedgeable risk categories are fair value and cash flow interest rate risks as well as currency risk.

Contracts are not accounted for according to the rules of hedge accounting if the hedging relationship between the hedging instrument and the related hedged item, as required by IAS 39, does not meet the criteria of the standard. OP Financial Group also concludes derivative contracts which are in fact used to hedge against financial risks but which do not fulfil these criteria.

5.8.2 Derivatives held for trading

The difference between interest received and paid on interest rate swaps held for trading is recorded in Net investment income in the income statement and the corresponding interest carried forward is recognised in derivative contracts in the balance sheet. Changes in the fair value of Derivatives held for trading are recorded under Net investment income in the income statement. Derivatives are carried as assets under Derivative contracts when their fair value is positive and as liabilities under Derivative contracts when their fair value is negative.

5.9 Hedge accounting

Hedge accounting is used to verify that changes in the fair value of a hedging instrument or cash flows fully or partially offset the corresponding changes of a hedged item. Section 11.3.2 describes Life Insurance hedging.

The relationship between hedging and hedged instruments is formally documented, containing information on risk management principles, hedging strategy and the methods used to demonstrate hedge effectiveness. Hedge effectiveness is tested at the inception of the hedge and in subsequent periods by comparing respective changes in the fair value or cash flows of the hedging instrument and the hedged item. The hedge is considered effective if the change in the fair value of the hedging instrument or in cash flows offsets the change in the fair value of the hedged contract or portfolio or in cash flows within a range of 80–125%. Due, however, to the Interest Rate Benchmark Reform, if the real result of the retrospective effectiveness test is outside of the limits concerned, the Group assesses whether hedge accounting can continue or be discontinued. This includes that hedging is still expected to be prospectively effective and the hedging relationship effectiveness can be calculated reliably. When assessing proactive effectiveness testing whether hedge is still highly probable, the reference rate will not be changed due to the Interest Rate Benchmark Reform. The effectiveness test also involves assessing any potential effects of market participants following the Reform on OP Financial Group's hedging relationship. OP Financial Group will stop applying the changes to hedging relationship effectiveness tests when uncertainty due to the Interest Rate Benchmark Reform ceases to affect cash flows based on reference rate of a hedged item or hedging derivative or when the hedging relationship ceases to exist. OP Financial Group applies hedge accounting based on

IAS 39 and the related changes caused by the Interest Rate Benchmark Reform.

OP Financial Group set up a Reference Interest Rate Committee tasked with monitoring the progress of the Interest rate Benchmark Reform and its effects on OP Financial Group too. OP Financial Group has made a business continuity plan required by the Benchmarks Regulation that determines a substitute rate for contracts if no reference rates are not available or where the existing contract terms by product are identified. The plan is updated as the Reform progresses. OP Financial Group will adopt reformed reference rate in new contracts, based on market practice. When it comes to the old portfolio of contracts, the changes will be implemented by adopting practices applied in markets to replace IBORs.

5.9.1 Fair value hedges

Fair value hedging against interest rate risk involves long-term fixed-rate debt instruments (such as central bank debt, own issues and certain term deposit issues), individual bond and loan portfolios, as well as individual loans. The Group applies a fair-value portfolio hedging model to hedging against interest rate risk involved in certain demand deposit current and savings accounts with an interest rate cap or a fixed interest rate. The Group uses interest rate options, forward exchange contracts and interest-rate and currency swaps (OTC swaps) as hedging instruments. Hedging against foreign currency risk applies to non-life insurance's and life insurance's foreign currency investments.

Changes in the fair value of derivative contracts that are documented as hedging the fair value and are highly effective hedges are recognised in the income statement. Hedged assets and liabilities are also measured at fair value during the period for which the hedge is designated, and any fair value changes are recognised through profit or loss.

In fair value hedge accounting, changes in the fair value of the hedging instrument and the hedged item are recorded in banking in the income statement under net interest income and net investment income. These are recorded in net investment income in non-life insurance and life insurance. Any ineffectiveness that may arise from a hedge relationship may be caused by the timing differences between the cash flows of the hedging instrument and the hedged item, and it is correspondingly recognised in the abovementioned items.

The calculation principles of the Euribor changed during 2019. In July 2019, the Financial Services and Markets Authority (FSMA) of Belgium granted authorisation related to the Euribor by virtue of the European Union Benchmark Regulation. This makes it possible to the market participants to continue using the Euribor after 1 January 2020, covering both the existing and new contracts. OP Financial Group expects that the Euribor will remain a reference interest rate in the future too and does not expect to change the risk to be hedged to a second reference rate. For these reasons, OP Financial Group does not consider that the reference rate change would directly affect fair value hedges where the Euribor is the reference rate.

5.9.2 Cash flow hedges

A cash flow hedge is a hedge of the exposure to the variability attributable to a particular risk associated with variable-rate debt or other variable-rate assets and liabilities. In addition, cash flow hedging is used to hedge the future interest flows of the loans defined on the basis of reference interest rate linkage. Interest rate swaps are mainly used as hedging instruments.

Derivative contracts which are documented as cash flow hedges and provide effective hedges are measured at fair value. The effective portion of changes in the fair value of the hedging instrument is recognised in other comprehensive income. Any ineffectiveness that may arise from a hedge relationship may be caused by the timing differences between the cash flows of the hedging instrument and the hedged item, and it is recognised in net interest income in the income statement. Fair value changes recognised in equity are included in the income statement in the period when hedged items affect net income.

OP Financial Group has assessed to what extent cash flow hedges are dependent on the uncertainty associated with the Interest rate Benchmark Reform on the reporting date. Hedged items and hedging derivatives continue indexing in respect of the reference interest rate that is not changed and whose quotations continue on a daily basis and whose cash flows are changed between counterparties as before. However, the duration of cash flow hedges exceeds one day, when the EONIA rate is no longer published but is replaced with the new €STR. The new reference rate is also expected to be replaced with the LIBOR. This transition and the new reference rate still involve uncertainty that may later affect the hedging relationship effectiveness or the assessment of the highly probable term. In respect of cash flow hedges either, OP Financial Group does not see that the Reform would case any uncertainty with timing or Eurobor cash flows on the reporting date of 31 December 2019.

6 Investment property

Investment property is land and/or buildings or part thereof held to earn rental income or for capital appreciation. Property, a minor part of which is used by the owner company or its personnel, is also accounted for as investment property. However, a part of property used by the owner company or its personnel is not accounted for as investment property if the part can be sold separately. Investment property is shown as investment assets in OP Financial Group's balance sheet.

Investment property is initially recognised at cost which includes transaction costs. It is subsequently carried at fair value. Investment property under construction is also measured at fair value only if the fair value can be determined reliably. Any changes in fair value are recognised in net income from investment property under net investment income.

If no comparable market data is available on the actual transaction prices of the property comparable with the property under review, the Group uses the income approach and

internal methods based on property-specific net income to determine the fair value of commercial, office and industrial premises. OP Financial Group uses both its internal and external information in the income approach. A property's net income comprises the difference between rental income and maintenance charges and is based on income under current leases or, if no lease is in force, on average market rents. Expenses deducted from income are mainly based on actual expenses. Assumption of underutilisation of the property is also taken into account in the calculation. For the income approach, OP Financial Group obtains information on market rental and cost levels from sources outside the Group, in addition to its own expertise. The return requirements for investment property holdings are determined on the basis of the property's purpose of use, location and condition/modernness and are based on market data provided by an external expert.

The fair value of residential buildings and land areas is primarily determined using the market approach, based on information on the actual transaction prices of similar properties and on OP Financial Group's internal expertise. In the fair value of undeveloped plots, the Group has taken account of the planning and market situation at the time of appraisal. The fair value of major property holdings is based on valuation reports drawn up by Authorised Property Valuers. External valuers use a cash flow analysis as the basis for their appraisal.

7 Intangible assets

7.1 Goodwill

For business combinations, the Group measures the resulting goodwill as the fair value of the consideration transferred including the recognised amount of any non-controlling interest in the acquiree and the previous holding exceed OP Financial Group's share of the fair value of the acquired assets and assumed liabilities.

For acquisitions before the effective date of the current IFRS 3, goodwill represents at the time of acquisition the excess of the cost of an acquisition over the fair value of OP Financial Group's share of the net identifiable assets, liabilities and contingent liabilities of an acquiree.

Goodwill is carried at cost less accumulated impairment losses. For the purpose of impairment testing, goodwill is allocated to cash-generating units (CGU), which are business segments, entities belonging to them or their internal business divisions. From the time of acquisition, goodwill is allocated to those CGUs or groups generating cash flow that are expected to benefit from synergies arising from the combination of businesses, and also to the lowest level with which goodwill is monitored for the purpose of internal management. If OP Financial Group reorganises its internal reporting structure, goodwill is allocated to the CGUs subject to such reorganisation in proportion to their fair values or on the basis of another method, which would better reflect goodwill related to the transferred business.

7.2 Testing goodwill for impairment

The cash-generating unit to which goodwill has allocated is subject to an annual impairment test or whenever there is any indication of the lowered goodwill of the unit. The value of the CGUs of OP Financial Group was, for the goodwill testing, determined by the Excess Returns method. Accordingly, the return on equity capital is deducted from the recoverable amount for the current and future financial periods. Any excess return is discounted by a discount rate corresponding to the return rate on equity capital in order to determine the present value of cash flows.

Forecasts used in cash flow statements are based on the cash flow expected for the next five years and on the terminal value of the testing unit that are discounted to present value. Cash flow forecasts derive from the continuous strategy process based on the guidelines for OP Financial Group's development confirmed by the Supervisory Board of OP Cooperative and the related derived expectations of the future development of businesses.

7.3 Value of acquired insurance portfolio

An intangible asset corresponding to the value of an acquired insurance portfolio is recognised if the insurance portfolio is acquired directly from another insurance company or through the acquisition of a subsidiary. The fair value of acquired insurance contracts is determined by estimating the present value of future cash flows on the basis of the insurance portfolio on the date of acquisition. Upon initial recognition, the fair value of acquired insurance contracts is divided into two parts: a liability associated with insurance contracts measured in accordance with the applicable principles on the acquisition date, and an intangible asset. Subsequent to the acquisition, the intangible asset is amortised, depending on the business, either on a front-loaded basis or on a straight-line basis over the estimated effective lives of the acquired contracts. The effective lives are reviewed annually and the value is amortised over 1–4 years for non-life insurance and 10–15 years for life insurance. An intangible asset is tested annually for impairment in connection with testing the adequacy of the liability associated with insurance contracts.

7.4 Customer relationships

Identifiable customer relationships acquired through business combinations are measured at fair value upon acquisition. This intangible asset arising from customer relationships is amortised on a straight-line basis over the asset's estimated useful life. The estimated useful life of OP Financial Group's acquired customer relationships is 5–15 years.

7.5 Brands

Identifiable brands acquired through business combinations are measured at fair value upon acquisition. The estimated useful lives of brands are estimated to be indefinite, since they will generate cash flows for an indefinable period. These will not be amortised. OP Financial Group's brands originate entirely from

the acquisition of Pohjola Group plc's business operations. Impairment testing was carried out separately for the Pohjola and A-Vakuutus (A-Insurance) brands, in accordance with IAS 36.

The value of brands is tested annually for impairment. The value of the brands was determined by using a method where their value was determined to be royalty savings accrued in the future from owning the brands, discounted to the present. The discount rate used in testing brands is the market-based equity cost defined for Non-life Insurance plus an asset-specific risk premium or 3%. The testing period of the brands was determined to be five years under IAS 36.

7.6 Other intangible assets

Other intangible assets are measured at cost less accumulated amortisation and any impairment losses. In general, computer software and licences are amortised over 4 years and other intangible assets over 5 years.

Expenditure on the development of internally-generated intangibles (software) is capitalised starting from the time when the software is found to generate future economic benefits. The capitalised expenditure includes, for example, licence fees, purchased services, other external costs related to projects and in-house work. The asset will be amortised from the time it is ready for use. An asset that is not yet ready for use is assessed annually for impairment. Research costs are recognised as expenses for the financial year.

7.7. Software as a service (SaaS)

The SaaS development costs are recognised in prepayments under other assets. The amount capitalised in prepayments is a project that is performed before the service provider is able to produce the service. The other party has control in SaaS and it is not capitalised as an intangible asset. Prepayment costs are spread over the contract period from the date when the asset is ready for use. Purchased services and other project-related external costs, among other things, are entered in prepayments.

8 Property, plant and equipment

Property, plant and equipment (PPE) assets are carried at cost less accumulated depreciation and any impairment losses. These assets are depreciated on a straight-line basis over their estimated useful lives. Land is not subject to depreciation. Subsequent expenditures are capitalised at the asset's carrying amount only if it is probable that the asset will generate greater economic benefits than initially estimated.

The estimated useful lives are mainly as follows:

Buildings	20–50 years
Emergency power units and generators	15 years
Machinery and equipment	3–10 years
ICT hardware	3–5 years
Cars	2–6 years
Other PPE assets	3–10 years

The assets' residual value and useful lives are reviewed on each balance sheet date and adjusted as appropriate if expectations differ from previous estimates with respect to economic benefits.

8.1 Impairment of PPE and intangible assets

On each balance sheet date, the Group assesses whether there is any indication of an asset's impairment. If such indication exists, the amount recoverable from the asset will be estimated. Regardless of the existence of such indication, the recoverable amount is estimated for assets not yet available for use, goodwill and intangible assets with indefinite useful lives (brands). An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its future recoverable amount.

The recoverable amount is the higher of an asset's fair value less costs to sell (net selling price) or value in use. The recoverable amount is primarily determined on the basis of the asset's net selling price, but if this is not possible, the asset's value in use must be determined. The asset's value in use equals the present value of future cash flows expected to be recoverable from the asset. The discount rate used is a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the asset. The need for impairment of the annually tested assets stated above is always determined on the basis of value-in-use calculations.

If the asset's net selling price cannot be determined and the asset does not generate cash flows independent of other assets, the need for impairment will be determined through the cash-generating unit, or the business segment or its company, to which the asset belongs. In such a case, the carrying amounts of the unit's assets are compared with the entire unit's recoverable amounts.

An impairment loss is reversed if there has been a change in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognised. The

increased carrying amount of the asset may not exceed the carrying amount of the asset that would have been determined had no impairment loss been previously recognised. Impairment loss on goodwill may not be reversed under any circumstances.

In respect of property in own use, the Group assesses as part of the financial statements whether there is any indication of an impaired property. Such indication includes a significant reduction in the market value and evidence of non-marketability or physical damage. If the income generated in the future by property in own use is expected to be lower than its acquisition cost not depreciated, the resulting difference will be impairment loss and charged to expenses.

9 Leases

9.1 Leases in 2019

At the inception of the lease, OP Financial Group assesses whether the contract concerned is a lease or contains a lease. It is the question of a lease treated under IFRS 16 if the following conditions are fulfilled in all respects:

- The contract is based on control over an identified asset in such a way that OP Financial Group companies or its employees have the right to decide on the use of the asset throughout the lease period when OP Financial Group is the lessee and the customer and its Group companies have decision-making powers related to the use of the asset when OP Financial Group is the lessor
- The contract includes rights and obligations and related payments
- The asset identified in the contract is used only by OP Financial Group companies or employees when OP Financial Group is the lessee, and by the customer or its Group companies when OP Financial Group is the lessor

Recognition of assets leased out

On the date of inception, OP Financial Group classifies leased assets as finance leases or operating leases depending on the substance of the transaction. A lease is classified as a finance lease if it transfers substantially all the risks and rewards incident to ownership to the lessee. All other leases are classified as operating leases. Lease classification is performed at the inception of the lease.

Assets leased out under finance lease are recorded as receivables from customers in the balance sheet, to the amount equal to the net investment in the lease. Finance income from the lease is recognised in interest income based on a pattern reflecting a constant periodic rate of return on the lessor's net investment outstanding in respect of the finance lease.

Assets leased out under operating lease are shown under property, plant and equipment and are depreciated on a straight-line basis over the lease term. Lease income is presented under other operating income and is recognised on straight-line basis over the lease term. The fixed duration specified in the contract is determined as the lease term in the leased contracts that may not be extended or terminated without a good reason or sanction.

Recognition of leased right-of-use assets

Leased right-of-use assets are presented in PPE assets and are mainly derecognised during the lease term. The corresponding lease liability is presented in other liabilities and the related interest expenses are presented in net interest income. Service charges related to leases, which are separated from the lease amount, are presented in other operating expenses. Separating the service charge is performed by fixed asset class.

For leased contracts, OP Financial Group defines the lease term as follows:

- A fixed term that cannot be extended or terminated without any good reason or sanction or
- based on management judgement, for a maximum of three years when it is the question of a property lease until further notice to which a mutual notice period applies. If the lease is fixed at first and is renewed to be valid until further notice as described above, the lease term is a combination of these. When such a lease has been terminated, the notice period is defined as the lease term. When determining the lease term, OP assesses that it is reasonably certain that the lessee stays on the premises longer because the property based on the lease has a central location and no substitutive property is necessarily available.
- the lessor's notice period if it is the question of a lease other than a property lease until further notice to which a mutual notice period applies. The lease term will always be renewed with a new notice period after the notice period unless the lease has been terminated. When determining the lease term, OP assesses that it is reasonably certain that leases have been concluded for a longer time because terminating and renewing such leases would not be profitable. Or
- the useful life of the leased property if it is shorter than the lease terms defined in a matter mentioned above.

In calculating lease liability, OP Financial Group usually uses the incremental borrowing rate of the lessor. The interest rate quoted by the OP Financial Group Treasury is used as the incremental borrowing rate that Treasury uses to lend OP cooperative banks and OP Financial Group's subsidiaries.

OP Financial Group applies entry concessions allowed for lessors. Expenses of low-value and short-term leases for the financial year are recognised in other operating expenses. These leases include laptops, mobile phones and smaller devices and devices and machines leased on a one-time basis.

OP Financial Group's leased contracts are mainly those related to premises, company cars and safety devices.

9.2 Leases in 2018

On the date of inception, leases (also when part of other arrangements) are classified as finance leases or operating leases depending on the substance of the transaction. A lease is classified as a finance lease if it transfers substantially all the risks and rewards incident to ownership to the lessee. All other leases are classified as operating leases. Lease classification is performed at the inception of the lease.

Assets leased out under finance lease are recorded as receivables from customers in the balance sheet, to the amount equal to the net investment in the lease. Finance income from the lease is recognised in interest income based on a pattern reflecting a constant periodic rate of return on the lessor's net investment outstanding in respect of the finance lease.

Assets leased under finance lease are recognised as property, plant and equipment and the corresponding finance lease liability is included in other liabilities. At the inception of the lease term, these leased assets are recorded as assets and liabilities at the lower of the fair value of the asset and the present value of the minimum lease payments. PPA assets are depreciated over the shorter of the lease term or the life of the asset. Finance charges are recognised in interest expenses so as to produce a constant periodic rate of interest on the remaining balance of the liability.

Assets leased out under operating lease are shown under property, plant and equipment and are depreciated on a straight-line basis over the lease term. Lease income is presented under other operating income and is recognised on straight-line basis over the lease term. Lease payments for leased assets under operating lease are recognised as expenses in "Other operating expenses" on a straight-line basis over the lease term.

10 Employee benefits

10.1 Pension benefits

Statutory pension cover for OP Financial Group companies' employees is arranged by Ilmarinen Mutual Pension Insurance Company and OP Bank Group Pension Fund. Some OP Financial Group companies provide their employees with supplementary pension cover through OP Bank Group Pension Foundation or an insurance company.

Pension plans managed by Ilmarinen Mutual Pension Insurance Company are defined contribution plans and those managed by OP Bank Group Pension Fund are defined benefit plans in respect of funded disability and old-age pension benefits. Pension plans managed by insurance companies may be either defined benefit or defined contribution plans. All of the plans managed by OP Bank Group Pension Foundation are defined benefit plans.

Expenses arising from pension plans are recognised under "Personnel costs" in the income statement. Contributions under defined contribution plans are paid to the insurance company and charged to expenses for the financial year to which they relate. No other payment obligations are included in defined contribution plans. Curtailing the defined benefit pension plan or fulfilling or changing the related obligation is recognised through profit or loss at the time of occurrence.

Defined benefit plans managed by insurance companies, OP Bank Group Pension Fund and OP Bank Group Pension Foundation are funded through payments based on actuarial calculations.

The liability recognised in the balance sheet in respect of the defined benefit plan is the present value of the defined benefit obligation on the balance sheet date less the fair value of the plan assets of OP Bank Group Pension Fund, OP Bank Group Pension Foundation and acceptable insurance.

Defined benefit obligations are calculated separately for each plan using the Projected Unit Credit method. Pension costs are charged to expenses over the employees' expected working lives on the basis of calculations performed by authorised actuaries. The discount rate for the present value of the defined benefit obligation is determined on the basis of the market return on high-grade corporate bonds on the closing date of the reporting period.

Items resulting from remeasurements of the net defined benefit liability are recognised in other comprehensive income in the period they occur. Remeasurements of the net defined benefit liability recognised in other comprehensive income will not be reclassified to income statement in later financial periods.

10.2. Long-term management remuneration scheme

OP Financial Group has a short-term and long-term management remuneration scheme in place. Those included in the schemes may receive bonuses either in cash only or as a combination of cash and a reference instrument decided by OP Cooperative's Supervisory Board or a Remuneration Committee it has appointed. Bonuses will be paid for work performed during the so-called performance and vesting period. The maximum amount of the remuneration schemes is calculated on the grant date and the amount charged to expenses is recognised in personnel costs and deferred expenses over the vesting period.

The amount of compensation corresponding to the objectives reached is reviewed quarterly. Any effects resulting from reviewing the original estimates are recognised in personnel costs and the corresponding adjustment is made in deferred expenses.

11 Insurance assets and liabilities

11.1 Classification of financial assets within insurance business

The section "Classification and recognition" under Financial Instruments contains information on the classification of financial assets within OP Financial Group's insurance operations.

11.2 Classification of insurance contracts issued by insurers

An insurance contract is a contract which transfers significant insurance risk from the policyholder to the insurer, as defined in IFRS 4. Other contracts which the insurance company may issue under its licence represent investment or claims management contracts. If a contract does not involve any significant insurance risk on the balance sheet date but the policyholder has the right to change the contract in such a way that the contract transfers significant insurance risk to the insurer, the contract is classified as an insurance contract. The contracts are categorised contract by contract or by types of contract containing homogeneous risks. If several contracts are concluded simultaneously with a single counterparty or if contracts are otherwise interdependent, the significance of insurance risk is assessed jointly.

The savings and insurance components of insurance contracts are not unbundled.

Almost all of the contracts issued by non-life insurers are insurance contracts. Contracts in which the difference between realised and estimated losses are balanced with a supplementary premium and which involve no underwriting risk have been categorised as claims management contracts.

Capital redemption contracts issued by life insurers and such endowment and pension insurance contracts under which, in the case of the insured person's death, purely savings will be paid to beneficiaries or an amount that differs slightly from it, are classified as insurance contracts because they do not include any significant underwriting risk and their policyholder has no right to change the contracts to include underwriting risk.

Insurance contracts are classified into risk groups in such a way that the risks of contracts are homogeneous in each group. This classification of non-life contracts takes account of the insured object, differences in the duration of contracts or the average length of the period between the occurrence of a loss event and the date of the fully-paid claim (claim settlement period). As to life insurance policies, the Group takes account of whether savings are accumulated, how the return of the savings is determined and whether the contract is for life or death risk.

The main insurance contract categories are short-term non-life contracts, long-term non-life contracts and life insurance contracts.

Short-term non-life insurance contracts usually have a policy term of 12 months or less, very rarely more than 24 months. In particular, policies for private individuals, motor-vehicle policies and statutory workers' compensation policies are usually automatically renewable annual policies that are treated as short-term contracts.

Long-term non-life insurance contracts refer to contracts with an average minimum policy term of two years. These include perpetual insurance policies and decennial insurance policies under the Housing Transactions Act.

Life insurance contracts include single and regular premium endowment policies where the sum insured is to be paid at termination of the policy, individual pension policies, group pension policies supplementing statutory pension cover, and term insurance policies issued mainly for death. Life and pension insurance savings can have either a guaranteed interest rate, with a discretionary participation in the profit of the insurer, or unit-linked in which the investment risk has been transferred to policyholders.

11.3 Recognition and measurement of insurance contracts issued by insurers

Contracts are recognised when an insurer's obligation to pay out the related claim begins following the occurrence of an insurance event.

Insurance contracts and investment contracts where the contract holder has the right of discretionary participation feature or the right to transfer the savings for a guaranteed interest rate and thereby be entitled to the discretionary participation feature are treated and measured according to Insurance Contracts standard IFRS 4. Other investment contracts are measured according to IFRS 9.

Liabilities of contracts issued by insurers and measured under IFRS 4 are calculated mainly in accordance with national accounting standards. However, equalisation provisions are not included in these liabilities but are included in equity capital. In addition, part of the insurance liability is measured by taking account of the current interest rate.

The liabilities comprise provisions for unearned premiums and the provision for outstanding claims. The life insurance provisions for unearned premiums consist of the liability calculated from the expected net claims and operating expenses during the contracts' remaining maturities less future insurance premiums during the remaining coverage periods of the recognised policies. Non-life provisions for unearned premiums equal the liabilities arising from claims and other expenses expected for the remaining coverage periods of the recognised policies. Provision for outstanding claims arises from reported and non-reported claims incurred and from their claims and settlement expenses paid in the future.

11.3.1 Measurement of insurance contracts issued by non-life insurers

Premiums are primarily recognised as revenue over the term of the contract. However, revenue recognition in decennial and perpetual insurance policies is based on the distribution of underwriting risk. In these policies, the portion of premiums written for the post-balance sheet date is recorded as provision for unearned premiums in the balance sheet and recognised as premium revenue relative to risk over the policy term.

Claims paid out and direct and indirect claim settlement expenses are charged to claims incurred on the basis of the date of loss occurrence. Claims unsettled on the balance sheet date for losses already occurred and their settlement expenses – including claims incurred but not yet reported (IBNR) – are reserved in the provision for outstanding claims consisting of both claims reserved for individual cases and statistically reserved claims. The provision, included in the provision for outstanding claims, for the future settlement of expenses is based on estimated costs.

Provision for unearned premiums for decennial insurance and perpetual insurance policies and insurance liability related to annuities are discounted. The general trend for the interest rate is taken into account in determining the discount rate. Change in the discount rate of the insurance liability for annuities is taken into account as one continuously updated variable of an accounting estimate. The discount rate may not exceed the expected return on the assets covering the liability or the level set by the authorities. An increase in liabilities due to the passage of time (unwinding of discount) is shown in the income statement as a separate item in non-life insurance items under Net investment income.

Non-life insurance's interest rate risk associated with insurance liability is reduced by entering into interest rate derivative contracts and making direct fixed-income investments that are recognised at fair value through profit or loss. The value of derivatives is included in the insurance liability so that the insurance liability reacts to changes in market interest rates.

Capital gain or loss on derivatives is recognised over the insurance liability's residual term to maturity mainly by decreasing or increasing the discount rate. A capital loss on a derivative may be recognised by increasing the discount rate only if the planned rate is not exceeded. By selling investment instruments that hedge the insurance liability, it is possible to cover the systematic decrease of the discount rate only to a limited extent. The limit at its most is the value change that has accrued from the rate movement exceeding the target level at that time.

11.3.2 Measurement of insurance contracts issued by life insurers

The portion of premiums written for risk insurance policies' post-balance sheet date, less any yet unpaid insurance premiums, is recognised as provision for unearned premiums in the balance sheet.

The liabilities of savings-type insurance contracts and those of insurance contracts measured under IFRS 4 are calculated as the capital value of future benefits, policy administration costs and future premiums. The capital value is calculated mainly by the discount rate, mortality and assumptions of operating expenses used for pricing. The decided additional bonuses are included in the insurance liability.

Provision for outstanding claims arises from reported and non-reported claims incurred and from their claims and settlement expenses paid in the future.

The liabilities' discount rate, according to the Insurance Companies Act, cannot be any higher than what was used for insurance pricing. The discount rate may not exceed the expected return on the assets covering the liability or the level set by the authorities.

The company has savings at its own risk with interest rate guarantees ranging between 0.5 and 4.5%. The insurance liability of contracts whose interest rate guarantee is 4.5% has been supplemented so that the technical interest rate of insurance liabilities in the financial statements is permanently 3.5% as the insurance liability discount rate. In addition to this, supplementary interest rate provisions have been applied to reduce the discount rate of the guaranteed-interest portfolio for a specific period. The provision for outstanding claims of life insurance other than pension insurance is not discounted.

The Group reduces the interest rate risk of the life insurance liability by entering into interest rate derivative contracts and making direct fixed-income investments that are recognised at fair value through profit or loss. The value of derivatives is included in the insurance liability, because any benefit from the derivatives is used for the guaranteed cash flows of the contracts.

The main assumption when calculating the liability of unit-linked insurance contracts and investment contracts is that the market income of assets covering the insurance liability is credited as income to the policy.

Unit-linked investment contracts are presented under Liabilities from unit-linked insurance and investment contracts in the balance sheet.

11.4 Liability adequacy test on insurance contracts

On each balance sheet date, the Group tests for the adequacy of liabilities in the balance sheet, using current estimates of future cash flows from insurance contracts. If the test shows that the liability's carrying amount arising from insurance contracts is not sufficient, the liability amount will be increased by the shortfall and the shortfall will be recognised in the income statement.

11.5 Premiums written

Premiums written included in net insurance income in the income statement are a consideration of the insurance coverage that began during the period.

Insurance premium tax, but not commissions and credit loss on insurance premium receivables, is deducted from premiums written.

Insurance premiums based on non-life insurance contracts are recognised as premiums written when the insurance period begins.

Life insurance premiums and investment contract payments are recognised under premiums written on an accrual basis in such a way that contracts other than defined benefit group pension contracts do not generate insurance receivables. Commissions or credit losses are not deducted from premiums written.

11.5.1 Receivables and payables related to insurance contracts

Non-life Insurance premium receivables are recognised at the beginning of the insurance period when the right to the receivable is established. These receivables are mainly those from policyholders and to a minor extent from insurance intermediaries. Prepaid insurance premiums are included in direct insurance liabilities under other liabilities.

Non-life insurance receivables based on insurance contracts are tested for impairment on each balance sheet date. If there is objective evidence of an impaired receivable, its carrying amount is reduced through profit or loss. Both final impairment losses (loan losses) and impairment losses established statistically on the basis of the phase of collecting the charge are deducted from receivables.

11.6 Salvage and subrogation reimbursements

Salvage property that has come to the company's possession in connection with claims settlement or undisputable subrogation reimbursements related to claims are reduced from insurance liability.

In 2018, the subrogation reimbursements and damaged property that has come into possession were recognised at fair value under other assets in the balance sheet when the claim is settled.

11.7 Reinsurance contracts

Reinsurance taken out by OP Financial Group refers to an insurance contract which meets the classification requirements set for insurance contracts and under which the Group may be paid compensation by another insurer if the Group becomes liable to pay compensation on the basis of other insurance contracts (ceded reinsurance).

Assets based on reinsurance contracts are tested for impairment on each balance sheet date. If there is objective evidence that OP Financial Group may not receive all amounts to which it is entitled on the basis of the contract terms, the carrying amount of the reinsurance asset is reduced to correspond to the recoverable amount and the impairment loss is recognised in the income statement.

Non-life insurance benefits received under reinsurance contracts held are included in other assets, reinsurance assets in the balance sheet, with the latter receivables corresponding to reinsurers' share of provision for unearned premiums and provision for outstanding claims of the insurance contracts reinsured by OP Financial Group. Premiums unpaid to reinsurers are included in other liabilities, reinsurance liabilities.

Amounts recovered from or due to reinsurers are measured consistently with the amounts associated with the reinsured insurance contracts and are recognised in the balance sheet either under other assets or other liabilities.

11.8 Coinsurance and pools

OP Financial Group is involved in a few coinsurance arrangements with other reinsurers. Of the coinsurance contracts, OP Financial Group treats only its share of the contract as insurance contracts and the Group's liability is limited to this share.

OP Financial Group also underwrites shares of insurance contracts through pools, whose members are primarily responsible for their own proportionate share of the underwriting risk. These shares are based on contracts confirmed annually. OP Financial Group treats as insurance contracts its own proportionate share of the direct insurance business managed by pools and of the reinsurance business from the pool to its members.

The pool's share of these insurance contracts is treated as reinsurance. In some pools, members are responsible for an insolvent member's liabilities in proportion to their shares in the pool. OP Financial Group recognises liabilities and receivables based on joint liability if joint liability is likely to materialise.

11.9 Principle of equity concerning life insurance

With the exception of unit-linked parts of life insurance contracts, almost all life insurance contracts and some capital redemption contracts entitle to a discretionary participation feature to the profit, in addition to guaranteed benefits, which may account for a significant portion of the total contractual benefits, but whose amount and timing is at the discretion of the company under the contract. Some unit-linked policies include an option for a discretionary participation feature. Additional benefits are distributed as additional return in excess of technical interest, additional death benefit or reduced premiums.

The distribution of the surplus is based on the principle of equity referred to in the Insurance Companies Act which requires that a reasonable amount of the surplus to which the contracts are entitled is distributed to these policyholders, provided the solvency requirements prevent this. It is necessary to aim at continuity with respect to the level of additional benefits. Nevertheless, the principle of equity will not enable policyholders to demand any funds as debt. OP Financial Group has published its life-insurance additional benefit principles and its realisation on its website.

Separated balance sheets with a profit distribution policy differing from other life insurance operations have been created from the endowment policies and individual pension policies transferred from Suomi Mutual Life Assurance Company. The amount with which the assets in the separated balance sheet exceed the insurance liabilities measured by discounting using a swap curve on a market consistency basis is reserved as liability for future bonuses.

12 Provisions and contingent liabilities

A provision is recognised for an obligation if the obligation is based on a past event and it is probable that an outflow of resources will be required to settle the obligation, but there is uncertainty about the timing or amount required in settlement. In addition, an entity must have a present legal or constructive obligation towards a third party as a result of past events. If it is possible to receive compensation for part of the obligation from a third party, the compensation is recognised as a separate asset, but only at the time when receipt of the compensation is actually certain.

A contingent liability is a possible obligation arising from past events, whose existence will be confirmed only by the realisation of an uncertain future event beyond OP Financial Group's control. A present obligation which probably does not require fulfilment of payment obligation or the amount of which cannot be defined reliably is also considered as contingent liability. A contingent liability is presented as a note.

13 Equity capital

OP Financial Group categorises instruments it has issued on the basis of their nature either as equity or financial liability. Incremental costs directly attributable to the issue or purchase of equity instruments are shown in equity as an allowance.

Cooperative capital, divided into cooperative bank members' cooperative contributions and Profit shares, are classified as equity instruments. Cooperative banks have an unconditional right to refuse to redeem both cooperative shares and Profit Shares. However, cooperative banks may decide to redeem cooperative shares, within the limits set by the authorities.

Member cooperative contributions and the resultant owner-customer membership entitle owner-customers to take part in the bank's decision-making. Cooperative banks have an unconditional right to refuse redemption of cooperative contributions. No interest is paid on cooperative contributions.

Profit Shares confer no voting rights. Cooperative banks have an unconditional right to refuse payment of Profit Share capital or interest. Any interest payable on Profit Shares is the same for all Profit Shares. The interest is recognised as liability and deducted from equity once the decision for payment has been made.

14 Income tax and deferred tax

Income tax expense shown in the income statement includes current tax, based on the taxable income of OP Financial Group companies for the financial year, and income tax for prior financial years and deferred tax expense or income. Taxes are recognised in the profit and loss except when they are directly linked to items entered into equity or other items in other comprehensive income. In such a case, the tax is recognised in the items in question. The current income tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the balance sheet date in the countries where the companies operate and generate taxable income.

Deferred tax liabilities are recognised for temporary taxable differences between the carrying amount of assets and liabilities and their tax base. Deferred tax assets are calculated on tax-deductible temporary differences between the carrying amount and taxable value included in the financial statements, and on losses confirmed for tax purposes. Deferred tax assets are recognised to the extent that it is probable that taxable profits will be available against which deductible temporary differences can be utilised. Deferred tax assets are not recognised insofar as taxable profits are likely not be generated against which taxable losses or refunds can be utilised. The greatest temporary differences in OP Financial Group are caused by tax provisions (such as loan loss provision), measurement of investments at fair value, and elimination of equalisation provision within non-life insurance.

The Group offsets deferred tax assets and liabilities by company. Deferred tax assets and liabilities resulting from consolidation are not offset. Deferred tax assets and liabilities are measured at the tax rate that is expected to apply to the period when the asset is realised or the liability is settled, based on tax rates enacted or substantively enacted by the balance sheet date.

15 Revenue recognition

15.1 Interest income

Interest income and expenses for interest-bearing assets and liabilities are recognised using the effective interest method. More detailed information on the effective interest method can be found in 5.2.1 Amortised cost in these accounting policies. Interest on receivables with non-settled, due payments is also recognised as revenue. The difference between the receivable's acquisition cost and its nominal value is recognised as interest income and that between the amount received and nominal value of the liability in interest expenses. The difference between the nominal value and the acquisition cost of fixed-

rate bonds is recognised as interest income or expenses over the residual term to maturity.

The customer margin of the interest-rate cap and interest-rate corridor loans would accrue net interest income as the customer pays the additional margin related to the derivative clause.

15.2 Net commissions and fees

Fees that are not an integral part of the effective interest rate of a financial instrument are accounted for in accordance with IFRS 15 Revenue from Contracts with Customers. Fees and commissions under IFRS 15 are recognised as revenue when a service's agreed performance obligations are transferred to the customer and the key criterion is transfer of control. Commissions and fees are recognised to the amount to which an entity expects to be entitled in exchange of transferring promised services to a customer. Commission expenses are recognised in net commissions and fees on an accrual basis.

In the Retail Banking segment, commissions and fees are charged from private customers and corporate customers. Commissions and fees consist of those from lending and payment transactions. In addition, the segment charges fees, for example, for legal services, guarantees, mutual funds and real estate agency services. The abovementioned items consist of several hundreds of fee types whose performance obligations are fulfilled over time or at a point in time, according to the type of the fee. The performance obligations of lending, guarantee and mutual fund fees are mainly fulfilled over time while other those of other retail banking fees at a point in time. The amount of consideration for the services is mainly the list price or a contractually stated price. Owner-customers are entitled to a 45% discount on their daily banking services. OP Financial Group charges its customers the fees on a monthly basis or after the service performance according to the contract terms.

In the Corporate Banking segment, commissions and fees are charged from private customers and corporate customers. Banking commissions and fees consist of those from lending and payment transactions. In addition, Corporate Banking charges fees outside of OP Financial Group, for example, for guarantees and the issue of securities. The abovementioned items consist of several hundreds of fee types whose performance obligations are fulfilled over time or at a point in time, according to the type of the fee. The performance obligations of lending and guarantee fees are mainly fulfilled over time while other those of other banking-related fees at a point in time. Commission income related to the Corporate Banking wealth management operations consists of mutual fund and investment management fees. Commission income is mainly recognised as revenue over time during the contract period, and the monthly consideration is a contractual percentage of the client's investments or insurance savings under management. Mutual fund and investment management fees include performance-based management fees tied to investment performance. The performance-based management fees are not recognised as revenue until the criteria measuring the success of investment has been met highly likely.

The Insurance segment's contracts with which no underwriting risk is associated are recognised as revenue under IFRS 15 and presented in net commissions and fees. Commission income mainly consists of the life insurance total expense loadings, returns of unit-linked management fees, income from health and wellbeing services and of fees for insurance brokerage. The life insurance expense loading contains a subscription fee for the insurance premium (so-called kappa loading) and the management fee for insurance savings (so-called gamma loading). Other life insurance fees are recognised as revenue in accordance with IFRS 4 Insurance Contracts. Income from health and wellbeing services is recognised for each treatment visit after the service has been rendered. The fee is charged from the customer after the service based on the list of charges and fees. In occupational healthcare agreements, income is recognised over time during the contract period and the fee is charged from the customer on a monthly basis as agreed. In healthcare and wellbeing services, OP Financial Group acts as the principal under IFRS 15, in which case the fee paid to the relevant entrepreneur is presented in commission expenses. OP Financial Group's partners pay commission income from broking insurance policies according to the consideration specified in the contract. The performance obligations are fulfilled over time and the fees are charged from customers on a monthly basis.

Fees of the Other Operations segment mainly consist of payment transfer fees. The performance obligations are fulfilled over time and the consideration amount is as agreed. The fees are charged based on the actual payment transactions.

Revenue from contracts with customers in the financial statements is grouped according to the segments (Note 6. Net commissions and fees).

Dividends are primarily recognised when they are approved by the General Meeting of Shareholders by the distributing entity. Dividend income is shown in net investment income.

16 Summary of presentation of income statement items

Net interest income	Received and paid interest on fixed-income instruments, the recognised difference between the nominal value and acquisition value, interest on interest-rate derivatives and fair value change in fair value hedging. Fees that are regarded as compensation for the risk taken by the bank associated with the financial instrument and as being an integral part of the financial instrument's effective interest rate.
Net insurance income	Insurance premium revenue from Non-life Insurance and Non-life Insurance claims as well as the risk result of Life Insurance.
Net commissions and fees	Commission income from lending, deposits, payment transactions, securities brokerage, securities issuance, mutual funds, investment management, legal services, guarantees, real estate services, insurance brokerage, life insurance expense loading, refunds of unit-linked insurance management fees as well as from healthcare and wellbeing services. Commission expenses for payment transactions, securities brokerage, securities issuance, mutual funds, investment management, insurance operations as well as for healthcare and wellbeing services.
Net investment income	Realised capital gains and losses on financial assets recognised at fair value through other comprehensive income, interest income, currency valuations as well as impairment losses and their reversals. Fair value changes in financial instruments at fair value through profit or loss and dividends and holdings. In addition, interest income and expenses related to financial assets held for trading. Income from loans and receivables recognised at amortised cost, and impairment loss. Fair value changes in investment property, rents and other property-related expenses. Life insurance credited interest on customers' insurance savings and change in underwriting provisions as well as non-life insurance unwinding of discount. Associated companies' income consolidated using the fair value and equity method.
Other operating income	Rental income and sales revenues from property in own use, and other income.
Personnel costs	Wages and salaries, pension costs and social expenses.
Other operating expenses	ICT production and development costs, purchased service, costs related to premises, charges of financial authorities, telecommunications, marketing, corporate responsibility and other expenses.
Impairment loss on receivables	Expected credit losses from customers, off-balance-sheet items and notes and bonds as well as final credit losses and their reversals.

17 Charges of financial authorities

OP Financial Group pays charges to various authorities. The Financial Stability Authority is in charge of deposit guarantee. Responsibility for banking supervision rests with the European Central Bank. The Finnish Financial Supervisory Authority is responsible for insurance supervision, macroprudential supervision and supervision of conduct of business. The EU's Single Resolution Board (SRB) is responsible for bank resolution. The financial authority charges and fees are in full recognised under other operating expenses at the beginning of the year.

17.1 Stability contribution

Stability contributions will be paid to the euro-area Single Resolution Fund (SRF) until 2023 in such a way that the target of a minimum of 1% of the amount of covered deposits will be reached. The SRF is managed by the Single Resolution Board which also determines the amount of stability contributions. The SRF ensures that the financial industry, as a whole, finances the stabilisation of the financial system. The stability contribution is determined based on the bank's importance and risk profile.

17.2 Deposit guarantee contribution

Amounts contributed to the former Deposit Guarantee Fund currently exceed the EU requirements governing the deposit guarantee level. By virtue of its rules, the former Deposit Guarantee Fund takes charge of the deposit guarantee contributions payable by its member banks to the new Deposit Guarantee Fund in proportion to which each member bank has made contributions to the former Deposit Guarantee Fund over the years. The Financial Stability Fund will determine the contribution for each member bank but will charge the amount directly from the former Deposit Guarantee Fund. The deposit guarantee contribution had no effect on OP Financial Group in 2018 and 2019 in terms of expenses.

17.3 Financial Stability Authority's administrative fee

The administrative fee charged by the Financial Stability Authority is based on the same calculation method as the supervision fee charged by the Financial Supervisory Authority.

17.4 Financial Supervisory Authority's supervision fee

The supervision fee charged by the Financial Supervisory Authority comprises a relative supervision fee, which is based on an entity's balance sheet total, and a fixed basic fee.

17.5 European Central Bank's supervisory fee

The ECB supervisory fee is determined based on the bank's importance and risk profile.

18 OP bonuses to owner-customers

In the income statement, OP bonuses to owner-customers are presented as a separate item. OP cooperative banks' owner-customers earn OP bonuses through banking, non-life insurance and wealth management transactions. OP bonuses are expensed in the income statement as they are earned and recognised as accrued liabilities in the balance sheet. Accrued bonuses are used automatically for banking and wealth management service fees and non-life insurance premiums starting from the oldest ones, and the accrued liabilities are reversed.

19 Segment reporting

Financial information, which the executive in charge monitors regularly, serves as the basis of defining operating segments.

OP Financial Group reports income statements and balance sheets for the following business segments: Corporate Banking, Retail Banking and Insurance. Non-business segment operations are presented under the Other Operations segment. Segments are reported in a way that is uniform with internal reporting submitted to the management. In segment reporting, OP Financial Group's Central Banking is reported as part of Other Operations not included in the business segments, as are income, expenses, investment and capital not included in actual business operations.

A description of the operating segments and segment accounting policies can be found as part of segment information.

20 Critical accounting estimates and judgements

The preparation of financial statements requires making estimates and assumptions about the future and the actual results may differ from these estimates and assumptions. It also requires the management to exercise its judgement in the process of applying the accounting policies.

Liabilities arising from insurance contracts involve several discretionary factors and uncertainty. With respect to Non-life Insurance, estimates are based on assumptions about the operating environment and on the actuarial analyses of the Group's own claims statistics. An especially high degree of management judgement is required for determining the discount rate and estimating claims expenditure arising from the already occurred loss events (Note 61. Sensitivity analysis of non-life insurance).

Liabilities arising from life insurance contracts involve several discretionary factors and uncertainty. When calculating life insurance liabilities, the Group primarily uses assumptions on the date when the contract was made concerning insurance risk materialisation, operating expenses and investment income. The Group follows the assumptions continuously and if it turns out that the liability calculated based on these assumptions is too small, the liability is increased to meet the

latest observations. The management's judgement is required especially in determining the amount of operating expenses related to the loan discount rate, people's mortality assumption and operating expenses arising from future management of insurance policies (Note 72. Information describing the character of Life Insurance operations, and sensitivity analysis of insurance liability).

When estimating the control over structured entities, OP Financial Group takes into account the investor's power to direct the investee's relevant activities and the exposure or right to variable returns from its involvement with the investee. Discretion is exercised when estimating power to direct relevant activities and variable returns. The emergence of control is evaluated in more detail when the investment accounts for 10–20% of the investee's net assets and returns. The investee is consolidated as a subsidiary at the latest when OP Financial Group's share of the variable returns exceeds 37% and there is a link between the control and the returns.

Goodwill, assets with indefinite useful lives and intangible assets not yet available for use are tested annually for impairment. The recoverable amount determined in the impairment test is usually based on value in use, and its calculation requires estimates of future cash flows and the applicable discount rate (Note 23. Intangible assets).

The determination of the measurement models for expected credit losses (ECL) involves several factors requiring management judgement, such as:

- Selection of appropriate ECL models so that they describe the expected credit losses on the contract portfolio as well as possible
- Different assumptions and expert judgements made in the models
- Selection of the estimation methods of the parameters for the ECL models
- Determination of the contract's maturity for non-maturing loans (revolving credit facilities)
- Determination of model risk associated with the quality of the available modelling data and other data
- Proper grouping of contracts into different segments so that their ECL can be calculated using the appropriate model
- Selection of macroeconomic factors in such a way that their changes correlate with the contracts' probability of default
- Forecasting future macroeconomic scenarios and their probabilities.

Management judgement has also been used in the assessment of a significant increase in credit risk, such as in:

- The expert judgement used in the assessment of change in relative credit risk associated with private customers to ensure a true number of contracts that move to stage 2 before moving to stage 3 (so-called default capture rate)
- The selection of the absolute threshold that is based on historical default behaviour and OP Financial Group's credit risk process
- The determination of the length of a period during which the customer must prove proper payment behaviour so that the impairment stage 3 can improve to stage 2 or 1.

The actual calculation of ECL figures is performed using the abovementioned models without management judgement expect if a large corporate exposure in stage 3 is involved, in which case the ECL is calculated using the cash flow based ECL method based on expert assessment.

The management must assess when markets for financial instruments are not active. The management must also assess whether an individual financial instrument is actively traded and whether the price obtained from the market is a reliable indication of the instrument's fair value. When the fair value of financial instruments is determined using a valuation technique, management judgement is required to select the applicable valuation technique. Whenever market observable input data is not available for outputs produced by valuation techniques, the management must evaluate how much other information will be used.

The present value of pension obligations depends on several factors determined by using several assumptions. The discount rate, future increases in salaries and pension payments and the inflation rate are the assumptions used to determine net costs (or income) arising from pensions. Changes in actuarial assumptions have an effect on the carrying amount of pension obligations (Note 34. Provisions and other liabilities).

The measurement of investment property at fair value is partially based on the management's estimates of the market value of property holdings. Investment property is also measured using a calculation model based on the income capitalisation approach utilising estimates of future net yield on property holdings (Note 40. Recurring fair value measurements by valuation technique). Income probably generated in the future by property in own use is based on the management's judgement (Note 24. Property, plant and equipment).

In wealth management, OP bonuses mainly accrue from mutual fund management fees and unit-linked insurance fees paid by clients. The OP bonuses of these items are close to considerations paid to clients under IFRS 15 that are accounted for as a reduction of the transaction prices and thereby revenue. Netting Wealth Management OP bonuses from asset management commission income would, based on management judgement, lead to the fact that OP bonuses in OP Financial Group's income statement would not give a true picture of their total amount. Consequently, Wealth Management OP bonuses are presented in the OP bonuses to owner-customers row in the income statement, in addition to the Banking and Non-life Insurance OP bonuses.

21 New standards and interpretations

The IASB (International Accounting Standards Board) has issued the following significant future IFRS amendments.

21.1 IFRS 17 Insurance Contracts

Replacing the current IFRS 4 Insurance Contracts, IFRS 17 Insurance Contracts was published on 18 May 2017.

The most important goal of the standard is to harmonise the measurement of insurance liability on a global basis; the measurement under the existing insurance contracts standard is based on national measurements. Under IFRS 17, measurement is based on current estimates, as is the case in insurance companies' solvency measurement. However, IFRS 17 differs from solvency measurement in terms of its purpose and principle basis.

Insurance contracts are measured based on the general approach (GA) using the following three parts on each reporting date:

- Estimates of future cash flows adjusted to reflect time value of money
- A risk adjustment for OP Financial Group's non-financial risk describing risk appetite and
- The contractual service margin which is measured at the time of recognition of the contract in such a way that no profit results from the contract at recognition but loss is recognised immediately. The contractual service margin represents unearned profits and it is recognised as revenue during the policy period based on how the insurance service is produced.

The current practice, in which insurance liability may contain implicit margins of risk-bearing and future profits, will cease to exist, leading to explaining changes in liability in a transparent way.

For insurance contract measurement, IFRS 17 also allows an optional simplified measurement approach, the premium allocation approach (PAA), to contracts whose policy period is a maximum of one year. Non-life insurance products rank among these contracts, for example.

Furthermore, the standard has a variable fee approach (VFA), a modification of the general model, that must be applied to direct insurance participating contracts. In the VFA model, a company's participation in changes in the below investments is included in the contractual service margin that changes on each reporting date. These contracts typically include life insurance unit-linked contracts.

Changes in assumptions of financial risk and changes in liability arising from market changes can be buffered against the corresponding changes in assets in income/expenses. The standard gives the right to reclassify insurance company financial assets when the standard is adopted for the first time.

The new standard means changes in the insurance contract valuation method and the presentation of the balance sheet and income statement. For the presentation of the balance sheet, the rights and obligations involved in insurance contracts are netted and presented either in assets or liabilities.

Insurance service earnings are presented as subtotal in the income statement and separately net investment income that is separated from endowment insurance.

In addition, the new standard means more qualitative and quantitative requirements for notes to the financial statements, such as reconciliation statements for changes in the net carrying amounts of insurance contracts during the period and an analysis of insurance service income per valuation component.

IFRS 17 affects the valuation and recognition of OP Financial Group's non-life and life insurance products as well as their presentation in the financial statements. OP Financial Group has organised a project where it is working on the adoption of the standard, needs for changes, and assessing the impact of IFRS 17 on OP Financial Group's financial position and financial performance.

IFRS 17 must be applied for accounting periods beginning on or after 1 January 2021. Nevertheless, the IASB decided in November 2018 that it would propose the adoption date of IFRS 17 to be postponed until 1 January 2022. This proposal will be discussed after hearing the draft standard. The European Union has not yet adopted IFRS 17.

21.2 Other upcoming amendments to standards

Amendments to IFRS 3, IAS 1 and IAS 8 took effect on 1 January 2020. The amendments will not have any significant effect on OP Financial Group's financial statements.

Note 2. OP Financial Group's risk management principles

1 OP Financial Group's business and its risk appetite statement

OP Financial Group's mission is to promote the sustainable prosperity, security and wellbeing of our owner-customers and business environment. To implement our mission, we provide our customers with a package of banking investment and insurance services.

Our operations are based on cooperative ideals, a strong capital base and capable risk management. Our risk-taking in guided by OP Financial Group's values – People First, Responsibility and Succeeding Together.

Our success is based on the identification of our customers' needs and our ability to serve our customers in a way that meets their expectations while being cost-effective. Our success is also based on our ability to manage those risks that we assume when serving our customers. In the long term within moderate risk-taking, we seek market-based growth. This requires controlled risk-taking relying on strong risk management.

In OP Financial Group and its companies, we promote an approach based on diligence, which is manifested as a strong risk culture with a positive attitude towards internal control. Our remuneration principles encourage people to act carefully, provide high-quality customer service and maintain a balance between the financial result, risks and capital.

The Risk Appetite Statement confirmed by the central cooperative's Supervisory Board describes our risk-taking bases and key principles. Our risk appetite determines what risks and risks associated with what operations we are ready to take when carrying out our mission within the framework of our strategic targets. The majority of our profits come from customer business and the earnings risks taken and priced in this context. In the main, we take risks that are associated with carrying out our mission. We keep the level of risk-taking relating to other operations to generate earnings low or temporary.

In order for the Group's companies to be able to operate in accordance with our risk appetite, they must have sufficient risk-bearing capacity, which comprises risk capacity and risk-taking capacity. Risk capacity means knowledge that is manifested, for example, in the way we know our customers and their needs, we can price the risks associated with the customers and the risks they transfer to us, and manage risks at portfolio level, as well as we can quantify the capital and liquid assets needed to cover various risks. In addition, we can organise our business reliably and in a way that secures business continuity, and we have the capability to quickly adapt our risk exposure when needed and have strategic flexibility to change OP Financial Group's risk-taking.

Risk-taking capacity comprises capital and liquidity. Strong risk-taking capacity enables us to serve our customers with a long-term approach and in difficult market conditions too and to ensure the availability of refinancing and its relative cost-effectiveness. We want to maintain a level of capital and liquid assets and a funding structure with the aid of which we are highly likely to be able to implement our current business models. We define the target level of risk-taking capacity by means of our external credit rating.

Together with the strategy, the Risk Appetite Statement provides the bases for the goal-setting of the businesses. OP Financial Group's limits and tolerances for risk-taking guide our risk-taking and make our risk-taking remain in line with the Risk Appetite Statement. We set risk limits to ensure that a sufficient risk-taking capacity is maintained. We set qualitative tolerances to reflect risk capacity. The limits included in the Risk Appetite Statement set a maximum limit for risk-taking. If this maximum limit is exceeded or threatened to be exceeded, the escalation procedure defined in the Risk Appetite Framework will be applied.

Based on the limits and tolerances set in the Risk Appetite Statement, Risk Management together with the businesses prepares more detailed limits and OP cooperative banks' control limits in such a way that the quantitative risks defined as significant within OP Financial Group are limited appropriately in revenue logic-specific risk policies. Quantitative limits are supplemented by guidelines included in risk policies and other guidelines issued by Risk Management to ensure that also the risks that are more difficult to quantify are covered. This is how we ensure that the Group or any of its companies does not take excessive risks to endanger the Group's or the company's capital adequacy, profitability, liquidity and business continuity.

The central cooperative Supervisory Board has confirmed OP Financial Group's risk tolerances for 2019 as shown below.

Risk capacity (capital adequacy)	
	Common Equity Tier 1 (CET1) ratio, %
	FiCo ratio, %
Risk appetite	
	Economic capital, %
	Capital tied to new businesses, %
Counterparty risk concentrations	
	Biggest individual customer risk, %
	Total significant customer risks, %
	Industry risk, %
	Country risk concentration, %
Credit risks	
	Doubtful receivables, %
	Economic capital requirement for credit risk, %
Market risks	
	Interest income risk in banking book, € million
	Banking book present value risk, %
	VaR (99% confidence) of Trading and customer business derivative position, 1 day, € million
	Economic capital requirement for OP Life Assurance Company's market risks, %
	Economic capital requirement for Non-Life Insurance's market risks, %
Underwriting risks	
	Highest Non-life Insurance retention per object and event, € million
Liquidity risks	
	Liquidity coverage ratio (LCR), %
	Net Stable Funding Ratio (NSFR), %
Operational risks	
	Materialised operational risks (net), € million

2 Risk management

2.1 Objective of risk management

Effective risk management is the basis of customer-driven business and a competitive advantage. It also supports the business profitability of OP Financial Group and its companies, and enhanced trust in relation to customers and other stakeholders.

The objective of risk management is to secure OP Financial Group's and its companies' sufficient risk-bearing capacity and to ensure that any business risks taken do not threaten profitability, capital adequacy, liquidity or the achievement of strategic targets and thereby to secure business continuity.

Risk management is aimed at ensuring that

- all significant risks are identified, measured and assessed and the quantitative risks defined as significant are limited
- earnings risks are managed and consequential risks are reduced efficiently
- significant risks are covered with sufficient capital and they have adequate management capital and liquidity buffers
- risk-taking capacity is allocated to revenue logics and business segments according to the strategy and risk appetite
- risk management processes are efficient, comprehensive and adequate
- customer-service processes and internal processes are cost-effective and they generate up-to-date and high-quality information to the management to support its decision-making, for reporting and the needs of the supervisor

- management decision-making is based on sufficient, detailed and timely risk data
- business continuity has been secured in all situations and fast recovery in incidents
- the management has access to sufficient information and versatile scenarios to assess changes in the business environment, make strategic choices, assess risks and the adequacy of capital and liquidity, has the strategic flexibility to change OP Financial group's risk-taking
- compliance with risk-taking and risk policies of business lines/divisions is supervised, the business determines prices for earnings risks in a sustainable manner over cycle and investment income is proportionate to investment risks
- OP Financial Group supervises its risk exposure so that it remains within the framework of the risk-taking principles, confirmed risk tolerances, limits and control limits and that the exceeding of limits triggers the escalation procedures determined in advance and the corrective measures are monitored
- risk exposure is analysed and reported to the management

2.2 Organising the risk management process

OP Financial Group's risk management and compliance function are built around the principles of three lines of defence. The first line of defence comprises business lines, the second line of defence comprises the risk management function independent of the business lines/divisions and the compliance function and the third line of defence comprises Internal Audit. Each line of defence has its own role in performing risk management duties efficiently.

Three lines of defence in risk management

I Operational risk management by business lines Applies the risk management framework • Risk management integrated as part of the operational units • Risk decisions and operational monitoring	Responsibility for pricing, risk position and its daily internal control
II Independent Risk Management "Owns" the risk management framework • Group's independent risk management function • Steering the risk decision process and managing consolidated risk exposure	Responsibility for the conditions and independent control of risk management
III Internal Audit Inspects the efficiency of the organisation's governance, risk management and control processes • Internal Audit • Independent audit function	Responsibility for independent audit of the risk management process

First line of defence – business lines

OP Financial Group's business lines by revenue logic include Banking, Non-life Insurance and Life Insurance. Banking is sub-divided into ALM business, containing, Retail Banking, Corporate Banking and Central Banking, as well as Markets and Asset Management.

The business lines/divisions fulfil OP Financial Group's strategy, are responsible for planning their own operations and for their internal control. They make risk decisions within the framework of the restrictions governing risk-taking and risk policy and of other guidelines, price their transactions on a risk basis, apply the risk management framework, supervise their risk exposure and that it remains within the confirmed limits and control limits, as well as bear responsibility for the risks they have taken and for the extensiveness and accuracy of data in the systems.

Risk management has been integrated as part of the Group's business and management. Each Group company focuses on carrying out its role according to its service capabilities and risk-bearing capacities in accordance with the intra-Group division of responsibilities.

Company-specific risk management descriptions specify the risk management duties that fall under the responsibility of the central cooperative companies' business operations. Each OP Financial Group company is responsible for their own risk management according to the extent and nature of their business in compliance with the Group's Risk Appetite Framework.

OP Financial Group and its companies ensure that their risk management resources are sufficient in view of the nature and extent of their business.

Second line of defence – independent Risk Management and Compliance

The second line of defence comprises the central cooperative's Risk Management that is independent of businesses. Risk Management is managed by the Chief Risk Officer who reports directly to the President and Group Chief Executive Officer.

Independent risk management is organised in such a way that it is in sufficient proportion to the nature, extent and diversity of the Group and each of its business segment and company.

Risk Management leads the intra-Group risk management process, owns the risk management framework and is responsible for maintaining and developing risk management systems and methods. It maintains, develops and prepares the Risk Appetite Framework for approval by the Executive Board and the Supervisory Board, and maintains other instructions related to risk management. Risk Management controls, supervises and supports the implementation of the Risk Appetite Statement and the Risk Appetite Framework at OP Financial Group and its companies while supervising risk decision processes and their quality. It also supports the efficient use of the Group's balance sheet by analysing the balance sheet against earnings risks.

Together with Finance and Group Treasury, Risk Management ensures the balance between profitability, risks and risk-taking capacity. Risk Management supports capital adequacy management by developing and supervising the principles, models and methods of the measurement of economic capital deriving from risks and the measurement based on regulatory requirements. Furthermore, Risk Management supervises the business lines/division that they comply with the strategy and the Risk Appetite Statement. It supervises the risk exposure of OP Financial Group and its companies and reports it to the central cooperative Supervisory Board and its Risk Management Committee, Executive Board and the senior management of the central cooperative and its segments and companies.

Risk Management is responsible for maintaining OP Financial Group's recovery plan and coordinates the delivery of information to the resolution authorities.

OP Financial Group's Compliance independent of business lines/divisions is responsible for supervising compliance with provisions and for assessing compliance risks. Risk Management works in close cooperation with Compliance in managing compliance risks.

Third line of defence – Internal Audit

OP Financial Group's Internal Audit forms the third line of defence. Internal audit constitutes independent and objective assessment, verification and consulting activities with a view to generating added value to OP Financial Group and improving its operations. Internal Audit helps OP Financial Group to reach its objectives by bringing a systematic, disciplined approach to evaluating and improving the efficiency and effectiveness of the organisation's governance, risk management, supervision and supervision processes.

Internal Audit is organised to correspond to business organisations and is responsible for the performance of Group-level, risk-based internal audit in all OP Financial

Group entities. Internal Audit inspects the achievement of strategic and operational goals, the quality of internal control and risk management, the efficiency of internal controls, reporting reliability, compliance with laws, other regulation and similar criteria, compliance with internal policies and guidelines and the efficiency and expediency of operations.

Internal Audit is headed by the Chief Audit Executive appointed by the central cooperative's Supervisory Board. The Supervisory Board's Audit Committee adopts the Internal Audit action plan. Internal Audit reports its observations and recommendations as well as the implementation of the recommendations to the Audit Committee of the Supervisory Board, the central cooperative's Executive Board, the management of the auditable entity and functions' management teams.

2.3 Central cooperative's decision-making system in duties related to risk management

In March 2019, OP Cooperative's Annual Cooperative Meeting made a decision according to which the central cooperative would adopt a new three-tier governance structure on 1 January 2020. In the new governance structure, instead of the current internal Executive Management Team (known as the Executive Board until the end of 2019), the central cooperative will have a Board of Directors consisting of members who are not directors of the central cooperative that is responsible for decision-making in the central cooperative. The Board of Directors will also be responsible for central cooperative supervision. The Supervisory Board's current committees (such as Risk Management, Audit and Remuneration Committees) will become the committees of the Board of Directors. The general duties of the Supervisory Council (formerly known as the Supervisory Board) acting as the highest tier in the new governance structure include supervising the governance of the central cooperative for which the Board of Directors and the President and Group Chief Executive Officer are responsible. In addition, it also confirms decisions in principles important to the entire OP Financial Group.

The Executive Board that acted as the central cooperative's legal decision-making body will become an Executive Management Team acting as a senior management team, which assists the President and Group Chief Executive Officer in the management of the central cooperative at operational level. As the central cooperative's CEO, the President and Group Chief Executive Officer is tasked with leading the central cooperative in accordance with the instructions and orders given the Board of Directors.

Below is a description of the central cooperative's management bodies and key risk management duties based on the governance structure effective in 2019.

Central cooperative's governance structure

Supervisory Board

OP Cooperative's Supervisory Board adopts, among other things, OP Financial Group's strategy and other objectives and policies and practices. It confirms the Group's principles of internal control and Risk Appetite Statement and Risk Appetite Framework, the control system principles required by joint and several liability,

the capital plan principles, the Group's annual plan and Group-level risk tolerances concerning capital adequacy and risk types. It also adopts the general principles and policies concerning OP Financial Group's remuneration and decides on long-term remuneration schemes. The Supervisory Board monitors the progress of strategy implementation and the development of the Group's and the central cooperative consolidated's business, risk-bearing capacity and risk exposure and its maintenance within the risk tolerances and limits.

Supervisory Board committees

The Supervisory Board of OP Cooperative has set up committees to support the performance of its duties, of which the Risk Management Committee is the most important one with respect to risk management. The committees are not as a rule authorised to make decisions independently.

The Risk Management Committee, among other things, assists the Supervisory Board to ensure that a sufficient risk management system is in place and that no exposure is so large that it can jeopardise business continuity, capital adequacy, liquidity or strategy implementation. It also assists the Supervisory Board in matters relating to the central cooperative's and the entire Group's risk-taking and risk management, and in supervising compliance of the central cooperative's Executive Board with the risk tolerances determined by the Supervisory Board. The Committee also assists the Supervisory Board's Remuneration Committee in creating sound remuneration schemes.

Executive Board

OP Cooperative's Executive Board is tasked with controlling the amalgamation's operations and issuing instructions to the member credit institutions within the amalgamation on risk management, good corporate governance and internal control to secure liquidity and capital adequacy, as well as on compliance with standardised accounting policies in the preparation of the amalgamation's consolidated financial statements. It also supervises compliance of the companies within the amalgamation with the laws and decrees governing the financial position, regulations issued by the relevant authorities, their own bylaws or articles of association, and instructions issued by the central cooperative.

The Board adopts OP Financial Group's risk policy and the risk limits of the central cooperative consolidated's companies. It also adopts the risks included in economic capital and the stress testing framework. It is also responsible for ensuring that the systems and procedures concerning risk and capital adequacy management are sufficient and up to date.

The Executive Board reports to the Supervisory Board and its Risk Management Committee on changes in the business, risk-bearing capacity and risk exposure of the Group, the central cooperative and its companies.

Executive Board committees

To support the performance of its duties, OP Cooperative's Executive Board has set up committees, of which the Risk Management Committee, the ALM Committee as well as the Control and Compliance Committee were the most important ones in 2019 in respect of risk management. The committees make decisions on matters delegated to them by the Executive Board.

The **Risk Management Committee** ensures OP Financial Group's ability to operate successfully in the long term by making sure that the models, methodologies, systems and metrics used in the risk management processes are adequate in terms of operational quality and extent and that detailed instructions and descriptions of their use are available.

The **ALM Committee** supports the Executive Board in controlling and managing OP Financial Group's assets and liabilities, as well as analyses, coordinates and controls the asset/liability management of the Group and the central cooperative consolidated in accordance with laws, official regulations, operating principles and decisions adopted by the Supervisory Board or the Executive Board, and operating principles set by the Risk Management Committee. It also monitors the quantity and quality of the Group's capital, the achievement of the risk-return ratio targets and the risk exposures of Insurance and Banking.

The **Steering and Compliance Committee** supports the Executive Board in the execution of control and supervision for the central cooperative consolidated and OP cooperative banks. It deals with both general and entity-specific matters related to control and supervision. Furthermore, the Committee receives reports related to the effectiveness of risk management processes, qualitative risks and internal control observations in both the central cooperative consolidated and OP cooperative banks.

2.4 Central cooperative subsidiaries

In their operations, the central cooperative subsidiaries apply OP Financial Group's Risk Appetite Statement and

Risk Appetitive Framework adopted by the central cooperative's Supervisory Board as required by the nature and extent of their business.

The subsidiary's senior management is responsible for the implementation of risk management according to the principles and operating policies that have been agreed on, and reports regularly on the company's business, risk-bearing capacity and risk exposure to the board of directors.

The central cooperative companies' independent risk management duties are performed by the central cooperative's Risk Management on a centralised basis. Company-specific risk management officers are appointed in the central cooperative's significant subsidiaries.

2.5 OP cooperative banks

OP cooperative banks organise their risk management as required by the description of Risk Management duties and organisation in OP cooperative banks.

The OP cooperative bank's supervisory board oversees the cooperative bank's governance managed by the board of directors and the managing director. The supervisory board Audit Committee has assisted the supervisory board in fulfilling its supervisory obligation and, for its part, assessed the bank's risk exposure and risk management adequacy.

The OP cooperative bank's board of directors is responsible for the sufficiency of risk management systems. The board of directors confirms, for example, the bank's action plans, goals, capital plan and the risk limits regarding capital adequacy and various risk types. Furthermore, it regularly supervises and monitors the bank's business, risk-bearing capacity and risk exposure. In controlling the banks' operations, the board of directors adheres to the Group's principles.

The OP cooperative bank's board of directors must hold a follow-up meeting of risk and capital adequacy management at least once a year. The purpose of this meeting is to ensure that the bank's top management has a comprehensive view of the bank's risks and the status and development of its risk and capital adequacy management. Based on this comprehensive view, the board of directors decides on guidelines for the bank's business operations and risk management.

The managing director is responsible for the implementation of practical risk management measures. The managing director reports regularly to the board of directors, supervisory board and OP Cooperative on the bank's business, risk-bearing capacity and risk exposure.

The central cooperative's Risk Management guides and supports OP cooperative banks' risk management. The largest OP Financial Group member cooperative banks have a risk management function independent of operational decision-making. In small and mid-size banks, the managing director is in charge of risk management, receiving expert support from the central cooperative for the management of credit risks, operational risks and compliance risks.

In OP cooperative banks, the risk-management assessment independence of business operations is based on reports produced by the central cooperative's Risk Management, the bank risk categorisation carried out by the central cooperative as well as the assessment by OP Financial Group's Internal Audit concerning the status of the bank's capital adequacy management.

OP Financial Group's Internal Audit helps OP cooperative banks to reach their objectives by bringing a systematic, disciplined approach to evaluating and improving the effectiveness and impact of the organisation's governance, risk management, supervision and supervision processes. Internal audit is based on an independent and objective assessment, assurance and consulting activities.

3 OP Financial Group's risk management process

OP Financial Group's risk management process contains the following:

- The steering framework prepared and maintained by independent Risk Management
    - The Risk Appetite Statement and the Risk Appetite Framework that guide risk-taking and the risk policies that specify them and other risk management guidelines
    - The creation of methods to identity, assess, measure, price and limit risks
    - The determination of the need of risk-taking capacity and allocation to the business lines/division based on the strategy
- Daily risk management of operational business
    - The identification, pricing and ongoing monitoring of risks

  - The maintenance of risk position management and risk exposure within the set restrictions and objectives
- Internal control and reporting performed by independent Risk Management
  - Supervision of compliance with risk-taking, risk policies and pricing
  - Risk exposure analysis and reporting to the management

3.1 Risk management steering framework

3.1.1 Guidelines maintained by Risk Management

Risk Management prepares and maintains principles governing risk-taking and risk management that the risk policies and other risk management guidelines specify.

In the Risk Appetite Statement (RAS), the central cooperative's Supervisory Board confirms the bases and key principles of OP Financial Group's risk-taking and the Group's limits and risk tolerances. In the risk management principles (Risk Appetite Framework, or RAF), the Supervisory Board confirms how OP Financial Group's risk management process is organised in practice and how risks are identified, assessed, measured and managed. The Statement and Framework are binding on all OP Financial Group companies.

Revenue logic specific risk policies specify the Risk Appetite Statement and delegate decision-making authorities in respect of risk-taking. Therefore, Risk Management prepares risk policies together with business lines/divisions. The risk policies of OP Financial Group, Banking, Non-life Insurance and Life Insurance confirm annually risk-management principles, actions, objectives, limits and control limits, to be applied by the business lines/divisions and companies that are used to guide business to implement the policies confirmed in the Group's strategy and Risk Appetite Statement. A summarised risk policy for OP cooperative banks derives from the relevant parts of the Banking risk policy.

OP Financial Group's statutory Recovery Plan creates a framework and determines the policy options used to safeguard the business continuity of the credit institutions within the amalgamation of cooperative banks in a situation where the amalgamation's financial position has significantly deteriorated. The financial position is considered to have deteriorated significantly at least if the amalgamation is in danger of not fulfilling the financial conditions set for its operations or if it otherwise violates the threshold values of the alerting indicators specified in the Recovery Plan. A liquidity contingency plan or tools available to strengthen liquidity and capital adequacy based on the capital plan control practices of the levels of preparedness are likely to be in use before the implementation of the Recovery Plan.

Furthermore, Risk Management maintains and issues risk management guidelines based on the Act on the Amalgamation of Deposit Banks as well as other more specified instructions and descriptions for the Group's companies. Risk Management is also responsible for organising training, guidance and other assistance that supports the set of guidelines.

3.1.2 Methods for identifying, assessing, measuring, pricing and limiting risks

Risk identification

OP Financial Group continuously identifies and assesses risks involved in its business and business environment.

In an extensive risk identification process conducted at least once a year, Risk Management together with the representatives of the businesses concerned assesses risks that are or may be involved in OP Financial Group's business environment and in the operations and exposures of its companies. This also involves identifying and assessing concentration risks within individual types of risk and cumulative Group-level risks and risk concentrations.

Risk Management assesses the significance of the risk through a stress test and the inclusion of the risk in the regular stress test programme. It also assesses the existing risk measurement methodology and efficiency and decides on how a new risk is measured.

Based on the results of the risk identification process, Risk Management annually presents OP Financial Group's most significant risks in its Risk Appetite Statement for the Supervisory Board for confirmation.

The results of the risk identification process are also used in the preparation of risk policies when specifying risk management principles, measures, objectives and limits based on risk-bearing capacity and risk appetite. Risk Management maintains a list of significant risks.

The central cooperative's management defines which significant risks are covered through economic capital and which are not possibly covered on justified grounds, in which case they are managed based on careful action.

The liquidity strategy and the guidelines and plans that specify them provide a framework for how liquidity risk is covered through buffers, by means of the liquidity contingency plan and by enhancing the ability to make the balance sheet more liquid.

Before the Group launches new products, services, concepts or systems, the business line/division concerned assesses the associated risks in accordance with the practices approved by Risk Management. OP Financial Group only provides customer products and applies business models that have been approved at Group level.

Risk assessment and measurement

OP Financial Group uses risk management measurement models (internal models) it has developed for risk measurement, capital requirement assessment, business price determination and the determination of values used in accounting. The models take account of their compatibility with OP Financial Group's business model, risk appetite and risk profile. All models applied are Group-specific. The Group and its companies share the related key parameters and assumptions. The models in use are approved by the supervisor, if so required by Risk Management or regulation.

In OP Financial Group, internal models used in credit risk capital adequacy measurement play a key role because regulation sets plenty of requirements for the use of internal methods. For the measurement of credit risk for capital adequacy, OP Financial Group has permission from the supervisory authority to use the Internal Ratings-based Approach (IRB) for corporate and credit institution exposures, retail exposures and equity investments.

Economic capital

In addition to the measurement of the regulatory capital requirement and own funds based on capital adequacy measurement, OP Financial Group uses a measurement model for its own economic capital and internal capital. They help to assess the capital required to bear risks (economic capital requirement) and OP Financial Group's view of how much it has items that can be used to cover any losses (internal capital). The economic capital measurement takes account of risks on a more extensive basis than in capital adequacy measurement. There are also differences in the way how parameters, estimates and risk concentrations are considered.

The economic capital requirement is OP Financial Group's own estimate of the amount of capital sufficient to cover any losses with a 99.97% probability that may arise from risks associated with business and the business environment for the next 12 months.

The economic capital requirement is a risk-taking indicator where business risks, irrespective of risk type, are as inter-comparable as possible. Using models specific to each risk type, each risk is measured to a euro loss amount. The company must reserve at least the loss amount to cover internal capital. In the measurement, the Group uses thought-out risk metrics, stress scenarios and expert assessment. At least once a year, Risk Management reviews how the model performs and presents changes to the methods or parameters to the Risk Management Committee.

Economic capital is divided into quantitative and qualitative, or assessable, risks. The generally accepted quantitative methods are used to measure the abovementioned risks. When it comes to the latter risks, the assessment is more heavily based on qualitative expert assessment. Quantitative risks include credit risk, Banking interest rate, equity and property as well as market risk associated with long-term investment and insurance operations, and market associated with trading and underwriting risks. The assessable risks are divided into operational risks and other risks that are more difficult to assess in terms of quantity. Other assessable risks include any significant risks that have not been taken into consideration in any other risk-specific models related to economic capital. These risks are typically caused by external factors, such as changes in competition or the market situation or regulatory measures.

The Group-level economic capital requirement is calculated by combining capital requirements for each type of risk and business and by taking into account diversification benefits between the types of risk. The capital requirement is calculated and reported in the Risk Analyses to the central cooperative's management by risk type, earnings logic and also without diversification benefits. The capital requirement is calculated and reported to the central cooperative consolidated's significant companies and OP cooperative banks.

Internal capital (permanent capital) is the Group's own estimate of its own funds that cover risks included in the calculation of economic capital requirement. The Group's equity capital forms the basis which has been made commensurate with the calculation assumptions of the capital requirement (e.g. confidence level, time horizon and insurance company adjustments).

In determining the economic capital requirement, OP Financial Group uses risk tolerance, limit and control limit

and target metrics as well as a capital buffer used in capital planning. Other applications include risk-based pricing and the assessment of the profitability of businesses and capital tie-up.

The economic capital requirement is meant to control OP Financial Group's risk-taking and risk-weighted assets more extensively and more carefully than the capital requirements set by the relevant authorities. This is how the Group ensures that forecasts and business goals will not jeopardise its operating conditions in the long term either.

Stress tests

OP Financial Group uses stress tests to assess how various serious, albeit potential, situations and those differing from the assumptions of risk models may affect the liquidity, risk exposure, profitability and capital adequacy of the Group and/or its companies. Stress tests assess the effect of both individual stress factors and the joint effect of multiple variables acting simultaneously. In stress testing, OP Financial Group utilises reverse stress tests, in addition to various sensitivity and scenario analyses. Stress tests support and supplement the whole picture given by other risk measurement methods of OP Financial Group's overall risk exposure.

Stress testing helps OP Financial Group to identify its key risks and assess their significance and to convert and scale the Group's risk appetite into risk tolerances and limits as well as to lines of risk policies. Stress tests are aimed covering all risk types identified as significant in the Risk Appetite Statement.

Stress test methods are utilised not only for the measurement of economic capital, especially to determine the capital requirement for other assessable risks, but also as complementary methods for the purposes of, for example, the Group's capital planning, liquidity management and as the basis for business continuity and recovery planning as well as in the preparation of the Recovery Plan. Stress tests are also used to determine the sufficiency of the regulatory and internal capital requirements produced by internal models in various business environments.

Pricing

Risk Management approves the models and methods used in pricing of each business line/division before a decision on their adoption is made by the ALM Committee.

Setting limits and escalation procedures

Tolerances and limits are aimed at limiting and controlling OP Financial Group's risk-taking in the direction of the Risk Appetite Statement and prevailing strategies.

Risk limits are used to ensure that the Group or any of its companies does not take excessive risks to endanger the Group's or the company's capital adequacy, profitability, liquidity and business continuity.

The central cooperative Supervisory Board confirms at least once a year OP Financial Group's tolerances that form Group-level limits. Based on the tolerances, Risk Management together with businesses prepares more detailed limits and OP cooperative banks' control limits in such a way that quantitative risks defined as significant within the Group are limited appropriately in risk policies. Quantitative limits are supplemented by guidelines included in risk policies and other guidelines issued by Risk Management to ensure that also the risks that are more difficult to quantify are covered.

The central cooperative Risk Management supervises OP Financial Group and its companies to ensure that they remain within the tolerances, limits and control limits set for them. Risk Management regularly reports its observations and the actual tolerance and limit metrics to the parties that have set the limits.

The limits and control limits set a maximum limit for risk-taking. If this maximum limit is exceeded or threatened to be exceeded, the escalation procedure defined in the Risk Appetite Framework will be applied.

3.1.3 Determination of the need of risk-taking capacity and allocation to the business lines/division based on the strategy

The key task of capital management is to determine the amount of available capital (permanent capital, or internal capital) and the capital needed (economic capital). The Group allocates the internal capital to revenue logic entities and business segments in accordance with the Group strategy and risk appetite. OP Financial Group, the business segment concerned or revenue logic entity concerned may not take risk that exceeds the amount of the internal capital (economic capital requirement) allocated to them.

The amount of available capital and capital requirements are also monitored using methods defined by the relevant authorities. From the perspective of the requirements set by the authorities, the Group monitors credit institution capital adequacy (especially CET1), capital adequacy under the Act on the Supervision of Financial and Insurance Conglomerates, regulatory buffer

requirements and the requirements set by the supervisor as well as own funds and their quality. In respect of the quality of capital, its permanence and availability to cover losses is essential. Therefore, OP Financial Group's capital adequacy targets are based on a strong CET1 ratio.

OP Financial Group's capital plan prepared annually is used to proactively ensure the sufficiency of the capital base during the planning period and in exceptional circumstances under various scenarios and thereby ensure business continuity. The planning period spans the next five years. Using different scenarios, the Group assesses the CET1 ratio, the FiCo ratio and permanent capital in relation to capital requirements.

The capital plan contains a situation analysis of capital adequacy, capital adequacy targets and measures, a contingency plan in the form of the levels of preparedness and control procedures as well as scenario calculations to assess the adequacy of the Group's capital. The Group acts on a contingency plan in case its capital adequacy ratio deteriorates. Monitoring and control procedures are determined by the levels of preparedness.

Each OP Financial Group company is responsible for its capital adequacy and must set its capital adequacy targets and limits according to guidelines set by the central cooperative. In any potential crises, capital allocation within OP Financial Group is primarily performed on a market consistency basis through voluntary arrangements. The central cooperative is in charge of capitalising OP Financial Group companies in cases where the company's own resources are insufficient to secure its operational capacity. Ultimately, capital allocation within the amalgamation of cooperative banks is based on the provisions of the Act on the Amalgamation of Deposit Banks.

Liquidity management

OP Financial Group's Treasury acting within OP Corporate Bank plc is responsible for the Group's banking liquidity on a centralised basis and manages the liquidity buffer. OP Corporate Bank obtains funding for the Group from wholesale markets according to the funding plan.

Deposit funding forms OP Financial Group's most significant type of funding. With respect to deposits, the Group emphasises their permanence and avoids aggressive pricing in attracting them.

Wholesale funding is aimed at actively and proactively covering funding needs arising from the growth differentials between the receivables and the deposit portfolio in the balance sheet, funding maturity and other internal objectives as well as regulatory requirements. Wholesale funding must be diversified by time, investor and market segment.

OP Financial Group manages its banking liquidity position by means of

- proactive planning of funding structures, the Group's risk tolerances and risk limits, as well as limits, control limits and target levels derived from them for Group companies;
- monitoring the liquidity status and a liquidity buffer of the right size;
- planning and managing daily liquidity;
- contingency planning based on emergency levels; and
- effective and ongoing control of the liquidity status.

OP Financial Group secures its banking liquidity through a liquidity buffer which consists mainly of deposits with central banks and receivables eligible as collateral for central bank refinancing. The liquidity buffer is sufficient to cover the need for short-term funding for known and predictable payment flows and in a liquidity stress scenario.

Insurance operations' liquidity risk is assessed individually from each insurance business's viewpoint. Insurance companies' investment assets act as a liquidity buffer for the company concerned. The companies' liquidity requirements are taken into account in the investment portfolio weightings.

3.1.4 Control and internal control performed by Risk Management

Control

In accordance with the Act on the Amalgamation of Deposit Banks, the central cooperative is under an obligation to control and supervise its member credit institutions, issue instructions to them on risk management, good corporate governance and internal control to secure liquidity and capital adequacy.

The central cooperative fulfils its statutory control and supervision obligation through general control and, in problems situations, bank-specific control based on cooperative banks' risk categorisation. The risk category reflects the view of the central cooperative on each bank's risk-bearing capacity and the bank's risk of having to resort to financial aid, or any possible risk to the Group's reputation. The main purpose of OP Financial

Group's bank-specific control is to prevent an individual company from having to resort to the Group's capital base or support. Another objective is to help the companies recover from problem situations that have threatened or jeopardised their operations.

Once the criteria of the Act on the Amalgamation of Deposit Banks have been met, the supervisor has given the central cooperative permission to grant exceptions to the member credit institutions in cases specified in the Act. The most important exceptions relate to regulation governing capital adequacy and large customer risks under the Act on Credit Institutions and to regulation related to liquidity under the Capital Requirements Regulation.

Supervision and reporting

The central cooperative's Risk Management supervises OP Financial Group's and its companies' risk management and liquidity management, risk-taking, pricing of business lines/divisions and risk management processes and their quality. Risk Management analyses the risk exposure of the Group and its companies and its developments, the maintenance of risk-taking within the set tolerances, limits and control limits and compliance with the risk policy. In addition, Risk Management secures business continuity by supervising the annual maintenance and testing of business continuity plans within the Group companies and the central cooperative consolidated.

In the quarterly Risk Analysis, Risk Management reports its observations and assessments regularly to the central cooperative management.

In addition, Risk Management supervises the amalgamation's member credit institutions to ensure that they follow the guidelines issued by Risk Management and reports any violation of the guidelines to the central cooperative Compliance.

The fact that reports on measurable risks are produced for Group companies on a centralised basis and separate from any business operations ensures the independence of operational risk reporting in OP Financial Group.

4 OP Financial Group's significant risks and their management

4.1 Risk categorisation

OP Financial Group is engaged in banking and insurance business. Pohjola Hospital owned by the Group focuses on orthopaedics and sports clinic services. Finland is the Group's home market while the Group also provides corporate customer banking services in the Baltic countries. The Group's segments and business divisions consist of the following businesses: banking for private and SME customers, banking for corporate and institutional customers and insurance customers.

From the risk management perspective, the Group reviews risks by revenue logic that comprises Banking, Non-life Insurance and Life Insurance. From the perspective of revenue logic, Banking is sub-divided into ALM business, containing Retail Banking, Corporate Banking and Central Banking, as well as Markets and Asset Management.

Risks associated with business are grouped into revenue and consequential risks. Revenue and consequential risks relate to the current business and the valid agreements that OP Financial Group companies have made with their customers and other counterparties. In the basic business, the Group knowingly takes earnings risks to earn income. Consequential risks, for their part, arise from the basic business and thus relate to all business carried on. These risks generate no earnings, but may only lead to financial losses and/or loss of reputation if they materialise. Risks of future business are associated with on what conditions and with what volumes new agreements, as they stand now or whether they are completely new ones, are concluded. The volumes and margins of new agreements made in customer business as well as the margins of new market transactions have a significant impact on OP Financial Group's financial result.

4.2 OP Financial Group's significant risks

In OP Financial Group's Risk Appetite Statement, the central cooperative's Supervisory Board annually confirms significant risks associated with OP Financial Group's business, based on the risk assessment made annually by the business lines/divisions and Risk Management. OP Financial Group has identified its significant risks in terms of quantity and quality relevant to business. Their materialisation may substantially affect the Group's financial performance or the amount of its capital base or the Group's strategy implementation. The effect on the guidance for business has also been considered. There are several interdependencies between risks that must be analysed in addition to individual risk types. The size of the Group and various business divisions provide significant risk diversification benefits. Meanwhile, however, the role of various concentration risks will increase at Group level.

Significant earnings risks include banking credit, liquidity and market risks, with the Interest rate risk in the banking book being the most significant one. Market risks associated with investment and insurance liability play a pronounced role in insurance operations, in addition to life and non-life insurance risks. Pohjola Hospital combines the best practices in the health and wellbeing sector with the Group's existing risk management framework to identify and manage relevant risks, as well as to ensure compliance with regulation.

With regulation becoming more complex and supervision tightening, the management of compliance risk among the consequential risks will play a pronounced role. The role of operational risks will increase in all business segments as services go digital and the role of the commission-based business increases. In addition to financial losses and deterioration of reputation, the materialisation of risks may cause sanctions imposed by authorities.

In both banking and insurance operations, model risk has become essential as models affect, for example, risk selection, related embedded derivatives and the prices of insurance policies, values of insurance liabilities, capital adequacy requirements, expected credit losses (ECL), and the measurement of credit risks associated with derivative contracts (CVA, Credit Valuation Adjustment).

Counterparty risk is associated with derivative and reinsurance contracts.

For instance, concentration risks within individual types of risk may arise from customers, industries and products, and they may cumulate from individual companies and segments to the Group level.

OP Financial Group companies actively manage earnings risks at the portfolio level within the quantitative limits set and in line with the other guidelines specified in risk policies. Responsibility for reducing consequential risks rests especially with business lines/divisions with the help of careful and effective action and a well-defined assignment of responsibilities.

Inadequate internal reaction and inflexibility in the business and competitive environment or changes in the values of customers or in technology cause a strategic risk.

Reputational risk is associated with all operations and often results from the materialisation of some risk.

The table below describes OP Financial Group's significant risks. The paragraphs below the table describe the nature of the risks and how they can be managed.

OP Financial Group's significant risks

Credit risks	Credit risk refers to a risk that a contracting party to a financial instrument is unable to fulfil their contractual repayment obligations and thereby causes a financial loss to the other party.
Liquidity risks	Liquidity risk comprises funding liquidity risk, structural funding risk, funding concentration risk and asset encumbrance.
Market risks	Market risk refers to an unfavourable change related to the value of a contract or the contract revenue that is caused by price changes observed in financial markets. Market risks include interest rate, currency, volatility, credit spread, equity and property risks associated with on- and off-balance sheet items as well as other potential price risks.
Non-life insurance risks	Non-life Insurance risks comprise risk of loss or damage, and provision risk. Risk of loss or damage occurs when there are an above-average number of losses or they are exceptionally large. Provision risk arises when claims incurred for the already-occurred losses are higher than expected or the timing of the payment of claims differs from what has been expected.
Life insurance risks	Life insurance risks comprise biometric risks, cost risk and customer behaviour risks.

Counterparty risks	Counterparty risk refer to a risk of the contracting party not fulfilling its financial obligations. Counterparty risk may be related to a derivative contract, trading or a reinsurance contract.
Operational risks	Operational risk means a risk of an adverse consequence that may result from insufficient or incorrect practices, processes, systems or external factors. Operational risk also includes legal risk, security risks and information security risks.
Model risk	Risk of loss or of loss of reputation, if any, caused by such decisions made on the basis of the results of the models, in which the errors in the development, implementation or use of the models are the reason.
Compliance risks	Risks caused by non-compliance with external regulation, internal policies, appropriate procedures or ethical principles governing customer relationships.
Concentration risks	Risks that may arise of a business's excessive concentration on individual customers, products, lines of business, maturity periods or geographical areas.
Reputational risk	Risk of deterioration of reputation or trust caused by negative publicity or materialisation of a risk.
Risks associated with future business	Risk associated with on what conditions and with what volumes new agreements, as they stand now or whether they are completely new ones, are concluded.
Risks associated with strategic choices and the implementation of the strategy	Risk that arises from inadequate internal reaction and inflexibility in the business and competitive environment or changes in the values of customers or in technology.

4.3 Credit risks

By definition, credit risk refers to a risk that a contracting party to a financial instrument is unable to fulfil their obligations and thereby causes a financial loss to the other party. The most significant credit risk in OP Financial Group is associated with Banking lending. Credit risk may also arise from bonds/notes, debt securities, derivative contracts and off-balance-sheet commitments (limits, guarantees and documentary credits) and from reinsurance contracts. Country and settlement risks are also counted as credit risks.

In OP Financial Group's investment operations, credit risk arising from a debt instrument issuer's default is included as part of market risk associated with investment. Credit risk associated with reinsurance contracts and derivative contracts, and settlement risk associated with securities and currency trade are counted as counterparty risks. Country risk is included in concentration risks.

Credit and country risks related to credit institutions arise mainly from liquidity management by banking. Country risks affecting credit institutions may also be the result of interest rate trading and the management of the notes and bonds portfolio and the Group's trade financing. The section below deals with credit risk that arises from financing operations associated with banking.

Measuring credit risks

Risk Management regularly monitors developments in credit risks relative to tolerances, limits and OP cooperative banks' control limits.

Credit risk is measured based on the ratio of doubtful receivables, non-performing exposures and performing forborne exposures to the loan and guarantee portfolio and the economic capital relative to exposure at default. The Group has also set a metric for the growth rate in non-performing exposures. The Group compares expected credit losses with non-performing exposures and the loan and guarantee portfolio. Loan portfolio concentrations are monitored by customer, industry and country.

In the Risk Policy, qualitative targets based on internal credit rating have been set the loan portfolio and new lending. The Group has set a maximum long-term target

for expected credit losses. The Group also measures the growth differential of the loan portfolio and credit risk economic capital to ensure balance between growth and risk-taking. The targets in the set of metrics have been divided according to corporate customer finance, private customer finance and processual dimension, and they are reviewed at Group, segment or bank level.

The Group assesses the risk using credit risk models. In addition to the models used for assessing probability of default (PD), the Group uses models for predicting loss given default (LGD) and exposure at default (EAD) to measure credit risk. Exposure at Default (EAD) refers to the estimated amount of the bank's receivable from the customer at default. Off-balance-sheet exposures at default are determined on the basis of the conversion factor (CF). Loss Given Default (LGD) is an estimate of a financial loss incurred by the bank, as a share of EAD, if the customer defaults.

Credit risk models

Probability of loan defaults within 12 months	=	Probability of default (PD), %
Estimate of the loss caused by a loan default	=	Loss given default (LGD), %
Estimate of the sum the customer would owe the bank in case of default	=	Exposure at default (EAD), €

The Group makes extensive use of credit risk models in measuring and managing credit risk, such as in

- lending and pricing;
- specifying financing decision-making powers;
- setting and monitoring the loan portfolio's qualitative targets;
- credit risk reporting;
- capital adequacy measurement using the Internal Ratings Based Approach (IRBA);
- measuring economic capital requirement and expected loss; and
- measuring expected credit loss.

Credit rating and probability of default

A credit rating system refers to models, processes and information systems that the Group uses to assess the probability of default of its obligors and to categorise the obligors into borrower grades based on the probability of default (private customers by contract and others by customer).

OP Financial Group's credit rating system is based on the IRBA. For the measurement of credit risk, OP Financial Group has permission from the supervisory authority to use the IRBA for retail, corporate and credit institution exposures. The credit rating system is used at Group level, involving all customer segments. The rating uses both expert rating and automated rating.

Default means that some of the customer's exposures becomes a receivable to OP Financial Group that is over 90 days past due or some other more severe payment default. A default customer also means a customer who does not fully meet their payment obligations without the bank's measures (e.g. realisation of collateral). Probability of default, or PD, is the average proportion of default events estimated for each borrower grade during one year over the economic cycle. When the economy is thriving, the actual proportion of default customers in a given borrower grade is lower than the estimated PD.Probability of default increases by many times when

moving to lower borrower grades compared with high borrower grades.

In expert rating, the Group has seen it appropriate to separate business and risk management responsibilities in such a way that decisions are centralised in the rating decision-makers within the independent Risk Management. The banks in charge are responsible for continuously monitoring the credit rating process, and the ratings must always be kept up to date. Customer credit rating must give a true picture of the customer's status and repayment capacity, and the lending decision must be based on the existing and up-to-date borrower grades. Credit rating controls customer selection, consequences of insufficient collateral and exposure pricing.

Assessing private customers' probability of default

OP Financial Group uses a 16-level scale of A–F to assess the probability of default for its private customer agreements, with F representing defaulting borrowers.

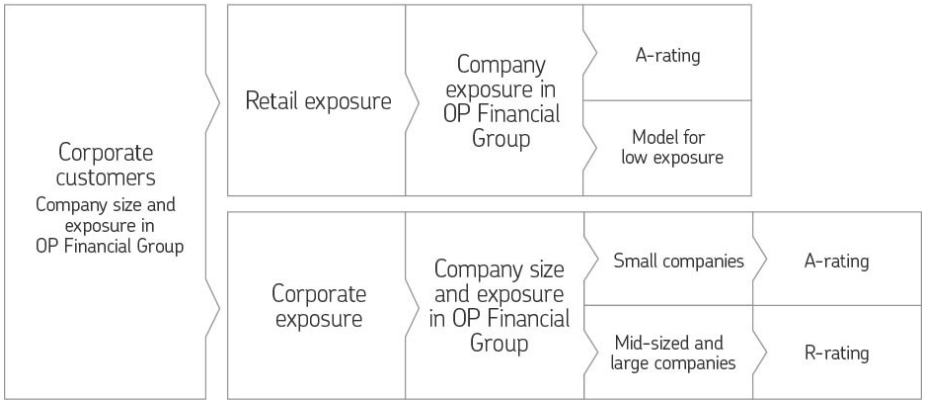
The Group assesses monthly all private customer agreements' PD using a loan portfolio rating model. The loan portfolio rating is based on a customer's basic data, payment behaviour and other transaction history data. The scores calculated on the basis of this data determine the borrower grade. Average PDs have been calculated for each borrower grade for a period of 12 months. The loan portfolio rating model is used for credit risk assessment and capital requirement measurement.

OP Cooperative banks use an application stage rating model that covers most of the promissory notes granted to private customers. The Group's asset and sales finance solutions and unsecured consumer loans have their own application stage models. The application stage rating takes place as part of OP Financial Group's loan approval process. The rating based on the application stage supports the loan approval process, credit risk assessment and the pricing of new loans.

Assessing corporate customers' probability of default

OP Financial Group assesses the probability of default of its corporate customers using its internal 20-level credit rating system on a scale of 1.0–12.0, with 11–12 borrower grades representing defaulting customers.

Rating of corporate customers in OP Financial Group



The R rating for mid-size and large corporate customers is based on the company's financial indicators and qualitative background data on the basis of which a statistical model generates a proposal for rating. An expert familiar with the customer will make a rating proposal on the basis of what is suggested by the model and of any other information available. Any changes and uncertainties relating to the future outlook will be regarded as warning signs and exceptions to the rating provided by the model. The borrower grade is determined by the central cooperative's independent Risk Management, based on the rating proposal, at least once a year and, in respect of potential default customers, on a half yearly basis.

Suomen Asiakatieto's automated rating model, Rating Alfa, forms the basis of small corporate customers' A rating. The rating Alfa variables include information on payment default and payment practices of the company or its persons in charge, key indicators based on financial statements and the customer's basic data. Risk scores provided by Rating Alfa have been described (calibrated) into OP Financial Group's internal borrower grades. Risk scores provided by the rating Alfa and OP Financial Group's internal payment behaviour data are used to generate OP Financial Group's borrower grades that will be changed based on expert assessments, if need be. The banks assess at least once a year the validity of the borrower grade of almost all A rated customers included in Corporate exposure group and they must assess customers with a low borrower grade and those on the watch list on a half-yearly basis.

Low exposure corporate customers are rated using a rating model for low exposures (P). The rating model is an automated rating model calculated on a monthly basis that is created on the basis of the customer's basic data, transaction data and payment behaviour data.

Borrower grades generated by the corporate rating models are comparable because, irrespective of the model, each borrower grade is subject to the same probability of default. In deriving probability of default, the Group has used recent years' actual payment default data, long-term loan loss data and bankruptcy statistics and the cyclical nature of the model. The need for updating probabilities of default for each grade is assessed annually.

OP Financial Group's credit ratings for corporate customers and Standard & Poor's (S&P) equivalent

S&P Rating	AAA...AA-	A+...A-	BBB+...BBB-	BB+...BB-	B+...B-	CCC+...C
OP Financial Group	1.0–2.5	3.0–4.0	4.5–5.5	6.0–7.0	7.5–8.5	9.0–10.0

Assessing credit institutions' probability of default

Credit institution exposure is divided into 20 grades ranging from 1.0 to 12.0, with defaulted customers falling into categories 11–12.

A specific L rating model is used to assess the probability of default of credit institutions as counterparties, the structure of which corresponds to the R rating model.

The statistical model as the basis of the credit rating is based on financial indicators in financial statements and on qualitative background data. Such rating can be revised by an expert with warning signs and, in many cases, rating is also affected by the parent company's support to the banking group and by the Sovereign Ceiling rule whereby the counterparty cannot be better than the country concerned in terms of creditworthiness. The Group decides on credit institution ratings at least once a year.

OP Financial Group's credit ratings for credit institutions and Standard & Poor's (S&P) equivalent

S&P Rating	AAA...AA+	AA...BBB+	BBB...BBB-	BB+...BB-	B+...B	B-...CCC
OP Financial Group	1.0–2.0	2.5–4.5	5.0	5.5–7.0	7.5–8.0	8.5–10.0

Use of credit risk models in capital adequacy measurement

For the measurement of credit risk for capital adequacy, OP Financial Group has permission from the supervisory authority to use the Internal Ratings-based Approach (IRBA) for corporate and credit institution exposures, retail exposures and equity investments.

The Group applies the Foundations Internal Ratings Based Approach (FIRBA) to measure capital adequacy requirement for credit risk on corporate and credit institution exposures. In FIRBA, an estimate of probability of default (PD) generated by OP Financial Group's credit risk models affects the capital adequacy requirement for credit risk associated with the customer. Standard estimates issued by the authorities are used for LGD and CF.

The Group uses advanced internal-rating based approach (AIRB) to calculate the capital requirement for credit risk on retail exposures, in which the capital requirement is affected by the PD, LGD and EAD values of OP Financial Group's internal credit risk models. OP Financial Group uses the Standardised Approach (SA) for government and central bank exposures and for some other exposure categories (like those of the Baltic countries and OP Card Company). The PD/LGD method applies to OP Financial Group's strategic investments, where the PD values are based on internal models and LGD values on standard estimates, and the basic approach to other investments. The OP Amalgamation Capital Adequacy Report provides more information on the approaches used.

Decision-making and assessment related to credit risk models

The ALM Committee decides on the adoption of changes in models and parameters approved by the Risk Management Committee. The credit risk models are developed and maintained by Risk Management, independent of business lines/divisions. In the development of new models and changes in models in

production, the approval of the content by Risk Management Committee is segregated from the implementation decision made by the ALM Committee. If such adoption requires permission from or notification to the relevant authority, Finance and Treasury will apply for the required permit before any decision on the adoption.

The effectiveness of the credit rating process and credit risk models is subject to regular monitoring and supervision. The monitoring is aimed at giving real-time picture of the effectiveness and quality of the credit risk models by assessing the performance of the model by means of quantitative and qualitative reviews. If the reviews performed during the monitoring reveal that the model's functionality has deteriorated, the related observation can be submitted to the Risk Management Committee. In less severe cases, it is possible to issue recommendations based on the monitoring, for example, to fix the process related to the adoption of the process or to analyse the model performance in greater detail in validation. The monitoring includes analysing data, used methods, model structure, variables and model usability and operating process in respect of PD and LGD models, CF and IFRS 9 within the scope of IRBA permission. OP Financial Group's Risk Management also collects continuous feedback from the business lines/divisions on the effectiveness of the credit rating process and credit risk models.

In addition, the Group assures the quality of the models at least once a year in accordance with the validation instructions approved by OP Financial Group's Risk Management Committee. The set of the validation instructions contains requirements for quality assurance carried out when adopting a model. Validation uses statistical methods to test, for example, the model's sensitivity and the validity of risk parameter estimates (PD, LGD and EAD). Validation also involves qualitative assessment, such as an analysis of user feedback, and a peer group analysis. The results of validation and any recommendations for required measures are reported to the Risk Management Committee, which decides on any improvements on the basis of the validation.

OP Financial Group's Internal Audit performs audits to ensure the independence of validation. It also controls the risk model development process and the appropriate and extensive use of the models on the basis of its risk-based assessment.

Securitisations

OP Financial Group has not acted as an originator or manager of securitisation transactions but has invested in securitised assets. In calculating the total amount of the risk-weighted assets of securitisation exposures, the Group has used IRBA to credit risk when the securitisation exposure belongs to the exposure category to which the assessment model based on credit rating is applied.

Credit risk management

OP Financial Group manages its credit risk through the Group-level guidelines and principles and qualitative and quantitative risk tolerances. These are specified in risk-taking policy lines, limits and control limits, qualitative and quantitative targets as well principles governing customer selection, collateral and covenants. Quantitative and qualitative target levels balance out the business targets and moderate risk appetite. Tolerances and control limits set maximum limits for risk-taking. These help to ensure the sufficient diversification of the loan portfolio while avoiding the emergence of too large risk concentrations.

Credit risk management is based on careful customer selection, active customer relationship management, good knowledge of customers, strong professional skills and comprehensive documentation. The day-to-day credit process and its effectiveness play a key role in the management of credit risks. The Group manages credit risk through the selection of the range of products and product terms and conditions. The Group manages risk associated with new lending through well-thought-out customer selections, covenant terms, collateral and the avoidance of risk concentrations. Managing risk associated with the loan portfolio is based on good customer relationship management and the proactive and consistent management of problem situations.

A customer's sufficient repayment capacity is the prerequisite for all lending. In order to ensure repayment, collateral is provided for exposure, and any retail banking exposure is primarily secured by hard collateral. Regularly updated, sufficiently conservative and well documented collateral management ensures good credit risk management. Separate instructions apply to collateral assessment and use of covenants. Maximum valuation percentages for each type of collateral have been specified and the Group monitors developments in collateral values on a regular basis. Collateral evaluation is based on the principle of independent evaluation and a prudent approach to fair value. The Group follows and monitors the values of home collateral using index data produced by Statistics Finland. The Group exercises special care in assessing the value of collateral deemed as cyclical in nature. In case a customer gets into difficulties or the collateral's

value changes significantly, the Group checks whether there is need for collateral re-evaluation.

With respect to larger corporate customers in particular, the Group also uses covenants to ensure the availability of information and an option to re-evaluate loan terms and conditions, collateral requirements or pricing should the risk status changes. Insufficient collateral may be acceptable in the best borrower grades. Unsecured retail exposures and leasing and factoring have been centralised within the central cooperative's banking.

The Group responds to any foreseeable problems as early as possible. The operating models for potential default and default customers are described to ensure uniform treatment of private, corporate and agricultural customers. Customers whose financial status performance, credit risk and payment behaviour justify a more detailed review are subject to special control. In this context, the Group also analyses the need to revise the customer's credit rating, the probability of a credit loss and the need to recognise an impairment loss. This often also means changes in loan decision levels.

The Group ensures the repayment capacity of private customers against higher interest rates as well. Customers can protect their loans against higher interest rates by choosing a fixed interest rate, an interest rate cap or corridor. In lending, the Group avoids high financing percentages. Customers are offered payment protection insurance in the case of illness or unemployment.

The assessment of corporate customers' repayment capacity and credit risk uses not only credit ratings but also payment behaviour data, financial statements analyses and forecasts, corporate analyses and sector reviews, and credit rating assessments and other documents produced by the banks' account managers. Corporate customers can protect against higher interest rates using an interest rate cap or interest rate corridor.

Risk Management regularly supervises and reports to the Executive Board and the Supervisory Board's Risk Management Committee on the risk exposure developments of the Group and its companies, and on the implementation of the risk policy principles as part of its regular risk management reporting. Significant and immediate risks that may endanger, or already have endangered, the Group's business continuity, security or reputation must immediately be reported to the management.

4.4 Liquidity risks

Liquidity risk comprises funding liquidity risk, structural funding risk, funding concentration risk and asset encumbrance.

Funding liquidity risk refers to the risk that OP Financial Group will not be able to meet its current and future cash flows and collateral needs, both expected and unexpected, without affecting its daily operations or overall financial position. Structural funding risk refers to uncertainty related to long-term lending, arising from the refinancing risk due to the structure of funding. Funding concentration risk refers to the risk that funding becomes more difficult due, for example, to a transaction related to an individual counterparty, currency, instrument or maturity band. Encumbrance of assets means risk of securing liquidity and reducing free collateral used as funding collateral. Market liquidity risk is a risk that is associated with uncertainty regarding the market value of receivables.

OP Financial Group's key source of liquidity risk is banking where inflows and outflows of financing does not take place at the same time. In such a case, the bank is exposed to refinancing risk due mainly to lending with a long maturity and the differences between the maturity of deposit funding dependent on customer behaviour and the liquidity of receivables. At the same time, the bank is exposed to funding concentration risk as regards the counterparties of deposit and wholesale funding, availability and maturity of finance. Lack of market liquidity may reduce liquid assets held by the bank.

Insurance operations' funding liquidity risk is assessed individually from each insurance business's viewpoint. Insurance companies' investment assets act only as a liquidity buffer for the company concerned. Measurement and management of funding liquidity risk is recorded in the companies' investment plans and liquidity requirements are taken into account in the investment portfolio weightings.

Measuring liquidity risks:

- Structural funding risk is measured on the difference between cash inflows and cash outflows in different maturities. In addition, the Group calculates the regulatory Net Stable Funding Ratio (NSFR) which determines how much there must have stable sources of funding in proportion to assets requiring stable funding. The calculation of the ratio is based on rules issued by the authorities.
- Funding liquidity risk is measured using a ratio based on the Liquidity Coverage Ratio (LCR), whose calculation is based on regulations issued

by the authorities. The LCR requires that a bank have sufficient liquid assets that cover the net cash outflows from the bank under stress conditions. Internal stress tests are also used to assess the sufficiency of the liquidity buffer.
- The Group measures funding concentration risk by calculating the amount of bond funding with a maturity of rolling 12 months and 3 months and also long-term central bank financing. Concentrations by counterparty and instrument are also subject to monitoring.
- The Group measures its asset encumbrance by proportioning encumbered assets to the aggregate amount of balance sheet assets and collateral securities.
- Life insurance liquidity risk is measured with a scenario in which premiums written decrease to zero for the next 12 months and claims paid double in those insurance lines that provide a right of surrender. In addition, the Group stress-tests the values of the investment portfolio using the scenarios under Solvency II standard formula.

A tolerance, limit or control limit has also been set for most of the abovementioned indicators.

As part of the Group's risk management process, stress tests are carried out regularly to test the effect of stress scenarios on the Group's liquidity, earnings and capital adequacy.

Liquidity risk management

Liquidity risk management is based on the principles governing OP Financial Group's risk-taking and management, risk policy lines as well as on the set tolerances, target levels and the Group's limits from which limits and control limits have been derived to Group companies. Funding liquidity management is also governed by the regulations governing the minimum reserve and marginal lending facility systems by the European Central Bank.

The central cooperative's Executive Board is responsible for OP Financial Group's liquidity risk management and controls funding liquidity management using various threshold levels. In cases of market disruption, liquidity management relies on the liquidity contingency plan. For each of those liquidity levels, the Group has specified control and monitoring practices which become more rigorous when moving up to the next level.

Each company within OP Financial Group controls its liquidity management within the framework of tolerances, limits and control limits issued by the central cooperative and guidelines and of account, deposit and loan terms and conditions.

The central cooperative's Executive Board has approved the funding plan and the ALM Committee of the Executive Board has approved the liquidity contingency plan that contains a control model of the liquidity status using various threshold levels, and sources of funding.

OP Financial Group manages its liquidity position through the proactive planning of the funding structure, the monitoring of the liquidity status and a well-balanced liquidity buffer, planning and management of daily liquidity, the contingency plan based on emergency preparedness, as well as the effective and ongoing control of the Group's liquidity status.

OP Financial Group safeguards its liquidity with a liquidity buffer and other sources of funding referred to in the contingency plan. The liquidity buffer and contingency plan items have been scaled in such a way that OP Financial Group will maintain its liquidity in a long-term liquidity shock too. Liquid funding may be made available for use by the Group by selling notes and bonds in the liquidity buffer or using them as collateral. The liquidity buffer consists mainly of deposits with the central bank and receivables eligible as collateral for central bank refinancing.

As OP Financial Group's treasury, OP Corporate Bank plc is tasked with securing the liquidity of the entire Group and each OP cooperative bank or Group company. OP Financial Group's daily liquidity management refers to managing liquidity of the companies engaged in banking. The liquidity of OP Financial Group's insurance companies and pension institutions transfers through bank accounts to the Group's overall liquidity. Any changes in their liquidity position will change OP Corporate Bank's liquidity position. The liquidity buffer of banking within the entire OP Financial Group is managed by the Group's Treasury.

OP Financial Group's funding planning is based on the proactive planning of the funding structure and on the tolerances set for the liquidity risk. Deposits from the general public and wholesale funding form the basis of OP Financial Group's funding. Wholesale funding is aimed at actively and proactively covering funding needs arising from the growth differentials between the receivables and the deposit portfolio in the balance sheet, funding maturity, other internal objectives and credit rating objectives. A solid funding structure requires that the

loan portfolio and OP Financial Group's liquidity buffer be funded not only through deposit funding and short-term funding but also through long-term wholesale funding. Diversifying funding sources will reduce OP Financial Group's dependence on an individual source and decrease price risk associated with funding. The Group diversifies its funding by time, maturity, instrument and customer segment.

Any surplus deposits with member banks are mainly channelled to the central cooperative consolidated accounts or instruments it has issued in order not to increase the Group's wholesale funding unnecessarily. OP Corporate Bank plc manages on a centralised basis the Group's wholesale funding in the form of senior bonds and equity capital, while OP Mortgage Bank manages wholesale funding based on covered bonds.

Liquidity risk reporting

Monitoring and reporting liquidity risks exposed by the Group's companies vary from real-time to quarterly practices, depending on the nature and extent of their business. Monitoring and reporting are based on the Group's tolerances, limits and target values. Depending on the company and reporting level, reporting practices may vary from daily cash-flow monitoring (funding liquidity) to the monitoring and forecasting of the long-term funding structure (refinancing risk).

The Group reports liquidity risks to the central cooperative's Executive Board on a regular basis and, with a heightened threshold level of the liquidity status, will adopt weekly or daily progress reporting practices whenever necessary. Group companies report liquidity risks to their boards of directors regularly, applying at least the level which has been set for control limits and limits.

4.5 Market risks

In the management of market risks, it is important to identify the dimensions of the business models' market risk, make risks visible through regular reporting and actively decide on bearing or covering the risk.

Market risks in OP Financial Group arise from the banking book of banking (interest rate risk in the banking book and optionalities), trading operations, long-term investment by banking and insurance operations and from insurance liability of insurance companies.

Trading operations have been centralised in OP Corporate Bank's Markets. OP Corporate Bank and OP Financial Group's insurance companies engage in investment. Investment is not counted among the common tasks of other member banks.

OP Financial Group uses derivatives for trading and hedging purposes. OP cooperative banks uses derivatives only for hedging purposes.

OP Financial Group controls and restricts market risk-taking by following the principles of risk-taking and risk management, using the supplementary risk policies, as well as tolerances, limits and control limits as well as principles of investment plans. OP Financial Group measures its market risks as a whole using the economic capital requirement. Stress tests supplement related estimates.

Interest rate risk in the banking book of Banking

The interest rate risk associated with Banking is by nature structural interest rate risk related to interest income from financing which is sensitive to changes in short-term interest rates. OP cooperative banks manage their interest rate risk through loans and deposits made together with the Group's Treasury, OP Mortgage Bank's intermediate loans, as cash flow hedges through interest rate swaps and by reducing the difference between variable-rate assets and liabilities. The difference can be reduced by actively reshaping the asset-liability position and through long-term business decisions.

All interest-bearing on- and off-balance sheet items are included in the Banking interest-rate risk analysis.
The Group measures interest rate risk in the banking book by means of interest income risk, a VaR measure and present value risk. Interest income risk measures the effect of a one-percentage-point parallel change on net interest income for the next 3 years scaled to a one-year period. Present value risk describes the effect of a two-percentage-point change in interest rates on the present value of the Group's Banking items relative to the Group's permanent capital (internal capital). As part of regular interest rate risk measurement and reporting, the Group carries out stress tests to analyse the effects of various interest rate changes on the present value and on interest income risk.

Trading

Trading in derivatives, foreign exchange products, bonds and money market products has been centralised in OP Corporate Bank's Markets. Risks taken include interest rate risk in different currencies, especially EUR, USD and SEK, currency risk, volatility risk of options and credit spread risk. Markets is responsible for the management of the Group's currency exposure and does foreign

exchange transactions on the markets according to needs.

To take account of credit risk, the Group adjusts the valuations of derivatives using Credit Valuation Adjustment (CVA). The size of the valuation adjustment is affected by the credit risk free valuation of derivatives, interest rates, volatility of interest rate options, exchange rates and credit risk market price.

Group member banks offer derivative features embedded as promissory note terms within loans: interest rate caps and corridors. Risks arising from derivative features are transferred to Markets that covers them on the market. Risks associated with operations include interest rate and volatility risk. In some products, the forecast customer behaviour has a significant effect on the pricing of the product and risk hedging. If the customers' behaviour differs considerably from the forecast behaviour, the customer behaviour risk materialises. The Group monitors customer behaviour risk associated with the derivative features embedded within loans by comparing the actual customer behaviour with the customer behaviour forecast by the model.

Markets is responsible for providing clients with structured investment products through the Group's sales channels. The products are built in such a way that the risk is covered at the time of issue. When the products are repurchased from clients, open market risk is opened. The risk depends on the product's underlying asset and may be an equity or credit basket, for example.

The risk policy sets limits and framework for business models. Markets manages risk exposures by actively managing positions and actively trade on the markets. The Markets risk and earnings monitoring is performed on a daily basis.

Market risks associated with Trading are measured using a VaR (Value-at-Risk) measure that is aimed at predicting loss at a selected level of confidence and with a time horizon as well as with product- and position-specific sensitivity indicators.

Market risks associated with long-term investment

OP Corporate Bank and OP Financial Group's insurance companies engage in investment.

To maintain liquidity, OP Financial Group has a liquidity buffer managed by OP Corporate Bank's Treasury. The liquidity buffer consists mainly of deposits with central banks and notes and bonds eligible as collateral for central bank refinancing. Furthermore, OP Corporate Bank invests in the bonds of Finnish companies. In both investment portfolios, revenue generation is based on covering credit spread risk. The Group uses limits to restrict credit spread risk associated with the portfolios. Derivatives are used to cover interest rate risk.

Equity and real estate risk is also to a lesser extent associated with Banking. Banking real estate risk chiefly involves real property units in its own use. The Group manages equity and real estate risk primarily through instructions which strictly specify risk-taking. Banking equity and real estate risk is measured using the economic capital requirement.

Investments made by insurance companies are aimed at ensuring customer income (life insurance), obtaining assets covering insurance liabilities, and investing profitably. The investment asset allocation of insurance operations takes account, for example, of the insurance companies' structural interest rate risk and other requirements set by insurance liability on investment assets and their liquidity. In life insurance, the application of the principle of equity also affects investment targets and the amount of risk taken. Indeed, the management of insurance companies' market risks pertain to the management of market risks in the entire balance sheet that involves investments, derivatives and insurance liability.

In the investment plan, the insurance company's board of directors determines the strategic intent in respect of the market risk level on the balance sheet and authorises the investment organisation to manage investment assets (including derivatives) within the framework of the asset class descriptions, basic weighting and risk limits specified in the investment plan. Risky investments are managed in the risk policy by asset class specific restrictions, the maximum number of risky investments and the maximum risk level that limits total risk exposure amount associated with the investment portfolio.

The insurance companies allocate a considerable amount of investments covering insurance liability to securities denominated in euros, because the insurance liability is almost in full denominated in euros. By investing in securities that include currency risk (e.g. debt securities in emerging markets), the Group seeks higher expected return and market risk diversification benefits with respect to the investment assets.

Insurance companies' investment operations may use derivative contracts to hedge against market risk or to take a market view within the limits set in the investment plan. If investment assets contain interest rate option contracts (such as swaptions), this will expose investment

assets to volatility risk. In addition, option contracts bring convexity to the interest rate risk profile.

With respect to investment assets the most significant market risk is associated with the effect of a change in equity prices on the value of equity investments. The most significant part of equity risk is caused by illiquid investments and liquid equity investments.

Insurance companies' real estate investments expose investment assets to real estate price risk. Real estate investments are aimed at achieving illiquidity premia and improving the risk-return ratio of investment assets while levelling off fluctuations in the value of investment assets.

The Group limits risk-taking through limits based on the risk policy and the principles governing risk-taking. The Group ensures sufficient portfolio diversification by means of restrictions by issuer. Liquidity buffer investments are also controlled by the eligibility of investment instruments as central bank collateral.

The VaR measure is used to measure market risks associated with investment portfolios.

Market risks associated with insurance liability

In insurance business, structural interest rate risk arises from interest rate risk associated with the valuation of insurance liabilities and from the credit spread risk: a reduction in interest rates and narrower credit spreads increase the present value of insurance liabilities. Net interest rate risk on the balance sheet consists of both interest rate risk associated with insurance liabilities and the risk profile of fixed income investments covering the insurance liabilities and of derivative hedges.

The insurance liability discounting curve includes a volatility adjustment, which exposes to credit spread risk. In respect of the level of the credit spread, the consistency of the risk profiles of assets and liabilities is essential.

In its investment plan, the insurance company's board of directors determines the company's strategic intent related to interest rate hedging and the room for manoeuvre for hedging while authorising the investment organisation to change interest rate hedging according to its strategy to be in line with the changing structure of the insurance liability and market situation.

In its investment plan, the Group limits market risks through limits by issuer, fund investment and interest rate risk.

4.6 Underwriting risks associated with non-life insurance

Risks of insurance operations

The insurance business is based on taking and managing risks. The largest risks associated with the insurance business pertain to risk selection and pricing, the acquisition of reinsurance cover, and the adequacy of insurance liabilities. In non-life insurance, the risk inherent in insurance liabilities lies mainly in insurance lines characterised by a long claims settlement period. Biometric risks also arise from granting non-life policies where the non-life insurer pays annuities stemming from non-life obligations as a result of an insurance event. In addition to underwriting risks, a significant insurance business risk consists of the investment risk related to the assets covering insurance liabilities.

Underwriting risks

Underwriting risks associated with Non-life Insurance comprise risk of loss or damage, and provision risk. Risk of loss or damage occurs when there are an above-average number of losses or they are exceptionally large. This results in assets covering technical provisions differing due to expected higher claims incurred. Provision risk arises when the claims incurred due to already-occurred losses are higher than anticipated on the balance sheet date. The uncertainty related to the timing of claims paid out also has an effect on the amount of provision for outstanding claims. Once a loss has been reported, uncertainty may still prevail as regards the size of the loss. However, the most significant uncertainty relates to the assessment of unknown losses.

The majority of claims expenditure in statutory lines of insurance for bodily injuries consists of compensation for loss of income and for medical care. In addition to accidental injuries, statutory occupational accident and occupational disease insurance covers occupational diseases, which tend to develop slowly. For this reason, major uncertainty is involved in assessing claims incurred in the case of occupational diseases.

It is typical of the statutory lines of insurance that the period from the date of the occurrence of loss until the date on which the claim is fully paid is often long. Such underwriting business generates a long-term cash flow, on the evaluation of which the mortality of beneficiaries, medical-cost inflation and return to work have the greatest impact. With respect to occupational accident and occupational disease insurance and motor liability insurance, the insurance company is not, however, liable

for the index increments of compensation for loss of income nor for any medical expenses that are paid for over ten years after the accident's occurrence. These are financed through the pay-as-you-go system. The pay-as-you-go system is a scheme based on special laws governing each statutory line of insurance. Under this system, the financing of benefits, the so-called pay-as-you-go benefits, specified in these laws, has been arranged through the pay-as-you-go system. The pay-as-you-go system does not generate any financial benefit or harm to the insurance company that would lead to changes in equity.

Individual claims are usually small in voluntary accident and health insurance. The largest claims may arise from catastrophes with a large number of injured people. Medical-cost inflation has a major impact on projecting cash flows in medical expenses insurance, with respect to illnesses for which compensation is paid for a long time. Rapid progress in medicine and rising pharmaceuticals costs increase medical-cost inflation. Developments in public healthcare will also affect future cash flows. If tax-funded public healthcare services decline, those insured will increasingly start paying for their medical care through medical expenses insurance.

In motor vehicle and cargo insurance, weather conditions have the greatest effect on the number and size of claims. Claims expenditure is therefore larger during the winter than during the summer. The greatest risks within cargo insurance are associated with risk concentrations caused by sea transport and trading stock. In addition, weather conditions, such as storms and floods, and snow and icy roads during the winter relating to motor vehicle insurance may involve accumulation risks covering a geographically large region.

The largest single risks within property and business interruption insurance include fire, natural phenomenon and breakage risks exposed by companies' production facilities and buildings, and the related business interruption risks. Households' individual property risks are small and the related individual claims have no material effect on the non-life insurance earnings. The majority of claims expenditure for households is due to leakage, fire and burglary claims.

The risk of natural catastrophes has been considered minor in Finland. However, studies have suggested that there are indications of a change in climatic conditions in our operating region at least in the longer term. The projected temperature increase will probably be reflected in changes in summer and winter conditions and, for instance, in higher precipitation and wind speeds.

Laws and legal practice governing the liability to pay damages have a major impact on the number and size of liability claims. For private individuals, claims have a minor effect on earnings. In addition, private individuals' risks account for a minor share of the total risk within the class. The majority of corporate liability policies consist of product liability and commercial general liability policies. Liability insurance is characterised by losses being revealed and settled slowly, especially in respect of product liability insurance in North America.

Decennial insurance and perpetual insurance are long-term contracts. Decennial insurance is a statutory policy where a loss event requires both a construction defect and the builder's default. The underwriting of perpetual insurance was terminated in the 1970s and their sums insured and associated risks are small due to low inflation. The policyholders consist mainly of private individuals.

A specific risk type consists of a claim accumulation generated by natural catastrophes or large catastrophes caused by human activity. In such a case, one catastrophic event may in practice give rise to simultaneously payable claims for a large number of insured risks at high amounts. The resulting total claims expenditure may be extremely large.

Unidentified background factors may also affect underwriting risks. Examples from recent history include cases of occupational diseases caused by exposure to asbestos dust, and the effect of higher life expectancy than predicted on the pension portfolio of statutory insurance.

Underwriting risk management

The most important tasks within the management of underwriting risks relate to risk selection and pricing, the acquisition of reinsurance cover, the monitoring of claims expenditure and the analysis of insurance liabilities. The highest underwriting risk decision-making body in 2019 was the Insurance Committee, tasked with managing non-life insurance underwriting risks. The Insurance Committee made underwriting decisions within the framework of confirmed powers and reported its decisions to the Insurance Customers Management Team.

Decisions on customer and insurance object selection and risk pricing are made according to the UW Guidelines. The Insurance Committee has approved the most significant and demanding risks in terms of their effect. For smaller risks, decisions are made jointly by several underwriters or managers on the basis of risk

size and severity. For basic insurance lines, decisions are made on a system-supported basis and customers and the objects of insurance are selected within the powers determined by instructions specifically approved.

The Group assesses non-life underwriting risks by applying the Solvency Capital Requirement (SCR) and the economic capital requirement. Stress tests are used to supplement the assessment. The Group limits the economic capital tied by underwriting risks relative to the Group's permanent capital (internal capital). Underwriting risks are, for their part, also restricted by a target set in the capital plan for own funds and the requirement for solvency capital.

Risk selection and pricing

Operating models highlight the role of risk selection and pricing. The Group has set limits for the size and extent of risk for each insurance line and risk concentration. Non-life Insurance has a centralised data warehouse and analysis applications in place to support risk selection and pricing. Insurance terms and conditions play a substantial role in risk mitigation. In addition, the Group performs risk analyses on a customer or insurance line specific basis to mitigate risks.

Reinsurance

The reinsurance principles and the maximum retention levels for different type of risks are annually approved by the board of directors of each insurance company. In practice, the Group's own retention levels can be kept lower than the maximum retention levels adopted by the board of directors, if the reinsurance pricing supports this. Retention in both risk-specific reinsurance and catastrophe reinsurance is mainly a maximum of 5 million euros. Reinsurance has an effect on the solvency capital requirement. Only reinsurance companies with a sufficiently high financial strength rating are accepted as reinsurers. The reinsurer's counterparty risk is managed by means of reinsurance diversification limits. Risk Management monitors that the reinsurance programme and the selection of reinsurers have been executed according to the reinsurance principles, and reports its observations in the risk analysis.

Risk concentrations

The Group takes account of local risk concentrations in EML (Estimated Maximum Loss) estimates for property and business interruption risks and through EML breakthrough cover included in reinsurance cover. Our operating region has no major risk of earthquakes. With respect to risks associated with other natural disasters, such as storms and floods, Finland is a stable area. However, the Group has protected against catastrophe accumulation losses through an extensive catastrophe reinsurance cover whose size has been dimensioned to correspond to the calculated size of a catastrophe loss occurring once every 200 years. The catastrophe accumulation cover applies to property damage and personal injuries.

Evaluation of insurance liabilities

The Group calculates insurance liabilities on a monthly basis and ensures their accuracy through a regular process, and reports regularly on how it develops.

Insurance liabilities arising from insurance contracts are determined on the basis of estimated future cash flows. The cash flows comprise payable claims and loss adjustment expenses. The amount of insurance liabilities has been estimated securely in such a way that it would be sufficient to fulfil the obligations arising from insurance contracts. This has been performed in such a way that an expected value has first been estimated for the insurance liability on top of which a safety loading based on the degree of uncertainty related to the liability has been determined.

The estimation of insurance liabilities always involves uncertainties which may be due, for instance, to the prediction of the claims trend, delays in verifying losses, cost inflation, legislative amendments and general economic development. Every few years, an external actuary performs for Non-life Insurance an analysis of the appropriateness of the calculation bases and the amount of insurance liabilities.

The provision for outstanding claims for annuities consists mainly of annuities of statutory insurance lines. Discounting is used in the computation of the provision for outstanding claims for annuities and the discount rate used is of great significance for the provision of outstanding claims. Due to low interest rates, non-life insurance has reduced the discount rate.

The actuary in charge annually makes the company's board of directors a statement of continuous compliance with the insurance liability requirements, the requirements set by the nature of the underwriting business and the opinions given by the actuarial analysis function on the insurance policy and reinsurance arrangements.

4.7 Underwriting risks associated with life insurance

Life insurance risks comprise biometric risks, cost risk and customer behaviour risks.

Biometric risks associated with life insurance products occur when death or disability causes higher claims paid out than expected, or pension disbursements being paid for a longer period than expected. Mortality and life expectancy affect a life insurance company's risk exposure in pure life insurance policies and pension policies. Longevity risk is particularly prevalent in group pension insurance policies under a defined benefit plan and in other portfolios of lifelong pensions, because these contracts do not contain any significant amount of the opposite mortality risk.

The policyholders' customer behaviour may give rise to lapse risk and surrender risk. Policyholders have the right to stop paying their premiums, terminate the contract prematurely or change the contract if there is an option provided for this; this will result in higher risk for the company. One example of such options is the customer's right to change the profit type of their assets from unit-linked to one with a guaranteed interest rate, which increases the expense of the rate of the premium basis. Another example is the postponement of pension, which increases the longevity risk and lapse risk. Endowment policies and capital redemption contracts with the right of surrender as well as term life policies, which the policyholder can terminate anytime, are particularly susceptible to surrender risk related to customer behaviour. Surrender of pension insurance is possible only in exceptional circumstances.

Expense risk refers to a situation in which incurred insurance contract management, maintenance and claims management expenses differ from those estimated in rating. Early lapse of insurance policies may also jeopardise the accuracy of cost assumptions used for rating and thereby contribute to the materialisation of the cost risk.

The Group assesses life insurance underwriting risks by applying the Solvency Capital Requirement (SCR) and the economic capital requirement. Stress tests are used to supplement the assessment.

Underwriting risk management

The Group manages life insurance underwriting risks by means of strict risk selection and pricing and by ensuring insurance liability that is accurate and sufficient as well as through reinsurance.

Risks related to mortality and longevity are rated in a secure way on the basis of the conditions and situation prevailing when the policy is issued. The company may change the prices of these long-term contracts to a very limited extent. This is why the risk for any later changes in the premium rating bases will be borne by the insurance company so that the premiums of new policies are increased and the company records an insurance liability supplement to sold policies. Offering insurance policies that have opposite risk exposures reduces the net risk of the entire insurance portfolio.

Early lapse risk related to customer behaviour and risk of customers' option to change the profit type of their assets to one with the guaranteed interest rate are managed through a competitive range of products, suitable product structures and incentives and sanctions in the contract terms and conditions.

The Group manages expense risk by means of sufficient cost control and prudent premium rating. The Group monitors regularly the realisation of assumptions made with regard to rating and, if necessary, increases the premiums of new policies and records a supplement to insurance liabilities with regard to the sold policies.

The Group also uses reinsurance to mitigate the risk. The reinsurance level is determined in the reinsurance principles approved by the board of directors of the company concerned. The reinsurance principles set limits for the maximum retention and catastrophe protection capacity. The reinsurance principles also restrict authorisations to take reinsurance counterparty risk because the document sets limits based on the counterparty's borrower grade and the reinsurance contract type (contract business, facultative). Risk Management monitors that the reinsurance programme and the selection of reinsurers have been executed according to the reinsurance principles, and reports its observations in the risk analysis.

The Group calculates insurance liabilities on a monthly basis and ensures their accuracy through a regular process, and reports regularly on how it develops.

The actuary in charge annually makes the company's board of directors a statement of continuous compliance with the insurance liability requirements, the requirements set by the nature of the underwriting business and the opinions given by the actuarial analysis function on the insurance policy and reinsurance arrangements.

The Group limits the economic capital tied by underwriting risks relative to the Group's permanent capital (internal capital). Underwriting risks are, for their

part, also restricted by a target set in the capital plan for own funds and the requirement for solvency capital.

4.8 Counterparty risks

Counterparty risk may relate to a derivative contract, security and foreign exchange transactions (settlement risk) or to a reinsurance contract. In OP Financial Group's investment operations, credit risk arising from a debt instrument issuer's default is included as part of market risk associated with investment. Lending risk arising from the non-fulfilment of the contracting party's repayment obligation is treated as a credit risk.

Counterparty risk arises from derivative contracts concluded by the central cooperative companies, with an external entity acting as the counterparty. The Group enters into derivative contracts for the purpose of both hedging and trading. Counterparty risk especially arises from derivatives held for trading performed without collateral with the counterparty. OP cooperative banks enter only into derivative contracts where OP Corporate Bank acts as the counterparty.

Reinsurers' counterparty risk is caused by the restriction of underwriting risk included in insurance operations through reinsurance contracts. Risk Management monitors that the reinsurance programme and the selection of reinsurers have been executed according to the reinsurance principles, and reports its observations in the risk analysis.

OP Financial Group's portfolio of derivatives consists mainly of interest rate derivatives in which no parallel correlation exists between the creditworthiness of the counterparty to the derivative contract and interest rates (so-called wrong-way risk).

Measuring counterparty risks

In loans, the market values of contracts decrease over time through repayments. It follows that the largest loss caused by default is the loan's remaining principal and accrued interest. Derivatives differ from this in that market values may increase significantly during the term to maturity. Forecasting an expected change in the market value is a key factor in measuring counterparty risk.

Counterparty risk of derivative contracts is measured by calculating credit equivalents for the counterparty contracts, through which the contracts become commensurate with loans. Credit equivalents are usually calculated by taking the positive part of the combined market values of the customer's contracts plus a buffer against market value. The Group also takes account of counterparty risk in the economic capital requirement as part of the credit risk model.

The Group measures counterparty risk using a fair value model, whereby the value of liability comprises the contract market value and the expected potential future exposure. The market value of counterparty credit risk adjusted using a Credit Value Adjustment (CVA) is determined at counterparty level. The CVA describes the market price of hedging the counterparty's credit risk and means an adjustment that must be made to valuations to take account of the customer's counterparty risk. The CVA is included in measuring economic capital requirement.

The Group assesses reinsurers' counterparty risk by applying the economic capital requirement and the Solvency Capital Requirement (SCR). Stress tests are used to supplement the assessments.

Counterparty risk management

The Group limits counterparty risk associated with derivatives by using derivative limits per counterparty. The Group confirms counterparty exposure limits once a year when it checks the amount and the status of collateral applying to limits for derivatives. This diversifies risk, i.e. the effect of default of a single customer on OP Financial Group's financial position decreases.

OP Financial Group manages counterparty risks associated with derivative contracts through master agreements enabling netting related to bankruptcies, through collateral and optional early termination (break clause). The Group uses netting for counterparty exposure arising from derivative contracts in both capital adequacy measurement and the monitoring of credit risk limits.

As a result of the global financial crisis of the 2000s, the role of the counterparty risk has grown. Derivatives with banks as counterparties are made on a secured basis. Furthermore, a large part of derivatives transactions between financial services providers has transferred to be cleared by a central counterparty. Collateral securities and central counterparty clearing have a major role in reducing counterparty risk.

The Group manages reinsurers' counterparty risks by diversifying the risks among several counterparties with a good credit rating. The reinsurance principles approved the insurance companies boards of directors describe the restrictions related to credit ratings and exposure amounts.

Risk Management regularly reports to the management on counterparty risks in the risk analysis.

4.9 Operational risks

Operational risks are associated with all OP Financial Group's business, both internal operations and business in the customer interface. Operational risk is a form of qualitative risk that is prevented through careful and high-quality operations. Each Group business and company is responsible for organising its operations in a way that minimises the negative consequences of operational risk.

The most significant, identified operational risks pertain to information systems, business processes, the accuracy of documentation, and the allocation of resources. Risk management related to the management of third parties and outsourcing is a growing operational risk area.

Operational risk may be shown in financial losses or other detrimental consequences, such as in terms of deterioration or loss of reputation or trust. The materialisation of operational risk may also lead to legal consequences, such as sanctions, in addition to the consequences mentioned above.

The Group measures and assesses operational risk in several ways and at several levels to ensure the extensive identification and control of operational risk. The Group measures and assesses risks in the following ways:

- OP Financial Group's business lines/divisions record operational risk events of those materialised and the so-called near-miss events. The aim is to ensure that the statistics on the events can be collected at Group level and be reported to the management and the relevant authorities.
- OP Financial Group assesses all new products, services and concepts against risks. Its business lines/divisions assess the risks based on practices approved by the central cooperative's Risk Management. OP Financial Group offers only products to customers and applies only business models that have been approved at Group level.
- The business lines/divisions and the companies analyse operational risks at least once a year that apply or may apply to OP Financial Group's business environment, business and exposures.
- The assessment of operational risks is supplemented by the annual operational risk stress test carried out by Risk Management. The results of stress tests are analysed and utilised, for example, in the assessment of the sufficiency of economic capital

Management of operational risks

Operational risk management ensures that operations have been organised appropriately and that risks do not result in unforeseeable financial losses or other negative consequences, such as loss of reputation. Due to the qualitative nature of operational risks, it is not possible to ever fully hedge against them and their adverse effects cannot be prevented in all cases. Operational risk management does neither always aim to eliminate the risk altogether, but it does aim to bring risks down to an acceptable level.

Group-level instructions are used to control operational risk management. Operational risks also have Group-level restrictions, such as those for the number of MIM (Major Incident Management) failures in 2019, materialised operational risks in euros and the usability of information systems.

The key tool to manage operational risks is diligence. OP Financial Group emphasises well-defined responsibilities and the role of personal responsibility in reducing operational risks.

In addition to the standard procedures and tools to management individual risks, the central cooperative may consider any effect of a materialised operational risk transferring outside the Group through insurance.

The business lines/divisions and companies themselves and the owner of each process are first and foremost responsible for operational risk management. They are also responsible for the fact that operational risks are identified and assessed and well-functioning and sufficient management tools are specified for them, for example through relevant controls, supervision and, if needed, by carrying out sufficient development measures to reduce the risk.

As business processes are being automated, the Group pays attention in the risk management assessment of new products and business models to compliance with policies required by good bank and insurance practices and the sufficiency of automated controls.

Business continuity planning also forms an integral part of managing operational risks. The Group prepares for risks threatening the continuity of critical and important processes by means of thorough business continuity planning.

Operational risks are reported regularly to the management of the central cooperative and the companies.

Management of security and information security risks

OP Financial Group's security work aims at upgrading the security culture throughout the organisation, developing and maintaining the desired security level by emphasising preventive measures and effective management of threatening situations and incidents. In threatening situations, ensuring personal security is always the primary goal, while property and data protection remains a secondary goal.

OP Financial Group manages the control, supervision and development of its security by means of the Corporate Security Policy confirmed by the Management Executive Team.

A specific, centralised cyber security framework is used to manage and supervise cyber security and report on related issues. When processing the information, the Group always ensures data and cyber security. By means of data security, the Group ensures data usability, integrity, confidentiality and availability, through technical and administrative measures. Data is protected against unauthorised access and handling unlawfully or accidentally. The owner of data classifies the data on the basis of its confidentiality and takes the necessary protection measures. Data access rights and authorisations are granted on the basis of work duties. This also includes defining avoiding any inadequate segregation of duties.

Threats and external requirements are systematically identified and preventive measures are planned on the basis of risks involved. The Group monitors systematically measures aimed at maintaining and enhancing security.

4.10 Model risk

The model means a method used to translate the source data based on mathematics, statistics and expert assessments into data guiding business decisions or quantitative data related to financial position or risk exposure.

The sources of model risk can be divided into the following three categories: shortcomings in the development stages of the models, shortcomings in the implementation of the models and shortcomings in the use of the models. All these share sources of risk, such as shortcomings in data, weak knowledge of interdependencies between mathematical methods and models and shortcomings in the knowledge of business, risk measurement and regulation. Furthermore, inadequate or unclear responsibilities of the management of the models as well as incomplete documentation in all stages of the model lifecycle lead to a higher risk of misunderstanding the models' function.

The models are used in the measurement of risks, measurement of regulatory capital adequacy, internal determination of capital need, assessment of liquidity sufficiency, measurement of balance sheet and income statement items and in price determination and decision-making in business. The models are grouped based on the purpose of use to implement model risk management.

All models applied in OP Financial Group are Group-specific. The Group and its companies share the related key parameters and assumptions. The independent validation unit within Risk Management maintains a register of all approved and adopted models.

In addition to the grouping, the models are classified in terms of quality according to their significance, which enables managing the models on a risk-based basis. Data on the models used by OP Financial Group and an assessment of the model's significance are registered in a model inventory.

The quantification of uncertainty involved in the model consists of the identification of shortcomings in data, the assessment of the model's estimation error and the determination of the model's shortcomings. The Group seeks to quantify uncertainty associated with the model arising from these sources by using applicable methods.

Model risk management

Risks associated with models are managed and restricted using practices included in the model risk management framework. OP Financial Group's model risk management framework specifies responsibilities related to the ownership and decision-making of the models as well as policies applying to the development, adoption, validation and other quality assurance of the models. The management model ensures effective and appropriate models, well-defined roles and responsibilities as well as the implementation of decisions in accordance with good governance, and supervision.

The Group manages model risk through well-defined roles and responsibilities as well as by ensuring adequate knowledge of quantitative methods and resource allocation. The development of models is segregated from their validation while the approval of models is segregated from the decisions of their implementation.

Each model has its owner. The model owner is responsible for the development of the model, the arrangement of its monitoring as well as for ensuring the data required by validations and its quality and the execution of development measures based on the validations.

Model development is primarily based on the Group's own, high-quality historical material or on measuring risk in risk position or on market information suitable for the valuation of an asset or liability. The model must be applicable to the review of the matter to be modelled and fulfil regulatory requirements. The Group uses generally used and proven modelling methods and models whenever they are available. Model development aims to identify shortcomings in the model and the situations where the model performs poorly. Regulation and risk management perspectives must be taken into account in the further development of the model.

The Risk Management Committee approves both new models and changes in the models in production. In its approval, the Risk Management Committee ensures the quality and effectiveness of the model and the sufficiency of impact analyses relative to the purpose of use of the model.

The adoption of the models included in the use categories based on the risk management principles requires valid approval from the Risk Management Committee, a comprehensive impact analysis and, as applicable, permission or notification from the supervisor. An appropriate business line'/division's decision-making body decides on the implementation of the business line's/division's pricing and decision-making models. With respect to the valuation models of items measured at market price, the model owner may make the decision on the approval of implementation unless the Risk Management Committee states otherwise in connection with the approval of the model. The ALM Committee decides on implementing other models.

The model owner (and other model users, if any) are responsible for the fact that each model's system implementation is tested and verified extensively before adoption and that the model is used only for what it has been developed and for what it has been approved. Extending the use of the model to a new application will always require a new approval and an implementation decision.

Standardised and regular monitoring is used in the assessment of use of the models. The extent, detail and frequency of monitoring must be proportionate to the significance of the model. In monitoring, the Group takes account of regulatory requirements.

The performance of the models is subject to a quantitative and qualitative review, or validation, carried out on a regular basis. The review takes account of the purpose of use of the model and its significance. The Risk Management validation unit is responsible for independent validation. The functionality of the models other than those included in the use categories under the risk management principles can be ensured through other procedures when the regulatory requirements and fulfilled.

Every stage of the model lifecycle pays also attention to adequate documentation and the fulfilment of regulatory requirements set for documentation.

Risk Management supervises model risks and reports them to the management. It also supervises the implementation of the approval conditions related to the used models, of the monitoring of the confirmed validation measures and functionality as well as the updatedness of validations. The Group regularly reports the supervision results, any deviations included, to the management.

The Group's Internal Audit inspects model risk management, the processes of the development, monitoring and validation of the models, individual models including their development and validation projects as well as the appropriate and extensive use of the models based on its risk-based assessment.

4.11 Compliance risks

Compliance risk forms part of operational risk. Compliance activities are aimed at ensuring that all OP Financial Group companies comply with laws, official instructions and regulations, self-regulation of markets, and internal guidelines, policies and instructions of OP Financial Group and the companies. Compliance also ensures that customer relationship management complies with appropriate and ethically sound principles and practices.

Materialisation of compliance risk may result not only in financial loss but also other adverse consequences, such as sanctions. Such sanctions may include a corporate fine and separate administrative fines for violation of obligations, and public warnings and reprimands. Compliance risk may materialise in terms of loss or deterioration of reputation or trust.

Responsibility for regulatory compliance and its supervision within OP Financial Group companies rests with the Group Executive Management and senior management and all supervisors and managers. In

addition, everyone employed by OP Financial Group is responsible for their own part for regulatory compliance.

Guidelines, advice and support concerning compliance within OP Financial Group are the responsibility of the Compliance organisation that is independent of business. It assists the Group Executive Management and senior management and business lines/divisions in the management of risks associated with regulatory non-compliance, supervises regulatory compliance and, for its part, develops internal control further. Central cooperative consolidated companies have concentrated compliance functions in the centralised compliance organisation, in addition to which the most significant central cooperative consolidated companies have their own compliance officers. Each OP cooperative bank has a designated person to ensure regulatory compliance.

Compliance risk management

Managing compliance risks forms part of internal control and good corporate governance practices and, as such, an integral part of business management duties and the corporate culture. Compliance risk management tools include monitoring legislative developments, providing the organisation concerned with guidelines, training and consultation in respect of observing practices based on regulation as well as supervising regulatory compliance with procedures applied within the organisation.

Compliance risks are identified, assessed and reported regularly according to the operational risk management model as part of the assessment of operational risks. Any observations made by Compliance have been reported regularly to the business segments, the central cooperative's Executive Board and the Supervisory Board's Risk Management and Audit Committees.

4.12 Concentration risks

OP Financial Group's concentration risks consist primarily of the following:

- Regional concentration of business within Finland, as evidenced by the current market position or within another individual country.
- Funding counterparties or timing (deposit funding and short- and long-term wholesale funding).
- Customer concentration. Customer concentrations arise from large exposures in different businesses. Customer, industry and sector concentrations arise from lending, derivatives business and investment.
- Concentration of investments by insurance companies' on low liquidity instruments, whose expected return is better due to illiquidity.

Concentration risk management

The management of concentration risks associated with business is closely integrated with other risk management. Strategic risk management addresses the degree of concentration related to business. The Group allocates capital to the business Finland centricity in the economic capital model. The Group sets limits for the exposures of the largest industry in the corporate sector, for the largest customer risks and for the total of the largest customer risks. The Group restricts the combined proportion of corporate and housing company exposures in the real property sector. The Group takes account of Group-level customer and sector credit risk concentrations and the differences of the risks associated with sectors in the measurement of economic capital of large exposures (EAD x LGD > 1.5 million euros). Maximum asset allocations are set for risky and illiquid investment instruments of the insurance companies' investment.
In order to ensure ongoing access to funding, the Group makes use of various financial instruments and diversifies the funding maturity structure. Funding sources are also diversified by geographic region, market and investor.

Country risk

OP Financial Group's country risks mainly arise from funding liquidity management by Banking (liquidity buffer) and investment by insurance companies. The liquidity buffer funds are mainly invested in notes and bonds eligible as collateral for central bank refinancing, such as government bonds or covered bonds. In insurance companies' investments, government bonds and bonds issued by companies and credit institutions with a high credit rating have a significant weight in the investment portfolio.

In Banking, country risks also arise from businesses based on the customer's need to secure its foreign receivables.

The Group manages country risks by determining country limits for different countries based, for example, on external credit rating that it uses to monitor, control and prevent its country risk concentrations. When setting the limits, the Group takes account of concentrations relative to its permanent capital.

4.13 Reputational risk

All OP Financial Group's operations involve reputational risks. These and any possible expected crises are assessed and identified systematically. Reputational risks may also arise for reasons not attributable to OP, such as negative associations or operations related to the sector in general.

OP Financial Group constantly monitors the publicity of the Group and its companies, and developments in the amount and tone of publicity and in media exposure. OP Financial Group measures its reputation and that of its main competitors by means of a half-yearly nationwide study whose results are analysed in relation to themes appearing in public or those that potentially increase or prevent reputational risk.

The management is regularly informed of reputational risks and any threat to imminent significant reputational risk is reported immediately.

Reputational risk management

Reputational risk is managed proactively and in the long term by complying with regulation, good practices of the financial sector and OP Financial Group's Code of Business Ethics and by emphasising transparency of operations and communications. In addition, the business line/division concerned plays an important role in identifying and preventing reputational risks. OP Financial Group adheres to international financial, social and environmental responsibility principles and international commitments.

The Group minimises reputational risks proactively by building a strong corporate image through active and transparent communications. The Group actively monitors the media coverage and social media publicity of the Group and the financial sector and other topical subjects. The Group also analyses the public image of the Group and the financial sector on a regular basis as part of its contingency plan for liquidity management. In the case of the materialisation of reputational risks and crisis situations, the Group has created communication models and plans in order to handle such cases as well as possible.

Executives and experts receive regular media training in respect of conventional and social media. Media training encourages active communications and gives guidelines on performing according to the Group's values in different channels in compliance with laws and good practice. OP Financial Group seeks to identify and address the excesses and misunderstandings in respect of its public image.

In addition to systematic communications, the Group attempts to minimise reputational risks by implementing its Corporate Responsibility Programme. The Group has in place a Code of Business Ethics. The Group also adheres to international economic, social and environmental responsibility principles and international commitments.

4.14 Risks associated with future business and strategy

General changes in the business environment (megatrends, root causes), such as climate change, demographic development and civil peace, affect the needs and preferences of customers. Changes in the business environment together with scientific and technological innovation affect financial-sector demand and supply in the longer term.

For business, it is essential on what conditions and with what volumes new agreements, as they stand now or whether they are completely new ones, are concluded. The volumes and margins of new agreements made in customer business as well as the margins of new market transactions have a significant impact on the financial result. These constitute risks associated with future business.

OP Financial Group manages risks associated with future business by means of strategic choices and their effective implementation.

OP Financial Group implements shared Group-level strategy, from where the central cooperative's business lines/divisions and OP cooperative banks derive their own strategy implementation plans. The strategy specifies OP Financial Group's core values, mission vision and strategic priorities as well as measures to achieve the selected strategic goals. Strategy statements are discussed extensively within OP Financial Group before being confirmed and implemented.

OP Financial Group is adopting a strategy process in which it assesses, reshapes and implements its strategy on an ongoing basis. The Group constantly updates strategic assumptions, priorities and measures in the face of the changing business environment.

Strategic Planning together with Risk Management analyses the business environment while producing diverse scenarios to support strategic choices. To assess strategic flexibility, they also identify factors that could put OP Financial Group and its companies in an unfavourable position compared to competitors in the implementation of the strategy.

Changes in the business environment and the strategic risks are subject to regular reporting and the central cooperative Group Executive Management discusses and monitors related actions. The representatives of management body members, Group Executive Management and business lines are involved in assessing the significance and probability of change drivers. Based on the assessment, the Supervisory Board confirms significant strategic risks and their management tools.

5 Declaration on the adequacy of risk management arrangements

In accordance with Article 435, Section 1 of the Capital Requirements Regulation, OP Financial Group must disclose a declaration approved, for example, by the Group Executive Management body on the adequacy of risk management arrangements.

Declaration by OP Cooperative's Board of Directors on 3 February 2020:

OP Cooperative's Board of Directors regularly assesses OP Financial Group's risks and risk exposure on the basis of risk reporting it has received and of information based on the comprehensive risk identification process performed annually by Risk Management and business lines/division. Based on the information it has received, the Board of Directors states that the risk management systems used by OP Financial Group are adequate in respect of OP Financial Group's risk profile and strategy.

Note 3. Changes in accounting policies and presentation

Change in accounting policies

During the financial year, OP Financial Group adopted an amortisation-based revenue recognition method for the customer margin related to a derivative clause attached to loans with an interest rate cap or interest rate collar. In accordance with its accounting policies, OP Financial Group previously recognised the fair value of the customer margin related to the derivative clause attached to loans with an interest rate cap or interest rate collar at a single point in time. After the change, customer margin accrued net interest income as the customer pays to OP Financial Group the additional margin related to the derivative clause.

The effect of this change was adjusted retrospectively in OP Financial Group's retained earnings (under equity). In addition, the income statement and balance sheet for 2018 were restated to reflect the new revenue recognition practice. The tables below show OP Financial Group's quarterly restated income statement and balance sheet items for 2018 and the effect of the change.

Balance sheet, € million	31 Dec 2018	Change
Derivative contracts	3,581	-62
Receivables from customers	87,026	-54
Tax assets	232	23
Equity capital	11,742	-93
Balance sheet total	**140,294**	**-93**

Income statement, € million	Q1–4/2018	Change
Net interest income	1,186	20
Net investment income	185	-78
Earnings before tax	959	-58
Income tax	-212	12
Profit for the period	747	-47

The change in the accounting policy decreased OP Financial Group's CET1 ratio by 0.2 percentage points on 31 December 2019. Capital adequacy measurement for 2018 was not adjusted retrospectively. The change had no effect on segment reporting.

Changes in presentation

Interest income and expenses of held-for-trading notes and bonds and derivatives previously presented in net interest income have been presented in net investment income since 1 January 2019. The change has been made retrospectively. Net interest totalling EUR 9 million was transferred from net interest income for Q1–4/2018 to net investment income. The change also involved specifying the presentation of items within net interest income.

Accrued interest on held-for-trading notes and bonds and derivatives previously presented in other assets and liabilities has been presented under derivative contracts items in the balance sheet since 1 January 2019. At the same time, OP Corporate Bank specified the netting procedure of these contracts' interest. The change has been made retrospectively. As a result of the change, other assets in the balance sheet assets of 31 December 2018 decreased by EUR 159 million, investment assets increased by EUR 3 million and derivative contracts increased by EUR 161 million. In the balance sheet, provisions and other liabilities under liabilities decreased by EUR 168 million, derivative contracts increased by EUR 172 million and debt securities issued to the public increased by EUR 2 million. As a result of the change, the balance sheet total increased by a total of EUR 5 million on 31 December 2018.

Salvage property that has come to the company's possession in connection with claims settlement or undisputable subrogation reimbursements related to claims have been reduced from insurance liability since 1 January 2019. The items totalling EUR 62 million were previously presented under other assets in the balance sheet.

IFRS 16 Leases adoption on 1 January 2019

OP Financial Group has adopted IFRS 16 Leases since 1 January 2019. The new standard changed the lessor's accounting and affect the Group's accounting for operating leases. As a result, almost all the lessor's leases are recognised in the balance sheet since operating leases and finance leases will no longer be separated from each other. Accounting by lessors remains substantially similar to IAS 17.

OP Financial Group applied a retrospective approach in the transition to a limited extent, in which case the comparatives were not restated. Owing to this choice, the following practical expedients under the transitional provisions were applied when assessing leases:

- At the date of initial application, the Group reassessed whether a contract is, or contains, a lease.
- A lease liability was recognised at the date of initial application for leases previously classified as an operating lease applying IAS 17. Lease liability was measured at the present value of the remaining lease payments discounted using the incremental borrowing rate. The right-to-use asset was recognised to the amount that equals the lease liability adjusted to the prepayments or deferring lease payments related to the lease concerned, which were recognised in the balance sheet on 31 December 2018. Initial direct costs

were not taken into account in the measurement of the right-to-use asset.
- Hindsight will be used to determine lease terms if the lease involves renewal or termination options.

Leased right-of-use assets are presented in PPE assets and are mainly derecognised during the lease term. The corresponding lease liability is presented in other liabilities and the related interest expenses are presented in net interest income. Service charges related to leases, which on the whole are separated from the lease amount, are presented in other operating expenses. Separating the service charge is performed by right-of-use asset class.

OP Financial Group's leased contracts are mainly those related to premises, company cars and safety devices. In the adoption of 1 January 2019, OP Financial Group recognised around EUR 62 million in right-of-use assets and lease liability in its balance sheet.

On 31 December 2019, the right-of-use asset amounted to EUR 53 million (Note: 25 Leases).

Reconciliation statement	€ million
Operating lease commitments on 31 December 2018 as disclosed in the notes	42
Operating lease obligations discounted at borrowing rate on 31 December 2018	35
Adjustments relating to different treatment of renewal options	27
Lease liability on 1 January 2019	**62**
Lease liability was discounted at incremental borrowing rates on 31 December 2018. The weighted average rate applied was 0.36%.	
Right-of-use assets on 1 January 2019	**€ million**
Buildings	50
Vehicles	3
ICT equipment	4
Machinery and equipment	5
Total right-of-use assets	**62**

Interest rate benchmark reform

In September 2019, the IASB published a document entitled Interest Rate Benchmark Reform that amended IFRS9, IAS 39 and IFRS 7. The European Union adopted the amendments on 15 January 2020 and they are effective for accounting periods beginning on or after 1 January 2020. Earlier application is allowed. OP Financial Group already applied amendments to IAS 39 during the financial year 2019. The interest rate benchmark reform has a significant effect on OP Financial Group's processes, and the Group proceeds with the changes according to its business continuity plan related to reference rates. Following the reform, the EONIA rate is calculated on the €STR by adding a fixed rate of 8.5 basis points to it until the EONIA rate ceases to exist on 31 December 2021. The determination principles of the Euribor too changed during 2019. Changes in the determination methods of the EONIA and Euribors will not affect the continuity of contract terms. The adoption of €STR in OP Financial Group will involve system changes, process changes, changes in risk and valuation models and in accounting. When it comes to hedge accounting, the change means a relief, for example, in the way that OP Financial Group can still continue with cash flow and fair value hedging despite the fact that the method of determination of the reference rate originally defined as the hedged one changes. In cash flow hedges, future cash flows can still be considered to be highly likely insofar as they depend on the reference interest rate.

New segments as of 1 January 2019

At its meeting on 6 June 2018, the Supervisory Board of OP Financial Group's central cooperative decided on a new division of responsibilities of the central cooperative's Executive Management Team, which changed the segment structure as of the beginning of 2019. The 2018 segment information has been restated to correspond to the new segments. The descriptions of the business segments are presented under Segment reporting in the financial statements.

Classification of the Vallila real property unit as a non-current asset held for sale

Based on decisions made, OP Financial Group classified the Vallila property for the financial year as a non-current asset held for sale. The Vallila property owned by OP Financial Group comprises a block located in Vallila, Helsinki, which was completed in 2017. After completion of the sale on 31 January 2020, OP Financial Group will continue operating in the property under a long-term lease agreement and the property will be recognised as a right-of-use asset in the balance sheet. The Vallila property was presented in full in the balance sheet of the Other Operations segment on 31 December 2019.

Itemised non-current assets held for sale:

Assets, € million	31 Dec 2019
Investment assets	90
Property, plant and equipment (PPE)	207*
Other assets	1
Tax assets	17
Total assets (A)	314
Liabilities, € million	31 Dec 2019
Provisions and other liabilities	0
Tax liabilities	6
Total liabilities (B)	6
Balance sheet net worth (A–B)	308

* VAT refund of EUR 10 million received in the fourth quarter has been deducted from the value of buildings.

Notes to the income statement

Note 4. Net interest income

EUR million	2019	2018
Interest income		
Receivables from credit institutions		
Interest	2	5
Negative interest	21	23
Total	24	28
Receivables from customers		
Loans	1,225	1,177
Finance lease receivables	28	23
Impaired loans and other commitments	0	1
Negative interest	10	11
Total	1,263	1,212
Notes and bonds		
Measured at fair value through profit or loss	1	2
At fair value through other comprehensive income	81	90
Amortised cost	10	1
Total	92	92
Derivative contracts		
Fair value hedge	-133	-101
Cash flow hedge	52	49
Ineffective portion of cash flow hedge	6	0
Other		-19
Total	-75	-70
Other	6	4
Total	**1,310**	**1,265**
Interest expenses		
Liabilities to credit institutions		
Interest	6	0
Negative interest	59	64
Total	65	64
Liabilities to customers	69	60
Notes and bonds issued to the public	249	225
Subordinated liabilities		
Subordinated loans	1	2
Other	46	45
Total	47	47
Derivative contracts		
Cash flow hedge	-260	-223
Other	-115	-92
Total	-375	-315
Other	5	4
Total	**60**	**85**
Net interest income before fair value adjustment under hedge accounting	**1,250**	**1,180**
Hedging derivatives	-1	-22
Value changes of hedged items	-7	28
Total	**1,241**	**1,186**

Interest income calculated using the effective interest method totalled EUR 1,287 (1,240) million.

Note 5. Net insurance income

EUR million	2019	2018
Net insurance premium revenue		
Premiums written	1,484	1,468
Insurance premiums ceded to reinsurers	-2	0
Change in provision for unearned premiums	-14	-10
Reinsurers' share	0	-3
Total	1,468	1,454
Net Non-life Insurance claims		
Claims paid	-1,017	-951
Insurance claims recovered from reinsurers	21	30
Change in provision for unpaid claims*	-79	-6
Reinsurers' share	2	13
Total	-1,073	-915
Other Non-life Insurance items	-4	-3
Life Insurance risk premiums collected	29	29
Total	**421**	**566**

* The item includes EUR 147 million (17) as a result of changes in reserving bases.

Note 6. Net commissions and fees

Q1–4 2019, EUR million	Retail Banking	Corporate Banking	Insurance	Other operations	Eliminations	OP Financial Group
Commission income						
Lending	102	46	0	5	-1	152
Deposits	1	2		0	0	3
Payment transfers	232	31		14	-14	264
Securities brokerage	4	21		0	-4	21
Securities issuance		6		0		6
Mutual funds	34	210	0	0	-96	148
Asset management	34	36	29	0	-20	81
Legal services	23	0			0	24
Guarantees	8	12		0	0	20
Housing service	74				0	74
Insurance brokerage	113		24		-86	50
Life insurance total expense loadings			91			91
Refund of unit-linked management fees			83			83
Health and wellbeing services			22		-1	20
Other	138	13		1	-113	39
Total	**763**	**378**	**249**	**20**	**-334**	**1,075**
Commission expenses						
Payment transfers	24	5	1	3	-11	22
Securities brokerage		14	0	0	-4	10
Securities issuance	0	2		1	0	3
Mutual funds		105			-97	8
Asset management		11	0	1	0	12
Insurance operations	-9		140		-86	45
Health and wellbeing services			8			8
Other *	39	116	0	8	-132	31
Total	**55**	**253**	**150**	**13**	**-331**	**139**
Total net commissions and fees	**708**	**125**	**99**	**6**	**-3**	**936**

Q1–4 2018, EUR million	Retail Banking	Corporate Banking	Insurance	Other operations	Eliminations	OP Financial Group
Commission income						
Lending	98	44	0	4	1	147
Deposits	2	1		0	0	3
Payment transfers	212	26		13	-13	238
Securities brokerage	5	16			-4	17
Securities issuance		7		1	0	8
Mutual funds	31	207	0	0	-93	146
Asset management	35	32		1	-11	57
Legal services	24	0		0	0	24
Guarantees	7	13		0	0	20
Housing service	72					72
Insurance brokerage	115		21		-85	51
Life insurance total expense loadings			91		2	93
Refund of unit-linked management fees			89		-7	82
Health and wellbeing services			19		-2	17
Other	122	13		1	-99	37
Total	**723**	**360**	**220**	**19**	**-310**	**1,012**
Commission expenses						
Payment transfers	20	3	1	1	-12	13
Securities brokerage		12			-4	8
Securities issuance	0	1		1	2	3
Mutual funds		104			-94	10
Asset management		10	0	1	0	11
Insurance operations	-10		136		-85	40
Health and wellbeing services			7			7
Other *	36	100	0	10	-115	32
Total	**46**	**230**	**144**	**13**	**-309**	**125**
Total net commissions and fees	**677**	**130**	**75**	**6**	**-2**	**887**

* In 2019, the item includes EUR 106 million (91) in commission expenses paid to member banks arising from derivative trading.

Note 7. Net investment income

EUR million	2019	2018
Net income from assets at fair value through other comprehensive income		
Notes and bonds		
Interest income	68	66
Other income and expenses	2	14
Capital gains and losses	115	26
Currency fair value gains and losses	7	18
Impairment losses and their reversal*	3	-5
Total	194	119

* Expected credit losses (ECL) on notes and bonds of insurance.

Net income recognised at fair value through profit or loss	2019	2018
Financial assets held for trading		
Notes and bonds		
Interest income and expenses	6	7
Fair value gains and losses	-6	-5
Total	0	2
Shares and participations		
Fair value gains and losses	12	11
Dividend income and share of profits	6	3
Total	18	14
Derivatives		
Interest income and expenses	108	32
Fair value gains and losses	317	25
Total	425	57
Total	443	73
Financial assets that must measured at fair value through profit or loss		
Notes and bonds		
Interest income	24	23
Fair value gains and losses	-4	-4
Total	21	19
Shares and participations		
Fair value gains and losses	140	-33
Dividend income and share of profits	47	63
Total	186	29
Total	207	48

Financial assets designated as at fair value through profit or loss		
Notes and bonds		
Interest income	38	45
Fair value gains and losses	79	-39
Total	117	7
Shares and participations		
Fair value gains and losses	-32	-24
Dividend income and share of profits	9	14
Total	-23	-9
Derivatives		
Fair value gains and losses	-18	-3
Total	-18	-3
Total	76	-6
Total net income from financial assets recognised at fair value through profit or loss	**726**	**115**
Net income from investment property		
Rental income	66	73
Fair value gains and losses	17	-8
Maintenance charges and expenses	-59	-70
Other	-5	-5
Net income from investment property total	19	-11
Net income from loans and receivables measured at amortised cost		
Loans and receivables		
Interest income	10	9
Interest expenses	-1	-1
Capital gains and losses	0	0
Impairment losses and their reversal	-4	2
Loans and receivables total	5	10
Non-life Insurance		
Unwinding of discount, Non-life Insurance	-27	-28

The increase in the discounted insurance liabilities in Non-life Insurance due to passage of time is unwinding of discount. Unwinding of discount is computed monthly applying the discount rate at the end of the previous month and the insurance liabilities discounted at the beginning of the current month. The discount rate stood at 1.0% (1.5).

Life Insurance		
Interest credited on customers' insurance savings	-85	-85
Change in supplementary interest rate provisions	-88	38
Other technical items**	-215	-15
Total	-387	-62

** Other technical items include changes in other technical provisions than those in supplementary interest rate provisions.

Associated companies		
Accounted for using the fair value method	9	21
Consolidated using the equity method	-7	19
Total	2	41
Total net investment income	**530**	**185**

Note 8. Other operating income

EUR million	2019	2018
Rental income from property in own use	15	13
Capital gains on property in own use	1	1
Leasing agreements	4	4
ICT income	2	2
Debt collection	1	1
Capital gains		15
Other	30	25
Total	**53**	**61**

Note 9. Personnel costs

EUR million	2019	2018
Wages and salaries	599	582
Variable remuneration*	43	41
Pension costs		
Defined contribution plans	96	75
Defined benefit plans**	18	-208
Other personnel related costs	26	26
Total	**781**	**516**

* Note 48.

** Note 34.

The Representative Assembly of OP Bank Group Pension Fund, which manages statutory earnings-related pension for the personnel, decided on 31 July 2018 to transfer its pension liability and the management of earnings-related pension insurance portfolio worth around EUR 1,068 million to Ilmarinen Mutual Pension Insurance Company. The transfer was executed on 31 December 2018. The transfer of the liabilities resulted in a non-recurring item of EUR 286 million recognised in defined benefit plans for 2018.

Note 10. Depreciation/amortisation and impairment loss

EUR million	2019	2018
Depreciation and amortisation		
Buildings	27	31
Machinery and equipment	11	15
Intangible assets related to business combinations	11	30
Other intangible assets	170	139
Right-of-use assets	19	
Leased out assets	1	0
Other	5	4
Total	244	219
Impairment loss		
Property in own use	6	41
Brand	4	4
Information systems	24	61
Total	33	106
Total	**278**	**325**

Note 11. Other operating expenses

EUR million	2019	2018
ICT costs		
Production	223	199
Development	131	153
Rental expenses		9
Expenses of short-term and low-value leases	-9	
Expenses for property in own use	76	75
Capital losses on property in own use	0	2
Government charges and audit fees*	49	54
Membership fees	5	4
Purchased services	130	139
Telecommunications	36	38
Marketing	39	37
Corporate responsibility	10	10
Operating expenses	24	42
Insurance and security costs	14	9
Experts' costs	9	
Temporary employment agency costs	30	0
Other	76	69
Total	**844**	**839**

* The item includes EUR 2.6 million (2.0) in audit fees paid to auditors, EUR 0.1 million (0.2) in fees for assignments as referred to in sub-paragraph 2, paragraph 1 section 1 of the Auditing Act, EUR 0.2 million (0.1) in fees for legal counselling and EUR 0.6 million (0.4) in fees for other services. Non-audit services provided by KPMG Oy Ab to OP Financial Group companies totalled EUR 0.3 million and services for tax advisory services EUR 0.1 million.

OP Financial Group's stability contribution calculated for 2019 amounted to EUR 33.8 million (39.4).

The deposit guarantee contribution of EUR 25.2 million (24.4) calculated for OP Financial Group for 2017 has been fully covered by payments accounted for from the old Deposit Guarantee Fund.

Development costs

EUR million	2019	2018
ICT development costs	131	153
Share of own work	52	50
Total development costs in the income statement	**183**	**203**
Capitalised ICT costs	110	170
Capitalised share of own work	12	12
Total capitalised development costs	**123**	**182**
	7	
Total development costs	**313**	**384**
Depreciation/amortisation and impairment loss	192	202

The development investments ensure the competitiveness and continuity of the present-day business and regulatory compliance and create conditions for new customer-driven business models.

Note 12. Impairment losses on receivables

EUR million	2019	2018
Receivables written down as loan and guarantee losses	68	70
Recoveries of receivables written down	-23	-15
Expected credit losses** (ECL) on receivables from customers and off-balance-sheet items	41	-10
Expected credit losses** (ECL) on notes and bonds*	0	1
Total	**87**	**46**

* The expected credit losses on notes and bonds in insurance operations are presented in net investment income.
** Loss allowance is itemised in Note 49. Loss allowance regarding receivables and notes and bonds.

Note 13. OP bonuses to owner-customers

EUR million	2019	2018
New OP bonuses accrued to owner-customers	254	230
Unused, expired OP bonuses	-5	-4
Total	**249**	**226**

Note 14. Temporary exemption (overlay appoach)

EUR million	2019	2018
Net investment income within the scope of the overlay approach recognised according to IFRS 9		
Financial assets that must measured at fair value through profit or loss		
Shares and participations		
Fair value gains and losses	145	-49
Total (A)	145	-49
Net investment income within the scope of the overlay approach measured according to IFRS 39		
Shares and participations		
Capital gains and losses	71	-12
Impairment losses and their reversals	-31	-11
Total (B)	40	-23
Effect of the overlay approach on the income statement (-A+B)	**-105**	26
Effect of the overlay approach on the statement of comprehensive income - (-A+B)	**105**	-26

Note 15. Income tax

EUR million	2019	2018
Current tax	145	125
Tax for previous financial years	-3	3
Deferred tax	27	84
Income tax expense	**168**	**212**
Corporate income tax rate	20.0	20.0
Reconciliation between tax expense in the income statement and tax expense calculated by the applicable tax rate		
Earnings before tax	838	959
Tax calculated at a tax rate of 20%	168	192
Tax for previous financial years	-3	3
Tax-exempt income	-4	-29
Non-deductible expenses and income portions of limited partnerships	-2	24
Re-evaluation of unrecognised tax losses	8	22
Tax adjustments	1	1
Other items	2	-2
Tax expense	**168**	**212**

Notes to assets

Note 16. Cash and cash equivalents

EUR million	31 Dec 2019	31 Dec 2018
Cash	72	83
Deposits with central banks repayable on demand		
OP Corporate Bank plc's minimum reserve deposit	767	703
Cheque account	11,149	11,564
Total liquid assets	**11,988**	**12,350**

In accordance with the minimum reserve system under the euro system, credit institutions are obligated to have a minimum reserve deposit with their national central bank. The reserve deposit equals the required percentage of the reserve base, as specified by the European Central Bank. The reserve base includes deposits (extensive) and debt securities with a maximum maturity of two years. The reserve base does not include deposits from other parties subject to the minimum reserve obligation. The reserve deposit is currently 1% of the reserve base. Credit institutions within OP Financial Group place a reserve deposit with OP Corporate Bank plc, which acts as an intermediary authorised by OP Financial Group credit institutions and is responsible for OP Financial Group's obligation to place a deposit with the Bank of Finland.

Note 17. Receivables from credit institutions

EUR million	31 Dec 2019	31 Dec 2018
Receivables from credit institutions		
Deposits		
Repayable on demand	180	73
Other	0	0
Total	180	73
Loans and receivables		
Repayable on demand	0	0
Other	67	110
Notes and bonds	0	0
Total	67	111
Total	246	184
Loss allowance*	0	-1
Total receivables from credit institutions	**246**	**183**

* Loss allowance is itemised in Note 49. Loss allowance regarding receivables and notes and bonds.

Note 18. Derivative contracts

EUR million	31 Dec 2019	31 Dec 2018
Held for trading		
Interest rate derivatives	3,546	2,911
Currency derivatives	240	145
Equity and index derivatives	0	0
Credit derivatives	21	6
Commodity derivatives	14	4
Other	0	0
Total	3,821	3,066
Hedging derivative contracts		
Fair value hedging		
Interest rate derivatives	591	374
Currency derivatives	412	142
Cash flow hedge		
Interest rate derivatives	0	0
Total	1,003	516
Other hedging derivatives		
Interest rate derivatives	0	-1
Total	0	-1
Total derivative contracts	**4,824**	**3,581**

The balance sheet item includes positive changes in fair value of derivative contracts as well as premiums paid.

Note 19. Receivables from customers

EUR million	31 Dec 2019	31 Dec 2018
Loans to the public and public sector entities	82,755	79,207
Notes and bonds	0	0
Finance lease receivables*	2,340	2,154
Guarantee receivables	7	10
Receivables	6,915	6,180
Total	92,017	87,551
Loss allowance**	-554	-525
Total receivables from customers	**91,463**	**87,026**

* Finance lease receivables are itemised in Note 25.

** Loss allowance is itemised in Note 49. Loss allowance regarding receivables and notes and bonds.

Note 20. Investment assets

EUR million	31 Dec 2019	31 Dec 2018
Financial assets held for trading		
Notes and bonds	1,415	505
Shares and participations	77	81
Total	1,492	586
Financial assets that must measured at fair value through profit or loss		
Notes and bonds	466	451
Shares and participations (Overlay approach)	1,178	1,085
Shares and participations (other than those under Overlay approach)	70	45
Total	1,714	1,581
Financial assets designated as at fair value through profit or loss		
Notes and bonds	2,216	2,227
Shares and participations	254	245
Total	2,470	2,472
Financial assets at fair value through other comprehensive income		
Notes and bonds	16,695	17,124
Shares and participations	0	0
Total	16,695	17,124
Amortised cost		
Notes and bonds	3	4
Other	201	65
Total	204	69
Investment property	714	979
Associated companies		
Associates	211	237
Joint ventures	8	0
Total	220	237
Total investment assets	**23,509**	**23,050**

Changes in investment property, EUR million	2019	2018
Acquisition cost 1 Jan	931	939
Increases	17	65
Decreases	-183	-85
Transfers to liabilities associated with non-current assets held for sale	-65	
Transfers between items	8	12
Acquisition cost 31 Dec	708	931
Accumulated changes in fair value	48	65
Changes in fair value during the financial year	1	-4
Decreases	-18	-8
Transfers to liabilities associated with non-current assets held for sale	-24	
Other changes	0	-5
Accumulated changes in fair value 31 Dec	6	48
Carrying amount 31 Dec	714	979

Increases in investment property include EUR 15 million (EUR 13 million) in capitalised expenses recognised after the acquisition. Depreciation, impairment losses and their reversals under PPE are charged to Other operating expenses. Changes in the fair value of investment property are recognised under Net investment income. The fair value of investment property holdings includes the portion of debt.

OP Financial Group companies own investment property subject to restrictions concerning their assignment and sales price under the legislation on state-subsidized housing loans, such property being worth EUR 0 million (1). Group companies had EUR 0 million (1) in construction and repair obligations regarding investment properties that were based on preliminary agreements.

Breakdown of investment property leased out under operating lease can be found in Note 25.
Investment property contains property used as collateral worth EUR 4 million (4).
Information on associated companies can be found in Note 22. Investments accounted for using the equity method.

Note 21. Assets covering unit-linked contracts

EUR million	31 Dec 2019	31 Dec 2018
Shares and participations	10,733	9,745
Other investments	99	26
Total	**10,831**	**9,771**

Note 22. Investments accounted for using the equity method

Amounts entered in the balance sheet:

EUR million	31 Dec 2019	31 Dec 2018
Associates	211	237
Joint ventures	8	0
Total	**220**	**237**

Amounts entered in the income statement:

EUR million	31 Dec 2019	31 Dec 2018
Associates	2	41
Total	**2**	**41**

Investments in associates and joint ventures

OP Financial Group has 21 (18) associates and 3 (3) joint ventures which are not significant when reviewing them one by one. The table below shows OP Financial Group's share of the profit/loss of these associates and joint ventures. Four (4) of the private equity funds treated as associates have been measured at fair value in accordance with IAS 28.

OP Financial Group's investments in associates and joint ventures have no quoted market price.

No contingent liabilities are involved in the associates or joint ventures. No such unrecognised commitments are related to the joint ventures that concern the provision of financing or resources or an obligation to buy another investor's interest in case certain future events occur.

	Associates consolidated using equity method		Associates measured at fair value		Joint ventures	
EUR million	31 Dec 2019	31 Dec 2018	31 Dec 2019	31 Dec 2018	31 Dec 2019	31 Dec 2018
Profit of continuing operations	-7	19	9	21		
Comprehensive income	**-7**	**19**	**9**	**21**		

The above summary of associates measured at fair value is based on the companies' financial statements.

Note 23. Intangible assets

Changes in intangible assets, EUR million	Goodwill	Brands	Customer relationships related to insurance contracts and policy acquisition costs	Information systems and other	Total
Acquisition cost 1 January 2019	633	166	507	1,323	2,630
Increases*				122	122
Decreases				-80	-80
Transfers between items				1	1
Acquisition cost 31 December 2019	633	166	507	1,365	2,672
2018		-4	-428	-708	-1,140
Amortisation during the financial year			-11	-162	-174
Impairments during the financial year	-3			-23	-25
Decreases				73	73
Other changes				0	0
Acc. amortisation and impairments 31 December 2019	-3	-4	-439	-820	-1,266
Carrying amount 31 December 2019	631	162	68	546	1,406

* Internal development work accounts for EUR 12 million (EUR 12 million).

Changes in intangible assets, EUR million	Goodwill	Brands	Customer relationships related to insurance contracts and policy acquisition costs	Information systems and other	Total
Acquisition cost 1 January 2018	634	179	517	1,154	2,485
Increases*				182	182
Decreases	-1	-13	-10	-14	-38
Transfers between items				0	0
Acquisition cost 31 December 2018	633	166	507	1,323	2,630
2018		-7	-406	-517	-930
Amortisation for the period			-31	-138	-169
Impairments for the period		-4		-61	-65
Decreases		7	10	7	24
Other changes				0	0
Accumulated amortisation and impairments 31 December 2018	0	-4	-428	-708	-1,140
Carrying amount 31 December 2018	633	162	79	615	1,490

Information systems and other

Carrying amount, EUR million	31 Dec 2019	31 Dec 2018
Information systems	396	391
Information systems under development	148	222
Other	2	2
Total	**546**	**615**

Intangible assets with indefinite economic lives

EUR million	31 Dec 2019	31 Dec 2018
Goodwill	631	633
Brands	162	162
Total	**793**	**795**

The useful lives of brands acquired through business combinations are estimated to be indefinite, since they will generate cash flows for an indefinable period.

Goodwill impairment test

Goodwill, EUR million Segment	Acquired business	31 Dec 2019	31 Dec 2018
Insurance	Acquisition of Pohjola Group plc's non-life and life businesses and the ICT functions of Pohjola Group plc.	449	451
Corporate Banking	The acquisition of Pohjola Group plc's fund and asset management services and the acquisition of Pohjola Finance Ltd's businesses	182	182
Total		**631**	**633**

Testing goodwill for impairment

At the end of 2019, goodwill totalled EUR 631 million as against EUR 633 million a year earlier. OP Financial Group's segment structure changed in early 2019. As a result, goodwill was reallocated according to the new segment division. Goodwill in its entirety is allocated to the Insurance and Corporate Banking segments in such a way that goodwill of EUR 168 million arising from the acquisition of Pohjola Group plc's fund and asset management businesses previously presented in the Wealth Management segment was allocated Corporate Banking segment, and goodwill of EUR 49 million arising from the acquisition of the life insurance business was allocated to the Insurance segment. In addition, goodwill of EUR 10 million arising from the acquisition of Pohjola Group plc's ICT functions was reallocated from Other Operations to Non-life Insurance. As a result of a review, no goodwill was allocated to the Retail Banking and Other Operations segments. Goodwill derecognised in 2019 totalled EUR 2.6 million. The write-down applied in full to the employee wellbeing business of Excenta Ltd terminated as a result of business arrangements executed.

The testing period was determined to be five years under IAS 36, and a growth expectation in cash flows for the previous forecast period or of a maximum of 2% was used as growth in cash flows for post-forecast periods. The effect of taxes has been taken into account in the cash flow statement. In testing, the surplus/deficit after return on equity requirements for the forecast cash flows of cash-generating units was discounted using a discount rate corresponding to the return on equity requirement. Market data available in the sector has been used as the basis for calculating the discount rate, and the discount rate reflects investors' view of business risks and of the expected return on capital tied to the investment. The discount rate used in the calculations before tax varied from 6.0 to 11.7%. In 2018, the discount rate varied from 7.4 to 9.9%. Impairment testing in 2019 proved that the recoverable amount of the tested cash-generating units exceeded their requirement for return on equity, and the surplus/deficit was positive in each tested cash-generating unit. So, no need for impairment loss recognition of goodwill was discovered based on the testing.

Sensitivity analysis of goodwill

A sensitivity analysis applied to the cash-generating units was carried out separately for each cash-generating unit on the basis of key variables of each cash-generating unit. Sensitivity was reviewed as a change in one variable in relation to values used in forecasts. The sensitivity analysis does not include simultaneous changes in all key variables. In addition, a relative change of each cash-generating unit's key variable, which would cause goodwill impairment risk, was derived from the sensitivity analysis.

Key assumptions used in calculating the recoverable amount of a cash-generating unit and a relative change that would cause goodwill impairment risk.

Segment	Cash-generating unit	Goodwill € million	Key variables	Value used in cashflow forecasts, %	Change caused by impairment risk, pp
Insurance	Non-life insurance bu	400	Discount rate, %	6.9	5.7
			Combined ratio, %	89,8–92,0	7.1
			Net investment income, %	2	-1.9
	OP Life Assurance Company Ltd	49	Discount rate, %	6.9	0.8
			Growth in operating expenses, %	1.0	1.7
			Net investment income percentage, %	0,2–1,3	-0.2
Corporate Banking	OP Asset Manageme	97	Discount rate, %	6.9	9.0
			Growth in assets under management, %	2,0–3,7	-8.0
			Growth in expenses, %	0,5–4,0	8.3
	Management Company Ltd	71	Discount rate, %	6.9	28.9
			Growth in mutual fund assets, %	2,0–3,7	-24.0
			Growth in expenses of fixed type, %	-0,5–12	18.8
	Asset and sales finance solutions	13	Discount rate, %	6.0	10.0
			Loan portfolio growth, %	2,0-4,5	-59.0
			Growth in expenses, %	2,0-6,7	15.6
	Checkout Finland Ltd, payment transmission service	2	Discount rate, %	11.7	15.0
			Growth in commissions and fees, %	2,0-53,8	-49.2
			Growth in expenses, %	-11,1-(-0,5)	14.8

Impairment testing of brands

Impairment testing for brands was carried out separately for the Pohjola and A-Vakuutus (A-Insurance) brands. Forecasts used in cash flow statements are based on long-term plans approved by the Non-life Insurance management and on forecasts derived from them for 2020–2024. A 2% growth expectation was used as growth in cash flows for post-forecast periods. On the basis of testing, there is no need to recognise any impairment loss on brands in the financial statements 2019.

Impairment testing of other essential intangible assets

An intangible asset related to customer relationships and insurance contracts has been allocated to OP Financial Group's balance sheet that arose as part of the acquisition of Aurum Investment Insurance in 2012 and the transfers of Suomi Mutual's portfolio in 2015 and 2016. Intangible assets originating from Life Insurance customer relationships as well as from insurance contracts are charged to expenses according to planned amortisation, over their estimated useful lives. No indications of the need for impairment recognition have been discovered. The value of intangible assets related to customer relationships and insurance contracts arising from the business acquisition of Pohjola Group plc was derecognised by the end of 2018.

Note 24. Property, plant and equipment

EUR million	31 Dec 2019	31 Dec 2018
Property in Group use		
Land and water areas	54	80
Buildings	365	589
Machinery and equipment	37	53
Other tangible assets	14	15
Right-of-use assets	53	
Leased-out assets	0	0
Total property, plant and equipment	**524**	**737**
of which construction in progress	11	4

Changes in property, plant and equipment (PPE), and investment property, EUR million	Property in Group use	Machinery and equipment	Other tangible assets	Leased-out assets	Total PPE
Acquisition cost 1 January 2019	1,176	141	17	1	1,336
Business operations acquired	0	0	0	0	0
Increases	28	14	1	0	42
Decreases	-25	-78	-1		-103
Transfers to liabilities associated with non-current assets l	-286				-286
Transfers between items	-8	0			-8
Acquisition cost 31 December 2019	885	78	17	1	981
Accumulated depreciation and impairments 1 January 2017	-508	-88	-2	-1	-599
Business operations acquired	0	0	0		0
Depreciation for the financial year	-30	-12	-1		-42
Impairments for the financial year	-6		-1		-6
Reversal of impairments during the financial year					0
Decreases	7	60	0		67
Transfers to liabilities associated with non-current assets l	69				69
Other changes	0		1		1
Accumulated depreciation and impairments 31 December 2019	-467	-41	-2	-1	-511
Right-of-use asset					53
Carrying amount 31 December 2019	419	37	14	0	524

Changes in property, plant and equipment (PPE), and investment property, EUR million	Property in Group use	Machinery and equipment	Other tangible assets	Leased-out assets	Total PPE
Acquisition cost 1 January 2018	1,175	130	18	2	1,325
Increases	40	18	1	0	60
Decreases	-25	-7	-2	-1	-35
Transfers between items	-14	1	0		-13
Acquisition cost 31 December 2018	1,176	141	17	1	1,336
Accumulated depreciations and impairments 1 January 2017	-445	-78	-2	-2	-527
Depreciation for the financial year	-34	-15	-1	0	-50
Impairments for the financial year	-39		-3		-41
Reversal of impairments during the financial year	0				0
Decreases	7	5	0	1	13
Other changes	3		3		6
Accumulated depreciations and impairments 31 December 2018	-508	-88	-2	-1	-599
Carrying amount 31 December 2018	668	53	15	0	737

Note 25. Leases

Right-of-use assets, EUR million	Buildings	Cars	IT equipment	Machinery and equipment	Total
Carrying amount 1 January 2019	50	3	4	5	62
Increases	7	3	0	2	11
Decreases	1	0	0	0	2
Depreciation for the financial year	-12	-2	-3	-2	-18
Value changes for the financial year	-3	0	0	0	-3
Other changes	0				0
*** Carrying amount 31 December 2019**	**43**	**4**	**1**	**5**	**53**

Lease liabilities, EUR million	31 Dec 2019
* Carrying amount	53
Contractual maturities	
< 1 year	15
1–2 years	13
2–3 years	11
3–4 years	6
4–5 years	4
Over 5 years	5

* Note 34 Provisions and other liabilities

Items entered in the income statement, EUR million	31 Dec 2019
Interest expenses	0
Depreciation on right-of-use assets	-18
Lease income received from sublease	-1
Expenses related to variable lease payments not included in lease liabilities	1
Gains or losses arising from sale and leaseback transactions;	0
Expenses of short-term and low-value leases	-9
Total cash flow from leases	-27

Lessor's operating leases

OP Financial Group companies have leased out investment property they own that generated EUR 26 million in lease income (30).

Minimum lease payments receivable under operating leases

EUR million	31 Dec 2019
< 1 year	77
1–2 years	92
2–3 years	69
3–4 years	63
4–5 years	44
Over 5 years	43
Total	**388**

EUR million	31 Dec 2018
< 1 year	56
1–5 years	139
Over 5 years	142
Total	**337**

Finance lease receivables

OP uses finance leases to finance moveable capital assets, real property units and other premises.

EUR million	31 Dec 2019
Maturity of finance lease receivables	
< 1 year	663
1–2 years	571
2–3 years	429
3–4 years	318
4–5 years	156
Over 5 years	300
Gross investment in finance leases	2,436
Unearned finance income (–)	-96
Present value of minimum lease payments	**2,340**
Present value of minimum lease payment receivables	
< 1 year	632
1–2 years	550
2–3 years	415
3–4 years	310
4–5 years	151
Over 5 years	283
Total	**2,340**

EUR million		31 Dec 2018
Maturity of finance lease receivables		
< 1 year		585
1–5 years		1,336
Over 5 years	31	326
Gross investment in finance leases	-1	2,246
Unearned finance income (–)		-92
Present value of minimum lease payments		**2,154**
Present value of minimum lease payment receivables		
< 1 year		557
1–5 years		1,290
Over 5 years		307
Total		**2,154**

Items entered in the income statement, EUR million	31 Dec 2019
Interest income from finance lease receivables	28
Capital gain/loss accrued from finance leases	-1

Note 26. Other assets

EUR million	31 Dec 2019	31 Dec 2018
Payment transfer receivables	19	21
Pension assets	44	34
Accrued income and prepaid expenses		
Interest	150	192
Interest on derivatives receivables	41	14
Commission receivables from asset management	7	7
Performance-based management fees from asset management	8	1
Subscription, redemption and management fee receivables	27	23
Other insurance operations' items	68	86
Other	28	58
Derivatives receivables, central counterparty clearing	1	3
CSA receivables from derivative contracts	432	458
Securities receivables	6	20
Direct insurance receivables	294	322
Claims administration contracts	181	181
Reinsurance receivables	70	73
Reinsurers' share of provisions for unearned premiums	7	8
Reinsurers' share of provisions for unpaid claims	98	97
Other receivables	201	278
Total	**1,684**	**1,875**

Note 27. Tax assets and liabilities

EUR million	31 Dec 2019	31 Dec 2018
Income tax assets	68	61
Deferred tax assets	166	171
Total tax assets	**235**	**232**

EUR million	31 Dec 2019	31 Dec 2018
Income tax liabilities	36	4
Deferred tax liabilities	1,014	917
Total tax liabilities	**1,050**	**921**

Deferred tax assets	31 Dec 2019	31 Dec 2018
Due to financial assets at fair value through other comprehensive income	17	2
Due to depreciation and impairments	6	6
Due to provisions and impairments on loans	17	16
Due to losses related to taxation	0	1
Cash flow hedge	6	4
Due to hedging of interest rate risk associated with technical provisions	34	9
Due to timing difference of derivatives	17	7
Due to defined-benefit pension plans	50	46
Due to consolidation of Group accounts	29	33
Due to other temporary differences	42	47
Set-off against deferred tax liabilities	-53	-23
Total	**166**	**148**

Deferred tax liabilities	31 Dec 2019	31 Dec 2018
Due to appropriations	703	671
Due to financial assets at fair value through other comprehensive income	19	0
Cash flow hedge	44	12
Due to elimination of equalisation provision	62	66
Due to fair value measurement of investment	121	47
Allocation of price of corporate acquisitions	42	44
Defined benefit pension plans	44	43
Due to consolidation of Group accounts	11	11
Due to other temporary differences	22	45
Set-off against deferred tax assets	-53	-23
Total	**1,014**	**917**
Net deferred tax asset (+)/liability (-)	**-848**	**-769**

Changes in deferred taxes	31 Dec 2019	31 Dec 2018
Deferred tax assets/liabilities 1 January	-769	-705
Effect of changes in accounting policies and other adjustments, total	23	3
Deferred tax assets /liabilities 1 January	-745	-703
Recognised in the income statement		
Effect of losses	0	0
Provisions and impairments on receivables	-1	-2
Appropriations	-29	-54
Amortisation/depreciation and impairments	-2	6
Eliminations of equalisation provisions	4	-7
Defined-benefit pension plans	6	-38
Due to hedging of interest rate risk associated with technical provisions	25	12
Due to provisions and impairment losses on receivables		0
Due to timing difference of derivatives	10	-2
Investment valuation	-38	-13
Other	-9	2
Recognised in statement of comprehensive income		
Available-for-sale financial assets		
Changes in fair value	-33	43
Cash flow hedge	-39	-13
Transfers to the income statement	11	13
Actuarial gains/losses on post-employment benefit obligations	-3	-18
Other	5	5
Reclassified as a non-current asset held for sale	-11	0
Total deferred tax assets 31 December, asset (+)/liability (-)	**-848**	**-769**
Income tax assets, asset (+)/liability (-)	**32**	**57**
Total tax assets, asset (+)/liability (-)	**-816**	**-712**

Tax losses for which a deferred tax asset was not recognised came to EUR 242 million (EUR 189 million) at the end of 2019. The losses will expire before 2029.

A deferred tax liability has not been recognised for the EUR 32 million (EUR 22 million) of undistributed profits of the Baltic subsidiaries, since the assets have been permanently invested in these countries.

Notes to liabilities and equity capital

Note 28. Liabilities to credit institutions

EUR Million	31 Dec 2019	31 Dec 2018
Liabilities to central banks	2,000	4,006
Liabilities to credit institutions		
Repayable on demand		
Deposits	81	1
Other liabilities	0	1
Total	81	2
Other than repayable on demand		
Deposits	342	730
Other liabilities	208	68
Total	551	798
Total liabilities to credit institutions and central banks	**2,632**	**4,807**

Note 29. Derivative contracts

EUR million	31 Dec 2019	31 Dec 2018
Held for trading		
Interest rate derivatives	2,638	2,488
Currency derivatives	234	145
Equity and index derivatives	0	0
Credit derivatives	1	4
Other	14	8
Total	2,887	2,645
Hedging derivative contracts		
Fair value hedging		
Interest rate derivatives	399	289
Currency derivatives	30	57
Cash flow hedge		
Interest rate derivatives	0	1
Total	429	347
Total derivative contracts	**3,316**	**2,992**

The balance sheet item includes negative changes in value of derivative contracts as well as premiums received.

Note 30. Liabilities to customers

EUR million	31 Dec 2019	31 Dec 2018
Deposits		
Repayable on demand		
Private	38,772	35,990
Companies and public-sector entities	24,015	23,911
Total	62,786	59,902
Other		
Private	1,122	1,292
Companies and public-sector entities	90	133
Total	1,212	1,425
Total deposits	63,998	61,327
Other financial liabilities		
Repayable on demand		
Private	8	17
Companies and public-sector entities	0	0
Total	9	17
Other		
Companies and public-sector entities	4,282	4,767
Total	4,282	4,767
Total other financial liabilities	4,291	4,785
Total liabilities to customers	**68,289**	**66,112**

Note 31. Insurance liabilities

EUR million	31 Dec 2019	31 Dec 2018
Non-life Insurance insurance liabilities	3,234	3,157
Insurance liability of Life Insurance other than guaranteed portions of unit-linked insurance	6,283	6,354
Life Insurance liability other than guaranteed portions of unit-linked investment contracts	3	3
Total	**9,520**	**9,514**

The figures in the note include provision for outstanding claims related to unit-linked contracts. As a result, the figures in the note do not match with the balance sheet.

Non-life Insurance contract liabilities and reinsurers' share

	31 Dec 2019			31 Dec 2018		
EUR million	Gross	Reinsurers' share	Net	Gross	Reinsurers' share	Net
Provision for unpaid claims for annuities	1,571	-4	1,567	1,510	-4	1,506
Other provisions by case	197	-81	116	182	-69	113
Special provision for occupational diseases	10		10	13		13
Collective liability (IBNR)	779	-13	766	761	-23	737
Reserved loss adjustment expenses	114		114	101		101
Provision for unearned premiums	584	-7	576	569	-8	561
Interest rate hedge for insurance liabilities	-22		-22	21		21
Total Non-life Insurance insurance liabilities	**3,234**	**-106**	**3,128**	**3,157**	**-104**	**3,053**

Changes in insurance liabilities arising from insurance contracts and in receivables arising from reinsurance contracts

	2019			2018		
EUR million	Gross	Reinsurers' share	Net	Gross	Reinsurers' share	Net
Provision for unpaid claims						
Provision for unpaid claims 1 Jan	2,588	-97	2,491	2,557	-84	2,473
Claims paid in financial year	-1,140	21	-1,119	-1,075	30	-1,045
Change in liability/receivable	1,219	-23	1,196	1,081	-42	1,039
Current period claims	1,116	-24	1,092	1,121	-40	1,081
Increase (decrease) from previous financial years	-25	1	-24	-39	-2	-42
Change in discount rate	128		128			
Unwinding of discount	27		27	27		27
Value change in interest rate hedges	-43		-43	25		25
Sold business operations	0	0	0	-28		-28
Foreign exchange gains (losses)	0		0	0		0
Provision for unpaid claims 31 Dec	2,650	-98	2,552	2,588	-97	2,491
Liability for remaining contract period						
Insurance liability 1 Jan	569	-8	561	585	-11	574
Increase	530	-7	523	539	-7	532
Decrease	-516	8	-509	-528	10	-518
Sold business operations				-27		-27
Unwinding of discount	1		1	1		1
Insurance liability 31 Dec	584	-7	576	569	-8	561
Total Non-life Insurance insurance liabilities	**3,234**	**-106**	**3,128**	**3,157**	**-105**	**3,052**

The insurance liability for the remaining contract period of insurance contracts has mainly been determined in accordance with the pro rata parte temporis rule for each contract.

Determination of insurance liabilities arising from non-life insurance contracts

a) Methods and assumptions used

The amount of insurance liability has been estimated in such a way that it is, in reasonable probability, sufficient to cover the liabilities arising from insurance contracts. This has been performed by estimating an expected value for the insurance liability and, after that, by determining a safety margin based on the degree of uncertainty related to the liability.

The provision for unpaid claims for annuities corresponds to the discounted present value of cash flow of compensation for loss of income payable as continuous annuity. The discount rate is determined taking account of the current interest rate, security required by law and the maximum discount rate set by the authorities and expected reasonable return on assets covering insurance liabilities. On 31 December 2019, the discount rate used was 1.0% (1.5). The mortality model applied is the cohort mortality model which is based on Finnish demographic statistics and which assumes the current trend of an increase in life expectancy to continue.

The provision for unpaid claims includes asbestos liabilities which arise from occupational diseases coverable under statutory workers' compensation insurance. The forecasted cash flow of these claims is based on an analysis which takes account of to what extent asbestos was used annually as raw material in Finland and how the latency periods of different asbestos diseases are distributed. Trends in asbestos-related claims are monitored annually and the outcome has corresponded well to the forecast.

Determining collective liability is based on different statistical methods: Bornhuetter-Ferguson, Cape Cod and Chain Ladder. When applying these methods, other selections must also be made, in addition to the selection of the method, such as deciding on how many occurrence years' statistics the methods will be applied.

In the valuation of collective liability, the largest risks relate to
- Estimating the future rate of inflation (excl. indemnities for loss of income payable on the basis of statutory insurance).
- Adjustment of changes due to changed compensation practices and legislation in the development triangle of claims (i.e. whether history provides a correct picture of the future).
- Adequacy of historical information over dozens of years.

Of the collective liability, only the liability for annuities has been discounted.

For the assessment of collective liability, the Group's non-life insurance portfolio is divided into several categories by risk and eg maturity of the cash flow applying to compensation paid. In each category, collective liability is first calculated using each statistical method stated above, and the method that best suits the category under review is chosen. The selection criteria used includes how well the model would have predicted developments in prior years of occurrence and the sensitivity of the estimate generated by the model with respect to the number of statistical years used. The safety margin of 2–10% is added to the expected value generated by the selected model. The safety margin is determined by the uncertainty associated with future cash flows and duration, as well as the quality of historical data.

When estimating the collective liability for medical expenses and rehabilitation expenses benefits in statutory workers' compensation and motor liability insurance, the Group has taken account of the fact claims paid for losses occurred more than 10 years ago are financed through the pay-as-you-go system.

Effect of changes in methods and assumptions on amount of liability	2019	2018
Effect of changes in methods and assumptions on amount of liability	147	17
Total	**147**	**17**

b) Claims development

The claims triangle compares the actual claims incurred with previous estimates. The triangles describing claims development have been drawn up by occurrence year.

With the exception of long-term liabilities, claims development for the gross business is presented over a period of ten years. The claims triangle does not monitor the shares of pools and the trends in the rights of recourse related to statutory workers' compensation insurance. The capital value of finalised annuities is treated as if the annuities had been paid equalling the capital amount in connection with confirmation as final. For long-term liabilities, i.e. annuities confirmed as final and asbestos-related claims, information on the adequacy of insurance liabilities is provided.

Claims triangles, gross business, EUR million

Occurrence year	2010	2011	20112	2013	2014	2015	2016	2017	2018	2019	Total
Estimated total claims expenditure											
0*	738	784	815	903	931	976	1,000	1,043	1,121	1,116	9,428
n+1	746	751	802	879	905	887	1,006	1,063	1,149		
n+2	744	752	805	861	920	902	995	1,078			
n+3	743	757	821	885	939	910	998				
n+4	750	771	836	891	929	912					
n+5	760	786	840	888	930						
n+6	771	785	840	900							
n+7	772	783	838								
n+8	779	784									
n+9	782										
Current estimate of total claims expenditure											
	782	784	838	900	930	912	998	1,078	1,149	1,116	9,488
Accumulated claims paid											
	-744	-750	-796	-842	-872	-838	-911	-948	-940	-661	-8,301
Provision for unpaid claims for 2010-2019											
	38	**35**	**42**	**57**	**58**	**74**	**88**	**130**	**210**	**455**	**1,186**
Provision for unpaid claims for previous years											247

* = at the end of the occurrence year

Development of claims due to latent occupational diseases, EUR million

Financial year	Collective liability	Known liabilities for annuities	Claims paid	Claims incurred	Changes in reserving basis*	Adequacy
2010	38	44	-3	0		0
2011	35	50	-3	-6	5	-2
2012	32	53	-4	-4	2	-1
2013	28	53	-4	-1	1	0
2014	22	53	-4	-2	2	0
2015	19	54	-4	-2	2	-1
2016	17	53	-5	-1	2	1
2017	14	53	-5	-3	3	0
2018	13	51	-6	-2		-2
2019	10	52	-5	-3	3	0

Development of annuities confirmed as final, EUR million

Financial year	Year-start	Year-end	New annuity capital	Annuities paid	Changes in reserving basis*	Adequacy
2010	771	794	60	34		3
2011	794	895	66	35	77	7
2012	895	940	66	34	31	18
2013	940	965	51	37	23	12
2014	965	1,010	54	40	36	5
2015	1,010	1,046	53	44	30	2
2016	1,046	1,080	54	49	31	3
2017	1,080	1,141	54	52	75	16
2018	1,141	1,145	56	54		-2
2019	1,145	1,206	38	56	80	1

* Effect of changes in the discount rate and the mortality model on final annuity capital.

Claims triangles, net business, EUR million

Occurrence year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total
Estimated total claims expenditure											
0*	693	721	796	861	897	957	992	1,019	1,081	1,092	9,110
n+1	707	697	782	829	868	877	1,000	1,026	1,109		
n+2	705	710	786	819	875	892	990	1,045			
n+3	705	714	804	843	887	898	994				
n+4	712	727	818	847	887	901					
n+5	721	741	823	847	885						
n+6	732	743	823	858							
n+7	734	742	822								
n+8	740	744									
n+9	743										
Current estimate of total claims expenditure											
	743	744	822	858	885	901	994	1,045	1,109	1,092	9,194
Accumulated claims paid											
	-706	-709	-780	-803	-830	-828	-909	-932	-934	-658	-8,088
Provision for unpaid claims for 2010-2019											
	38	**35**	**42**	**55**	**56**	**73**	**86**	**113**	**175**	**434**	**1,106**
Provision for unpaid claims for previous years											229

* = at the end of the occurrence year

Change in claims incurred based on loss events for prior financial years

Claims incurred for losses occurred in prior financial years increased by EUR 104 million while those for the previous financial year decreased by EUR 42 million. Change in claims incurred based on loss events for prior financial years describes the adequacy of insurance liabilities, which on average is positive due to the security of insurance liabilities.

Changes in Life Insurance insurance liabilities

Liabilities, EUR million	1 Jan 2019	Growth in liability arising from insurance premiums	Dis-charged liabilities	Credited interest and changes in value	Other charges and credits	Other items	31 Dec 2019
Other than unit-linked contract liabilities							
Other insurance liability than unit-linked liability discounted with interest rate guarantee	2,824	170	-244	85	-96	17	2,757
Separated balance sheet 1	827	0	-42	44	-6	19	841
Separated balance sheet 2	2,296	6	-228	75	8	27	2,185
Other liability than unit-linked investment contracts discounted with interest rate guarantee	3	0	-1	0	0	1	3
Reserve for decreased discount rate	297					-41	257
Effect of discounting with market interest rate	43					125	169
Other items	66					8	75
Total	**6,357**	**176**	**-514**	**203**	**-93**	**157**	**6,286**

Liabilities, EUR million	1 Jan 2018	Growth in liability arising from insurance premiums	Dis-charged liabilities	Credited interest and changes in value	Other charges and credits	Other items	31 Dec 2018
Other than unit-linked contract liabilities							
Other insurance liability than unit-linked liability discounted with interest rate guarantee	2,898	72	-227	87	-12	7	2,824
Separated balance sheet 1	904	0	-45	35	-6	-61	827
Separated balance sheet 2	2,565	6	-219	110	9	-175	2,296
Other liability than unit-linked investment contracts discounted with interest rate guarantee	3	0	0	0	0	0	3
Reserve for decreased discount rate	413					-116	297
Effect of discounting with market interest rate	-8					51	43
Other items	70					-3	66
Total	**6,845**	**79**	**-491**	**232**	**-10**	**-297**	**6,357**

When determining the liabilities related to insurance and investment contracts other than unit-linked contracts and to unit-linked policies, OP Financial Group has complied with the Finnish Accounting Standards, with the exception that the Group started using the discount rate for insurance liabilities that is closer to the real-time interest rate. Insurance and capital redemption contract savings have been entered in the life insurance company's balance sheet at its own investment risk with their interest rate guarantees ranging between 1.5% and 4.5% and discounted to the amount of the interest guarantee in the national financial accounts' insurance liabilities. The effect of the reduced discount rate under FAS has been entered in the reserve for the decreased discount rate. Part of the interest rate risk between the market and discount rate has been hedged using fixed-income investments, the value of which has been entered as part of the liability from insurance and capital redemption contracts.

Life insurance liabilities act as term life insurance liabilities.

Amounts recovered from or due to reinsurers are measured consistently with the amounts associated with the reinsured insurance contracts and are recognised in the balance sheet separately.

Group pension insurance liabilities have been annually increased since 2011 owing to the higher life expectancy.

Refunded interest amounts includes guaranteed interest and, based on management judgement, distributed and paid customer bonuses.

Note 32. Liabilities from unit-linked insurance and investment contracts

EUR million	31 Dec 2019	31 Dec 2018
Unit-linked contract liabilities		
Liabilities for unit-linked insurance contracts	4,784	4,518
Liabilities for unit-linked investment contracts	6,034	5,255
Total	**10,818**	**9,774**

The figures in the note exclude provision for outstanding claims related to unit-linked contracts. As a result, the figures in the note do not match with the balance sheet.

Changes in insurance liabilities

Liabilities, EUR million	1 Jan 2019	Growth in liability arising from insurance premiums	Discharged liabilities	Credited interest and changes in value	Other charges and credits	Other items	31 Dec 2019
Unit-linked contract liabilities							
Liabilities for unit-linked insurance contracts	4,518	161	-549	702	-17	-32	4,784
Liabilities for unit-linked investment contracts	5,255	711	-758	793	-19	52	6,034
Total	**9,774**	**873**	**-1,307**	**1,494**	**-36**	**20**	**10,818**

Liabilities, EUR million	1 Jan 2018	Growth in liability arising from insurance premiums	Discharged liabilities	Credited interest and changes in value	Other charges and credits	Other items	31 Dec 2018
Unit-linked contract liabilities							
Liabilities for unit-linked insurance contracts	5,036	179	-339	-315	-18	-26	4,518
Liabilities for unit-linked investment contracts	5,084	812	-411	-310	-20	101	5,255
Total	**10,120**	**991**	**-750**	**-625**	**-38**	**75**	**9,774**

The dependence of unit-linked contracts is the policyholder's choice. At company level, the value change cannot be compared with any benchmark index. Similarly, return from guaranteed-interest investment contracts cannot reliably be compared with any benchmark index. Return from guaranteed-interest investment contracts cannot reliably be compared with any benchmark index. The return is based on that on assets covering the liability. Company assets have no benchmark.

Unit-linked investment contracts are measured at fair value.

The liability of unit-linked policies is valued at the market values of assets associated with contracts on the balance sheet date.

Note 33. Debt securities issued to the public

EUR million	31 Dec 2019	31 Dec 2018
Bonds	11,501	9,522
Subordinated bonds	1,156	
Covered bonds	12,097	10,720
Other		
Certificates of deposit	0	105
Commercial paper	9,716	10,162
Included in own portfolio in trading (–)*	-101	-50
Total debt securities issued to the public	**34,369**	**30,458**

*Own bonds held by OP Group have been set off against liabilities.

Reconciliation of changes in liabilities in cash flows from financing activities against balance sheet items

EUR million	Debt securities issued to the public	Subordinated liabilities
Balance sheet value 1 January 2019	**30,458**	**1,358**
Changes in cash flows from financing activities		
Increases in bonds	5,591	
Increases in covered bonds	2,243	
Increases in certificates of deposit	75	
Increases in commercial papers	21,920	
Increases total	**29,830**	
Decreases in bonds	-2,848	
Decreases in covered bonds	-921	
Decreases in certificates of deposit	-182	
Decreases in commercial papers	-22,714	
Decreases in debentures	0	-60
Decreases total	**-26,664**	**-60**
Total changes in cash flows from financing activities	**3,165**	**-60**
Valuations and changes in exchange rates	746	-8
Balance sheet value 31 December 2019	**34,369**	**1,290**

EUR million	Debt securities issued to the public	Subordinated liabilities
Balance sheet value 1 January 2018	**26,841**	**1,400**
Changes in cash flows from financing activities		
Increases in bonds	2,346	
Increases in covered bonds	1,004	
Increases in certificates of deposit	141	
Increases in commercial papers	24,495	
Increases total	**27,986**	
Decreases in bonds	-1,898	
Decreases in covered bonds	-1,100	
Decreases in certificates of deposit	-121	
Decreases in commercial papers	-21,346	
Decreases total	**-24,465**	
Total changes in cash flows from financing activities	**3,521**	
Valuations and changes in exchange rates	96	-42
Balance sheet value 31 December 2018	**30,458**	**1,358**

Most significant issues in 2019	Nominal amount	Interest rate
OP Corporate Bank plc		
OP Corporate Bank plc Issue of EUR 500,000,000 0.375 per cent. Instruments due 26 February 2024 under the EUR 20,000,000,000 Programme for the Issuance of Debt Instruments	500.0	Fixed 0.375%
OP Corporate Bank plc Issue of EUR 500,000,000 0.375 per cent. Senior Non-Preffered Instruments due 19 June 2024 under the EUR 20,000,000,000 Programme for the Issuance of Debt Instruments	500.0	Fixed 0.375%
OP Corporate Bank plc Issue of EUR 500,000,000 0.625 per cent. Senior Non-Preferred Instruments due 12 November 2029 under the EUR 20,000,000,000 Programme for the Issuance of Debt Instruments	500.0	Fixed 0.625%
OP Mortgage Bank		
OP Mortgage Bank Issue of EUR EUR 1,250,000,000 0,625 per cent. Covered Notes due 15 Feb 2029 under the EUR 20,000,000,000 Euro Medium Covered Note Programme.	1,250.0	Fixed 0.625%
OP Mortgage Bank Issue of EUR 1,000,000,000 0,010 per cent. Covered Notes due 19 Nov 2026 under the EUR 20,000,000,000 Euro Medium Covered Note Programme.	1,000.0	Fixed 0.010%

Note 34. Provisions and other liabilities

EUR million	31 Dec 2019	31 Dec 2018
Provisions		
Loss allowance	18	6
Reorganisation provision	5	10
Other statutory provisions	10	5
Other liabilities		
Payment transfer liabilities	919	929
Accrued expenses		
Interest payable	186	180
Interest payable on derivatives	26	24
Other accrued expenses	404	368
CSA liabilities from derivatives	728	504
Pension liabilities	86	62
Lease liabilities	53	
Accounts payable on securities	24	21
Payables based on purchase invoices	39	50
Direct insurance liabilities	52	49
Reinsurance liabilities	20	11
Claims administration contracts	162	209
Total	2,699	2,407
Other	431	188
Total provisions and other liabilities	**3,163**	**2,617**

EUR million	Loss allowance	Reorganisation	Other provisions	Total
1 January 2019	6	10	5	21
Increase in provisions	12	5	10	27
Provisions used		-6	-4	-10
Reversal of unused provisions		-4	-1	-5
31 December 2019	18	5	10	33

EUR million	Loss allowance	Reorganisation	Other provisions	Total
31 December 2017			9	9
1 January 2018 IFRS 9 transition	10			10
Increase in provisions		10	5	15
Provisions used	-4		-9	-13
31 December 2018	6	10	5	22

Claims administration contracts

Claims administration contracts are contracts which are not insurance contracts, but on the basis of which claims are paid on behalf of another party which has full risk for its own account. Among these contracts, the most important are captive arrangements in which the insured risk is reinsured with a captive company belonging to the same Group of companies with the customer; index increases in annuities of statutory workers' compensation, motor liability and patient insurance policies; certain other increases in benefits; and medical treatment indemnities payable over ten years after the occurrence of the accident; as well as public sector patient insurance.

Defined benefit pension plans

OP Financial Group has funded assets of its pension schemes through OP Bank Group Pension Fund, OP Bank Group Pension Foundation and insurance companies. Schemes related to supplementary pensions in the Pension Foundation and insurance company, as well as the TyEL (Employees' Pensions Act) funded old-age and disability pension schemes managed by the Pension Fund are treated as defined benefit plans. Contributions to the TyEL pay-as-you-go system are treated as defined contribution plans.

OP Bank Group Pension Fund

OP Bank Group Pension Fund has managed statutory pension insurance for the employees of OP Financial Group employers until 2018. On 31 December 2018, OP Financial Group transferred 90.8% of OP Bank Group Pension Fund's pension portfolio to Ilmarinen Mutual Pension Insurance Company Based on the initial plan, the remaining pension liability will be transferred to Ilmarinen at a later date, but no earlier than at the end of 2020. The statutory pension scheme under TyEL (Employees' Pensions Act) provides pension benefits based on the years of employment and earnings as prescribed in the Act. Benefits under the employees pension scheme comprise old-age pension, partial early old-age pension, year-of-service pension, disability pension, survivors' pension and rehabilitation benefits.

The TyEL pension scheme is based on a system that is partly a funded system and partly a pay-as-you go system. A pension insurance institution, which has insured each employment, manages funding for each employee.

OP Bank Group Pension Fund aims to manage statutory pension insurance in such a way that the level of contributions will remain steady year after year and be below the average contribution level of the employees pension scheme. In 2019, OP Bank Group Pension Fund's level of contributions was 22.9% and the average level of contributions of Ilmarinen Mutual Pension Insurance Company was 24.4%. The most significant risk associated with OP Bank Group Pension Fund relates to the possibility of the actual return on investment assets being lower than the actual average investment return under the pension scheme. If such a risk materialises in several consecutive years, this would result in increasing the level of insurance contributions.

The most significant actuarial risks of OP Bank Group Pension Fund are associated with interest rate and market risks, future increases in pension benefits and systematically increasing life expectancy. A change in the discount rate for pension liabilities has a substantial effect on the amount of pension liabilities.

Under the Employee Benefit Funds Act, the Pension Fund must invest its assets securely and profitably and in view of its liquidity. The Pension Fund must cover the insurance liability arising from pension obligations, in accordance with the national accounting framework. When covering the insurance liability, the Pension Fund must consider what type of insurance business it conducts and, accordingly, must ensure the security of, return on and cashability of its assets and that they are appropriately versatile and properly diversified. As prescribed by law, the Pension Fund has a specific solvency limit which it must cover through its solvency capital.

Responsible for investment, the Board of Trustees of the Pension Fund approves the Pension Fund's investment plan related to its assets. A pension institution's chief actuary prepares annually a forecast for developments in insurance liabilities and pension costs. On this basis, investment asset allocation takes account of the requirements set by the nature of insurance liabilities for investment operations with respect to the level of security, productivity and liquidity, as well as the Pension Fund's risk-bearing capacity.

Supplementary pension at OP Bank Group Pension Foundation and insurance companies

OP Bank Group Pension Foundation manages supplementary pension cover for employees provided by the employers within OP Financial Group. The purpose of the Pension Foundation is to grant old-age and disability pension benefits and sickness benefits to employees covered by the Pension Foundation activities, and survivors' pension benefits to their beneficiaries, and burial grant. In addition, the Pension Foundation may grant said employees benefits related to rehabilitation. Given that providing supplementary pension is voluntary, not all employers belonging to the Pension Fund belong automatically to the Pension Foundation. Supplementary pension cover provided by the Pension Foundation is fully funded.

The Pension Foundation covers every employee who has reached the age of 20 years and who has been employed, as specified by TyEL, for two consecutive years by the employer within the Pension Foundation and whose employment has begun before 1 July 1991. The employment term entitling to pension begins from the day the employee turned 23 years in the employment of the employer. The salary/wage serving as the basis for the calculation of pension refers to pensionable pay based on one and the same employment and calculated under the Finnish Employees' Pensions Act, TEL, in force until 31 December 2006. The retirement age of those covered by the Pension Foundation varies from 60 to 65 years, depending on the personnel group to which the employee belongs under the Pension Foundation rules.

The most significant associated risk relates to the possibility of the actual return on investment assets being lower than the target set for the minimum return. If such a risk materialises in several consecutive years, this would result in charging contributions.

The most significant actuarial risks of OP Bank Group Pension Foundation are associated with interest rate and market risks, systematically increasing life expectancy and inflation risk. A change in the discount rate for pension liabilities has a substantial effect on the amount of pension liabilities.

Responsible for investment, the Board of Trustees of the Pension Foundation approves the Foundation's investment plan related to its assets. A pension institution's chief actuary prepares annually a forecast for developments in insurance liabilities and pension costs. On this basis, investment asset allocation takes account of the requirements set by the nature of insurance liabilities for investment operations with respect to the level of security, productivity and liquidity, as well as the Pension Foundation's risk-bearing capacity.

In 2019, the Group reversed the one-off 20-million euro increase in paid-up policies performed in 2017, whose effect is shown in paid pension benefits.

Supplementary pension has also been arranged in life insurance companies. The adaptation performed as a result of the TyEL change in 2017 increased the liability by EUR 12 million in the financial statements for 2018.

Balance sheet value of defined benefit plans, EUR million	Defined benefit obligations		Fair value of pension assets		Net liabilities (assets)	
	2019	2018	2019	2018	2019	2018
Opening balance 1 Jan	**714**	**2,230**	**-686**	**-1,926**	**28**	**304**
Defined benefit pension costs recognised in income statement						
Current service cost	15	62			15	62
Interest expense (income)	12	37	-11	-32	1	5
Effect of plan curtailment, change and fulfilment of obligation or previous service	0	-1,484		1,208	0	-276
Administrative expenses			1	1	1	1
Total	**27**	**-1,385**	**-10**	**1,177**	**18**	**-208**
Losses (gains) recognised in other comprehensive income arising from remeasurement						
Actuarial losses (gains) arising from changes in economic expectations	73	-96			73	-96
Actuarial losses (gains) arising from changes in demographic expectations						
Return on TyEL interest rate difference and growth in old-age pension liabilities (net)	0	34	0	-34		
Experience adjustments	6	0			6	0
Return on plan assets, excluding amount (–) of net defined benefit liability (asset)			-93	8	-93	8
Total	**78**	**-62**	**-93**	**-26**	**-15**	**-88**
Other						
Employer contributions*			13	19	13	19
Benefits paid	-48	-69	48	69		
Total	**-48**	**-69**	**61**	**88**	**13**	**19**
Closing balance 31 Dec	**771**	**714**	**-728**	**-686**	**42**	**28**

* include refund of OP Bank Group Pension Fund's solvency capital surplus, totalling EUR 24 (43) million.

Liabilities and assets recognised in the balance sheet, EUR million	31 Dec 2019	31 Dec 2018
Net liabilities/assets (Pension Foundation)	-44	-34
Net liabilities/assets (Pension Fund)	50	28
Net liabilities (Other pension plans)	36	35
Total net liabilities	**86**	**62**
Total net assets	**-44**	**-34**

Pension Fund and Pension Foundation assets, grouped by valuation technique, 31 December 2019, EUR million	Level 1	Level 2	Level 3	Total
Shares and participations	67	0	32	99
Notes and bonds	187		4	191
Real property			9	9
Mutual funds	89	30	186	305
Derivatives			0	0
Other assets	54		5	59
Total	**397**	**31**	**236**	**663**

Pension Fund and Pension Foundation assets, grouped by valuation technique, 31 December 2018, EUR million	Level 1	Level 2	Level 3	Total
Shares and participations	81	0	20	102
Notes and bonds	181	1	10	191
Real property			17	17
Mutual funds	198	6	74	278
Derivatives	0	0		0
Other assets	46		3	49
Total	**506**	**7**	**124**	**638**

The fair value of Level 1 assets is determined on the basis of the quotes in markets.

The fair value of Level 2 assets means value derived from the market price of a financial instrument's components or similar financial instruments; or value which can be determined using commonly used valuation models and techniques if the inputs significant to the fair value measurement are based on observable market data.

The fair value Level 3 assets is determined using a pricing model whose input parameters involve uncertainty.

Proportion of the most significant assets of total fair value of plan assets, %	31 Dec 2019	31 Dec 2018
Shares and participations	**15**	**16**
Financial sector	0	0
Forest	0	5
Real estate	4	3
Other	10	8
Notes and bonds	**29**	**30**
Government bonds	28	28
Other	1	2
Real property	**1**	**3**
Mutual funds	**46**	**44**
Equity funds	17	17
Bond funds	6	2
Real estate funds	18	19
Hedge funds	5	6
Derivatives	**0**	**0**
Interest rate derivatives		0
Currency derivatives	0	
Structured investment vehicles	**0**	
Other	**9**	**8**
Total	**100**	**100**

Pension plan assets include, EUR million,	31 Dec 2019	31 Dec 2018
Other receivables from OP Financial Group companies	62	51
Total	**62**	**51**

Contributions payable under the defined benefit pension plan in 2019 are estimated at EUR 11 million.

The duration of the defined benefit pension obligation in the Pension Fund on 31 December 2019 was 26.6 years, in the Pension Foundation 15.2 years and in other plans 20.6 years.

Key actuarial assumptions used, 31 December 2019, EUR million	Pension Fund	Pension Foundation	Other
Discount rate, %	1.0	0.8	0.9
Future pay increase assumption, %	2.3	2.1	2.1
Future pension increases, %	0.5	1.5	1.5
Turnover rate, %	3.0	0.0	0.0
Inflation rate, %	1.5	1.3	1.3
Estimated remaining service life of employees in years	22.9	6.1	8.5
Life expectancy for 65-year old people			
Men	21.4	21.4	21.4
Women	25.4	25.4	25.4
Life expectancy for 45-year old people after 20 years			
Men	23.7	23.7	23.7
Women	28.1	28.1	28.1

Key actuarial assumptions used, 31 December 2018, EUR million	Pension Fund	Pension Foundation	Other
Discount rate, %	1.9	1.7	2.0
Future pay increase assumption, %	2.5	2.3	2.5
Future pension increases, %	1.1	1.6	1.9
Turnover rate, %	3.0	0.0	0.0
Inflation rate, %	1.7	1.5	1.7
Estimated remaining service life of employees in years	22.9	1.2	8.9
Life expectancy for 65-year old people			
Men	21.4	21.4	21.4
Women	25.4	25.4	25.4
Life expectancy for 45-year old people after 20 years			
Men	23.7	23.7	23.7
Women	28.1	28.1	28.1

	Change in defined benefit pension obligation			
	Pension Fund		Pension Foundation	
Sensitivity analysis of key actuarial assumptions, 31 December 2019	EUR million	%	EUR million	%
Discount rate				
0.5 pp increase	-22	-11.2	-31	-6.8
0.5 pp decrease	26	13.3	35	7.6
Pension increases				
0.5 pp increase	24	12.3	31	6.7
0.5 pp decrease	-21	-11.0	-29	-6.3
Mortality				
1-year increase in life expectancy	6	3.1	16	3.6
1-year decrease in life expectancy	-6	-3.0	-16	-3.5

Sensitivity analysis of key actuarial assumptions, 31 December 2018	Change in defined benefit pension obligation			
	Pension Fund		Pension Foundation	
	EUR million	%	EUR million	%
Discount rate				
0.5 pp increase	-19	-10.8	-28	-6.3
0.5 pp decrease	22	12.7	31	7.1
Pension increases				
0.5 pp increase	21	11.8	27	6.3
0.5 pp decrease	-18	-10.5	-26	-5.9
Mortality				
1-year increase in life expectancy	5	2.9	14	3.3
1-year decrease in life expectancy	-5	-2.9	-14	-3.2

Note 35. Subordinated liabilities

EUR million	31 Dec 2019	31 Dec 2018
Subordinated loans	52	52
Other		
Debentures	1,239	1,306
Total subordinated liabilities	**1,290**	**1,358**

Principal terms and conditions of the hybrid bonds/subordinated loans are as follows:

1. Perpetual bond of EUR 50 million

This is a perpetual loan without interest-rate step-ups, but with an 8% interest rate cap. The loan was issued on 31 March 2005 and its interest rate for the first year was 6.5% and thereafter CMS 10 years + 0.1%.Interest payments are made annually on 11 April. If interest cannot be paid for a given interest period, the obligation to pay interest for the period in question will lapse. The loan can be called in on 11 April 2010 at the earliest, subject to authorisation by the Financial Supervisory Authority. The loan's entire principal must be repaid in one instalment.

2. Perpetual bond of EUR 40 million

This perpetual loan carries a variable interest rate based on 3-month Euribor + 1.25% payable quarterly on 28 February, 30 May, 30 August and 30 November. If interest cannot be paid for a given interest period, the obligation to pay interest for the period in question will lapse. Subject to authorisation by the Financial Supervisory Authority, the loan may be called in on the due dates of interest payment. The entire loan principal must be repaid in one instalment.

Debentures

A debenture loan of CHF 100 million (euro equivalent 92 million), which is a ten-year bullet loan, will mature on 14 July 2021. The loan carries a fixed interest rate of 3.375% p.a.
A debenture loan of EUR 100 million, which is a ten-year bullet loan, will mature on 14 September 2021. The loan carries a fixed interest rate of 5.25% p.a.

A debenture loan of EUR 500 million, which is a 10-year bullet loan, will mature on 28 February 2022. Under the terms and conditions of the loan, the issuer will have the opportunity for early redemption in case the principal cannot be counted as part of the bank's Tier 2 capital. The loan carries a fixed interest rate of 5.75% p.a.

Debenture loan of JPY 10 billion (euro equivalent 82 million), which is a ten-year bullet loan, will mature on 3 July 2025. Under the terms and conditions of the loan, the issuer will have the opportunity for early redemption in case the principal cannot be counted as part of the bank's Tier 2 capital. The loan carries a floating rate linked to the JPY Libor + 0.735%.

Debenture loan of SEK 3,500 million (euro equivalent 335 million), which is a ten-year non-call 5 loan. The loan may be called in on 25 August 2020, matures on 25 August 2025. Under the terms and conditions of the loan, the issuer will have the opportunity for early redemption in case the principal cannot be counted as part of the bank's Tier 2 capital. The loan carries a floating rate linked to Stibor + 1.60% .
Debenture loan of 100 million euros, which is a 10-year bullet loan, will mature on 25 September 2025. Under the terms and conditions of the loan, the issuer will have the opportunity for early redemption in case the principal cannot be counted as part of the bank's Tier 2 capital. The loan carries a fixed interest rate of 2.405% p.a.

Loans were issued in international capital markets.

OP Corporate Bank plc has no breaches of the terms and conditions of the loan contracts with respect to principal, interest and other conditions. The difference between the nominal value and carrying amount is due to the fair value hedge related to interest rate risk measurement.

Note 36. Equity capital

EUR million	31 Dec 2019	31 Dec 2018
Capital and reserves attributable to OP Financial Group owners		
Cooperative capital, cooperative shares	203	193
of which cancelled cooperative shares	6	6
Cooperative capital, profit shares	2,764	2,744
of which cancelled profit shares	265	298
Reserves		
Restricted reserves		
Reserve fund	795	794
Fair value reserve		
Cash flow hedge	141	33
Measurement at fair value		
Notes and bonds	38	-14
Loss allowance regarding notes and bonds	7	9
Shares and participations (overlay approach)	65	-21
Other restricted reserves	14	14
Non-restricted reserves		
Other non-restricted reserves	1,375	1,374
Retained earnings		
Profit (loss) for previous financial years	6,067	5,418
Profit (loss) for the financial year	663	739
Equity capital attributable to OP Financial Group's owners	**12,404**	**11,588**
Non-controlling interests	**166**	**154**
Total equity capital	**12,570**	**11,742**

Cooperative capital, cooperative shares

The equity capital of OP Financial Group includes cooperative shares paid by Group member cooperative bank members, and the bank has an absolute right to refuse to pay interest on them and refund the capital. Cooperative contributions and the following customer ownership entitle the customer to take part in the bank's administration and decision-making.

Cooperative capital, profit shares

The equity capital of OP Financial Group also includes investments in profit shares made by members of the Group member cooperative bank members, and the bank has an absolute right to refuse to pay interest on them and refund the capital. For 2019-20, OP Financial Group seeks an interest rate of 3.25% and will each year confirm afterwards the interest payable. The return target may change on an annual basis. No customer-owner rights are involved in profit shares and they do not confer any voting rights.

If a member cooperative bank has not refused a refund, the cooperative contribution and the profit share contribution may be refunded within 12 months after the end of the financial year when membership terminated or the profit share has been cancelled by its holder. If the refund cannot be made in full in any given year, the balance will be refunded from disposable equity capital based on subsequent financial statements. However, this entitlement to the refund for the balance will terminate after the fifth financial statements. No interest will be paid on the balance.

Number of Group cooperative shares

(1 000)	Cooperative capital, member shares	Cooperative capital, profit shares	Total number of cooperative shares
1 January 2018	1,918	29,062	30,979
Increase in cooperative capital	146	2,782	2,927
Refund of cooperative capital	-60	-1,426	-1,486
31 December 2018	2,003	30,417	32,421
Increase in cooperative capital	156	1,295	1,451
Refund of cooperative capital	-62	-1,427	-1,489
31 December 2019	2,097	30,285	32,382

Reserves

Reserve fund

The reserve fund consists of profits transferred to it during previous periods and of the portion transferred to it from member cooperative banks' revaluation reserves and loan loss provisions. The reserve fund may be used to cover losses for which non-restricted equity capital is not sufficient. The reserve fund may also be used to raise the share capital and it can be lowered in the same way as the share capital. In cooperative credit institutions, the reserve fund can only be used to cover losses. In a limited liability company, it has not been possible to increase the reserve fund since 1 September 2006.

Fair value reserve

The fair value reserve includes the change in the fair value of equity instruments as financial assets recognised through the statement of comprehensive income (available-for-sale) and within the scope of the overlay approach. Items included in this reserve will be derecognised and recorded in the income statement when an available-for-sale financial asset is disposed of or is subject to impairment. The expected loss on notes and bonds recognised through other comprehensive income is recognised to adjust the fair value reserve. The reserve also includes the net fair value change of interest rate derivatives as cash flow hedges verified as effective and adjusted for deferred tax. Fair value changes are included in the income statement in the period when hedged cash flows affect net income.

Fair value reserve after income tax

	Fair value through other comprehensive income				
EUR million	Notes and bonds	Shares and participa-tions	Shares and participations (overlay approach)	Cash flow hedging	Total
Balance sheet 31 December 2017	135	25		16	176
Effect of IFRS 9 transition at 1 January 2018	-2	-25			-28
Opening balance 1 January 2018	133	0	0	16	148
Fair value changes	-135	0	-35	66	-104
Capital gains transferred to income statement	-37		-8		-45
Impairment loss transferred to income statement			17		17
Transfers to net interest income				-45	-45
Deferred tax	34	0	5	-4	35
Closing balance 31 December 2018	-5		-21	33	7

EUR million	Fair value through other comprehensive income: Notes and bonds	Fair value through other comprehensive income: Shares and participations (overlay approach)	Cash flow hedging	Total
Opening balance 1 January 2019	**-5**	**-21**	**33**	**7**
Fair value changes	93	70	77	241
Capital gains transferred to income statement	-32	12		-20
Impairment loss transferred to income statement		26		26
Transfers to net interest income			58	58
Deferred tax	-12	-22	-27	-61
Closing balance 31 December 2019	**44**	**65**	**141**	**251**

The fair value reserve before tax totalled EUR 314 million (9) and the related deferred tax liability EUR 63 million (2). During the financial year, positive mark-to-market valuations of equity instruments in the fair value reserve totalled EUR 99 million (54) and negative mark-to-market valuations EUR 11 million (82), owing to the application of the overlay approach. The loss allowance on notes and bonds recognised at fair value through other comprehensive income totalled EUR 2 million in the fair value reserve (–6) during the financial year.

A negative fair value reserve may recover by means of asset appreciation and recognised impairments.

Other restricted reserves

These reserves consist of retained earnings based on the Articles of Association or other rules describing their purpose. The revaluation reserve includes the difference between the carrying amount and fair value of the investment property previously in own use at the time of reclassification.

Other non-restricted reserves

These reserves consist of retained earnings based on the Articles of Association or other rules, or decisions taken by the General Meeting, Representatives' Meeting, or Cooperative Meeting.

Retained earnings

Retained earnings also contain voluntary provisions and depreciation difference included in the separate financial statements of Group companies and insurance companies' equalisation provisions and profits/(losses) due to the redefinition of defined benefit pension plans less deferred tax.

Other notes to the balance sheet

Note 37. Collateral given

EUR million	31 Dec 2019	31 Dec 2018
Given on behalf of own liabilities and commitments		
Pledges	230	171
Loans (as collateral for covered bonds)	14,551	13,700
Others	3,496	5,775
Total collateral given*	**18,277**	**19,647**
Secured derivative liabilities	1,098	928
Other secured liabilities	2,209	4,149
Covered bonds	12,097	10,720
Total	**15,404**	**15,797**

* In addition, bonds with a book value of EUR 6.4 billion have been pledged in the central bank, of which EUR 1.5 billion in intraday settlement collateral. Given that the bonds are available for withdrawal without the central bank's advance permission, they are not presented in the table above.

Note 38. Financial collateral held

OP has received collateral, in accordance with the Financial Collateral Act, which it may resell or repledge.

EUR million	31 Dec 2019	31 Dec 2018
Fair value of collateral received		
Other	707	490
Total	**707**	**490**

The credit risk arising from derivatives is mitigated through collateral, which means the use of ISDA Credit Support Annex (CSA) contract associated with the ISDA general agreement. In the collateral system, the counterparty provides securities or cash in security for the receivable. The amount of CSA-related collateral received in cash totalled EUR 707 million on the balance sheet date (490). The Group had no securities received as collateral on the balance sheet date.

Note 39. Classification of financial assets and liabilities

			Fair value through profit or loss				
Assets, EUR million	Amortised cost	Fair value through other comprehen-sive income	Financial assets held for trading	Financial assets designated as at fair value through profit or loss	Must be measured at fair value through profit or loss	Hedging derivatives	Carrying amount total
Cash and cash equivalents	11,988						11,988
Receivables from credit institutions	246						246
Derivative contracts			3,821			1,003	4,824
Receivables from customers	91,463						91,463
Assets covering unit-linked contracts				10,831			10,831
Notes and bonds	3	16,695	1,415	2,216	466		20,795
Equity instruments		0	77	254	1,248		1,580
Other financial assets	1,884						1,884
Financial assets							**143,612**
Other than financial instruments							3,412
Total 31 December 2019	**105,585**	**16,695**	**5,313**	**13,301**	**1,714**	**1,003**	**147,024**

Assets, EUR million	Amortised cost	Fair value through other comprehen-sive income	Fair value through profit or loss: Financial assets held for trading	Fair value through profit or loss: Financial assets designated as at fair value through profit or loss	Fair value through profit or loss: Must be measured at fair value through profit or loss	Hedging derivatives	Carrying amount total
Cash and cash equivalents	12,350						12,350
Receivables from credit institutions	183						183
Derivative contracts			3,066			515	3,581
Receivables from customers	87,026						87,026
Assets covering unit-linked contracts				9,771			9,771
Notes and bonds	4	17,124	505	2,227	451		20,312
Equity instruments		0	81	245	1,130		1,456
Other financial assets	1,940						1,940
Financial assets							**136,619**
Other than financial instruments							3,676
Total 31 December 2018	**101,503**	**17,124**	**3,652**	**12,243**	**1,581**	**515**	**140,294**

* Investment assets in the balance sheet include Non-life and Life Insurance notes and bonds recognised through profit or loss, and equity instruments.

Liabilities, EUR million	Financial liabilities at fair value through profit or loss	Other liabilities	Hedging derivatives	Carrying amount total
Liabilities to credit institutions		2,632		2,632
Derivative contracts	2,887		429	3,316
Liabilities to customers		68,289		68,289
Insurance liabilities		9,476		9,476
Liabilities from unit-linked insurance and investment contracts	10,862			10,862
Debt securities issued to the public		34,369		34,369
Subordinated loans		1,290		1,290
Other financial liabilities		2,578		2,578
Financial liabilities				**132,812**
Other than financial liabilities				1,642
Total 31 December 2019	**13,749**	**118,634**	**429**	**134,454**

Liabilities, EUR million	Financial liabilities at fair value through profit or loss	Other liabilities	Hedging derivatives	Carrying amount total
Liabilities to credit institutions		4,807		4,807
Derivative contracts	2,572		421	2,992
Liabilities to customers		66,112		66,112
Insurance liabilities		9,476		9,476
Liabilities from unit-linked insurance and investment contracts	9,812			9,812
Debt securities issued to the public		30,458		30,458
Subordinated loans		1,358		1,358
Other financial liabilities		2,134		2,134
Financial liabilities				**127,148**
Other than financial liabilities				1,404
Total 31 December 2018	**12,383**	**114,344**	**421**	**128,552**

Bonds included in debt securities issued to the public are carried at amortised cost. On 31 December, the fair value of these debt instruments was approximately EUR 529 (242) million higher than their carrying amount, based on information available in markets and employing commonly used valuation techniques. Subordinated liabilities are carried at amortised cost. Their fair values are higher than their amortised costs, but determining reliable fair values involves uncertainty.

Note 40. Recurring fair value measurements by valuation technique

Fair value of assets on 31 December 2019, EUR million	Level 1	Level 2	Level 3	Total
Recognised at fair value through profit or loss				
Equity instruments	705	231	643	1,579
Debt instruments	2,810	750	537	4,097
Unit-linked contracts	7,048	3,783		10,831
Derivative financial instruments	22	4,728	74	4,824
Fair value through other comprehensive income				
Equity instruments		0		0
Debt instruments	13,980	1,827	888	16,695
Total financial instruments	**24,565**	**11,319**	**2,143**	**38,027**
Investment property			714	714
Total	**24,565**	**11,319**	**2,857**	**38,741**

Fair value of assets on 31 December 2018, EUR million	Level 1	Level 2	Level 3	Total
Recognised at fair value through profit or loss				
Equity instruments	592	185	679	1,456
Debt instruments	2,107	764	312	3,184
Unit-linked contracts	6,337	3,434		9,771
Derivative financial instruments	0	3,524	57	3,581
Fair value through other comprehensive income				
Equity instruments		0		0
Debt instruments	13,885	3,026	214	17,124
Total financial instruments	**22,921**	**10,933**	**1,262**	**35,116**
Investment property			979	979
Total	**22,921**	**10,933**	**2,241**	**36,095**

Fair value of liabilities on 31 December 2019, EUR million	Level 1	Level 2	Level 3	Total
Recognised at fair value through profit or loss				
Unit-linked contracts	7,068	3,794		10,862
Other		12		12
Derivative financial instruments	18	3,266	32	3,316
Total	**7,086**	**7,072**	**32**	**14,190**

Fair value of liabilities on 31 December 2018, EUR million	Level 1	Level 2	Level 3	Total
Recognised at fair value through profit or loss				
Unit-linked contracts	6,364	3,448		9,812
Other		0		0
Derivative financial instruments	10	2,939	44	2,992
Total	**6,373**	**6,387**	**44**	**12,804**

Fair value measurement

Derivatives

The Group obtains the price of listed derivatives directly from markets. In the fair value measurement of OTC derivatives, Pohjola uses models and techniques commonly used in markets. These are needed, for instance, to create yield curves and currency conversion charts and volatility surfaces as well as for option valuation. The input data of these models can generally be derived from markets. In the fair value measurement of some contracts, however, the Group has to use models where input data cannot be observed in the market and therefore they must be assessed. Such contracts are included in Level 3.

Middle Office is responsible for the fair value measurement of Banking derivatives, incl. level 3 hierarchy, and the quality and reliability of market data, valuation curves and volatility surfaces used in them, as part of its daily fair value measurement process. Middle Office compares regularly at contract level valuation prices with valuations supplied by CSA counterparties and central counterparties and, whenever necessary, determines any possible significant valuation differences.

Risk Management Control is responsible for approval of new fair value measurement models and techniques and supervision of the fair value measurement process. Verifying fair values is based, for example, on valuation using alternative sources for market prices and other input data. In this verification process, valuation prices can be compared with prices supplied by CSA counterparties and central counterparties. In addition, it is possible to use valuation services provided by third parties.

The fair value measurement of OTC derivatives takes account of the credit risk of the parties to a transaction. Credit risk is adjusted with a Credit Valuation Adjustment (CVA) and with a Debit Valuation Adjustment (DVA). CVA and DVA valuation adjustments are calculated for each counterparty. CVA and DVA adjustments are calculated by simulating the market values of derivatives and events of default based primarily on data obtained from markets. In assessing probabilities of default, the Group utilises market data through illiquid counterparties too by combining the counterparties with liquid market data.

Fair value hierarchy

Level 1: Quoted prices in active markets

This level includes equities listed on major stock exchanges, quoted debt instruments issued by companies, governments and financial institutions as well as and exchange-traded derivatives. The fair value of these instruments is determined on the basis of the quotes in active markets.

Level 2: Valuation techniques using observable inputs

Valuation techniques based on observable input parameters. The fair value of the instruments included within this level means value derived from the market price of a financial instrument's components or similar financial instruments; or value which can be determined using commonly used valuation models and techniques if the inputs significant to the fair value measurement are based on observable market data. This hierarchy level includes the majority of OP Corporate Bank Group's OTC derivatives and quoted debt instruments issued by companies, governments and financial institutions which have not been included in Level 1.

Level 3: Valuation techniques using unobservable inputs

Valuation techniques whose input parameters involve uncertainty. The fair value determination of the instruments included within this level contains inputs not based on observable market data (unobservable inputs). Level 3 also includes bonds for which there is little, if any, market activity on the valuation date. This level includes the most complex OTC derivatives and derivatives with a long maturity for which the Group had to extrapolate the market data used in their value measurement, as well as certain private equity investments, and illiquid bonds, structured bonds, including securitised bonds and structured debt securities, and hedge funds. Level 3 fair value is based on pricing information from a third party.

Transfers between levels of the fair value hierarchy

Transfers between the levels of the fair value hierarchy are considered to take place on the date when an event causes such transfer or when circumstances change. Transfers between the levels are mainly due to the number of available market quotes.

Reconciliation of Level 3 items

Specification of financial assets and liabilities

Financial assets, EUR million	Financial assets at fair value through profit or loss	Derivative contracts	Fair value through other comprehen-sive income	Total assets
Opening balance 1 January 2019	991	57	214	1,262
Total gains/losses in profit or loss	-326	18	1	-308
Total gains/losses in other comprehensive income			1	1
Purchases	141		5	146
Sales	-85		-18	-103
Settlements	-1		-6	-7
Transfers into Level 3	466		766	1,233
Transfers out of Level 3	-6		-75	-81
Closing balance 31 December 2019	**1,181**	**74**	**888**	**2,143**

Financial assets, EUR million	Financial assets at fair value through profit or loss	Derivative contracts	Fair value through other comprehen-sive income	Total assets
Balance sheet 31 December 2017	**454**	**131**	**931**	**1,516**
Effects of IFRS 9 transition 1 January 2018	601		-593	8
Opening balance 1 January 2018	**1,055**	**131**	**338**	**1,525**
Total gains/losses in profit or loss	-382	-75	-1	-457
Total gains/losses in other comprehensive income			0	0
Purchases	201		3	203
Sales	-164		-1	-166
Settlements	-15		-10	-24
Transfers into Level 3	296		141	437
Transfers out of Level 3			-256	-256
Closing balance 31 December 2018	**991**	**57**	**214**	**1,262**

Financial liabilities, EUR million	Derivative contracts	Total liabilities
Opening balance 1 January 2019	**44**	**44**
Total gains/losses in profit or loss	-11	-11
Closing balance 31 December 2019	**32**	**32**

Financial liabilities, EUR million	Derivative contracts	Total liabilities
Opening balance 1 January 2018	**92**	**92**
Total gains/losses in profit or loss	-48	-48
Closing balance 31 December 2018	**44**	**44**

Total gains/losses included in profit or loss by item for the financial year on 31 December 2019

EUR Million	Net interest income	Net investment income	Statement of comprehensive income/ Change in fair value reserve	Total gains/ losses for the financial year included in profit or loss for assets/ liabilities held at year-end
Realised net gains (losses)	-263	-62	0	-325
Unrealised net gains (losses)	29		1	30
Total net gains (losses)	**-234**	**-62**	**2**	**-295**

Total gains/losses included in profit or loss by item for the financial year on 31 December 2018

EUR Million	Net interest income	Net investment income	Statement of comprehensive income/ Change in fair value reserve	Total gains/ losses for the financial year included in profit or loss for assets/ liabilities held at year-end
Realised net gains (losses)	-411	29		-382
Unrealised net gains (losses)	-26		0	-27
Total net gains (losses)	**-438**	**29**	**0**	**-409**

Derivatives included in Level 3 comprise structured derivatives for customer needs, whose market risk is covered by a corresponding derivatives contract. The uncovered market risk does not have any effect on earnings. Level 3 derivatives relate to structured bonds issued by OP Corporate Bank, whose return is determined by the value performance of an embedded derivative instrument. The fair value change of these embedded derivatives is not presented in the above table. In addition, long-maturity derivatives have been included in Level 3 for which the Group had to extrapolate the market data used in their value measurement.

Changes in the levels of hierarchy

No major changes occurred in valuation techniques in 2019.

Sensitivity analysis of input parameters involving uncertainty on 31 December 2019

Type of instrument, EUR million	Receivables	Liabilities	Net balance	Sensitivity analysis	Reasonably possible change in fair value
Recognised at fair value through profit or loss:					
Bond investments	537		537	53.7	10%
Epälikvidit sijoitukset	130		130	19.5	15%
Private equity funds*	372		372	37.2	10%
Real estate funds***	141		141	28.2	0.2
Derivatives:					
Index-linked bond hedges and structured derivatives, and derivatives with a long-term maturity**	74	-32	42	4.6	11%
Fair value through profit or loss					
Bond investments	888		888	88.8	10%
Investment property					
Investment property***	979		979	195.8	20%

Type of instrument, EUR million	Receivables	Liabilities	Net balance	Sensitivity analysis	Reasonably possible change in fair value
Recognised at fair value through profit or loss:					
Bond investments	312		312	31.2	10%
Epälikvidit sijoitukset	127		127	19.1	15%
Private equity funds*	407		407	40.7	10%
Real estate funds***	145		145	29	0.2
Derivatives:					
Index-linked bond hedges and structured derivatives, and derivatives with a long-term maturity**	57	-44	13	1.4	11%
Fair value through profit or loss					
Bond investments	214		214	21.4	10%
Investment property					
Investment property***	688		688	137.6	20%

* The value of private equity funds depends mainly on the profit performance of portfolio companies and the PE ratios of similar listed companies. The Total Value to Paid-in (TVPI) multiple, which has changed an average of 10%, is used to monitor the progress of the fair value of private equity funds.
** Following stress scenarios: the combined value change of volatility of shares (30%), dividends of shares (30%), credit risk premiums (30%) and significant correlation changes.

*** In the valuation of real estate funds and investment property, OP mainly uses the income approach whose main components are yield requirement and net rent. A +/– 1 percentage point change in the yield requirement leads on average to around 20% change in the fair value.

Notes to contingent liabilities and derivatives

Note 41. Off-balance-sheet commitments

EUR million	31 Dec 2019	31 Dec 2018
Guarantees	711	775
Other guarantee liabilities	2,459	2,162
Loan commitments	13,180	12,577
Commitments related to short-term trade transactions	333	283
Other	1,311	1,195
Total off-balance-sheet commitments	**17,995**	**16,993**

Note 42. Contingent liabilities and assets

Insurance companies belonging to OP Financial Group underwrite insurance policies through pools. Pool members are primarily responsible for their own proportionate share of the risk. Proportionate shares are based on contracts confirmed annually. In certain pools, pool members are responsible for an insolvent member's liabilities in proportion to their shares in the pool. Group insurance companies recognise liabilities and receivables based on joint liability if joint liability is likely to materialise.

Note 43. Derivative contracts

Derivatives held for trading 31 December 2019

	Nominal values/residual maturity				Fair values*	
EUR million	<1 year	1–5 years	>5 years	Total	Assets	Liabilities
Interest rate derivatives						
Interest rate swaps	7,944	24,994	41,337	74,275	2,604	1,450
Cleared by the central counterparty	5,117	14,681	22,133	41,932	26	40
OTC interest rate options						
Call and caps						
Purchased	5,112	6,184	2,732	14,027	239	30
Written	6,394	7,153	3,522	17,068	102	190
Put and floors						
Purchased	3,098	4,324	2,482	9,903	64	67
Written	3,332	6,635	1,758	11,726	65	50
Total OTC interest rate derivatives	25,879	49,290	51,830	126,999	3,074	1,788
Interest rate futures	1,134	938		2,072	0	0
Total exchange traded derivatives	1,134	938		2,072	0	0
Total interest rate derivatives	27,013	50,228	51,830	129,071	3,074	1,788
Currency derivatives						
Forward exchange agreements	33,659	305		33,964	236	215
Interest rate and currency swaps	909	5,149	1,760	7,818	606	603
Currency options						
Call						
Purchased	158	12		170	1	1
Written	161	13		174	1	0
Put						
Purchased	143	13		156	1	0
Written	130	14		144	0	1
Total OTC currency derivatives	35,159	5,506	1,760	42,426	845	820
Total currency derivatives	35,159	5,506	1,760	42,426	845	820
Equity and index derivatives						
Equity index options						
Call						
Purchased	1	2		3	0	
Total OTC equity and index derivatives	1	2		3	0	
Total equity and index derivatives	1	2		3	0	
Credit derivatives						
Credit default swaps	59	1,610	224	1,893	25	20
Credit default swaptions						
Put						
Purchased			2,122	2,122	0	
Written			2,122	2,122		0
Total credit derivatives	59	1,610	4,468	6,137	25	20
Other						
Other forward contracts	3	3		5	0	0
Other swaps	231	432	18	681	67	38
Total other OTC derivatives	233	435	18	686	68	38
Total other derivatives	233	435	18	686	68	38
Total derivatives held for trading	**62,465**	**57,780**	**58,076**	**178,322**	**4,011**	**2,666**

Derivatives held for trading 31 December 2018

	Nominal values/residual maturity				Fair values*	
EUR million	<1 year	1–5 years	>5 years		Assets	Liabilities
Interest rate derivatives						
Interest rate swaps	9,456	27,006	38,799	75,261	1,398	1,207
Cleared by the central counterparty	7,151	21,767	27,371	56,288	6	10
OTC interest rate options						
Call and caps						
Purchased	2,559	5,730	2,879	11,169	214	14
Written	2,141	9,347	3,323	14,811	86	114
Put and floors						
Purchased	4,132	4,802	2,128	11,061	83	55
Written	3,914	6,131	1,591	11,635	54	49
Total OTC interest rate derivatives	22,201	53,015	48,720	123,936	1,835	1,439
Interest rate futures	3,850	3,280		7,129	0	0
Total exchange traded derivatives	3,850	3,280		7,129	0	0
Total interest rate derivatives	26,051	56,295	48,720	131,066	1,835	1,440
Currency derivatives						
Forward exchange agreements	17,649	631	2	18,281	137	136
Interest rate and currency swaps	2,699	4,269	2,928	9,896	798	817
Currency options						
Call						
Purchased	180	17		197	1	1
Written	239	24		262	1	1
Put						
Purchased	316	24		340	2	1
Written	299	21		319	1	2
Total OTC currency derivatives	21,380	4,986	2,930	29,296	939	958
Total currency derivatives	21,380	4,986	2,930	29,296	939	958
Equity and index derivatives						
Equity index options						
Call						
Purchased		3		3	0	0
Total OTC equity and index derivatives		3		3	0	0
Total equity and index derivatives		3		3	0	0
Credit derivatives						
Credit default swaps	15	189	2	206	4	9
Total credit derivatives	15	189	2	206	4	9
Other						
Other forward contracts	16	1		17	0	4
Other swaps	190	363	8	560	34	24
Other options						
Call						
Purchased	0			0		
Written	0			0		
Put						
Purchased	0			0		
Written	0			0		
Total other OTC derivatives	207	364	8	579	34	28
Other futures contracts	0	0		1	0	0
Total other derivatives	208	364	8	580	34	29
Total derivatives held for trading	**47,654**	**61,837**	**51,659**	**161,150**	**2,813**	**2,435**

Derivative contracts for hedging purposes – fair value hedging 31 December 2019

	Nominal values/residual maturity				Fair values*	
EUR million	<1 year	1–5 years	>5 years		Assets	Liabilities
Interest rate derivatives						
Interest rate swaps	6,041	20,976	17,286	44,303	67	51
Cleared by the central counterparty	5,254	20,706	16,945	42,905	20	13
OTC interest rate options						
Call and caps						
Purchased	720	3,345	5,047	9,112	2	176
Put and floors						
Purchased			300	300	1	0
Total OTC interest rate derivatives	6,761	24,321	22,633	53,715	71	227
Total interest rate derivatives	6,761	24,321	22,633	53,715	71	227
Currency derivatives						
Forward exchange agreements						
Interest rate and currency swaps	2,609	1,448	654	4,711	166	130
Total OTC currency derivatives	2,609	1,448	654	4,711	166	130
Total currency derivatives	2,609	1,448	654	4,711	166	130
Total derivative contracts, fair value hedge	**9,371**	**25,769**	**23,287**	**58,426**	**237**	**357**

Derivative contracts for hedging purposes – cash flow hedge 31 December 2019

EUR million	Nominal values /residual term to maturity <1 year	1–5 years	>5 years	Total	Fair values* Assets	Liabilities
Interest rate derivatives						
Interest rate swaps	425	750	3,130	4,305	6	0
Cleared by the central counterparty	420	739	3,130	4,289	6	0
Total OTC interest rate derivatives	425	750	3,130	4,305	6	0
Total interest rate derivatives	**425**	**750**	**3,130**	**4,305**	**6**	**0**
Currency derivatives						
Forward exchange agreements	7,374			7,374	241	17
Total OTC currency derivatives	7,374			7,374	241	17
Total currency derivatives	7,374			7,374	241	17
Total derivative contracts, cash flow hedge	**7,799**	**750**	**3,130**	**11,679**	**247**	**17**
Total derivative contracts held for hedging	**17,170**	**26,518**	**26,417**	**70,105**	**484**	**375**

Derivative contracts for hedging purposes – fair value hedging 31 December 2018

EUR million	Nominal values/residual maturity <1 year	1–5 years	>5 years	Total	Fair values* Assets	Liabilities
Interest rate derivatives						
Interest rate swaps	3,751	24,020	14,548	42,319	222	31
Cleared by the central counterparty	2,027	16,903	9,333	28,264	2	2
OTC interest rate options						
Call and caps						
Purchased	210	2,905	4,047	7,162	0	59
Written	210	2,905	4,047	7,162		
Total OTC interest rate derivatives	3,961	26,925	18,595	49,481	222	91
Total interest rate derivatives	**3,961**	**26,925**	**18,595**	**49,481**	**222**	**91**
Currency derivatives						
Interest rate and currency swaps	422	1,799	475	2,696	91	179
Total OTC currency derivatives	422	1,799	475	2,696	91	179
Total currency derivatives	422	1,799	475	2,696	91	179
Total derivative contracts, fair value hedge	**4,383**	**28,724**	**19,070**	**52,177**	**182**	**179**

Derivative contracts for hedging purposes – cash flow hedge 31 December 2018

	Nominal values/residual maturity				Fair values*	
EUR million	<1 year	1–5 years	>5 years	Total	Assets	Liabilities
Interest rate derivatives						
Interest rate swaps	524	961	2,801	4,286	95	1
Cleared by the central counterparty	100			100	0	
Total OTC interest rate derivatives	524	961	2,801	4,286	95	1
Total interest rate derivatives	524	961	2,801	4,286	95	1
Currency derivatives						
Forward exchange agreements	6,843			6,843	35	39
Total OTC currency derivatives	6,843			6,843	35	39
Total currency derivatives	6,843			6,843	35	39
Total derivative contracts, cash flow hedge	**7,367**	**961**	**2,801**	**11,130**	**129**	**40**
Total derivative contracts held for hedging	**11,750**	**29,685**	**21,871**	**63,306**	**311**	**222**

Total derivatives 31 December 2019

	Nominal values/residual maturity			Total	Fair values*	
EUR million	<1 year	1–5 years	>5 years		Assets	Liabilities
Interest rate derivatives	34,200	75,299	77,593	187,091	3,151	2,015
Cleared by the central counterparty	10,791	36,126	42,208	89,126	52	53
Currency derivatives	45,143	6,954	2,414	54,511	1,252	967
Equity and index-linked derivatives	1	2		3	0	
Credit derivatives	59	1,610	4,468	6,137	25	20
Other derivatives	233	435	18	686	68	38
Total derivatives	**79,636**	**84,299**	**84,493**	**248,427**	**4,496**	**3,041**

Total derivatives 31 December 2018

	Nominal values/residual maturity			Total	Fair values*	
EUR million	<1 year	1–5 years	>5 years		Assets	Liabilities
Interest rate derivatives	30,535	84,181	70,116	184,833	2,152	1,531
Cleared by the central counterparty	9,278	38,670	36,704	84,652	8	12
Currency derivatives	28,646	6,784	3,404	38,835	1,065	1,176
Equity and index-linked derivatives		3		3	0	0
Credit derivatives	15	189	2	206	4	9
Other derivatives	208	364	8	580	34	29
Total derivatives	**59,404**	**91,522**	**73,530**	**224,456**	**3,255**	**2,744**

*Fair values include accrued interest which is shown under other assets or provisions and other liabilities in the balance sheet.

Interest rate derivatives for central counterparty clearing are offset in the balance sheet. The effects of netting can be found in Note 44 below. Other derivative contracts are presented on a gross basis in the balance sheet. In its capital adequacy measurement, OP Amalgamation also applies netting of derivatives. The effects of netting on counterparty risk are presented in 3.5 of the OP Amalgamation Capital Adequacy Report. Netting would reduce the credit equivalent of OP Corporate Bank plc's derivative contracts by EUR 6,934 million (4,099).

Average prices of derivative contracts in hedge accounting – fair value hedge 31 December 2019

	<1 year	1–5 years	>5 years	Total
Interest rate derivatives				
Cleared by the central counterparty	0.019	0.672	0.608	0.549
OTC interest rate derivatives	0.395	0.775	0.655	0.692
Total interest rate derivatives	0.101	0.705	0.621	0.591

Average prices of derivative contracts in hedge accounting – fair value hedge 31 December 2018

	<1 year	1–5 years	>5 years	Total
Interest rate derivatives				
Cleared by the central counterparty	0.616	0.488	0.771	0.591
OTC interest rate derivatives	0.963	0.695	0.869	0.791
Total interest rate derivatives	0.748	0.539	0.801	0.647

Average prices of currency derivatives in hedge accounting concerning significant currencies 31 December 2019

	<1 year	1–5 years	>5 years	Total
Forward exchange agreements: EUR:USD	1.111			
Interest rate and currency swaps				
AUD			2.440	2.440
CHF		1.604		1.604
GBP		2.155		2.155
HKD	2.144		2.959	2.670
JPY	0.562		1.300	0.609
NOK	0.000		3.800	3.800
USD	1.691	2.219	3.611	2.747

Average prices of currency derivatives in hedge accounting concerning significant currencies 31 December 2018

	<1 year	1–5 years	>5 years	Total
Forward exchange agreements: EUR:USD	1.149			
Interest rate and currency swaps				
GBP	0.910	2.231		2.000
JPY	0.434	0.562	1.300	0.518
USD		1.939	3.823	2.764

Average prices of derivative contracts in hedge accounting – cash flow hedge 31 December 2019

	<1 year	1–5 years	>5 years	Total
Interest rate derivatives				
Cleared by the central counterparty				
OTC interest rate derivatives	1.282	0.982	0.849	0.916
Total interest rate derivatives	1.282	0.982	0.849	0.916
Currency derivatives				
Forward exchange agreements				
Average EUR:USD	1.1198			1.1198
Average EUR:GBP	0.8783			0.8783
Average EUR:CHF	1.1010			1.1010
Average EUR:HKD	8.8791			8.8791
Average EUR:SGD	1.5336			1.5336
Average EUR:AUD	1.6246			1.6246
Average EUR:NOK	10.1080			10.1080
Average EUR:CAD	1.4734			1.4734

Average prices of derivative contracts in hedge accounting – cash flow hedge 31 December 2018

	<1 year	1–5 years	>5 years	Total
Interest rate derivatives				
Cleared by the central counterparty	0.602			0.602
OTC interest rate derivatives	1.400	1.175	0.906	1.019
Total interest rate derivatives	1.249	1.175	0.906	1.009
Currency derivatives				
Forward exchange agreements				
Average EUR:USD	1.1654			1.1654
Average EUR:GBP	0.8936			0.8936
Average EUR:CHF	1.1529			1.1529

Note 44. Financial assets and liabilities offset in the balance sheet or subject to enforceable master netting arrangements or similar agreements

Financial assets

				Financial assets not set off in the balance sheet		
31 December 2019, EUR million	Gross amount of financial assets	Gross amount of financial liabilities deducted from financial assets*	Net amount presented in the balance sheet**	Master agreements ***	Collateral received	Net amount
Derivatives	6,703	-1,879	4,824	-2,147	-707	1,971

				Financial assets not set off in the balance sheet		
31 December 2018, EUR million	Gross amount of financial assets	Gross amount of financial liabilities deducted from financial assets*	Net amount presented in the balance sheet**	Master agreements ***	Collateral received	Net amount
Derivatives	4,515	-934	3,581	-1,823	-490	1,330

Financial liabilities

31 December 2019, EUR million	Gross amount of financial liabilities	Gross amount of financial assets deducted from financial liabilities*	Net amount presented in the balance sheet**	Financial liabilities not set off in the balance sheet: Master agreements ***	Financial liabilities not set off in the balance sheet: Collateral given	Net amount
Derivatives	5,371	-2,055	3,316	-2,147	-654	515

31 December 2018, EUR million	Gross amount of financial liabilities	Gross amount of financial assets deducted from financial liabilities*	Net amount presented in the balance sheet**	Financial liabilities not set off in the balance sheet: Master agreements ***	Financial liabilities not set off in the balance sheet: Collateral given	Net amount
Derivatives	3,887	-1,066	2,992	-1,823	-703	467

* Incl. daily cleared derivatives on a net basis included in cash and cash equivalents, totalling -177 (-140) million euros.

** Fair values excluding accrued interest.

***It is the practice to enter into master agreements for derivative transactions with all derivative counterparties.

Central counterparty clearing for OTC derivatives

Standardised OTC derivative transactions entered into with financial counterparties are cleared in London Clearing House or ICE Clear Europen, accordance with EMIR (EU 648/2012). Based on this model, the central counterparty will become the derivatives counterparty at the end of the daily clearing process, with whom daily payments for derivatives are netted. In addition, collateral is paid or received daily, which corresponds to the change in the fair value of open positions (variation margin). Interest rate derivatives cleared by the central counterparty are presented on a net basis in the balance sheet.

Other bilaterally cleared OTC derivatives

The ISDA Master Agreement or the Master Agreement of Finance Finland or the Group will apply to derivative transactions between the Group and other clients and to derivative transactions to which central counterparty clearing in accordance with the Regulation does not pertain. On the basis of these agreements, derivative payments may be netted per transaction on each payment date and in the event of counterparty default and bankruptcy. It is also possible to agree on collateral on a counterparty-specific basis in the terms and conditions of the agreement. Such derivatives are presented on a gross basis in the balance sheet.

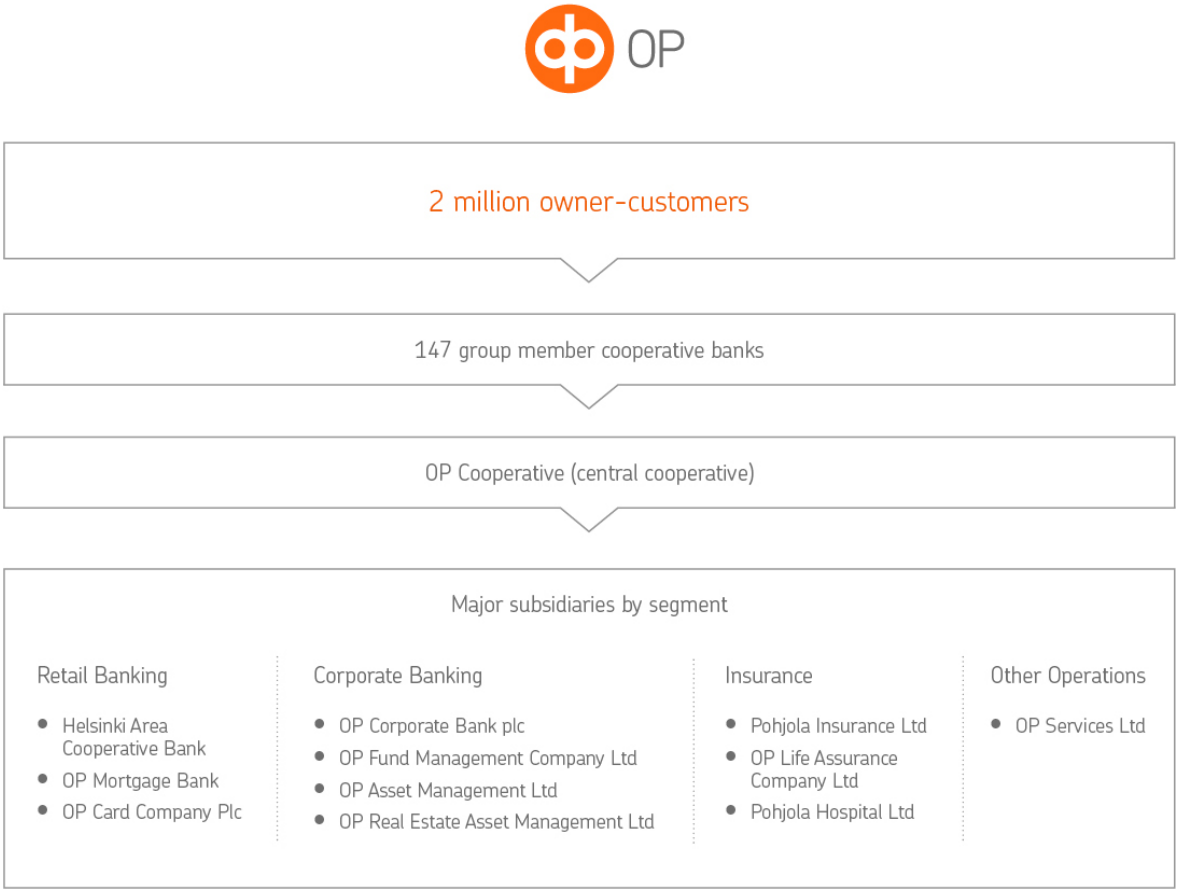
Other notes

Note 45. Ownership interests in subsidiaries, structured entities and joint operations

OP Financial Group's structure

The following figure describes the structure of OP Financial Group. Group member cooperative banks constitute the Group's technical parent company. In addition to the member cooperative banks, the most important subsidiaries, OP Cooperative (central cooperative) and its subsidiaries, associates and various joint arrangements are consolidated into OP Financial Group.

Business structure



Changes occurred in subsidiaries and structured entities during the financial year

On 31 August 2019, OP Cooperative sold OP Custody Ltd to OP Corporate Bank plc. Eurooppalainen Insurance Company Ltd merged into Pohjola Insurance Ltd on 31 October 2019. OP Customer Services Ltd merged into OP Card Company Plc on 30 November 2019.

Major subsidiaries included in the financial statements of OP Financial Group in 2019

Major OP Financial Group subsidiaries include companies whose business is subject to licence and other major companies relevant to business operations. All major consolidated subsidiaries are wholly owned and accordingly they have no major non-controlling interests.

Company	Domicile/ home country	Interest, %	Votes, %
OP Cooperative	Helsinki	100.0	100.0
Helsinki Area Cooperative Bank*	Helsinki		
OP Mortgage Bank	Helsinki	100.0	100.0
OP Life Assurance Company Ltd	Helsinki	100.0	100.0
OP Card Company Plc	Helsinki	100.0	100.0
OP-Services Ltd*)	Helsinki	100.0	100.0
OP Customer Services Ltd	Helsinki	100.0	100.0
OP Fund Management Company Ltd	Helsinki	100.0	100.0
Pivo Wallet Oy	Helsinki	100.0	100.0
OP Corporate Bank plc	Helsinki	100.0	100.0
Checkout Finland Oy	Tampere	100.0	100.0
OP Property Management Ltd	Helsinki	100.0	100.0
OP Asset Management Limited	Helsinki	100.0	100.0

*Helsinki Area Cooperative Bank is a cooperative. Every representative of its Representative Assembly has one vote. The Representative Assembly has 20 representatives appointed by the central cooperative and 10 owner-customer representatives.

Subsidiaries consolidated into OP Corporate Bank Group's financial statements			
A-Insurance Ltd	Helsinki	100.0	100.0
Pohjola Hospital Ltd	Helsinki	100.0	100.0
OP Finance AS	Estonia	100.0	100.0
OP Finance SIA	Latvia	100.0	100.0
Pohjola Insurance Ltd	Helsinki	100.0	100.0
UAB OP Finance	Lithuania	100.0	100.0
OP Custody Ltd	Helsinki	100.0	100.0

In addition to the subsidiaries, 46 (47) OP Koti (formerly OP Kiinteistökeskus) real estate agencies are consolidated into the financial statements of OP Financial Group. These OP Koti real estate agencies, which are wholly owned subsidiaries, provide services for buying and selling real property and dwelling units and house management services. In addition to the real estate agencies, 22 (22) other subsidiaries have been consolidated.

Member cooperative banks forming the technical parent company of OP Financial Group in 2019

Name	Balance sheet 2019, EUR million	Capital adequacy, % 31 Dec 2019	Managing Director 31 Dec 2019
Alajärven Op	315	47.2	Jari Leivo
Alastaron Op	70	47.9	Sanna Metsänranta
Alavieskan Op	74	45.6	Antero Alahautala
Alavuden seudun Op	259	45.8	Jussi Ruuhela
Andelsbanken för Åland	502	21.4	Johnny Nordqvist
Andelsbanken Raseborg	470	28.5	Mats Enberg
Artjärven Op	53	69.7	Reijo Hurskainen
Askolan Op	143	33.1	Kari Leskinen
Auramaan Op	481	49.1	Tuomo Jokinen
Etelä-Hämeen Op	1,703	48.1	Mika Helin
Etelä-Karjalan Op	1,669	41.6	Petri Krohns
Etelä-Pirkanmaan Op	622	48.3	Juha Luomala
Etelä-Pohjanmaan Op	1,382	27.2	Olli Tarkkanen
Euran Op	221	59.9	Timo Viitanen
Haapamäen Seudun Op	67	68.2	Hannu Petjoi
Hailuodon Op	48	49.9	Jani Isomaa
Halsuan-Ylipään Op	80	59.7	Heidi Pöyhönen
Himangan Op	90	29.7	Kari Haanmäki
Honkilahden Op	38	59.7	Jukka-Pekka Koivisto
Humppilan-Metsämaan Op	97	57.9	Jari Salokangas
Itä-Uudenmaan Op	1,390	25.7	Mauri Molander
Janakkalan Op	432	58.6	Mikko Suutari
Jokioisten Op	131	43.7	Vesa Rantanen
Jämsän Seudun Op	373	72.2	Kyösti Myller
Järvi-Hämeen Op	484	56.2	Teemu Sarhemaa
Kainuun Op	938	48.3	Teuvo Perätalo
Kalajoen Op	231	30.1	Leena Pajumaa
Kangasalan Seudun Op	495	39.0	Jyrki Turtiainen
Kangasniemen Op	206	59.1	Seppo Laurila
Kannuksen Op	122	40.6	Juha Lundström
Kemin Seudun Op	401	43.4	Heikki Palosaari
Kerimäen Op	97	51.8	Jarmo Kaivonurmi
Keski-Pohjanmaan Op	1107	25.0	Jyrki Rantala
Keski-Suomen Op	3,008	37.1	Pasi Sorri
Kesälahden Op	81	63.7	Jouko Tammelin
Kihniön Op	42	46.3	Pirjo Haapa-aho Vehniä
Kiikoisten Op	32	59.2	Minna Uusitalo
Kiteen Seudun Op	322	67.3	Olli Koivula
Koitin-Pertunmaan Op	81	64.3	Jouko Iso-Kuortti
Korpilahden Op	95	49.5	Tuomas Kupsala
Korsnäs Andelsbank	146	34.8	Jan-Erik Westerdahl
Kronoby Andelsbank	133	48.2	Kaj Nylund
Kuhmon Op	225	72.5	Martti Pulkkinen
Kuortaneen Op	76	42.9	Sanna Kattelus
Kurun Op	56	49.0	Marja-Leena Siuro
Kuusamon Op	278	35.5	Kari Kivelä
Kymenlaakson Op	2,083	44.1	Juha Korhonen
Kärkölän Op	109	43.2	Mikael Hanhilahti
Köyliön Op	70	57.5	Jari Valonen
Laihian Op	121	41.4	Markku Jaatinen
Lapin Op	105	47.7	Juha Teerialho
Lehtimäen Op	71	23.7	Veli-Jussi Haapala

Lemin Op	89	33.3	Ilkka Martikainen
Limingan Op	139	29.9	Petteri Juusola
Liperin Op	227	46.3	Jukka Asikainen
Loimaan Seudun Op	298	51.0	Juha Pullinen
Lokalahden Op	40	54.6	Ville Aarnio
Lounaismaan OP	1,711	40.8	Jouni Hautala
Lounaisrannikon Op	637	34.2	Juha-Pekka Nieminen
Lounais-Suomen Op	382	57.8	Leena Nikula
Luhangan Op	57	37.8	Tuomas Puttonen
Luopioisten Op	46	59.8	Sirpa Leppäkoski
Luumäen Op	113	60.2	Mikko Purmonen
Länsi-Kymen Op	376	30.5	Saila Rosas
Länsi-Suomen Op	3,080	43.2	Matti Kiuru
Maaningan Op	132	50.1	Ari Väänänen
Miehikkälän Op	83	64.1	Teemu Tuukkanen
Mouhijärven Op	86	32.2	Kirsi Soltin
Multian Op	85	65.4	Arto Laitinen
Mynämäen-Nousiaisten Op	405	57.1	Lasse Vehviläinen
Mäntsälän Op	253	48.8	Heikki Kananen
Nagu Andelsbank	72	31.1	Alice Björklöf
Nakkila-Luvian Op	243	47.1	Jussi Kuvaja
Niinijokivarren Op	79	94.8	Kaisa Markula
Nilakan Seudun Op	187	36.1	Jouni Karhinen
Nivalan Op	199	35.9	Markku Niskala
Op Kantrisalo	116	51.2	Bo Hellen
Orimattilan Op	297	56.1	Jukka Sipilä
Oripään Op	71	23.3	Jouko Rekolainen
Oulaisten Op	252	36.3	Mika Korkia-aho
Oulun Op	3,882	27.2	Timo Levo
Outokummun Op	178	72.5	Ari Karhapää
Paltamon Op	77	47.7	Jorma Niemi
Parikkalan Op	147	72.8	Tuomo Liukka
Pedersörenejdens Andelsbank	510	24.7	Thomas Hulten
Perhon Op	109	34.5	Pekka Pajula
Perhonjokilaakson Op	161	35.6	Asko Ahonen
Peräseinäjoen Op	133	42.2	Juha Mäki
Petäjäveden Op	98	49.8	Jaakko Ylitalo
Pohjois-Hämeen Op	489	39.1	Pertti Pyykkö
Pohjois-Karjalan Op	1808	37.3	Jaana Reimasto-Heiskanen
Pohjois-Savon Op	3194	41.7	Seppo Pääkkö
Pohjolan Op	1,554	28.9	Keijo Posio
Polvijärven Op	160	60.9	Ari Noponen
Posion Op	122	63.6	Vesa Jurmu
Pudasjärven Op	208	65.2	Pertti Purola
Pukkilan Op	96	53.1	Jari Toivanen
Pulkkilan Op	48	58.2	Marja Hyvärinen
Punkalaitumen Op	105	72.3	Petri Antila
Purmo Andelsbank	42	31.8	Tommy Olin
Päijät-Hämeen Op	1,795	33.5	Mika Kivimäki
Raahen seudun Op	461	42.0	Ari Pohjola
Rantasalmen Op	138	43.3	Kari Mäkelä
Rautalammin Op	81	36.2	Esko-Pekka Markkanen
Riistaveden Op	145	28.3	Pauli Kröger
Ruoveden Op	192	30.6	Leena Selkee
Ruukin Op	158	45.2	Kalle Arvio
Rymättylän Op	82	41.5	Minnaliisa Vehkala
Rääkkylän Op	87	51.3	Heli Silvennoinen

Sallan Op	97	46.5	Anne Harju
Sastamalan Op	325	32.9	Janne Pohjolainen
Satakunnan Op	532	58.6	Olli Näsi
Satapirkan Op	365	33.9	Antti Suomijärvi
Savitaipaleen Op	120	62.6	Samppa Oksanen
Siikajoen Op	51	44.0	Sakari Kangas
Siikalatvan Op	92	31.3	Ismo Välijärvi
Simpeleen Op	95	77.9	Asko Imppola
Suomenselän Op	667	31.4	Timo Suhonen
Suur-Savon Op	2411	38.9	Mikko Antikainen (vt. tj.)
Säkylän Op	102	53.7	Jari Katila
Taivalkosken Op	92	47.3	Piia Mourujärvi
Taivassalon Op	63	35.9	Jens Hildén
Tampereen Seudun Op	4,336	28.7	Jani Vilpponen
Tervolan Op	90	36.8	Hannu Neuvonen
Tervon Op	66	33.6	Jani Kääriäinen
Toholammin Op	123	34.2	Juha Pajumaa
Tornion Op	337	28.1	Terhi Luokkanen
Turun Seudun Op	3,926	18.8	Olli-Pekka Saario
Tuusniemen Op	149	33.0	Esa Simanainen
Tyrnävän Op	115	29.1	Antto Joutsiniemi
Ullavan Op	43	42.4	Pekka Haapakoski
Uudenmaan Op	3531	35.4	Juhani Rinta-Kartano
Utajärven Op	205	41.8	Terttu Hagelin
Vaara-Karjalan Op	473	54.4	Raili Hyvönen
Vaasan Op	1,059	25.7	Ulf Nylund
Vampulan Op	92	58.2	Kari Hänti
Vehmersalmen Op	95	45.6	Petri Tyllinen
Vesannon Op	76	53.0	Markku Niskanen
Vihannin Op	125	46.5	Jari Kantomaa
Vimpelin Op	91	62.9	Matti Mäkinen
Virtain Op	230	38.1	Ari Kakkori
Ylitornion Op	112	60.3	Laura Harju-Autti
Ylä-Kainuun Op	282	45.1	Eija Sipola
Yläneen Op	82	50.3	Heikki Eskola
Ylä-Savon Op	510	42.1	Mikko Paananen
Ypäjän Op	74	51.4	Kirsi-Marja Hiidensalo

Structured entities included in the consolidated financial statements

OP Financial Group both acts as investor and manages various mutual funds in order to gain investment income and various commissions. The financial statements of OP Financial Group include the accounts of 0 (0) mutual fund and of 2 (2) real estate funds. These funds that have been classified as structured entities because OP Financial Group's control is not based on votes but the control of significant operations, exposure to variable returns from the fund, and organising the fund's management. These funds also involve non-controlling interests most relevant to the Group.

The table below structured entities with a significant number of non-controlling interests

Name	Place of business	Main line of business	Interest, % 2019	Interest, % 2018	Non-controlling interests, %
Real Estate Funds of Funds II Ky	Helsinki	Real Estate Fund	27.8	27.8	72

Summary of financial information on subsidiaries with a significant proportion of non-controlling interests

The table below presents a summary of financial information on subsidiaries with a significant proportion of non-controlling interests from OP Financial Group's perspective. The financial information corresponds to the figures presented in the financial statements of the subsidiaries to which, for example, fair value adjustments have been made to correspond to OP Financial Group's accounting policies. The figures below are before the elimination of internal transactions.

Balance sheet in summary	Real Estate Fund of Funds II Ky	
EUR million	2019	2018*
Cash and cash equivalents	0	4
Investments	10	21
Other assets	1	1
Total assets	**11**	**26**
Other liabilities		0
Total liabilities		0
Net assets	**11**	**26**
Accrued share of non-controlling interests	8	18
Statement of comprehensive income in summary		
Net sales	1	4
Profit or loss of continuing operations after tax	3	3
Other comprehensive income		-1
Comprehensive income	**3**	**2**
Comprehensive income attributable to non-controlling interests	2	1
Share of profit paid to non-controlling interests	6	2
Cash flows in summary		
Net cash flow from operating activities	0	-2
Net cash flow from investing activities	14	19
Net cash flow from financing activities	-17	-14
Net change in cash flows	-4	**3**
Cash and cash equivalents at year start	4	0
Cash and cash equivalents at year end	0	4

* Group figures

Joint operations

Some 895 (958) property companies are incorporated into OP Financial Group's financial statements as joint operations by consolidating the proportionate share of OP Financial Group's holding of the property company's assets. Classification into joint operations has been made according to the nature of the business although OP Financial Group has control over some of the property companies. The shares of the property companies entitle to the occupancy of certain apartments some of which are in OP Financial Group's own use. Each shareholder of the mutual real estate company is responsible for their share of the company's loans. Some of these joint operations form OP Financial Group's branch network in Finland and they are included in Note 24 Property, plant and equipment on the balance sheet. The rest of the property companies are investment property holdings included in Notes 20. In 2019, Vallila Rahasto Ky's assets of EUR 314 million have been transferred to non-current assets held for sale on the balance sheet.

Summary of the effect of consolidation of joint operations on the balance sheet

EUR million	31 Dec 2019	31 Dec 2018
Land	111	140
Buildings	826	1,196
Total assets	937	1,336
Total liabilities	2	3

Most significant joint operations consolidated into OP Financial Group's financial statements in 2019

Name	Domicile	Sector	Holding, %
Asunto Oy Oulun Kalevankulma	Oulu	Property holding and management	100.0
Kiinteistö Oy Ansatie 5	Helsinki	Property holding and management	100.0
Kiinteistö Oy Arkadiankatu 23	Helsinki	Property holding and management	100.0
Kiinteistö Oy Hämeenkivi	Tampere	Property holding and management	100.0
Kiinteistö Oy Jyväskylän Kassatalo	Jyväskylä	Property holding and management	100.0
Kiinteistö Oy Kaisaniemenkatu 1	Helsinki	Property holding and management	22.4
Kiinteistö Oy Koskikatu 9	Joensuu	Property holding and management	57.5
Kiinteistö Oy OPK-Vallila	Helsinki	Property holding and management	100.0
Kiinteistö Oy Tampereen Hämeenkatu 12	Tampere	Property holding and management	100.0
Kiinteistö Oy Uusi Paino	Helsinki	Property holding and management	100.0
Kiinteistö Oy Vammalan Torikeskus	Vammala	Property holding and management	100.0
Kiinteistö Oy Vääksyntie 2	Helsinki	Property holding and management	100.0
Kiinteistö Oy Vääksyntie 4	Helsinki	Property holding and management	100.0
Mikkelin Forum Oy	Mikkeli	Property holding and management	87.1
As Oy Lappeenrannan Mariankulma	Lappeenranta	Property holding and management	100.0
Companies owned by OP Corporate Bank Group			
Kiinteistö Oy Kanta-Sarvis II	Tampere	Property holding and management	100.0
Kiinteistö Oy Helsingin Puutarhurinkuja 2	Helsinki	Property holding and management	100.0
Kiinteistö Oy STC Viinikkala	Vantaa	Property holding and management	100.0
Kiinteistö Oy Grand Cargo Terminal 1	Helsinki	Property holding and management	100.0
Kiinteistö Oy Grand Cargo Terminal 2	Vantaa	Property holding and management	100.0
Kiinteistö Oy Vantaan Kisällintie 13	Vantaa	Property holding and management	100.0
Tikkurilan Kauppatalo Oy	Vantaa	Property holding and management	53.7
Kiinteistö Oy Kouvolan Karhut	Helsinki	Property holding and management	100.0
Kiinteistö Oy Vuosaaren Pohjoinen Shopping centres	Helsinki	Property holding and management	100.0
Kiinteistö Oy Kanta-Sarvis I	Helsinki	Property holding and management	50.0
Kiinteistö Oy Koskitammi	Tampere	Property holding and management	100.0
Kiinteistö Oy Kuopion Isabella	Kuopio	Property holding and management	100.0
Kiinteistö Oy Oulun Kiilakivi	Oulu	Property holding and management	100.0
Kiinteistö Oy Turun Joukahaisenkatu 9	Turku	Property holding and management	100.0
Kiinteistö Oy Helsingin Frantseninkatu 13	Helsinki	Property holding and management	100.0
Kiinteistö Oy Topeliuksenkatu 41b	Helsinki	Property holding and management	50.0
Kiinteistö Oy Asiakkaankatu 3	Helsinki	Property holding and management	100.0
Kiinteistö Oy Tuusulan Jatke	Tuusula	Property holding and management	100.0
Keskinäinen Kiinteistö Oy Marikko	Helsinki	Property holding and management	100.0
Kiinteistö Oy Helsingin Kaarlenkadun Fenno	Helsinki	Property holding and management	100.0
Kiinteistö Oy Koivuhaan Yrityskeskus	Vantaa	Property holding and management	100.0
Kiinteistö Oy Aleksis Kiven katu 21-23	Helsinki	Property holding and management	50.0

Most significant joint operations consolidated into OP Financial Group's financial statements in 2018

Name	Domicile	Sector	Holding, %
Asunto Oy Oulun Kalevankulma	Oulu	Property holding and management	100.0
Kiinteistö Oy Ansatie 5	Helsinki	Property holding and management	100.0
Kiinteistö Oy Arkadiankatu 23	Helsinki	Property holding and management	100.0
Kiinteistö Oy Hämeenkivi	Tampere	Property holding and management	100.0
Kiinteistö Oy Jyväskylän Kassatalo	Jyväskylä	Property holding and management	100.0
Kiinteistö Oy Kaisaniemenkatu 1	Helsinki	Property holding and management	22.4

Kiinteistö Oy Koskikatu 9	Joensuu	Property holding and management	60.1
Kiinteistö Oy OPK-Vallila	Helsinki	Property holding and management	100.0
Kiinteistö Oy Quartetto Intermezzo	Helsinki	Property holding and management	100.0
Kiinteistö Oy Tampereen Hämeenkatu 12	Tampere	Property holding and management	100.0
Kiinteistö Oy Uusi Paino	Helsinki	Property holding and management	100.0
Kiinteistö Oy Vammalan Torikeskus	Vammala	Property holding and management	100.0
Kiinteistö Oy Vääksyntie 2	Helsinki	Property holding and management	100.0
Kiinteistö Oy Vääksyntie 4	Helsinki	Property holding and management	100.0
Mikkelin Forum Oy	Mikkeli	Property holding and management	87.1
As Oy Lappeenrannan Mariankulma	Lappeenranta	Property holding and management	100.0
Companies owned by OP Corporate Bank Group			
Kiinteistö Oy Kanta-Sarvis II	Tampere	Property holding and management	100.0
Kiinteistö Oy Helsingin Puutarhurinkuja 2	Helsinki	Property holding and management	100.0
Kiinteistö Oy STC Viinikkala	Vantaa	Property holding and management	100.0
Kiinteistö Oy Grand Cargo Terminal 1	Helsinki	Property holding and management	100.0
Kiinteistö Oy Grand Cargo Terminal 2	Vantaa	Property holding and management	100.0
Kiinteistö Oy Vantaan Kisällintie 13	Vantaa	Property holding and management	100.0
Tikkurilan Kauppatalo Oy	Vantaa	Property holding and management	53.7
Kiinteistö Oy Vuosaaren Pohjoinen Shopping centres	Helsinki	Property holding and management	100.0
Kiinteistö Oy Kanta-Sarvis I	Helsinki	Property holding and management	50.0
Kiinteistö Oy Koskitammi	Tampere	Property holding and management	100.0
Kiinteistö Oy Kuopion Isabella	Kuopio	Property holding and management	100.0
Kiinteistö Oy Oulun Kiilakivi	Oulu	Property holding and management	100.0
Kiinteistö Oy Turun Joukahaisenkatu 9	Turku	Property holding and management	100.0
Kiinteistö Oy Helsingin Frantseninkatu 13	Helsinki	Property holding and management	100.0
Kiinteistö Oy Topeliuksenkatu 41b	Helsinki	Property holding and management	50.0
Kiinteistö Oy Asiakkaankatu 3	Helsinki	Property holding and management	100.0
Kiinteistö Oy Tuusulan Jatke	Tuusula	Property holding and management	100.0
Keskinäinen Kiinteistö Oy Marikko	Helsinki	Property holding and management	100.0
Kiinteistö Oy Helsingin Kaarlenkadun Fenno	Helsinki	Property holding and management	100.0
Kiinteistö Oy Koivuhaan Yrityskeskus	Vantaa	Property holding and management	100.0

The consolidated financial statements include the share of assets and related liabilities under joint control.

Interests in unconsolidated structured entities

OP Fund Management Company Ltd within OP Financial Group manages OP Mutual Funds OP Fund Management Company Ltd uses OP Asset Management Ltd as the portfolio manager for many of the mutual funds it manages In addition, OP Property Management Ltd within the Group manages several real estate funds. In many funds, the fund management company controls significant operations by making investment decisions in accordance with the fund rules. OP Financial Group companies have no interests in the funds managed by the abovementioned companies that would significantly expose the Group to the varying return on the investment and would thereby cause a consolidation obligation.

OP Financial Group receives management fee income from unconsolidated funds that is included in net commissions and fees in the income statement. In addition, OP Financial Group as investor receives from unconsolidated funds income which is recognised in net investment income, depending on in which balance sheet item the investments are recognised in the balance sheet.

OP Financial Group's investments in OP Mutual Funds and the funds of OP Property Management Ltd have been recognised in investment property in the balance sheet. The Group's risk of loss is limited to the investment's balance sheet value. Investments in mutual funds managed by OP Financial Group totalled 236 million (249) on 31 December 2019.

Note 46. Information by country

OP Corporate Bank plc has branches engaged in banking in Estonia, Latvia and Lithuania. In addition, it has subsidiaries in Estonia, Latvia and Lithuania engaged in finance-company operations.

Name		Domicile
OP Corporate Bank plc Estonian Branch	Branch	Estonia
OP Corporate Bank plc Latvian Branch	Branch	Latvia
OP Corporate Bank plc Lithuanian Branch	Branch	Lithuania
OP Finance AS	Subsidiary	Estonia
"OP Finance" SIA	Subsidiary	Latvia
UAB "OP Finance"	Subsidiary	Lithuania

				31 Dec 2019
Financial information, EUR million	Estonia	Latvia	Lithuania	Total
Total operating income	13	14	21	**47**
Total EBIT	3	4	13	**20**
Total current tax	0	0	2	**2**
Total personnel in man-years	35	27	38	**100**

				31 Dec 2018
Financial information, EUR million	Estonia	Latvia	Lithuania	Total
Total operating income	11	10	16	**36**
Total EBIT	4	3	7	**14**
Total current tax	0	0	1	**1**
Total personnel in man-years	127	75	92	**294**

Note 47. Related-party transactions

The related parties of OP Financial Group include associates, administrative personnel and other related party companies. The administrative personnel comprise OP Financial Group's Executive Chairman (Chairman of the Executive Board of OP Cooperative), President of OP Cooperative, members and deputy members of the Executive and Supervisory Boards and their close relatives. Related parties also include companies over which a person among administrative personnel or his close family member exercises significant influence. Other entities regarded as related parties include OP Bank Group Pension Fund and OP Bank Group Pension Foundation.

Standard terms and conditions for credit are applied to loans granted to the related parties. Loans are tied to generally used reference rates.

The period of notice observed by OP Financial Group's Executive Chairman, other OP Central Cooperative's Executive Board members and a deputy member and the employer is a maximum of 6 months. Upon termination of employment in cases specifically stipulated in the executive contract, the Executive Chairman and CEO is entitled to a severance pay and a sum equivalent to a maximum of 12 months' pay, while other Board members, deputy members and the Chief Audit Officer are entitled to a sum equivalent to a maximum of 6 months' pay.

Related-party transactions 2019

EUR 1,000	Associates	Administrative personnel	Others
Loans	260,714	2,345	
Receivables	16	49	
Deposits	15,284	1,999	61,738
Interest income		31	
Interest expenses		1	15
Insurance premium revenue	25	54	6,774
Commission income	202	13	188
Commission expenses	8	13	3
Salaries and other short-term benefits, and performance-based pay			
Salaries and other short-term benefits		4,147	
Related-party holdings			
Number of participations		62	

Related-party transactions 2018

EUR 1,000	Associates	Administrative personnel	Others
Loans	270,517	1,990	
Receivables	17	55	
Deposits	14,253	2,832	50,646
Interest income		31	
Interest expenses		2	61
Insurance premium revenue	24	67	7,254
Commission income	171	19	310
Commission expenses	8	20	9
Salaries and other short-term benefits, and performance-based pay			
Salaries and other short-term benefits		3,838	
Related-party holdings			
Number of participations		85	

Pension obligations regarding members of the Executive Board

OP Cooperative has an Executive Management Team acting as a board of directors. The Executive Management Team comprises a chair called as President and Group Chief Executive Officer; a deputy to the President and Group Chief Executive Officer; and a minimum of four and a maximum of nine other members and a maximum of four deputy members.

The President and Group Chief Executive Officer's retirement age is 65. Pension benefits are determined in accordance with pension laws and OP Financial Group's own pension plans. The President and Group Chief Executive Officer is covered by OP Bank Group Pension Foundation's supplementary pension scheme. Pension accrued under the supplementary pension scheme may begin to be disbursed as a paid-up pension before the old-age pension if employment with OP Financial Group terminates. The supplementary pension insurance of the President and Group Chief Executive Officer did not incur costs in 2019.

The retirement age of other Executive Management Team members who became members before 2018 and the Chief Audit Executive is 63 years. The retirement age of Executive Board members who became members in 2018 corresponds to the lowest pensionable age under TyEL. Pension benefits are determined in accordance with pension laws and OP Financial Group's own pension plans. Note 34 provides more detailed information on OP Financial Group's pension plans.

EUR 1,000	2019	2018*
Pension costs under TyEL plan*	116	538
Pension obligation under TyEL plan	293	187
Pension costs of defined contribution plans under TyEL	927	
IFRS expense of voluntary supplementary pension	418	386
Pension obligation of voluntary supplementary pension	9,454	4,074
Pension costs of supplementary defined contribution plans	263	105

* IFRS expense has been used for the portion of the TyEL defined benefit plan and the equalisation portion of an employee's contribution less the employee's portion of the contribution has been used for the defined contribution plan.

Note 48. Variable remuneration

Personnel fund

About 95% of all personnel are members of OP Financial Group's Personnel Fund.

Payment of profit-based bonuses to OP Financial Group's Personnel Fund in 2019 was based on the achievement of the following targets: OP Financial Group's EBT with a weight of 60%, use of digital services with a weight of 20%, service encounter NPS with a weight of 15% and brand NPS with a weight of 5%. Profit-based bonuses for 2019 transferred to the Fund account for some 2.0% (1.8) of the combined salaries and wages earned by the Fund's members. The bonuses recognised in 2019 totalled EUR 13 million (6).

Long-term remuneration schemes

OP Financial Group's remuneration schemes are in compliance with regulation in the financial sector and are based on OP Financial Group's strategic targets

OP Financial Group's variable remuneration principles take account of the Group's risk exposure and risk management methods. The performance indicator targets have been set at a level that does not encourage excessive risk-taking. Long-term variable remuneration is based on reaching OP Financial Group's targets, whereas short-term variable remuneration is based on how an individual Group company or business unit reaches its targets. The maximum amount of remuneration is limited in all schemes.

Long-term scheme

Managers and designated persons in key positions in OP Central Cooperative Consolidated and Group member banks and their subsidiaries, whom the board of directors of the company in question or the OP Cooperative's Supervisory Board have appointed, are included in the long-term management remuneration scheme. The 2014–2016 scheme covers some 270 (270) persons, the 2017–2019 scheme some 300 (310) persons.

The scheme consists of consecutive three-year performance periods. The bonus for the performance period of 2014–2016 will be paid after a deferment period in three equal instalments by the end of each June from 2018 to 2020. Bonuses for the performance period of 2017–2019 will be paid in four equal instalments between 2020 and 2023. The bonus will be paid to members of OP Cooperative's Executive Management Team in six equal instalments between 2020 and 2025.

During the performance period of 2014–2016, it was possible to annually earn bonuses equalling a person's 2–8-month salary and the targets were achieved at around 57%. During the performance period of 2017–2019, it was possible to annually earn bonuses equalling a person's 1–8-month salary and the targets were achieved at around 13%.

Performance metrics under the long-term scheme

The Supervisory Board of OP Cooperative determines the performance indicators for the scheme and targets set for them separately for each performance period.

In setting targets for the 2014–16 scheme, OP has taken account of the Capital Requirements Directive IV (CRD IV) of the European Parliament and of the Council, which will limit the maximum variable remuneration to the amount of a person's annual fixed remuneration. The targets for the 2014–16 are based on the following criteria:
- OP Financial Group's EBT
- OP Financial Group's CET1
- Growth in the number of customers using OP as their main bank and insurer

The targets set for the 2017–19 scheme are in line with the strategy in force and are based on the following criteria:
- OP Financial Group's EBT
- Use of digital services
- Service encounter NPS
- Brand NPS

The Group-level targets are the same in the management incentive scheme and in OP Financial Group's Personnel Fund.

Determination and payout of bonuses under the long-term scheme

At the beginning of the scheme for 2014–16, bonuses were determined in euro terms and bonuses that may be paid under the scheme will be paid in terms of debentures issued by OP. The earned euro bonus will be converted into the number of debentures once the outcome of the scheme is known. An amount paid in cash will be deducted from the bonus to cover related taxes and fiscal charges. During the financial year, OP Cooperative's Supervisory Board decided to change the scheme terms in such a way that the bonus will be paid in cash unless deferral procedures under regulation are applied to the person concerned. In such a case, half of the bonus payout is tied to a reference instrument decided by OP Cooperative's Supervisory Board or the Remuneration Committee it has appointed.

Bonuses for 2017–19 will be paid in cash unless deferral procedures under regulation are applied to the person.

Bonuses for the 2014–2016 scheme will be paid to their beneficiaries provided that OP Financial Group's FiCo capital adequacy is 1.30 or higher on the payout date. Bonuses for the 2017–2019 scheme will be paid to their beneficiaries provided that OP Financial Group's CET1 ratio exceeds the CET1 buffer set by the ECB + 3% on the bonus payout date and OP Financial Group's LCR is less than 110% in the financial statements preceding the year of the bonus payout date, and that the person within the scheme is employed by OP Financial Group up to the payout date.

Expenses for both schemes are recognised from the beginning of the performance period up to the date of payment (vesting period) as personnel costs, and the equivalent liability is recognised under deferred expenses. A liability recognised under the scheme amounted to EUR 7.6 million (19.3) on 31 December 2019.

OP Cooperative's Supervisory Board or the Remuneration Committee it has appointed manages the long-term scheme and supervises compliance with it. OP Cooperative's Supervisory Board may exercise discretion to change the terms and conditions of the scheme and defer bonus payout for compelling reasons.

In June 2019, the Supervisory Board of OP Cooperative decided not to initiate a new performance period for the long-term management remuneration scheme in 2020. OP Financial Group's variable remuneration comprises short-term remuneration and the personnel fund. Group-level strategic goals and targets will be taken into account in the metrics of short-term remuneration and the personnel fund.

Short-term remuneration schemes

The short-term remuneration performance period is 6 or 12 months. Short-term remuneration schemes are based on targets set for each company, team and person derived from an annual, covering all personnel of OP Financial Group.

The bonus is determined by the job grade and the maximum bonuses correspond to a 1–4-month annual salary. The maximum bonuses for separately specified duties may not exceed the amount equalling the person's annual salary.

Performance metrics of short-term remuneration

A factor applies to the bonus created through the achievement of the targets achieved in the central cooperative consolidated that is based on OP Financial Group's EBT. Targets shown in the balanced scorecards and derived from annual planning are decided by the business lines/functions.

Short-term remuneration in OP cooperative banks is based on shared bank-level targets and personal targets. Customer experience, sales and the strategy-based targets for growth and digitality are highlighted in the metrics.

Determination and payout of bonuses under the short-term scheme

Like in long-term remuneration, bonuses will be paid to their beneficiaries provided that OP Financial Group's CET1 ratio exceeds the CET1 buffer set by the ECB + 3% on the bonus payout date and the LCR is less than 110% in the financial statements preceding the year of the bonus payout date, and that the person within the scheme is employed by OP Financial Group up to the payout date. Bonus payout in OP cooperative banks requires that the bank's customer business show profit.

Bonuses earned based on the balanced scorecard will be reduced before bonus payout if binding internal guidelines within the Group or task or regulatory requirements have been ignored and risk management elements have been materialised. If an offence or negligence becomes apparent only after the bonus payout, bonus reduction or clawback can also be applied retrospectively.

Expenses for the scheme are recognised from the beginning of the performance period up to the date of payout (vesting period) as personnel costs, and the equivalent liability is recognised under deferred expenses.

OP Cooperative's Supervisory Board decides on the terms and conditions of OP Financial Group's short-term remuneration scheme, maximum bonuses based on job grades and a structural framework within which OP Cooperative's Executive Management Team and OP cooperative banks' boards of directors can select the scheme metrics and set related targets.

Deferment of variable remuneration

The Act on Credit Institutions (610/2014) prescribes payment of variable remuneration to persons whose action may cause significant risk to the company ("identified staff"). OP Financial Group's identified staff includes CEOs/Managing Directors and other key management personnel as well as those involved in internal control.

The deferral of variable remuneration payment and variable bonuses paid in cash other than on a fifty-fifty basis apply to the identified staff of OP Financial Group or its company if their variable remuneration for a 12-month performance period exceeds EUR 50,000 – the maximum recommended by the Financial Supervisory Authority. The remuneration of the identified staff is reviewed up to the EUR 50,000 deferment limit as a whole, considering both long- and short-term remuneration.

If the euro maximum for deferment is exceeded, some bonus will be paid immediately, while the rest is deferred and the deferred bonus will be paid in equal instalments within the next three years (within the next five years for the Executive Board). In such a deferment situation, half of the variable remuneration is paid in cash and half is tied to the value of the reference instrument decided by OP Cooperative's Supervisory Board or the Remuneration Committee appointed by the Supervisory Board. The bonus tied to the reference instrument will be paid to its beneficiary after a one-year retention period.

Remuneration for persons in charge of control duties

The remuneration objectives of persons in charge of control duties independent of business lines, such as risk management, internal audit, compliance and actuarial duties, may not jeopardise the independence of the duties. Variable remuneration must be independent of the business line under control and the Chief Risk Officer's metrics may not include any direct sales-based targets. It is also recommended that the balanced scorecard also includes a qualitative metric that measures the performance of control duties.

Monitoring of OP Financial Group's remuneration

OP Financial Group monitors the market consistency of its total remuneration on a regular basis using various salary surveys.

The Remuneration Committee appointed by OP Cooperative annually monitors how paid bonuses are in proportion to OP Financial Group's success vis-à-vis benchmark companies and refunds paid to customers. OP Financial Group also makes internal, Group-level comparisons of remuneration and structures on a regular basis.

Expenses recognised for variable remuneration*

EUR million	2019	2018*
Personnel fund	13	6
Short-term schemes	35	28
Long-term schemes:		
Scheme for 2014–16	0	2
Scheme for 2017–19	-5	4
Total	**43**	**41**

* Excl. social expenses.

More information on the remuneration schemes is available at www.op.fi.

Note 49. Loss allowance regarding receivables and notes and bonds

Credit risk exposures and related loss allowance

A description of OP Financial Group's credit risk formation and management can be found in section 4 of Note 2. The measurement principles of expected credit losses are described in section 5.4 Impairment of Note 1.

Expected credit losses are calculated on receivables measured at amortised cost and notes and bonds recognised at fair value through other comprehensive income (investments in bonds). OP Financial Group receivables include loans, standby credit facilities (e.g. credit cards and accounts with credit facility and lease and factoring receivables). In addition, expected credit losses are calculated on off-balance-sheet items, such as loan commitments, credit facilities and bank guarantees. However, notes and bonds are investments in bonds. For expected credit losses, loss allowance is recognised in the balance sheet or in the case of notes and bonds in other comprehensive income.

The following factors, for example, affect the amount of expected credit losses: exposure amount, exposure validity, customer borrower grade and collateral value as well as forward-looking information.

The following table shows the receivables which are exposed to credit risk and on which expected credit loss is calculated. Here the on-balance-sheet and off-balance sheet exposures also describe the maximum exposure amount exposed to credit risk, excluding collateral securities or other arrangements that improve credit quality. The off-balance sheet exposure represents the exposure amount binding on the bank or the guarantee amount.

The agreements have been grouped to correspond to OP Financial Group's new segments effective since 1 January 2019. The comparatives have been restated accordingly.

Exposures within the scope of accounting for expected credit losses by impairment stage 31 December 2019

Exposures	Stage 1	Stage 2			Stage 3*	
EUR million		Not more than 30 DPD	More than 30 DPD	Total		Total exposure
Receivables from customers (gross)						
Retail Banking	60,605	6,778	173	6,951	909	68,464
Corporate Banking	25,103	1,388	306	1,693	384	27,180
Total	**85,707**	**8,166**	**479**	**8,645**	**1,292**	**95,644**
Off-balance-sheet limits						
Retail Banking	5,218	354	7	361	11	5,589
Corporate Banking	4,674	318	151	470	60	5,204
Total	**9,892**	**673**	**158**	**830**	**71**	**10,793**
Other off-balance-sheet commitments						
Retail Banking	2,775	94		94	12	2,881
Corporate Banking	7,011	1,216		1,216	70	8,297
Total	**9,786**	**1,309**		**1,309**	**82**	**11,178**
Notes and bonds						
Other Operations	12,259	93		93		12,352
Insurance	3,936	4		4	10	3,950
Total	**16,196**	**97**		**97**	**10**	**16,302**
Total exposures within the scope of accounting for expected credit losses	**121,581**	**10,245**	**637**	**10,881**	**1,455**	**133,918**

* A total of 41 million euros of Stage 3 exposures are purchased or originated credit-impaired financial assets (POCI).

Loss allowance by stage 2019

On-balance-sheet exposures and related off-balance-sheet limits*	Stage 1	Stage 2			Stage 3****	
EUR million		Not more than 30 DPD	More than 30 DPD	Total		Total loss allowance
Receivables from customers						
Retail Banking	-16	-54	-3	-57	-188	-261
Corporate Banking	-25	-18	-3	-21	-248	-294
Total	**-40**	**-72**	**-6**	**-78**	**-436**	**-555**
Off-balance-sheet commitments**						
Retail Banking	-1	-1		-1	0	-2
Corporate Banking	-2	-4		-4	-10	-16
Total	**-3**	**-5**		**-5**	**-10**	**-18**
Notes and bonds***						
Other Operations	-2	-1		-1		-3
Insurance	-4	-1		-1	-5	-10
Total notes and bonds	**-6**	**-1**		**-1**	**-5**	**-13**
Total	**-49**	**-79**	**-6**	**-85**	**-451**	**-585**

* Loss allowance for on- and related off-balance sheet limits is recognised as one component to deduct the balance sheet item.

** Loss allowance is recognised in provisions and other liabilities in the balance sheet.

*** Loss allowance is recognised in the fair value reserve in other comprehensive income.

****EUR 8 million of Stage 3 loss allowance relates to purchased or originated credit-impaired financial assets (POCI).

The table below shows a summary of loss allowance relative to the exposure amount by impairment stage. The coverage ratio describes the ratio of loss allowance to exposure amount.

Summary and key indicators 31 December 2019	Stage 1	Stage 2			Stage 3	
		Not more than 30 DPD	More than 30 DPD	Total		Total
Receivables from customers; on-balance-sheet and off-balance-sheet items						
Retail Banking	68,597	7,226	180	7,406	931	76,934
Corporate Banking	36,788	2,922	457	3,379	514	40,681
Loss allowance						
Retail Banking	-17	-55	-3	-58	-188	-263
Corporate Banking	-27	-22	-3	-26	-258	-310
Coverage ratio, %						
Retail Banking	-0.02%	-0.76%	-1.67%	-0.78%	-20.22%	-0.34%
Corporate Banking	-0.07%	-0.77%	-0.71%	-0.76%	-50.12%	-0.76%
Receivables from customers; total on-balance-sheet and off-balance-sheet items	**105,386**	**10,148**	**637**	**10,784**	**1,445**	**117,615**
Total loss allowance	**-43**	**-77**	**-6**	**-83**	**-446**	**-573**
Total coverage ratio, %	**-0.04%**	**-0.76%**	**-0.98%**	**-0.77%**	**-30.86%**	**-0.49%**
Carrying amount, notes and bonds						
Other Operations	12,259	93		93		12,352
Insurance	3,936	4		4	10	3,950
Loss allowance						
Other Operations	-2	-1		-1		-3
Insurance	-4	-1		-1	-5	-10
Coverage ratio, %						
Other Operations	-0.02%	-0.81%		-0.81%		-0.02%
Insurance	-0.09%	-19.84%		-19.84%	-54.58%	-0.24%
Total notes and bonds	**16,196**	**97**		**97**	**10**	**16,302**
Total loss allowance	**-6**	**-1**		**-1**	**-5**	**-13**
Total coverage ratio, %	**-0.04%**	**-1.52%**		**-1.52%**	**-54.58%**	**-0.08%**

The agreements have been grouped to correspond to OP Financial Group's new segments effective since 1 January 2019. The comparatives have been restated accordingly.

Exposures within the scope of accounting for expected credit losses by impairment stage 31 December 2018*

Exposures	Stage 1	Stage 2			Stage 3**	
EUR million		Not more than 30	More than 30 DPD	Total		Total exposure
Receivables from customers (gross)						
Retail Banking	58,339	6,800	183	6,984	876	66,199
Corporate Banking	22,355	1,257	283	1,540	354	24,249
Total	**80,694**	**8,057**	**466**	**8,524**	**1,231**	**90,448**
Off-balance-sheet limits						
Retail Banking	5,755	237	1	238	9	6,001
Corporate Banking	4,443	512	139	651	86	5,180
Total	**10,198**	**749**	**141**	**889**	**94**	**11,181**
Other off-balance-sheet commitments						
Retail Banking	2,307	87		87	14	2,408
Corporate Banking	6,655	178		178	20	6,854
Total	**8,962**	**265**		**265**	**34**	**9,262**
Notes and bonds						
Other Operations	12,219	20		20		12,239
Insurance	4,677	313		313	11	5,001
Total	**16,896**	**332**		**332**	**11**	**17,240**
Total exposures within the scope of accounting for expected credit losses	**116,750**	**9,403**	**607**	**10,010**	**1,370**	**128,131**

* The amount of exposures within the scope of accounting has been specified as a result of the new division of segments.
** A total of 28 million euros of Stage 3 exposures are purchased or originated credit-impaired financial assets (POCI).

Loss allowance by stage 31 December

On-balance-sheet exposures and related off-balance-sheet limits*	Stage 1	Stage 2			Stage 3	
EUR million		Not more than 30 DPD	More than 30 DPD	Total		Total loss allowance
Receivables from customers						
Retail Banking	-12	-49	-3	-52	-202	-267
Corporate Banking	-25	-25	-3	-28	-206	-259
Total	**-37**	**-74**	**-6**	**-81**	**-409**	**-526**
Other off-balance-sheet commitments**						
Retail Banking	-1	-1		-1		-2
Corporate Banking	-2	-1		-1	0	-4
Total	**-3**	**-3**		**-3**	**0**	**-6**
Notes and bonds***						
Other Operations	-3	0		0		-3
Insurance	-3	-4		-4	-4	-11
Total notes and bonds	**-6**	**-4**		**-4**	**-4**	**-14**
Total	**-46**	**-81**	**-6**	**-87**	**-413**	**-546**

* Loss allowance for on- and related off-balance sheet limits is recognised as one component to deduct the balance sheet item.

** Loss allowance is recognised in provisions and other liabilities in the balance sheet.

*** Loss allowance is recognised in the fair value reserve in other comprehensive income.

****EUR 6 million of Stage 3 loss allowance relates to purchased or originated credit-impaired financial assets (POCI).

The table below shows a summary of loss allowance relative to the exposure amount by impairment stage. The coverage ratio describes the ratio of loss allowance to exposure amount.

Summary and key indicators 31 December 2018	Stage 1	Stage 2			Stage 3	
		Not more than 30 DPD	More than 30 DPD	Total		Total
Receivables from customers; on-balance-sheet and off-balance-sheet items						
Retail Banking	66,401	7,124	185	7,308	899	74,609
Corporate Banking	33,453	1,947	422	2,369	460	36,282
Loss allowance						
Retail Banking	-13	-50	-3	-54	-202	-269
Corporate Banking	-27	-26	-3	-30	-207	-263
Coverage ratio, %						
Retail Banking	-0.02%	-0.71%	-1.71%	-0.73%	-22.51%	-0.36%
Corporate Banking	-0.08%	-1.36%	-0.74%	-1.25%	-44.93%	-0.73%
Receivables from customers; total on-balance-sheet and off-balance-sheet items	**99,854**	**9,071**	**607**	**9,678**	**1,359**	**110,891**
Total loss allowance	**-40**	**-77**	**-6**	**-83**	**-409**	**-532**
Total coverage ratio, %	**-0.04%**	**-0.85%**	**-1.03%**	**-0.86%**	**-30.09%**	**-0.48%**
Carrying amount, notes and bonds						
Other Operations	12,219	20		20		12,239
Insurance	4,677	313		313	11	5,001
Loss allowance						
Other Operations	-3	0		0		-3
Insurance	-3	-4		-4	-4	-11
Coverage ratio, %						
Other Operations	-0.02%	-0.85%		-0.85%		-0.02%
Insurance	-0.07%	-1.20%		-1.20%	-34.32%	-0.22%
Total notes and bonds	**16,896**	**332**		**332**	**11**	**17,240**
Total loss allowance	**-6**	**-4**		**-4**	**-4**	**-14**
Total coverage ratio, %	**-0.04%**	**-1.18%**		**-1.18%**	**-34.32%**	**-0.08%**

Collateral and other arrangements improving credit quality

OP Financial Group's credit risk management measures to reduce credit risk are described in Note 2, section 4. The most common measures to reduce credit risk is to use various collateral securities. Home loans and standby credit facilities are the largest credit groups among households. Home loans account for 77% (73%) of household exposures. Residential property is typically used as collateral for home loans.

The table below presents a breakdown of home loans on 31 December 2019 by LTV level with loss allowance. The LTV (loan-to-value) ratio describes the loan's balance sheet value relative to the fair value of the residential property collateral. The loan may also have other collateral securities but these have not been taken into account in the table. The lower the LTV ratio, the larger the collateral value in relation to the loan amount. Loss allowance is lower in relative terms, the lower the LTV ratio is.

31 Dec 2019	Total home loans	
LTV %, EUR million	Exopsure amount in balance sheet	Loss allowanceä
0–50%	8,912	0
51–70%	16,930	-5
Over 70%	13,008	-23
Total	**38,851**	**-28**

31 Dec 2018	Total home loans	
LTV %, EUR million	Exopsure amount in balance sheet	Loss allowanceä
0–50%	8,491	0
51–70%	16,911	-6
Over 70%	12,582	-20
Total	**37,984**	**-25**

Changes in loss allowance during financial year

The table below shows the change in loss allowance by impairment stage during 2019 in respect of the effect of the following factors:

Note 1, section 5.4.1 describes impairment stages.

Receivables from customers and off-balance-sheet items, EUR million	Stage 1	Stage 2	Stage 3	
	12 months	Lifetime	Lifetime	Total
Loss allowance 1 January 2019	**40**	**83**	**409**	**532**
Transfers from Stage 1 to Stage 2	-3	22		19
Transfers from Stage 1 to Stage 3	-4		15	11
Transfers from Stage 2 to Stage 1	2	-11		-10
Transfers from Stage 2 to Stage 3		-14	33	19
Transfers from Stage 3 to Stage 2		5	-16	-11
Transfers from Stage 3 to Stage 1	1		-2	-2
Increases due to origination and acquisition	16	15	14	45
Decreases due to derecognition	-7	-14	-24	-44
Changes in risk parameters (net)	-1	-2	48	45
Decrease in allowance account due to write-offs	0	0	-31	-31
Net change in expected credit losses	**4**	**0**	**37**	**41**
Loss allowance 31 December 2019	**44**	**83**	**446**	**573**

Transfers from Stage 1 to State 3 compare the current year-end Stage 3 of a financial asset to the Stage 3 at the beginning of the year. Of these, some 90% (see the default capture rate below) have been reported in Stage 2 during 2019, so the agreements have, as a rule, transferred to Stage 3 through Stage 2. The agreement may transfer directly to Stage 3 due to external payment default.

Transfers from Stage 3 to Stages 2 or 1 compare the year-start Stage 3 with the year-end Stage 2 or 1. As the main rule, the transfers, however, took place within 2019 with a delay of three months.

The risk parameters included in the LDG model have been calibrated in the fourth quarter of the year by removing a cure rate from credit in debt collection. This increased stage 3 loss allowance by about EUR 12 million.

Notes and bonds, EUR million	Stage 1	Stage 2	Stage 3	
	12 months	Lifetime	Lifetime	Total
Loss allowance 1 January 2019	**6**	**4**	**4**	**14**
Transfers from Stage 1 to Stage 2	0	1		1
Transfers from Stage 1 to Stage 3	0		2	2
Transfers from Stage 2 to Stage 1	0	-2		-2
Transfers from Stage 3 to Stage 1	0		0	0
Increases due to origination and acquisition	2	0	0	2
Decreases due to derecognition	-2	-2	-1	-4
Changes in risk parameters (net)	0	0	0	0
Changes due to update in the methodology for estimation (net)	0			0
Net change in expected credit losses	**0**	**-2**	**1**	**-1**
Loss allowance 31 December 2019	**6**	**1**	**5**	**13**

The table below shows the change in loss allowance by impairment stage during 2018 in respect of the effect of the following factors:

Receivables from customers and off-balance-sheet items, EUR million	Stage 1	Stage 2	Stage 3	Total
	12 months	Lifetime	Lifetime	
Loss allowance 1 January 2018	**31**	**80**	**431**	**543**
Transfers from Stage 1 to Stage 2	-2	18		16
Transfers from Stage 1 to Stage 3	0		25	25
Transfers from Stage 2 to Stage 1	2	-16		-14
Transfers from Stage 2 to Stage 3		-8	23	15
Transfers from Stage 3 to Stage 2		9	-30	-21
Transfers from Stage 3 to Stage 1	1		-7	-6
Increases due to origination and acquisition	13	7	13	34
Decreases due to derecognition	-9	-12	-22	-43
Changes in risk parameters (net)	4	3	28	35
Decrease in allowance account due to write-offs	0	0	-52	-52
Net change in expected credit losses	**9**	**3**	**-22**	**-11**
Loss allowance 2018	**40**	**83**	**409**	**532**

In June 2018, forborne exposures were included as the qualitative criterion of a significant increase in credit risk, which slightly increased transfers from Stage 1 to Stage 2.

Transfers from Stage 1 to State 3 compare the current year-end Stage 3 of a financial asset to the Stage 3 at the beginning of the year. Of these, some 85% (see the default capture rate below) have been reported in Stage 2 during 2018, so the agreements have, as a rule, transferred to Stage 3 through Stage 2. The agreement may transfer directly to Stage 3 due to external payment default.

Transfers from Stage 3 to Stages 2 or 1 compare the year-start Stage 3 with the year-end Stage 2 or 1. As the main rule, the transfers, however, took place within 2018 with a delay of three months.

Risk parameters included in the LGD (loss given default) model have been calibrated during the financial year, for example, by reducing the recovery rate by –10 percentage points and removing it altogether from corporate exposures in bankruptcy. This is shown in an increase in loss allowance.

Notes and bonds, EUR million	Stage 1	Stage 2	Stage 3	
	12 months	Lifetime	Lifetime	Total
Loss allowance 1 January 2018	**5**	**0**	**0**	**5**
Transfers from Stage 1 to Stage 2	0	1		1
Transfers from Stage 1 to Stage 3	0		2	2
Transfers from Stage 2 to Stage 1	0	0		0
Transfers from Stage 2 to Stage 3		0	0	0
Transfers from Stage 3 to Stage 2		0	0	0
Transfers from Stage 3 to Stage 1	0		0	0
Increases due to origination and acquisition	2	3	2	7
Decreases due to derecognition	-2	0		-2
Changes in risk parameters (net)	0			0
Changes due to update in the methodology for estimation (net)	1		0	1
Net change in expected credit losses	**1**	**4**	**3**	**8**
Loss allowance 2018	**6**	**4**	**4**	**14**

The table below presents exposures of receivables in the balance sheet by rating and off-balance-sheet exposures, exposure amount after deducting collateral as well as loss allowance. Ratings 1–12 are used in the credit rating of public-sector entities and Ratings A–F in the credit rating of households. The ratings have been combined into the table in such a way that the corporate customer rating 1 comprises ratings 1 and 1.5 etc. The private customer rating A comprises A+, A and A- etc. Note 2, section 4 describes OP Financial Group's ratings. Net exposure has been calculated for each contract and it excludes overcollateralisation.

31 Dec 2019

EUR million	Balance sheet exposures			Off-balance-sheet exposure, gross			Net exposure after collateral			Loss allowance		
Rating	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
1	808			570			250			0		
2	2,513	8		1,742	4		2,016	8		0	0	
3	4,852	80		2,920	81		4,174	80		-1	0	
4	4,492	209		1,725	46		4,021	161		-1	0	
5	8,397	298		2,324	52		3,566	52		-2	0	
6	7,543	530		2,184	108		3,641	154		-5	-1	
7	5,428	702		1,369	181		2,732	246		-10	-5	
8	2,835	1,084		993	1,439		1,481	781		-15	-15	
9	5	576		5	89			166		0	-16	
10	0	267		1	69			69		0	-14	
11	0	0	638	3	0	144			350	0		-255
12			180			5			119			-106
A	32,535	257		3,669	0		5,609	30		0	0	
B	9,797	1,084		1,414	9		2,397	137		-1	0	
C	4,076	977		454	20		1,332	170		-2	-2	
D	2,407	1,147		303	26		855	228		-4	-5	
E	19	1,426		0	14			401		0	-26	
F			475			4			150			-85
Total	**85,707**	**8,645**	**1,292**	**19,679**	**2,137**	**153**	**32,074**	**2,681**	**619**	**-43**	**-83**	**-446**

31 Dec 2018

EUR million	Balance sheet exposures			Off-balance-sheet exposure, gross			Net exposure after collateral			Loss allowance		
Rating	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3
1	1,359	2		474	14		1,377	2				
2	2,031	2		851	16		1,853	2		1		
3	3,503	39		2,351	36		3,207	30		1		
4	4,534	145		2,289	139		4,089	118		2	0	
5	7,382	324		2,913	82		3,137	84		3	1	
6	6,179	530		1,963	140		2,701	160		5	2	
7	5,000	847		1,768	204		2,641	266		10	6	
8	3,874	915		842	265		793	273		11	10	
9		567			131			162			15	
10		302			17			83			15	
11			401			52			252			145
12			381						247			192
A	30,801	254		3,570	10		5,140	31		0		
B	9,832	1,422		1,344	12		2,324	182		1	0	
C	3,380	850		314	19		1,119	170		1	3	
D	2,828	913		171	15		593	209		4	8	
E		1,412			11			358			24	
F			448			3			141			73
Total	**80,702**	**8,524**	**1,230**	**18,851**	**1,109**	**55**	**28,974**	**2,131**	**640**	**40**	**83**	**409**

The majority of the loans have transferred to stage 2 in all ratings based on OP's relative SICR model. Payments past due over 30 days causes a transfer to stage 2 in most cases in the middle and lower level ratings. Forbearance measures cause a transfer to stage 2 in corporate customers more often in middle and lower level ratings whereas they affect transfers to stage 2 in all ratings in private customers.. The lowest ratings are classified into stage 2 based on an absolute rating limit. In the lowest ratings, in particular, there are several reasons for transfers to stage 2. Default is identified on a real-time basis, immediately causing a transfer to stage 3.

OP Financial Group may write off credit loss from financial assets in full or in part, but thereafter these will still be subject to collection measures. The amount of such financial assets were EUR 116 (99) million on 31 December 2019.

Significant increase in credit risk (SICR)

A significant increase in credit risk is discovered on a technical basis as presented in the accounting policies (Note 1 section 5.4.1).

The classification of contracts under SICR into similar groups in terms of credit risk is identical with lifetime PD (probability at default) models. Credit ratings are the most significant input data of the PD models. Both the current PDs and threshold PDs include forward-looking information (below).

The effectiveness of SICR is assessed on every reporting date using the following indicators:

The default capture rate measures how many contracts were in Stage 2 before it transferred to Stage 3. The rate was 90% on 31 December 2019 (84). The higher the rate is, the better the SICR model can capture a significant increase in credit risk. Contracts in Stage 2 accounted for 8% (8) of the entire non-default loan portfolio.

Forward-looking information included in the ECL measurement models

The assessment of SICR and the measurement of expected credit loss incorporate forward-looking information; OP Financial Group has analysed what macroeconomic variables have an explanatory significance to the credit risk amount.

The table below shows a summary of the values of the five most important macroeconomic variables for 2019–2048 used in the models (average, minimum and maximum) for three scenarios that have been used in the measurement of the expected credit loss. These values were used for all product groups on 31 January 2019.

Economic variable	Scenario	Average (%)	Minimum (%)	Maksimum (%)
GDP growth	Downside	0.5	-1.5	1.4
	Baseline	1.4	0.5	1.5
	Upside	2.0	1.4	2.5
Unemployment rate	Downside	8.7	6.5	9.0
	Baseline	6.9	6.5	7.0
	Upside	5.2	5.0	6.5
Investment growth %	Downside	0.5	-2.3	1.5
	Baseline	1.4	0.4	1.9
	Upside	2.3	1.5	4.8
House price index	Downside	1.0	-2.5	1.5
	Baseline	2.6	0.5	3.0
	Upside	3.8	0.5	4.0
12-month Euribor	Downside	0.6	-0.9	1.3
	Baseline	1.6	-0.3	2.3
	Upside	2.7	-0.3	3.3

On 31 December 2019, the probability weights of the scenarios were Downside 20%, Baseline 60% and Upside 20%.

The scenarios are based on the forecasts performed by OP Financial Group economists. The forecast process also takes account of comparable forecasts by external organisations, such as the OECD, International Monetary Fund, Bank of Finland, Ministry of Finance etc., as well as academic research.

The table below shows a summary of the values of the five most important macroeconomic variables for 2018–2046 used in the models (average, minimum and maximum) for three scenarios that have been used in the measurement of the expected credit loss. These values were used for all product groups on 31 January 2018.

Economic variable	Scenario	Average (%)	Minimum (%)	Maksimum (%)
GDP growth	Downside	0.6	-0.7	2.5
	Baseline	1.5	1.3	2.5
	Upside	2.2	2.0	3.8
Unemployment rate	Downside	8.8	7.6	9.0
	Baseline	7.0	7.0	7.6
	Upside	5.3	5.0	7.6
Investment growth %	Downside	0.7	-0.9	4.0
	Baseline	1.7	1.5	4.0
	Upside	2.6	2.0	7.0
House price index	Downside	1.1	-2.0	1.5
	Baseline	2.8	1.0	3.0
	Upside	4.1	1.0	5.5
12-month Euribor	Downside	1.2	-0.2	1.8
	Baseline	2.0	-0.1	2.5
	Upside	2.9	-0.1	3.3

On 31 December 2018, the probability weights of the scenarios were Downside 20%, Baseline 60% and Upside 20%.

The rationality of the used macroeconomic variables is assessed when reviewing the functionality of the models for PD, LGD, EAD and prepayment.

The table below shows loss allowance regarding significant receivables under various scenarios by impairment stage on 31 December 2019.

Total private customer and corporate customer exposures	Weighted loss allowance	Loss allowance under downside scenario	Loss allowance under baseline scenario	Loss allowance under upside scenario
Stage 1	42	45	42	40
Stage 2	83	87	83	79
Stage 3	435	435	435	435
Total	**560**	**568**	**561**	**554**

The table below shows loss allowance regarding significant receivables under various scenarios by impairment stage on 31 December 2018.

Total private customer and corporate customer exposures	Weighted loss allowance	Loss allowance under downside scenario	Loss allowance under baseline scenario	Loss allowance under upside scenario
Stage 1	37	40	36	33
Stage 2	83	88	83	78
Stage 3	409	409	409	409
Total	**529**	**537**	**528**	**520**

As a rule, loss allowance is the largest under the downside scenario. Private customer loans are mainly variable rate loans, so an increase in interest rates has a major effect on PD parameters. This is why loss allowance of private customers in Stage 1 is the highest under the upside scenario because the 12-month Euribor rate has the strongest effect on it through the PD change. Loss allowance of private customers in Stage 2 contracts, however, is the highest under the downside scenario, which is due to developments in the lifetime LGD parameter. All corporate customer risk parameters affect in a parallel way in such a way that loss allowance is clearly the largest under the downside scenario. The LGD model for Stage 3 is independent of macroeconomic factors, but a significant proportion of Stage 3 exposures is assessed by means of a cash flow based expert assessment that also takes account of forward-looking information.

Sensitivity analysis

The sensitivity analysis describes the sensitivity of loss allowance to changes in macroeconomic factors. The analysis below only describes somewhat potential economic deterioration and not an economic upswing at all. In addition, all different components of the sensitivity analysis do not necessarily develop together during a recession in the way presented in the sensitivity analysis.

The most significant macroeconomic variables in risk parameters and exposure classes include the 12-month Euribor rate, investment growth rate and GDP development. Changes used in sensitivity analyses include a 1% increase in the 12-month Euribor rate, a 6% decrease in investment growth and a 3.5% decrease in the GDP growth rate. So the figures reflect an economic situation that is poorer than now and all of them increase loss allowance and are based on the following facts. First of all, the interest rate and related forecasts in the modelling period of 2008–2016 are clearly lower and GDP and the investment growth rate plus their forecasts are considerably higher, i.e. the economic situation is good in view of history. The levels used in the sensitivity analysis are based on the behaviour of variables in the historic period, and the changes roughly correspond to the change of standard deviation.

The sensitivity analysis covers only Stage 1 and 2 contracts. The sensitivity analysis does not take account of the transfers between Stage 1 and 2 as a result of SICR. Changes in the lifetime PD stressed scenarios are included only in PD estimates based on the loss allowance formula and the effects of PD changes are not taking into account through SICR in the sensitivity analysis.

The table below show the sensitivity of change in the loss allowance of the groups household and corporate customers on 31 December 2019, when the economic situation weakens due to changes in the combined effects of interest rates, investment growth rate and GDP:

Group Stage	Loss allowance 31 Dec 2019	Loss allowance sensitivity analysis*	Proportional change
Households			
Stage 1	7	8	5.6 %
Stage 2	32	34	7.3 %
Corporate customers			
Stage 1	34	53	56.0 %
Stage 2	51	77	49.1 %
Total	**124**	**171**	**37.6 %**

* 1 percentage point increase in the 12-month Euribor rate, 6 percentage point decrease in the investment growth rate and a 3.5 percentage point decrease in the GDP rate under all scenarios

The table below show the sensitivity of change in the loss allowance of the groups household and corporate customers on 31 December 2018, when the economic situation weakens due to changes in the combined effects of interest rates, investment growth rate and GDP:

Group Stage	Loss allowance 31 Dec 2019	Loss allowance sensitivity analysis*	Proportional change
Households			
Stage 1	5	6	6.0 %
Stage 2	35	41	16.0 %
Corporate customers			
Stage 1	29	45	54.0 %
Stage 2	45	73	61.0 %
Total	**115**	**164**	**43.0 %**

* 1 percentage point increase in the 12-month Euribor rate, 6 percentage point decrease in the investment growth rate and a 3.5 percentage point decrease in the GDP rate under all scenarios.

Loss allowances are largely determined based on the first couple of years when the first years of the simulated scenario years are essential in terms of the results.

A 1 percentage point increase in the interest rate increases the amount of loss allowance in both private customers and corporate customers. A deterioration in the investment growth rate raises the amount of loss allowance in corporate customers, as well as through changes in PD and LGD. GDB growth has a negative relation to the amount of loss allowance through all model components. Slower GDP growth increases PD values for both private customers and corporate customers. It also affects through the LGD in such a way that a GDP decrease weakens developments in home collateral, which has an effect on Stage 2 contracts.

The analysis shows that the most significant proportional and absolute changes apply to the corporate customers where the amounts of loss allowance regarding Stage 1 and 2 contracts increase by over 50%. Changes are considerably smaller in private customers than in corporate customers because the estimates of their risk parameters are not so sensitive to economic conditions.

Comparison of exposures in impairment stage 3 in the balance sheet with non-performing receivables

The value of impairment stage 3 exposures are impaired financial assets due to credit risk. The table below shows a reconciliation statement between exposures and loss allowance presented in impairment stage 3 and Note 48 concerning doubtful receivables.

EUR million 31 Dec 2019	Balance sheet exposure	Loss allowance
Impairment stage 3	1,292	436
Difference between the definitions*	187	3
Performing and forborne receivables (stage 2)	2,042	12
Doubtful receivables (Note 48)	**3,521**	**451**

* Commission Implementing Regulation (EU) 2015/227 Annex 5 part 2: 155, 157, 176

EUR million 31 Dec 2018	Balance sheet exposure	Loss allowance
Impairment stage 3	1,230	409
Difference between the definitions*	150	3
Performing and forborne receivables (stage 2)	2,137	29
Doubtful receivables (Note 48)	**3,517**	**440**

* Commission Implementing Regulation (EU) 2015/227 Annex 5 part 2: 155, 157, 176

Note 50. Events after the balance sheet date

On 31 January 2020, OP Cooperative, OP Financial Group's central cooperative, sold the Vallila property to a South Korean-Finnish consortium which includes Varma Mutual Pension Insurance Company, NH Investment & Securities (NHIS) and Shinhan Investment Corp. The value of the transaction is 480 million euros. OP Financial Group will continue operating in the property under a long-term lease agreement. The sale of the property will improve OP Financial Group's CET1 ratio by some 0.2 percentage points. A capital gain of approximately 97 million euros will be recognised on the sale in OP Financial Group's first quarter results 2020.

On 7 January 2020, OP Cooperative's Board of Directors elected from among its members the chairs, vice chairs and other members to the statutory Board Committees. The regulatory authority has approved the composition of OP Cooperative's Board of Directors.

Notes to risk management

Note 2 describes OP Financial Group's risk management principles.
Notes 51–52 present OP Financial Group's risk exposure, Notes 53–59 retail banking and corporate banking risk exposure, Notes 60–91 insurance risk exposure and capital adequacy and capital base in Notes 92–95. OP Financial Group publishes information under Pillar III disclosures in the OP Amalgamation Capital Adequacy Report.

OP Financial Group's risk exposure

Note 51. OP Financial Group's risk tolerances

In accordance with Article 435, point 1 of the Capital Requirements Regulation, OP Financial Group must disclose, for example, a concise risk statement approved by the management body succinctly describing the institution's overall risk profile associated with the business strategy.

Declaration by OP Cooperative's Board of Directors on 3 February 2020
The Risk Appetite Statement confirmed by the central cooperative's Supervisory Board describes OP Financial Group's risk-taking bases and key principles. Together with the strategy, the Risk Appetite Statement provides the bases for the goal-setting of the businesses. According to our risk appetite, we mainly take risks associated with fulfilling our mission. To implement our mission, we provide our customers with a package of banking investment and insurance services. In all our operations, we emphasise moderate risk-taking, responsibility and careful action.
Tolerances, limits and control limits confirmed annually are used to direct and restrict risk-taking within OP Financial Group and its companies and to ensure compliance with the Risk Appetite Statement. For 2019, OP Cooperative's Supervisory Board confirmed tolerances for OP Financial Group's capital adequacy and liquidity and for the Group's risks which have been defined as significant. OP Financial Group remained within the set risk tolerances during the year. The restrictions set by the Supervisory Board are supplemented by risk policy lines and other risk management guideline to ensure that the Group or its company does not take such a high risk in its operations that it would jeopardise the capital adequacy, profitability, liquidity or business continuity of OP Financial Group or its companies.

Indicator	Tolerance	31 Dec 2019	31 Dec 2018
Capital adequacy			
CET1, %	15.0	19.5	20.5
FiCo solvency, %	110	138	147
Risk appetite (Economic capital / permanent capital, %)			
OP Financial Group, %	75	49	48
Retail Banking, %	30	20	19
Corporate Banking, %	30	18	18
Group Treasury, %	10	4	6
Insurance, %	30	16	18
New businesses			
Capital tied to new businesses / permanent capital, %	3	0.6	0.5
Counterparty risk concentrations			
Largest single customer risk / capital under FiCo, %	10	6	5
Total of significant customer risks (≥ 3%) / capital under FiCo, %	100	33	31
Industry risk / Corporate receivables and commitments, %	15	12	11
Concentration risk			
Country risk concentration / FiCo capital, %	5	2.8	2.6
Credit risks			
Doubtful receivables / loan and guarantee portfolio, %	5	3.2	3.4
Economic capital requirement for credit risk / exposure at default, %	3	2.2	2.1
Market risks			
3-year banking book interest income risk to a 1-pp change in interest rate scaled to a 1-year period, € million*	-300	-40.0	-125.0
Banking book present value risk to 2-pp change in interest rate / permanent capital, %	-10	-0.5	2.4
VaR (99% confidence) of Trading and customer business derivative position, 1 day, € million	7.5	2.5	2.4
Economic capital requirement for OP Life Assurance Company's market risks / OP Financial Group's permanent capital, %	8	3.2	4.3
Economic capital requirement for OP Non-life Insurance's market risks / OP Financial Group's permanent capital, %	8	3.9	5.2
Underwriting risks			
Highest Non-life Insurance retention per object and event, € million	20	20	20
Liquidity risks			
Liquidity coverage (LCR) ratio, %	120	141	143
Net Stable Funding Ratio (NSFR), %	100	112	111
Operational risks			
Materialised operational risks (net), € million	50	14.1	4.8

Concentration risk

Country concentration risk means unexpected and expected losses arising from exposures of a specific country. Tolerance specifies the maximum exposure of a single country. Losses are proportioned to the Group's FiCo capital.

Credit risks

OP Financial Group uses credit risk tolerances to spread risk by sector and counterparty and to limit the formation of doubtful receivables. The Group's sector and customer risks are diversified. At the end of 2019, customer risk deriving from an individual counterparty and the total of significant customer risk was clearly within the tolerances. Any customer exposure that accounts for at least 3% of the Group's FiCo capital base covering customer exposure has been taken into account in measuring significant customer exposure. In calculating sector risk, the Group uses its internal sector breakdown and, in addition to Banking receivables and commitments, takes account of direct investments by insurance companies, incomplete housing companies and guarantees from public-sector entities.

Market risks

The VaR measure of the derivative position of Trading and customer business measures market risk taking account of interest rate, credit spread, currency, equity and commodity risks as well as price risks associated with structured and securitised investments.

Insurance risks

The Group reinsures all underwriting risks above the retention limit in order to keep claims expenditure arising from an individual object and event within the limits of risk tolerance.

Liquidity risk

The liquidity coverage ratio (LCR) based on regulation requires credit institutions to have sufficient liquid funds that correspond to at least net cash outflows in an acute shock with duration of 30 days.
The Net Stable Funding Ratio (NSFR) measures the sufficiency of the amalgamation's stable funding to the stable funding requirement expected by business (lending and investment and derivative business as the most significant ones).

Note 52. OP Financial Group's exposure split by geographic region and exposure class

The majority of OP Financial Group's country exposure is in EU countries. The exposures cover all balance-sheet and off-balance-sheet items and are based on values used in capital adequacy.

Exposure split by geographic region 31 December 2019

EUR million	Exposures to central governments and central banks	Exposures to credit institutions	Exposures to corporates	Retail exposures	Equity investments*	Collateralised notes and bonds**	Other	Total exposures
Finland	17,389	382	49,383	60,761	738	557	1,005	130,216
Baltic countries	438		2,646	15			9	3,109
Other Nordic countries	98	386	1,485	113	14	1,668	0	3,764
Germany	2,161	360	141	87	1	1,679	76	4,506
France	86	602	233	182	19	1,031	0	2,152
UK	2	770	76	276	55	410	0	1,589
Italy		16	37	34			0	87
Spain		44	15	17			0	75
Other EU countries	2,177	411	509	263	173***	963	0	4,497
Rest of Europe		74	110	32	36	20	0	272
USA		204	62	590	88	36	0	980
Russia		10	3	9				21
Asia		243	65	46		16	0	370
Other countries	32	197	106	66	949***	1,471	1,864	4,683
Total	**22,383**	**3,697**	**54,871**	**62,490**	**2,074**	**7,850**	**2,955**	**156,320**

* Also includes EUR 71 million in bond funds.

** Comprises RMBS, ABS and Covered Bond investments.

*** Consist mainly of investments in European funds in Other EU countries and Emerging Markets and Global funds in Other countries.

Exposure split by geographic region 31 December 2018

EUR million	Exposures to central governments and central banks	Exposures to credit institutions	Exposures to corporates	Retail exposures	Equity investments*	Collateralised notes and bonds**	Other	Total exposures
Finland	16,337	397	46,359	58,932	530	495	996	124,046
Baltic countries	271	0	2,126	15			6	2,418
Other Nordic countries	149	415	1,467	126	7	1,768	0	3,933
Germany	2,657	164	47	103	3	1,264	7	4,244
France	186	421	248	161	16	836		1,868
UK	2	832	152	346	52	449	0	1,832
Italy		24	24	26				74
Spain		38	12	19		1		71
Other EU countries	2,040	405	474	289	231***	1,244		4,684
Rest of Europe		145	116	34	42	37		373
USA		236	50	626	89	34		1,036
Russia		42	3	8				54
Asia		279	40	79			0	398
Other countries	31	117	248	112	783***	1,282	1,322	3,895
Total	**21,673**	**3,514**	**51,365**	**60,876**	**1,753**	**7,411**	**2,331**	**148,923**

* Also includes EUR 104 million in bond funds.

** Comprises RMBS, ABS and Covered Bond investments.

*** Consist mainly of investments in European funds in Other EU countries and Emerging Markets and Global funds in Other countries.

Risk exposure of Retail and Corporate Banking

Note 53. Receivables from credit institutions and customers, and doubtful receivables

31 December 2019	Not impaired (gross)	Loss allowance	Balance sheet value
Receivables by sector			
Non-banking corporate sector	35,192	419	34,773
Financial institutions and insurance companies	1,200	2	1,198
Households	53,016	127	52,889
Non-profit organisations	786	5	781
Public-sector entities	2,069	1	2,068
Total	**92,264**	**555**	**91,709**

31 December 2018	Not impaired (gross)	Loss allowance	Balance sheet value
Receivables by sector			
Non-banking corporate sector	32,405	410	31,995
Financial institutions and insurance companies	1,065	2	1,064
Households	51,511	105	51,406
Non-profit organisations	814	6	808
Public-sector entities	1,985	3	1,981
Total	**87,780**	**526**	**87,254**

31 December 2019	Not impaired (gross)	Arrears	Impairments Loss allowance
Doubtful receivables and forborne loans by sector			
Non-banking corporate sector	1,111	305	353
Financial institutions and insurance companies	0	0	0
Households	2,377	175	94
Non-profit organisations	33	2	4
Public-sector entities			
Total	**3,521**	**482**	**451**

31 December 2018	Impaired (gross)	Arrears	Impairments Loss allowance
Doubtful receivables and forborne loans by sector			
Non-banking corporate sector	968	265	350
Financial institutions and insurance companies	0	0	0
Households	2,509	170	85
Non-profit organisations	40	1	5
Public-sector entities		0	
Total	**3,517**	**436**	**440**

Doubtful receivables and forborne loans

31 December 2019	Performing receivables from credit institutions and customers (gross)	Non-performing receivables from credit institutions and customers (gross)	Receivables from credit institutions and customers (gross)	Loss allowance	Receivables from credit institutions and customers (net)
Over 90 days past due		638	638	250	388
Unlikely to be paid		504	504	147	357
Forborne receivables	2,042	337	2,379	54	2,325
Total	**2,042**	**1,479**	**3,521**	**451**	**3,070**

Doubtful receivables and forborne loans

31 December 2018	Performing receivables from credit institutions and customers (gross)	Non-performing receivables from credit institutions and customers (gross)	Receivables from credit institutions and customers (gross)	Individually assessed	Receivables from credit institutions and customers (net)
Over 90 days past due		614	614	229	385
Unlikely to be paid		426	426	148	278
Forborne receivables	2,137	340	2,477	62	2,414
Total	**2,137**	**1,380**	**3,517**	**440**	**3,077**

The Group reports on the remaining principal as the amount of a receivable that is more than 90 days past due whose interest or principal amount has been overdue and outstanding for over three months. Contracts with the lowest credit ratings (F for private customers and 11-12 for others) are reported as unlikely to be paid. Forborne receivables include receivables that have been renegotiated due to the customer's financial difficulties. The loan terms and conditions of renegotiated receivables have been eased due to the customer's financial difficulties for example by transferring to interest only terms for a period of 6-12 months. Forborne receivables are in ECL measurement at stage two or three.

Key ratio, %	2019	2018
Loss allowance, % of doubtful receivables	12.8%	12.5%

Financial assets to which impairment is applied and payment related to them is past due

31 December 2019	Less than 30 days	30–90 days	90–180 days	Over 180 days	Total
Matured receivables	521	228	93	326	1,167

31 December 2018	Less than 30 days	30–90 days	90–180 days	Over 180 days	Total
Matured receivables	325	226	90	321	962

Note 54. Loan losses and impairment losses

EUR million	31 Dec 2015	31 Dec 2016	31 Dec 2017	31 Dec 2018	31 Dec 2019
Receivables written down as loan and guarantee losses				70	68
Impairment losses on receivables	190	183	147		
Reversal of impairment losses	-88	-99	-91		
Payments on eliminated receivables	-15	-15	-15	-15	-23
Expected credit losses (ECL) on receivables from customers and off-balance-sheet items				-10	41
Expected credit losses (ECL) on notes and bonds				1	0
Net change in impairments of collectively assessed loans and receivables	-9	7	7		
Total	78	77	48	46	87

Note 55. Structure of OP Financial Group funding

EUR million	31 Dec 2019	%	31 Dec 2018	%
Liabilities to credit institutions	2,632	2.3	4,807	4.4
Liabilities to customers				
Deposits	63,998	56.6	61,327	56.5
Other	4,291	3.8	4,785	4.4
Debt securities issued to the public				
Certificates of deposit, commercial papers and ECPs	9,615	8.5	10,217	9.4
Bonds	24,754	21.9	20,242	18.6
Other liabilities	3,163	2.8	2,617	2.4
Subordinated liabilities	1,290	1.1	1,358	1.3
Membership capital contributions	209	0.2	199	0.2
Profit shares	3,029	2.7	3,042	2.8
Total	**112,993**	**100.0**	**108,593**	**100.0**

Note 56. Maturity of financial assets and liabilities by residual maturity

31 December 2019	Less than 3 months	3–12 months	1–5 years	5–10 years	More than 10 years	Total
Financial assets						
Liquid assets	11,981					11,981
Receivables from credit institutions	219	24	3		0	246
Receivables from customers	6,794	8,934	34,218	19,599	21,919	91,463
Investment assets						
Financial assets held for trading	357	150	154	69	1	730
Financial assets designated as at fair value through profit or loss		2	420			422
Financial assets at fair value through other comprehensive income	904	969	5,821	5,226		12,920
Total financial assets						
Transfer of financial assets at fair value through	-219	-24	-3		0	
profit or loss to the less-than-3-months category	246					
Total financial assets in internal reporting	**20,255**	**10,078**	**40,615**	**24,894**	**21,920**	**117,762**

Financial liabilities	Less than 3 months	3–12 months	1–5 years	5–10 years	More than 10 years	Total
Liabilities to credit institutions	590	49	1,992			2,632
Liabilities to customers	66,989	574	200	61	465	68,289
Debt securities issued to the public	7,497	6,727	13,789	6,026	330	34,369
Subordinated liabilities		374	760	157		1,290
Total financial liabilities	**75,077**	**7,724**	**16,741**	**6,244**	**795**	**106,580**
Transfer of private customers' deposit repayable on demand from the less-than-3-months category to the 3-12-months category	-38,780	38,780				
Total financial liabilities in internal reporting	**36,296**	**46,504**	**16,741**	**6,244**	**795**	**106,580**
Guarantees	60	148	207	6	290	711
Other guarantee liabilities	357	725	562	69	746	2,459
Loan commitments	13,180					13,180
Commitments related to short-term trade transactions	107	125	100	0	2	333
Other	557	556	2	196	0	1,311
Total off-balance-sheet commitments	**14,261**	**1,554**	**870**	**271**	**1,039**	**17,995**

31 December 2018	Less than 3 months	3–12 months	1–5 years	5–10 years	More than 10 years	Total
Financial assets						
Liquid assets	12,299					12,299
Receivables from credit institutions	145	34	4		0	183
Receivables from customers	5,662	8,101	33,392	19,526	20,344	87,026
Investment assets						
Financial assets held for trading	167	145	151	37	5	505
Financial assets designated as at fair value through profit or loss			387			387
Financial assets at fair value through other comprehensive income	229	535	7,043	4,407		12,214
Total financial assets						
Transfer of financial assets at fair value through	-145	-34	-4		0	
profit or loss to the less-than-3-months category	183					
Total financial assets in internal reporting	**18,503**	**8,814**	**40,986**	**23,971**	**20,350**	**112,645**

Financial liabilities	Less than 3 months	3–12 months	1–5 years	5–10 years	More than 10 years	Total
Liabilities to credit institutions	769	0	4,015	23		4,807
Liabilities to customers	63,958	1,388	267	98	401	66,112
Debt securities issued to the public	7,360	5,358	12,267	5,123	350	30,458
Subordinated liabilities		67	1,052	239		1,358
Total financial liabilities	**72,087**	**6,813**	**17,601**	**5,483**	**750**	**102,735**
Transfer of private customers' deposit repayable on demand from the less-than-3-months category to the 3-12-months category	-36,008	36,008				
Total financial liabilities in internal reporting	**36,079**	**42,821**	**17,601**	**5,483**	**750**	**102,735**
Guarantees	90	125	401	8	151	775
Other guarantee liabilities	329	523	611	61	638	2,162
Loan commitments	12,577					12,577
Commitments related to short-term trade transactions	70	132	79	0	3	283
Other	519	427	1	248	1	1,195
Total off-balance-sheet commitments	**13,586**	**1,207**	**1,091**	**317**	**792**	**16,993**

Note 57. Maturities of financial assets and liabilities by maturity or repricing

31 December 2019	1 month or less	>1–3 months	>3–12 months	>1–2 years	>2–5 years	Over 5 years	Total
Financial assets							
Liquid assets	11,981						11,981
Receivables from credit institutions	192	27	24	1	1		246
Receivables from customers	15,409	20,668	49,579	582	2,732	2,493	91,463
Investment assets							
Financial assets held for trading	159	198	149	19	134	71	730
Financial assets designated as at fair value through profit or loss	10	410					420
Financial assets at fair value through other comprehensive income	960	565	886	608	4,675	5,226	12,920
Total financial assets	**28,871**	**22,067**	**50,787**	**1,229**	**7,677**	**7,860**	**118,491**
Financial liabilities							
Liabilities to credit institutions	2,458	125	49				2,632
Liabilities to customers	65,814	1,405	563	41	6	460	68,289
Debt securities issued to the public	4,004	6,054	7,105	2,029	8,823	6,354	34,369
Subordinated liabilities	82	344	39	193	532	100	1,290
Total financial liabilities	**72,359**	**7,928**	**7,756**	**2,263**	**9,373**	**6,914**	**106,592**

31 December 2018	1 month or less	>1–3 months	>3–12 months	>1–2 years	>2–5 years	Over 5 years	Total
Financial assets							
Liquid assets	12,299						12,299
Receivables from credit institutions	104	42	33	3	1		183
Receivables from customers	16,188	19,948	45,595	604	2,311	2,380	87,026
Investment assets							
Financial assets held for trading	51	131	151	22	108	42	505
Financial assets designated as at fair value through profit or loss Financial	1	385					387
assets at fair value through other comprehensive income	630	342	439	1,670	4,726	4,407	12,214
Total financial assets	**29,324**	**20,980**	**46,368**	**2,321**	**7,253**	**6,872**	**113,119**
Financial liabilities							
Liabilities to credit institutions	267	540	0	3,000	1,000		4,807
Liabilities to customers	62,638	1,605	1,364	95	14	396	66,112
Debt securities issued to the public	2,895	6,412	6,407	1,842	7,435	5,467	30,458
Subordinated liabilities	79	351	42		726	160	1,358
Total financial liabilities	**65,879**	**8,908**	**7,812**	**4,937**	**9,175**	**6,023**	**102,735**

Note 58. Sensitivity analysis of interest rate and market risk

OP Financial Group's banking book present value risk

	-200bp		+200bp	
Currency EUR million	2019	2018	2019	2018
EUR	95	228	-29	298
GBP	-1	-1	1	1
USD		1		-1
Other	13	2	14	0

Risks of GBP and USD are expressed in euro equivalents. Euro-denominated risks of other currencies have been added up as intrinsic values. Interest rate risk is calculated as the volatility of the present value of balance sheet cash flows to the parallel 2 percentage point change of the yield curve. The calculation performed every month covers all interest-bearing on-balance-sheet and off-balance sheet items of the banking book of OP Financial Group credit institutions and OP Cooperative. The interest rate sensitivity of OP cooperative banks' perpetual customer deposits is calculated using maturity assumptions based on expert assessment and the model for early repayments applies to loans.

Interest income risk associated with banking book of retail banking

	-100bp		+100bp	
Currency EUR million	2019	2018*	2019	2018*
EUR	-40	-48	326	161

* The calculation method has changed since the beginning of 2019. The comparable figures are –EUR 125 and EUR 293 million.

Interest rate risk associated with Retail Banking is calculated using the interest income risk method where interest income risk is determined for a period of one year. The risk is obtained by dividing interest income risk by three calculated on a 1 pp parallel interest change from the date of calculation for the next three years. The calculation and reporting performed every month covers all interest-bearing on-balance-sheet and off-balance sheet items of the retail banking book. Negative interest rates are also taken into account in the calculation of interest income risk but a –2% minimum is applied to interest rates. The Group takes account of the 0% floor of reference interest rates applicable to loans on the basis of contractual terms. The Group keeps the balance sheet structure unchanged by replacing items falling due with corresponding interest rate bases or the fixed-rate maturities. In the calculation, the Group applies a maturity model based on modelling to perpetual deposits and the model for early repayments to loans. In this connection, retail banking includes OP cooperative banks' financing operations.

Sensitivity analysis of market risk

EUR million		Change 2019	2018*
Interest rate volatility*	10bp	3	1
Currency volatility*	10 pps	0	0
Credit risk premium**	10bp	-53	-55

* Trading portfolio.
** Long-term investment assets.

Note 59. Liquidity buffer

The liquidity buffer is presented under the Other Operations segment.

Liquidity buffer by maturity and credit rating on 31 December 2019, EUR million

Year(s)	0–1	1–3	3–5	5–7	7–10	10–	Total	Proportion, %
Aaa*	12,909	1,950	2,264	2,329	1,400		20,852	83.4
Aa1–Aa3	274	382	509	428	440	0	2,033	8.1
A1–A3	6	5	21	8	0		40	0.2
Baa1–Baa3	4	48	106	94	22	1	275	1.1
Ba1 or lower	0	22	76	22	16		136	0.5
Internally rated**	1,108	282	224	37	11		1,661	6.6
Total	**14,300**	**2,689**	**3,200**	**2,918**	**1,889**	**1**	**24,996**	**100.0**

* incl. deposits with the central bank
** PD </= 0.40%
The liquidity buffer's (excl. deposits with the central bank) residual term to maturity averages 4.0 years.

Liquidity buffer by maturity and credit rating on 31 December 2018, EUR million

Year(s)	0–1	1–3	3–5	5–7	7–10	10–	Total	Proportion, %
Aaa*	12,499	2,254	2,088	1,383	1,018		19,243	84.6
Aa1–Aa3	38	529	520	661	376	0	2,125	9.3
A1–A3	23	23	9	4		2	62	0.3
Baa1–Baa3	18	56	60	110	19	3	265	1.2
Ba1 or lower	5	34	11	61	15		127	0.6
Internally rated**	400	81	310	123			914	4.0
Total	**12,983**	**2,978**	**2,998**	**2,342**	**1,428**	**5**	**22,735**	**91.0**

* incl. deposits with the central bank
** PD </= 0.40%
The liquidity buffer's (excl. deposits with the central bank) residual term to maturity averages 4.2 years.

Risk exposure by Insurance

Note 60. Non-life Insurance risk-bearing capacity

Non-life Insurance must fulfil all capital adequacy requirements set by regulatory authorities mainly at company level. Based on EU directives, a minimum solvency margin requirement and a minimum solvency capital requirement apply to all non-life insurance companies.

The ratio of the capital base to solvency capital is described as the solvency ratio that reflects the company's opportunity to cover unexpected risks. Solvency figures and ratios are unaudited.

Solvency, EUR million	31 Dec 2019	31 Dec 2018
Eligible capital	**1,008**	**818**
Solvency capital requirement (SCR)		
Market risk	457	421
Underwriting risk	564	281
Counterparty risk	38	36
Operational risk	45	45
Diversification benefits and loss absorbency	-405	-162
Total	**699**	**621**
Buffer for SCR	**309**	**197**
SCR ratio, %	**144%**	**132%**
SCR ratio, % excluding transitional provisions	**144%**	**132%**

Note 61. Sensitivity analysis

The table below shows the effect of various risk parameters on profit and solvency capital:

Risk parameter	Total in 2019, EUR million	Change in risk parameter	Effect on profit/ solvency, EUR million	Effect on combined ratio
Insurance premium revenue *	1,478	Up by 1%	15	Up by 1.0 pp
Claims incurred *	1,196	Up by 1%	-12	Down by 0.8 pps
Large claim, over EUR 5 million		1 large claim	-5	Down by 0.3 pps
Personnel costs *	112	Up by 8%	-9	Down by 0.6 pps
Expenses by function **	212	Up by 4%	-8	Down by 0.6 pps
Inflation for collective liability	778	Up by 0.25 pps	-5	Down by 0.4 pps
Life expectancy for discountedinsurance liabilities	2,024	Up 1 year	-48	Down by 3.1 pps
Discount rate for discountedinsurance liabilities	2,024	Down by 0.1 pp	-28	Down by 1.8 pps

* Moving 12-month.

** Expenses by function in Non-life Insurance excluding expenses for investment management and expenses for other services rendered.

Note 62. Non-life insurance premiums written and sums insured by class

Premiums written by EML* class in corporate property insurance

The degree of risk in property insurance can be evaluated by dividing risks into classes by their EML* amounts. The table below shows premiums written calculated for each risk class.

EUR million	5–20	20–50	50–100	100–500
2019	11	9	6	12
2018	10	10	8	10

* EML = Estimated Maximum Loss per object of insurance.

Division of premiums written by TSI* class in corporate liability insurance

The degree of risk in liability insurance can be evaluated by dividing risks into classes by their TSI* amounts. The table below shows premiums written calculated for each risk class.

EUR million	2–4	4–10	10–30	30–90
2019	4	4	7	2
2018	4	3	6	3

* TSI = Total Sum Insured

Sums insured in decennial insurance

The sum insured of insurance contracts depicts the volume of decennial insurance (construction defects insurance). The gross and net amounts of the sum insured are itemised in the table below. The liability period of decennial insurance is 10 years.

	Gross		Net*	
EUR million	2019	2018	2019	2018
Decennial insurance	1852	1802	1852	1802

* For insurance company's own account after reinsurers' share but before counter guarantee

Note 63. Trend in non-life insurance large claims

Number of detected large claims by year of detection for 2015–2019

Non-life Insurance monitors carefully claims expenditure arising from large claims. The claims expenditure explains a significant part of the annual fluctuation in the underwriting result. In addition, monitoring the claims expenditure arising from large claims helps to detect any changes in risks or risk selection. In this analysis, large claims are those whose gross amount exceeds EUR 2 million. Most large claims occur in property and business interruption insurance. In statutory policies, the risk of large claim is small relative to the large volume of the line of business.

Gross amount

Number of losses exceeding EUR 2 million	Statutory lines	Other accidents and health	Hull and cargo	Property and business interrup-tion	Liability and legal expenses	Long-term
2015	1			5		
2016				5		
2017				7		
2018				17	3	
2019	2			9	3	
			Total claims, EUR millions		222	
Gross amount, total claims, EUR million						
2015–2019	**6**			**193**	**23**	

Net amount

Number of losses exceeding EUR 2 million	Statutory lines	Other accidents and health	Hull and cargo	Property and business interrup-tion	Liability and legal expenses	Long-term
2014	1			5		
2015				5		
2016				7		
2017				15	3	
2018	2			9	3	
			Total claims, EUR millions		163	
Net amount, total claims, EUR million						
2015–2019	**6**			**137**	**23**	

Note 64. Non-life insurance business profitability

Trends in insurance premium revenue (gross and net) and combined ratio (net)

Insurance premium revenue describes the volume of an insurance class, enabling the evaluation of the importance of the insurance class in relation to the whole portfolio. Similarly, the combined ratio (CR) is used to evaluate fluctuations in the results of the insurance class and the profitability of the class. The combined ratio is presented separately adjusted for one-off items relating to previous insurance periods.

2019, EUR million	Gross IP revenue	Net IP revenue	Net CR*	Net** CR*
Statutory lines	443	442	123%	90%
Other accident and health	286	286	91%	91%
Hull and cargo	308	307	97%	97%
Property and business interruption	390	357	91%	91%
Liability and legal expenses	88	84	91%	91%
Long-term	4	3	75%	75%
Total	**1,520**	**1,478**	**102%**	**92%**

2018, EUR million	Gross IP revenue	Net IP revenue	Net CR*	Net** CR*
Statutory lines	442	440	89%	89%
Other accident and health	272	272	94%	94%
Hull and cargo	302	301	95%	95%
Property and business interruption	398	365	90%	90%
Liability and legal expenses	89	84	97%	97%
Long-term	4	3	60%	60%
Total	**1,507**	**1,465**	**92%**	**92%**

* The combined ratio is calculated by dividing the sum of claims incurred (net) and operating expenses of insurance business by insurance premium revenue (net). Amortisation on intangible rights has not been taken into account.

** One-off changes affecting the balance on technical account have been eliminated.

Note 65. Information on the nature of non-life insurance insurance liabilities

Information on the nature of liabilities	2019	2018
Latent occupational diseases	10	13
Other	3,118	3,040
Total (before transfers)	**3,128**	**3,053**
Discounted insurance contract liabilities	15.2	14.4
Undiscounted insurance contract liabilities	2.2	2.2
Total	**10.5**	**9.9**
Discounted net debt (EUR million)		
Provision for known unpaid claims for annuities	1,620	1,552
Collective liability (IBNR)	368	338
Provision for unearned premiums	40	41
Total	**2,029**	**1,932**

Note 66. Non-life insurance insurance liabilities by estimated maturity

31 December 2019, EUR million	0–1 yr	1–5 yrs	5–10 yrs	10–15 yrs	Over 15 yrs	Total
Provision for unearned premiums*	417	118	23	7	11	576
Provision for unpaid claims						
Undiscounted	294	219	60	12	4	590
Discounted	95	427	365	297	778	1,962
Total insurance contract liabilities**	**807**	**763**	**449**	**316**	**794**	**3,128**

* Includes EUR 40 million in discounted liability.

** Excluding the value of derivatives hedging the interest rate risk associated with insurance liabilities.

31 December 2018, EUR million	0–1 yr	1–5 yrs	5–10 yrs	10–15yrs	Over 15 yrs	Total
Provision for unearned premiums*	406	117	22	6	10	561
Provision for unpaid claims						
Undiscounted	296	213	58	11	4	584
Discounted	97	473	358	285	694	1,908
Total insurance liabilities**	**799**	**804**	**438**	**302**	**708**	**3,053**

* Includes EUR 41 million in discounted liability.

** Excluding the value of derivatives hedging the interest rate risk associated with insurance liabilities.

Note 67. Non-life Insurance asset allocation

Investment asset portfolio allocation	31 Dec 2019 value*, EUR million	%	31 Dec 2018 value*, EUR million	%
Money market total	**547**	**14**	**173**	**4**
Money market instruments and deposits**	541	14	167	4
Derivatives***	6	0	5	0
Total bonds and bond funds	**2,644**	**67**	**2,857**	**72**
Governments	447	11	498	13
Investment Grade	1,669	42	1,895	51
Emerging markets and High Yield	253	6	243	7
Structured Investments****	275	7	222	6
Total equities	**426**	**11**	**360**	**9**
Finland	116	3	60	2
Developed markets	172	4	147	4
Emerging markets	67	2	76	2
Unlisted equities	6	0	1	0
Private equity investments	65	2	76	2
Total alternative investments	**35**	**1**	**28**	**1**
Hedge funds	35	1	28	1
Total property investment	**300**	**8**	**312**	**8**
Direct property investment	159	4	157	4
Indirect property investment	141	4	155	4
Total	**3,952**	**100**	**3,730**	**94**

* Includes accrued interest income.

** Includes settlement receivables and liabilities and market value of derivatives.

*** Effect of derivatives on the allocation of the asset class (delta-weighted equivalents).

**** Include covered bonds, bond funds and illiquid bonds.

Note 68. Sensitivity analysis of Non-life Insurance investment risks

The table below shows the sensitivity of investment risks by investment category. The discount rate sensitivity analysis related to the calculation of insurance liabilities is presented in Note 61 dealing with insurance liabilities Effects of changes in investment and insurance liabilities offset one another.

Non-life Insurance	Portfolio at fair value, 31 Dec 2019, EUR million	Risk parameter	Change	Effect on solvency capital, EUR million 31 Dec 2019	31 Dec 2018
Bonds and bond funds*	3,191	Interest rate	1 pp	85	115
Equities**	390	Market value	10%	35	39
Venture capital funds and unlisted shares	71	Market value	10%	7	8
Real property	300	Market value	10%	30	31
Currency	69	Value of currency	10%	15	19
Credit risk premium***	3,191	Credit spread	0.1 pp	36	34
Derivatives	6	Volatility	10 pps	1	4

* Include money market investments, convertible bonds and interest-rate derivatives.

** Include hedge funds and equity derivatives.

*** Includes bonds and convertible bonds and money-market investments, excluding government bonds issued by developed countries.

Note 69. Risk exposure of Non-life Insurance investments in fixed-income securities

The market risk arising from changes in interest rates is monitored by classifying investments by instrument, in accordance with duration. The table below does not indicate the balancing effect which the insurance contract liabilities have on the interest-rate risk, because only some of the insurance contract liabilities have been discounted using an administrative interest rate (Note 31).

Fair value by duration or repricing date*, EUR million	2019	2018
0–1 year	730	421
>1–3 years	631	673
>3–5 years	498	781
>5–7 years	440	432
>7–10 years	172	353
>10 years	110	161
Total	**2,582**	**2,821**
Modified duration	4.0	4.3
Effective interest rate, %	1.6	1.7

* Includes money market investments and deposits, bonds, convertible bonds and bond funds.

Fixed-income portfolio by maturity and credit rating on 31 December 2019*, EUR million

Year(s)	0–1	1–3	3–5	5–7	7–10	10–	Total	roportion, %
Aaa	2	45	57	49	28	79	261	10.1%
Aa1–Aa3	520	148	28	24	12	0	732	28.3%
A1–A3	76	179	114	145	61	10	584	22.6%
Baa1–Baa3	81	216	231	199	53	15	794	30.8%
Ba1 or lower	46	41	36	9	6	7	145	5.6%
Internally rated	5	1	32	15	13	0	66	2.6%
Total	**730**	**631**	**498**	**440**	**172**	**110**	**2,582**	**100.0%**

Fixed-income portfolio by maturity and credit rating on 31 December 2018*, EUR million

Year(s)	0–1	1–3	3–5	5–7	7–10	10–	Total	roportion, %
Aaa	3	62	378	45	110	85	682	24.2%
Aa1–Aa3	200	94	55	49	47	8	453	16.0%
A1–A3	77	181	144	109	55	48	613	21.7%
Baa1–Baa3	112	296	177	186	126	18	915	32.4%
Ba1 or lower	31	34	25	14	9	2	114	4.0%
Internally rated	0	6	3	29	6		45	1.6%
Total	**421**	**673**	**781**	**432**	**353**	**161**	**2,821**	**100.0%**

* Excludes credit derivatives.

The maturity is presented until the end of the term to maturity. If the paper includes a call option, the maturity is presented until the first possible Call date.

The average credit rating of the Non-life Insurance fixed-income portfolio is Moody's A2.

The term to maturity of the Non-life Insurance fixed-income portfolio averages 3.6 years (calculated on the basis of the Call date and the maturity date).

Note 70. Currency risk associated with Non-life Insurance investments

Foreign currency exposure, EUR million	31 Dec 2019	31 Dec 2018
USD	51	86
SEK	0	4
JPY	0	0
GBP	1	1
Other	23	57
Total*	**76**	**147**

* The currency exposure was 1.9% (3.9%) of the investment portfolio. It is calculated as the sum total of individual currencies' intrinsic values.

Note 71. Counterparty risk associated with Non-life Insurance investments

	31 Dec 2019		31 Dec 2018	
Credit rating, consistent with Moody's, EUR million	Investment*	Insurance**	Investment*	Insurance**
Aaa	261		682	
Aa1–Aa3	732	16	453	24
A1–A3	584	50	613	38
Baa1–Baa3	794		915	0
Ba1 or lower	145	0	114	
Internal rating	66	43	45	43
Total	**2,582**	**109**	**2,821**	**106**

* Includes money market investments, deposits and bonds and bond funds.

** Includes the reinsurers' share of insurance contract liabilities, and receivables from reinsurers.

Note 72. Information on the nature of insurance liabilities and their sensitivity analysis

The key risks associated with Life Insurance are the market risks of Life Insurance's investment assets, the interest rate used for the valuation of insurance liabilities and a faster-than-expected life expectancy increase among those insured.

Risk-bearing capacity of Life Insurance based on statutory indicators

Life insurance companies must fulfil the solvency requirements prescribed by law in force. The statutory minimum capital and solvency requirements are the key requirements to be monitored.

The life insurance risk-bearing capacity is measured using the solvency ratio, which means the ratio of the capital base to solvency capital. Based on the Group's strategic indicators, the target for the solvency ratio is 130%, excluding transitional provisions. The solvency figures and ratios are unaudited.

Solvency, EUR million	31 Dec 2019	31 Dec 2018
Eligible capital	**1,423**	**1,297**
Solvency capital requirement (SCR)		
Market risk	770	732
Underwriting risk	471	351
Counterparty risk	23	30
Operational risk	32	34
Diversification benefits and loss absorbency	-609	-571
Total	**687**	**576**
Buffer for SCR	**736**	**719**
SCR ratio, %	**207%**	**225%**
SCR ratio, % excluding transitional provisions	**170%**	**176%**

Portfolio of insurance and investment contracts in Life Insurance 31 December 2019

	Liability, 31 Dec 2019, EUR million	Number of insureds or contracts	Duration on yield curve, 31 Dec 2019
Unit-linked contracts	**10,818**	**329,411**	**10.3**
Unit-linked insurance contracts	**4,784**	**115,562**	**10.2**
Life Insurance/Savings	3,220	64,583	10.0
Individual pension insurance	1,443	47,090	10.2
Group pension insurance	120	3,889	13.4
Unit-linked investment contracts	**6,034**	**213,849**	**10.3**
Saving	3,700	88,585	11.8
Individual pension contracts	1,517	116,981	7.3
Group pension contracts	58	6,305	12.2
Capital redemption contracts	760	1,978	9.0
Other than unit-linked contracts	**6,286**	**506,614**	**9.4**
Insurance contracts discounted with technical interest rate	**6,040**	**506,605**	**9.7**
Life Insurance/Savings	1,384	55,674	9.8
Rate of guaranteed interest 4.5%	41	459	9.1
Rate of guaranteed interest 3.5%	366	7,545	12.1
Rate of guaranteed interest 2.5%	133	7,166	8.7
Rate of guaranteed interest 1.5%	2	106	10.0
Rate of guaranteed interest 4.5% (Separate balance sheet 1)	841	40,398	8.6
Individual pension insurance	3,158	69,332	8.4
Rate of guaranteed interest 4.5%	265	6,716	5.6
Rate of guaranteed interest 3.5%	455	17,895	8.0
Rate of guaranteed interest 2.5%	252	20,225	13.7
Rate of guaranteed interest 1.5%	1	87	8.3
Rate of guaranteed interest 4.5% (Separate balance sheet 2)	2,185	24,409	8.1
Group pension insurance	1,380	33,092	12.5
Defined benefit 3.5%	936	20,638	12.1
Defined benefit 2.5%	95	2,252	13.7
Defined benefit 0.5%	220	5,212	15.9
Defined benefit 1.5%	61	1,440	14.7
Defined contribution 3.5%	7	67	15.7
Defined contribution 2.5%	54	3,143	13.0
Defined contribution 1.5%	6	293	14.6
Defined contribution 0.5%	0	47	22.0
Individual term life policies	115	344,147	4.4
Group life insurance	4	4,360	1.6
Other than unit-linked investment contracts discounted with technic	**3**	**9**	**1.7**
Capital redemption contracts	3	9	1.7
Rate of guaranteed interest 2.5%	3	8	1.3
Rate of guaranteed interest 1.5%	0	1	9.6
Effect of discounting with market interest rate	**169**		
Other insurance liability items	**75**		
Total	**17,104**	**836,025**	**10.0**

Portfolio of insurance and investment contracts in Life Insurance 31 December 2018

	Liability, 31 Dec. 2018, EUR million	Number of insureds or contracts	Duration on yield curve, 31 Dec. 2018
Unit-linked contracts	**9,774**	**338,507**	**10.2**
Unit-linked insurance contracts	**4,518**	**218,530**	**10.3**
Life Insurance/Savings	3,199	93,519	10.3
Individual pension insurance	1,221	118,688	10.1
Group pension insurance	99	6,323	13.6
Unit-linked investment contracts	**5,255**	**119,977**	**10.0**
Saving	3,295	65,847	11.8
Individual pension contracts	1,282	48,823	7.3
Group pension contracts	42	3,348	10.5
Capital redemption contracts	637	1,959	9.1
Other than unit-linked contracts	**6,357**	**529,163**	**11.1**
Insurance contracts discounted with technical interest rate	**6,245**	**529,149**	**11.1**
Life Insurance/Savings	1,435	62,718	8.6
Rate of guaranteed interest 4.5%	44	501	5.8
Rate of guaranteed interest 3.5%	409	8,830	7.9
Rate of guaranteed interest 2.5%	153	8,282	13.1
Rate of guaranteed interest 1.5%	2	116	7.7
Rate of guaranteed interest 4.5% (Separate balance sheet 1)	827	44,989	8.6
Individual pension insurance	3,306	74,582	7.0
Rate of guaranteed interest 4.5%	280	7,243	5.8
Rate of guaranteed interest 3.5%	471	18,986	7.9
Rate of guaranteed interest 2.5%	257	21,540	13.1
Rate of guaranteed interest 1.5%	1	92	7.7
Rate of guaranteed interest 4.5% (Separate balance sheet 2)	2,296	26,721	7.9
Group pension insurance	1,363	32,637	11.9
Defined benefit 3.5%	1,016	25,410	11.5
Defined benefit 2.5%	102	693	12.9
Defined benefit 0.5%	154	1,983	15.3
Defined benefit 1.5%	25	1,009	14.5
Defined contribution 3.5%	7	73	14.7
Defined contribution 2.5%	52	3,112	12.6
Defined contribution 1.5%	6	311	13.7
Defined contribution 0.5%	0	46	19.6
Individual term life policies	137	354,867	4.5
Group life insurance	4	4,345	1.6
Other than unit-linked investment contracts discounted with technic	**3**	**14**	**2.0**
Capital redemption contracts	3	14	2.0
Rate of guaranteed interest 2.5%	3	13	1.7
Rate of guaranteed interest 1.5%	0	1	10.2
Effect of discounting with market interest rate	**43**		
Other insurance liability items	**66**		
Total	**16,131**	**867,670**	**10.5**

Sensitivity of life insurance liabilities to changes in calculation principles

Since savings and single-premium savings policies have been sold in plenty as long-term contracts, policyholders may terminate their contracts by surrendering the policies according to their needs before the date of expiry under the contract. For this reason, the number of surrenders is large. The company takes account of the resulting loss of surpluses or deficits when calculating the life insurance solvency position.

The risk of surrender for individual pension plans is very small, since by law this can only be done in specific cases such as divorce and long-term unemployment. The accumulated surrender value of insurance is paid back to the policyholder upon surrender.

The beginning of pension disbursement under individual pension insurance is postponed.. Often, when taking out a pension, policyholders do not have a realistic view of when they will actually retire. Tax laws have also changed over the decades, allowing people to claim their individual pensions later.

Pension insurance companies' mortality data show that the life expectancy figures based on technical bases are too low. However, the mortality risk and longevity risk of individual pensions offset each other, to the point that there is no need for a mortality supplement despite the rise in life expectancy. On the other hand, in group pension insurance, the longevity risk is higher than the mortality risk, and the liabilities have therefore had to be supplemented. If the mortality assumption is modified, by increasing the life expectancy of policyholders by one year on average, the liabilities will grow by EUR 26 million (26).

Since in savings insurance and investment insurance, the mortality and longevity risks almost offset each other, no mortality supplement has been needed.

The company has complied with the FAS in establishing insurance contract liabilities, with the exception that the company has moved closer to a real-time interest rate in the discount rate. The company has insurance contract savings at its own risk with guaranteed interest rate ranging between 0.5% and 4.5%. The insurance liability of the contracts with a technical interest rate of 4.5% has been permanently supplemented in such a way that the discount rate of the insurance liability is 3.5% (excl. insurance assets transferred from Suomi Mutual that are included OP Life Assurance Ltd's balance sheets separated from the other balance sheet). In addition, insurance liabilities of contracts with guaranteed interest have been supplemented with supplementary short-term interest rate provisions until 31 December 2020 and income recognised on the sale of fixed income investments hedging sold insurance liabilities has been allocated to insurance liabilities as supplementary interest rate provisions for the residual term to maturity of fixed income investments. Following the supplementary interest rate provisions, the company's discount rate based on technical interest is 0% until 31 December 2020, 2.4% for the following ten years and 3.1% thenceforth. The company has used fixed income investments to hedge against some of the interest rate risk that exists between the market and discount rate. Since the benefit deriving from fixed income investments are used for guaranteed benefits involved in insurance and capital redemption contracts, their liability is increased to the amount of the fixed income investments under the national financial accounts by EUR 169 million (43).

In financial statements based on national regulation, lowering the discount rate by 0.1 percentage point would increase the technical provisions by EUR 25 million (26).

On 31 December 2015, insurance liabilities transferred from Suomi Mutual to OP Life Assurance Company through a portfolio transfer. At that time, a balance sheet separated from the company's balance sheet was created out of the transferred endowment policies. The individual pension insurance portfolio of Suomi Mutual was consolidated into OP Life Assurance Company Ltd on 30 September 2016. A separated balance sheet was also created out of this portfolio. The separated balance sheets apply their own profit distribution policy specified in the portfolio transfer plans. The separate balance sheets also include liabilities of future supplementary benefits that buffer market and customer behaviour risk associated with the separated balance sheets.

The liability of unit-linked policies is measured at the market values of assets associated with the policies on the balance sheet date.

Investment contracts come in three types: OP Life Assurance investment contracts are capital redemption contracts and such unit-linked savings agreements where death cover equals insurance liability, and pension insurance contracts where death cover almost equals insurance liability in such a way that no significant underwriting risk arises. Some capital redemption contracts include entitlement to a discretionary participation feature and they are measured as specified in the Insurance Contracts standard. Some exclude this entitlement and they plus other investment contracts are measured and classified as contracts recognised at fair value through profit or loss, in accordance with IAS 39.

Note 73. Expected maturity of life insurance and investment contracts

	Duration						
31 December 2019, EUR million	2020–2021	2022–2023	2024–2028	2029–2033	2034–2038	2039–2043	2044–
Unit-linked contracts	**-1,571**	**-1,437**	**-2,847**	**-1,822**	**-1,281**	**-759**	**-919**
Insurance contracts	**-675**	**-595**	**-1,247**	**-737**	**-464**	**-299**	**-403**
Life Insurance/Savings	-557	-430	-875	-497	-316	-212	-306
Individual pension insurance	-106	-149	-334	-217	-132	-75	-70
Group pension insurance	-12	-16	-38	-23	-17	-11	-26
Investment contracts	**-897**	**-842**	**-1,600**	**-1,085**	**-816**	**-460**	**-517**
Saving	-464	-427	-913	-708	-521	-396	-472
Individual pension contracts	-290	-302	-479	-222	-101	-44	-36
Group pension contracts	-6	-8	-19	-15	-9	-5	-9
Capital redemption contracts	-136	-106	-190	-139	-186	-15	0
Other than unit-linked contracts	**-1,047**	**-1,029**	**-1,821**	**-1,055**	**-577**	**-359**	**-510**
Insurance contracts	**-923**	**-969**	**-1,752**	**-1,034**	**-576**	**-360**	**-510**
Life Insurance/Savings	-201	-181	-400	-321	-147	-71	-94
Rate of guaranteed interest 4.5%	-6	-7	-14	-13	-4	-2	-2
Rate of guaranteed interest 3.5%	-68	-55	-111	-89	-59	-44	-69
Rate of guaranteed interest 2.5%	-33	-27	-41	-20	-11	-8	-12
Rate of guaranteed interest 1.5%	-1	0	0	0	0	0	0
Rate of guaranteed interest 4.5% (Separate balance sheet 1)	-93	-93	-233	-199	-74	-18	-11
Individual pension insurance	-513	-601	-978	-439	-226	-142	-185
Rate of guaranteed interest 4.5%	-39	-81	-137	-24	-5	-1	0
Rate of guaranteed interest 3.5%	-56	-116	-195	-84	-39	-20	-16
Rate of guaranteed interest 2.5%	-21	-49	-71	-47	-38	-39	-62
Rate of guaranteed interest 1.5%	0	0	0	0	0	0	0
Rate of guaranteed interest 4.5% (Separate balance sheet 2)	-397	-355	-574	-285	-143	-82	-107
Group pension insurance	-180	-169	-354	-269	-202	-146	-232
Defined benefit 3.5%	-151	-138	-289	-217	-162	-115	-167
Defined benefit 2.5%	-13	-12	-23	-17	-14	-12	-22
Defined benefit 1.5%	-7	-6	-13	-11	-9	-8	-20
Defined benefit 0.5%	-2	-2	-4	-3	-3	-2	-5
Defined contribution 3.5%	-1	-1	-3	-2	-1	-1	-4
Defined contribution 2.5%	-5	-8	-20	-17	-11	-6	-11
Defined contribution 1.5%	-1	-1	-1	-1	-1	-1	-2
Defined contribution 0.5%	0	0	0	0	0	0	0
Individual pure risk insurance	-24	-16	-20	-5	-1	0	0
Group life insurance	-5	-1	0				
Investment contracts	**-3**	**0**	**0**	**0**	**0**	**0**	**0**
Capital redemption contracts	-3	0	0	0			
Rate of guaranteed interest 2.5%	-3	0					
Rate of guaranteed interest 1.5%	0	0	0	0			
Reserve for decreased discount rate	-122	-60	-69	-21	-1	0	0
Total	**-2,619**	**-2,466**	**-4,669**	**-2,877**	**-1,858**	**-1,119**	**-1,430**

	Duration						
31 December 2018, EUR million	2019–2020	2021–2022	2023–2027	2028–2032	2033–2037	2038–2042	2043–
Unit-linked contracts	**-1,245**	**-1,163**	**-2,299**	**-1,519**	**-1,079**	**-676**	**-932**
Insurance contracts	**-640**	**-594**	**-1,199**	**-741**	**-503**	**-342**	**-535**
Life Insurance/Savings	-549	-473	-926	-558	-382	-271	-443
Individual pension insurance	-82	-109	-243	-162	-107	-60	-64
Group pension insurance	-9	-12	-30	-20	-15	-11	-28
Investment contracts	**-606**	**-568**	**-1,100**	**-779**	**-575**	**-334**	**-397**
Saving	-254	-230	-507	-424	-330	-235	-359
Individual pension contracts	-237	-245	-423	-215	-97	-45	-35
Group pension contracts	-4	-5	-14	-12	-7	-4	-3
Capital redemption contracts	-111	-88	-156	-128	-141	-50	
Other than unit-linked contracts	**-1,125**	**-1,217**	**-2,197**	**-1,173**	**-687**	**-374**	**-575**
Insurance contracts	**-999**	**-1,145**	**-2,091**	**-1,146**	**-679**	**-373**	**-575**
Life Insurance/Savings	-224	-325	-641	-369	-197	-70	-102
Rate of guaranteed interest 4.5%	-43	-81	-136	-33	-7	-1	-1
Rate of guaranteed interest 3.5%	-58	-110	-204	-78	-51	-19	-18
Rate of guaranteed interest 2.5%	-25	-44	-71	-43	-44	-32	-73
Rate of guaranteed interest 1.5%	0	0	0	0	0	0	0
Rate of guaranteed interest 4.5% (Separate balance sheet 1)	-98	-91	-230	-215	-95	-17	-11
Individual pension insurance	-553	-625	-1,054	-487	-269	-148	-218
Rate of guaranteed interest 4.5%	-43	-81	-136	-33	-7	-1	-1
Rate of guaranteed interest 3.5%	-58	-110	-204	-78	-51	-19	-18
Rate of guaranteed interest 2.5%	-25	-44	-71	-43	-44	-32	-73
Rate of guaranteed interest 1.5%	0	0	0	0	0	0	0
Rate of guaranteed interest 4.5% (Separate balance sheet 2)	-427	-391	-642	-333	-166	-95	-126
Group pension insurance	-187	-173	-368	-282	-212	-155	-254
Defined benefit 3.5%	-157	-144	-306	-232	-173	-125	-185
Defined benefit 2.5%	-14	-12	-24	-18	-15	-13	-25
Defined benefit 1.5%	-7	-6	-12	-10	-9	-8	-22
Defined benefit 0.5%	-2	-1	-3	-2	-2	-2	-4
Defined contribution 3.5%	-1	-1	-3	-2	-1	-1	-4
Defined contribution 2.5%	-5	-7	-18	-17	-11	-6	-12
Defined contribution 1.5%	-1	-1	-1	-1	-1	-1	-2
Defined contribution 0.5%	0	0	0	0	0	0	0
Individual pure risk insurance	-31	-21	-27	-8	-1	0	0
Group life insurance	-5	-1	0				
Investment contracts	**-3**	**0**	**0**	**0**	**0**	**0**	**0**
Capital redemption contracts	-3	0	0	0			
Rate of guaranteed interest 2.5%	-3	0	0				
Rate of guaranteed interest 1.5%	0	0	0	0			
Reserve for decreased discount rate	-123	-72	-106	-26	-8	-1	0
Total	**-2,370**	**-2,380**	**-4,496**	**-2,692**	**-1,766**	**-1,050**	**-1,506**

Note 74. Profitability of life insurance business

EUR million	2019 Risk income	2019 Claims incurred	2019 Claim ratio	2018 Risk income	2018 Claims incurred	2018 Claim ratio
Life insurance	**414**	**394**	**95%**	**425**	**406**	**96%**
Term life insurance	34	17	50%	33	17	51%
Insurance saving	380	377	99%	392	389	99%
Pension insurance	**41**	**41**	**100%**	**43**	**43**	**100%**
Defined benefit	23	23	100%	24	24	100%
Defined contribution	18	18	101%	19	19	99%
OP Life Assurance Company	**455**	**435**	**96%**	**468**	**449**	**96%**

Claims expenditure of defined benefit group pension includes the longevity provision of EUR 0,8 million in 2019 and EUR 2.8 million in 2018.

Note 75. Life Insurance asset allocation

Investment asset portfolio allocation	31 Dec 2019 Fair value*, EUR million	31 Dec 2019 %	31 Dec 2018 Fair value*, EUR million	31 Dec 2018 %
Total money market instruments	**386**	**11%**	**175**	**5%**
Money market investments and deposits**	381	11%	170	5%
Derivatives***	5	0%	5	0%
Total bonds and bond funds	**2,555**	**71%**	**2,826**	**78%**
Governments	516	14%	623	17%
Investment Grade	1,548	43%	1,784	49%
Emerging markets and High Yield	200	6%	182	5%
Structured investments****	290	8%	236	6%
Total equities	**406**	**11%**	**337**	**9%**
Finland	105	3%	48	1%
Developed markets	156	4%	116	3%
Emerging markets	61	2%	57	2%
Fixed assets and unquoted equities	3	0%	3	0%
Private equity investments	81	2%	113	3%
Total alternative investments	**41**	**1%**	**34**	**1%**
Hedge funds	41	1%	34	1%
Total real property investments	**231**	**6%**	**271**	**7%**
Direct property investments	93	3%	114	3%
Indirect property investments	138	4%	156	4%
Total	**3,619**	**100%**	**3,644**	**100%**

* Includes accrued interest income.

** Include settlement receivables and liabilities and market value of derivatives.

*** Effect of derivatives on the allocation of the asset class (delta equivalent).

**** Include covered bonds, bond funds and illiquid bonds.

Note 76. Asset allocation in separated balance sheet 1

In connection with the portfolios' transfer, a separated balance sheet (separated balance sheet 1) was created out of the individual life insurance portfolio (separated balance sheet 1) transferred from Suomi Mutual in 2015 and with a profit distribution policy differing from other life insurance operations.

	31 Dec 2019		31 Dec 2018	
Investment asset portfolio allocation	Fair value*, EUR million	%	Fair value*, EUR million	%
Total money market instruments	**31**	**4%**	**34**	**4%**
Money market investments and deposits**	31	4%	34	4%
Derivatives***	0	0%		0%
Total bonds and bond funds	**705**	**88%**	**671**	**83%**
Governments	187	23%	217	27%
Inflation-linked bonds	3	0%	3	0%
Investment Grade	417	52%	370	46%
Emerging markets and High Yield	48	6%	36	4%
Structured investments****	50	6%	45	6%
Total equities	40	5%	35	4%
Developed markets	24	3%	14	2%
Emerging markets	1	0%	1	0%
Fixed assets and unquoted equities	0	0%	0	0%
Private equity investments	14	2%	20	2%
Total alternative investments		0%	2	0%
Hedge funds		0%	2	0%
Total real property investments	**27**	**3%**	**68**	**8%**
Direct property investments	11	1%	48	6%
Indirect property investments	16	2%	19	2%
Total	**803**	**100%**	**810**	**100%**

* Includes accrued interest income.

** Include settlement receivables and liabilities and market value of derivatives.

*** Effect of derivatives on the allocation of the asset class (delta equivalent).

**** Include covered bonds, bond funds and illiquid bonds.

Net return on investments at fair value totalled EUR 32 million (3). Net return on investments at fair value is calculated by deducting the value change in market-consistent insurance liability from income from investment assets.

Note 77. Asset allocation in separated balance sheet 2

In connection with the portfolios' transfer, a separated balance sheet (separated balance sheet 2) was created out of the individual life insurance portfolio (separated balance sheet 1) transferred from Suomi Mutual in 2015 and with a profit distribution policy differing from other life insurance operations.

	31 Dec 2019		31 Dec 2018	
Investment asset portfolio allocation	Fair value*, EUR million	%	Fair value*, EUR million	%
Total money market instruments	**93**	**4%**	**72**	**3%**
Money market investments and deposits**	93	4%	72	3%
Derivatives***	0	0%		0%
Total bonds and bond funds	**1,892**	**89%**	**1,946**	**85%**
Governments	560	26%	617	27%
Inflation-linked bonds	8	0%	7	0%
Investment Grade	1,086	51%	1,000	44%
Emerging markets and High Yield	10	0%	93	4%
Structured investments****	228	11%	230	10%
Total equities	**82**	**4%**	**90**	**4%**
Developed markets	42	2%	38	2%
Emerging markets	2	0%	2	0%
Fixed assets and unquoted equities	0	0%	0	0%
Private equity investments	37	2%	50	2%
Total alternative investments	**0**	**0%**	**1**	**0%**
Hedge funds		0%	1	0%
Total real property investments	**71**	**3%**	**185**	**8%**
Direct property investments	34	2%	143	6%
Indirect property investments	36	2%	43	2%
Total	**2,137**	**100%**	**2,295**	**100%**

* Includes accrued interest income.

** Include settlement receivables and liabilities and market value of derivatives.

*** Effect of derivatives on the allocation of the asset class (delta equivalent).

**** Include covered bonds, bond funds and illiquid bonds.

Net return on investments at fair value totalled EUR 71 million (-24). Net return on investments at fair value is calculated by deducting the value change in market-consistent insurance liability from income from investment assets.

Note 78. Sensitivity analysis of Life Insurance investment risks

Life insurance	Portfolio at fair value, EUR million 31 Dec 2019	Risk parameter		Effect on equity capital, EUR million 31 Dec 2019	1 Dec 2018
Bonds and bond funds*	2,941	Interest rate	1 pp	79	114
Equities**	363	Market value	10%	32	37
Private equity investments and unquoted equities	84	Market value	10%	8	12
Commodities		Market value	10%		
Real property	231	Market value	10%	23	27
Currency	69	Market value	10%	13	15
Credit risk premium***	2,941	Credit spread	0.1 pp	33	30
Derivatives	5	Volatility	10 pps	1	3

* Include money-market investments, convertible bonds and interest-rate derivatives.

** Include hedge funds and equity derivatives.

*** Includes bonds, convertible bonds and money-market investments, including government bonds and interest-rate derivatives issued by developed countries.

Note 79. Sensitivity analysis of investment risks under separated balance sheet 1

Separated balance sheet of individual life insurance portfolio (separated balance sheet 2)	Portfolio at fair value, EUR million 31 Dec 2019	Risk parameter		Effect on equity capital, EUR million 31 Dec 2019	1 Dec 2018
Bonds and bond funds	736	Interest rate	1 pp	31	32
Equities **	25	Market value	10%	3	4
Private equity investments and unquoted equities	14	Market value	10%	1	2
Real property	27	Market value	10%	3	7
Currency	69	Market value	10%	2	2
Credit risk premium***	736	Credit spread	1 pp	6	8
Derivatives	0	Volatility	10 pps	0	0

Investment and customer behaviour risks associated with the portfolio in the separated balance sheet 1 have been buffered through future supplementary benefits. The buffers are sufficient to cover a significant negative return on the investment assets included in the separated portfolios, after which OP Financial Group will bear all the risks associated with the portfolio. Changes in investments income above the buffer will affect OP Financial Group's equity capital. The buffer of the separated balance sheet 1 is EUR 103 million (83).

* Include money-market investments, convertible bonds and interest-rate derivatives.

** Include hedge funds and equity derivatives.

*** Include bonds, convertible bonds and money-market investments, including government bonds and interest-rate derivatives issued by developed countries, including government bonds and interest-rate derivatives issued by developed countries.

Note 80. Sensitivity analysis of investment risks under separated balance sheet 2

Separated balance sheet of individual life insurance portfolio (separated balance sheet 1)	Portfolio at fair value, EUR million 31 Dec 2019	Risk parameter		Effect on equity capital, EUR million 31 Dec 2019	1 Dec 2018
Bonds and bond funds	1,985	Interest rate	1 pp	88	95
Equities **	45	Market value	10%	4	9
Private equity investments and unquoted equities	37	Market value	10%	4	5
Commodities		Market value	10%		
Real property	71	Market value	10%	7	19
Currency	69	Market value	10%	5	6
Credit risk premium***	1,985	Credit spread	0.1 pp	17	24
Derivatives	0	Volatility	10 pps	0	0

Investment and customer behaviour risks associated with the portfolio in the separated balance sheet 2 have been buffered through future supplementary benefits. The buffers are sufficient to cover a significant negative return on the investment assets included in the separated portfolios, after which OP Financial Group will bear all the risks associated with the portfolio. Changes in investments income above the buffer will affect OP Financial Group's equity capital. The buffer of the separated balance sheet 2 is EUR 224 million (206).

* Include money-market investments, convertible bonds and interest-rate derivatives.

** Include hedge funds and equity derivatives.

*** Include bonds, convertible bonds and money-market investments, including government bonds and interest-rate derivatives issued by developed countries, including government bonds and interest-rate derivatives issued by developed countries.

Note 81. Risk exposure of Life Insurance investments in fixed-income securities

Fair value by term to maturity or repricing date, EUR million *	31 Dec 2019	31 Dec 2018
0–1 year	786	423
>1–3 years	737	590
>3–5 years	718	941
>5–7 years	448	426
>7–10 years	132	277
>10 years	114	170
Total	**2,936**	**2,826**
Modified duration	2.9	4.1
Average interest rate, %	1.5	1.5

* Includes money market investments and deposits, bonds, convertible bonds and bond funds.

Fixed-income portfolio by maturity and credit rating on 31 December 2019*, EUR million

Year(s)	0–1	1-3	3-5	5-7	7–10	10–	Total	Proportion
Aaa	0	117	234	37	38	81	508	17.3%
Aa1–Aa3	524	191	66	43	9	8	842	28.7%
A1–A3	64	192	82	145	26	14	524	17.8%
Baa1–Baa3	43	192	237	194	50	5	720	24.5%
Ba1 or lower	32	29	25	5	6	6	103	3.5%
Internally rated	122	15	74	25	3	0	239	8.1%
Total	**786**	**737**	**718**	**448**	**132**	**114**	**2,936**	**100.0%**

Fixed-income portfolio by maturity and credit rating on 31 December 2018*, EUR million

Year(s)	0–1	1–3	3–5	5–7	7–10	10–	Total	Proportion
Aaa	0	40	510	100	32	117	799	28.3%
Aa1–Aa3	205	65	57	41	52	1	421	14.9%
A1–A3	84	232	123	110	56	29	633	22.4%
Baa1–Baa3	94	221	216	147	125	21	824	29.1%
Ba1 or lower	22	22	13	14	10	4	86	3.0%
Internally rated	18	10	23	13	1	-2	63	2.2%
Total	**423**	**590**	**941**	**426**	**277**	**170**	**2,826**	**100.0%**

* Excludes credit derivatives.

The maturity is presented until the end of the term to maturity. If the paper includes a call option, the maturity is presented until the first possible Call date.

The average credit rating of a Life Insurance portfolio by Moody's is A2.

The average residual term to maturity of a Life Insurance fixed-income portfolio is 3.7 years (calculated on the basis of the Call date and maturity date).

Note 82. Risk exposure associated with fixed-income investments under separated balance sheet 1

Fair value by term to maturity or repricing date, € million *	31 Dec 2019	31 Dec 2018
0–1 year	113	129
>1–3 years	176	128
>3–5 years	164	150
>5–7 years	145	107
>7–10 years	59	89
>10 years	66	60
Total	**722**	**664**
Modified duration	4.7	5.0
Average interest rate, %	0.5	1.1

* Includes money market investments and deposits, bonds, convertible bonds and bond funds.

Fixed-income portfolio by maturity and credit rating on 31 December 2019*, EUR million

Year(s)	0–1	1–3	3–5	5–7	7–10	10–	Total	Proportion
Aaa	1	40	44	25	32	52	194	26.9%
Aa1–Aa3	49	28	37	31	1	2	147	20.4%
A1–A3	19	35	17	34	8	1	114	15.8%
Baa1–Baa3	12	59	54	45	17	8	194	26.9%
Ba1 or lower	8	10	7	3	1	2	30	4.2%
Internally rated	23	5	5	9	0	0	42	5.8%
Total	**113**	**176**	**164**	**145**	**59**	**66**	**722**	**100.0%**

Fixed-income portfolio by maturity and credit rating on 31 December 2018*, EUR million

Year(s)	0–1	1–3	3–5	5–7	7–10	10–	Total	Proportion
Aaa	36	42	41	38	32	52	240	36.2%
Aa1–Aa3	39	7	21	16	18	2	103	15.6%
A1–A3	14	33	30	13	14	0	105	15.8%
Baa1–Baa3	30	41	54	35	23	3	186	28.0%
Ba1 or lower	6	5	5	3	2	2	22	3.4%
Internally rated	4	1	0	2	0	0	7	1.0%
Total	**129**	**128**	**150**	**107**	**89**	**60**	**664**	**100.0%**

* Excludes credit derivatives.

The maturity is presented until the end of the term to maturity. If the paper includes a call option, the maturity is presented until the first possible Call date.

The average credit rating of the fixed-income portfolio in the separated balance sheet 1 is A2, according to Moody's rating.

The average residual term to maturity of the fixed-income portfolio in the separated balance sheet 1 (based on call dates and maturity dates) is 5.2 years .

Note 83. Risk exposure of fixed-income investments under separated balance sheet 2

Fair value by term to maturity or repricing date, € million *	31 Dec 2019	31 Dec 2018
0–1 year	213	726
>1–3 years	338	218
>3–5 years	535	282
>5–7 years	349	253
>7–10 years	229	197
>10 years	170	129
Total	**1,834**	**1,805**
Modified duration	5.2	5.4
Average interest rate, %	0.3	1.2

* Includes money market investments and deposits, bonds, convertible bonds and bond funds.

Fixed-income portfolio by maturity and credit rating on 31 December 2019*, EUR million

Year(s)	0–1	1–3	3–5	5–7	7–10	10–	Total	Proportion
Aaa	1	92	176	52	126	94	541	29.5%
Aa1–Aa3	137	39	77	39	18	55	364	19.8%
A1–A3	35	73	94	92	30	1	324	17.7%
Baa1–Baa3	17	121	164	144	47	19	512	27.9%
Ba1 or lower	0	0	0	1	0	1	2	0.1%
Internally rated	23	13	24	22	7	0	90	4.9%
Total	**213**	**338**	**535**	**349**	**229**	**170**	**1,834**	**100.0%**

Fixed-income portfolio by maturity and credit rating on 31 December 2018*, EUR million

Year(s)	0–1	1–3	3–5	5–7	7–10	10–	Total	Proportion
Aaa	250	66	102	68	42	75	603	33.4%
Aa1–Aa3	157	1	15	22	10	41	246	13.6%
A1–A3	148	49	48	59	32	2	338	18.7%
Baa1–Baa3	149	86	95	87	101	9	528	29.3%
Ba1 or lower	9	11	9	8	6	2	45	2.5%
Internally rated	13	5	12	9	6	0	44	2.4%
Total	**726**	**218**	**282**	**253**	**197**	**129**	**1,805**	**100.0%**

* Excludes credit derivatives.

The maturity is presented until the end of the term to maturity. If the paper includes a call option, the maturity is presented until the first possible Call date.

The average credit rating of the fixed-income portfolio in the separated balance sheet 2 is A1, according to Moody's rating.

The average residual term to maturity of the fixed-income portfolio in the separated balance sheet 2 (based on call dates and maturity dates) is 5.5 years.

Note 84. Currency risk associated with Life Insurance investments

Foreign currency exposure, EUR million	31 Dec 2019	31 Dec 2018
USD	41	74
SEK	0	2
JPY		0
GBP	1	2
Other	24	49
Total*	**66**	**128**

* Total net currency exposure.

The currency exposure was 1.8% (3.4) of the investment portfolio.

Note 85. Currency risk associated with investments under separated balance sheet 1

Foreign currency exposure, EUR million	31 Dec 2019	31 Dec 2018
USD	13	14
SEK	0	0
GBP	0	0
Other	8	9
Total*	**21**	**24**

* Total net currency exposure.

The currency exposure was 2.6% (2.9) of the investment portfolio.

Note 86. Currency risk associated with investments under separated balance sheet 2

Foreign currency exposure, EUR million	31 Dec 2019	31 Dec 2018
USD	44	36
SEK	0	0
JPY	2	2
GBP	1	0
Other	20	24
Total*	**67**	**62**

* Total net currency exposure.

The currency exposure was 3.1% (2.7) of the investment portfolio.

Note 87. Counterparty risk associated with Life Insurance investments

Credit rating, EUR million Moody's equivalent	31 Dec 2019 Investment*	31 Dec 2018 Investment*
Aaa	508	799
Aa1–Aa3	842	421
A1–A3	524	633
Baa1–Baa3	720	824
Ba1 or lower	103	86
Internally rated	239	63
Total	**2,936**	**2,826**

* Includes money-market investments and deposits, bonds, and bond funds.

Note 88. Counterparty risk associated with investments under separated balance sheet 1

Credit rating, EUR million Moody's equivalent	31 Dec 2019 Investment*	31 Dec 2018 Investment*
Aaa	194	240
Aa1–Aa3	147	103
A1–A3	114	105
Baa1–Baa3	194	186
Ba1 or lower	30	22
Internally rated	42	7
Total	**722**	**664**

* Includes money-market investments and deposits, bonds, and bond funds.

Note 89. Counterparty risk associated with investments under separated balance sheet 2

Credit rating, EUR million Moody's equivalent	31 Dec 2019 Investment*	31 Dec 2018 Investment*
Aaa	541	603
Aa1–Aa3	364	246
A1–A3	324	338
Baa1–Baa3	512	528
Ba1 or lower	2	45
Internally rated	90	44
Total	**1,834**	**1,805**

* Includes money-market investments and deposits, bonds, and bond funds.

Note 90. Credit risk associated with investments under separated balance sheet 1

	31 Dec 2019		31 Dec 2018		Change in fair value arising from change in credit risk	
Investments exposed to credit risk, EUR million	Fair value*	Credit derivative par value	Fair value*	Credit derivative par value	Invest-ments change *****	Credit derivatives change *****
Total money market instruments	**31**		**34**			
Money market investments and deposits**	31		34			
Derivatives***	0					
Total bonds and bond funds	**705**		**671**		**7**	**-1**
Governments	187		217		-1	
Inflation-linked bonds	3		3		0	
Investment Grade	417		370		7	-1
Emerging markets and High Yield	48		36		1	
Structured investments****	50		45			
Total	**736**		**705**		**7**	**-1**

Exclude money market investments and convertible bond investments.
*Includes accrued interest income.
**Include settlement receivables and liabilities.
*** Effect of derivatives on the allocation of the asset class (delta equivalent).
**** Include covered bonds, bond funds and illiquid bonds.
***** Running yield deducted from total return of liquid fixed income investments, excluding Money market and investment result relative to the EUR swap curve.
*****Total return in direct credit risk derivatives. The method is not suitable for structured investments.

Note 91. Credit risk associated with investments under separated balance sheet 2

Investments exposed to credit risk, EUR million	31 Dec 2019 Fair value*	31 Dec 2019 Credit derivative par value	31 Dec 2018 Fair value*	31 Dec 2018 Credit derivative par value	Change in fair value arising from change in credit risk: Invest-ments change *****	Change in fair value arising from change in credit risk: Credit derivatives change *****
Total money market instruments	**93**		**72**			
Money market investments and deposits**	93		72			
Derivatives***	0					
Total bonds and bond funds	**1,892**		**1,946**		**23**	**-4**
Governments	560		617		-2	
Inflation-linked bonds	8		7		0	
Investment Grade	1,086		1,000		21	-4
Emerging markets and High Yield	10		93		4	
Structured investments****	228		230			
Total	**1,985**		**2,018**		**23**	**-4**

Exclude money market investments and convertible bond investments.
*Includes accrued interest income.
**Include settlement receivables and liabilities.
*** Effect of derivatives on the allocation of the asset class (delta equivalent).
**** Include covered bonds, bond funds and illiquid bonds.
***** Running yield deducted from total return of liquid fixed income investments, excluding Money market and investment result relative to the EUR swap curve.
*****Total return in direct credit risk derivatives. The method is not suitable for structured investments.

Capital adequacy and capital base

The following notes present a summary of OP Financial Group's capital adequacy and capital base. The OP Amalgamation Capital Adequacy Report discloses information on the capital adequacy of the consolidated group of the amalgamation of member cooperative banks, as specified in Part 8 of the Capital Requirements Regulation of the European Parliament and of the Council No. 575/2013 (CRR) (Pillar III disclosures). Given that Pillar III disclosures are based on the consolidated capital adequacy on the amalgamation of member cooperative banks, it is not directly comparable with information disclosed on OP Financial Group.

The amalgamation of the member cooperative banks consists of the amalgamation's central cooperative (OP Cooperative), the central cooperative's member credit institutions and the companies belonging to their consolidation groups. Although OP Financial Group's insurance companies do not belong to the amalgamation of the cooperative banks, investments made in them have a major impact on capital adequacy calculated in accordance with the capital adequacy regulations for credit institutions. More detailed information on companies within the consolidation group can be found in Notes 22 and 45.

In OP Financial Group's view, the most significant open changes in the regulatory and supervisory environment affecting capital adequacy for credit institutions include obligations, if any, imposed by the supervisor due to ECB's targeted review of internal (IRBA) models (TRIM), and obligations imposed by the supervisor due to the new definition of default.

The process based on the new definition of default recognises defaulted customers earlier, for example, based on information in external credit registers or in retail customers by extending the default to cover all exposures of an individual obligor. This new definition is expected to mean a larger number of default observations and to weaken credit risk parameters. OP Financial Group will apply a so-called two-step approach. The first step involves the change of the definition of default, which is planned to take place in March 2020. The second step to be taken later involves the calibration of credit risk parameters. The supervisory obligation related to the adoption of the new definition of default is expected to weaken OP Financial Group's CET1 ratio by 1.3 percentage points in the first step. Growth in the expected credit losses (ECL) caused by the change in the definition of default has been taken into account in the effect on capital adequacy. The growth is estimated to be less than 10% of the total amount of the ECL on 31 December 2019.

The effects of the ECB's targeted review of internal (IRBA) models (TRIM) on corporate exposures are still open. More detailed information on the effects is expected in the first half of 2020.

Note 92. Capital base

EUR million	31 Dec 2019	31 Dec 2018
OP Financial Group's equity capital	**12,570**	**11,835**
The effect of insurance companies on the Group's shareholders' equity is excluded	-237	189
Fair value reserve, cash flow hedge	-141	-33
Common Equity Tier 1 (CET1) before deductions	**12,192**	**11,991**
Intangible assets	-630	-710
Excess funding of pension liability and valuation adjustments	-76	-76
Items deducted from cooperative capital	-142	-147
Expected profit distribution	-97	-94
Shortfall of ECL minus expected losses	-428	-288
Common Equity Tier 1 (CET1)	**10,819**	**10,677**
Hybrid capital to which transitional provision is applied	60	80
Additional Tier 1 capital (AT1)	**60**	**80**
Tier 1 capital (T1)	**10,879**	**10,757**
Debenture loans	806	995
Tier 2 capital (T2)	**806**	**995**
Total capital base	**11,685**	**11,752**

Terminated cooperative capital contributions refunded to customers in January 2020, as permitted by the supervisor, were deducted from CET1 capital. ECL - shortfall of expected losses increased due to the risk parameter factors set by the ECB for retail exposures.

OP Financial Group has applied transitional provisions regarding old capital instruments to subordinated loans. In the calculation of capital adequacy and the leverage ratio, the Group has not applied the IFRS 9 transitional provision.

Note 93. Total risk exposure amount

OP Financial Group has used the Foundation Internal Ratings Based Approach (FIRBA) to measure capital requirement for corporate and credit institution exposures. This approach uses internal credit ratings to determine a customer's probability of default (PD), whereas loss given default (LDG) and credit conversion factor (CF) are regulatory standard estimates. The Group has used the Internal Ratings Based Approach (IRBA) to measure capital requirement for retail exposures. This approach uses internal credit ratings to determine a customer's PD, LGD and CF are estimated internally.

It is possible to use various methods to measure capital adequacy requirement for equity investments. In the PD/LGD method, investments' risk-weighted exposure is calculated using PD, based on internal credit rating, and a regulatory standard LGD. According to the Simple Risk Weight Approach, investments' risk-weighted exposure amount derives from multiplying each investment by the risk-weight determined by the type of investment.

OP Financial Group has used the Standardised Approach to measure capital requirement for operational risks and market risks.

Risk exposure amount, EUR million	31 Dec 2019	31 Dec 2018
Credit and counterparty risk	**49,216**	**41,602**
Standardised Approach (SA)	**4,101**	**3,878**
Central government and central banks exposure	304	293
Credit institution exposure	8	7
Corporate exposure	2,646	2,561
Retail exposure	1,069	961
Equity investments	22	12
Other	52	43
Internal Ratings-based Approach (IRB)	**45,115**	**37,724**
Credit institution exposure	1,023	1,083
Corporate exposure	25,580	23,474
Retail exposure	10,320	5,276
Equity investments	6,898	6,659
Other	1,293	1,233
Market and settlement risk (Standardised Approach)	**1,309**	**1,319**
Operational risk (Standardised Approach)	**4,232**	**4,136**
Valuation adjustment (CVA)	**191**	**175**
Other risks	**11**	
Total risk exposure amount	**54,959**	**47,233**
Risk weight floors based on ECB's decision	**505**	**4,893**
Total risk exposure amount including risk weight floors	**55,464**	**52,126**

The risk exposure amount (REA) totalled EUR 55.5 billion (52.1), or 6% higher than on 31 December 2018. The risk-weight floor for retail exposures set by the ECB decreased to EUR 0.5 billion, due to an increase in the risk weights of mortgage-backed retail exposures. The average risk weights of retail exposures increased as a result of added conservatism in risk parameters and of risk parameter factors set by the ECB. The loan portfolio grew in corporate and retail exposures.

The risk weight of equity investments includes EUR 6.4 billion in insurance holdings within OP Financial Group. The IRB retail risk-weighted asset increased due to the risk parameter factors set by the ECB for retail exposures, while the effect of the ECB's risk-weight floor decreased.

EUR 279 million (261) of government exposures represent deferred tax assets that are treated with a risk weight of 250% instead of a deduction from Common Equity Tier 1 capital.

Capital requirement for counterparty risk amounts to EUR 40 million (EUR 37 million).

Note 94. Capital ratios

Ratios, %	31 Dec 2019	31 Dec 2018
CET1 capital ratio	19.5	20.5
Tier 1 ratio	19.6	20.6
Capital adequacy ratio	21.1	22.5

Ratios, fully loaded, %	31 Dec 2019	31 Dec 2018
CET1 capital ratio	19.5	20.5
Tier 1 ratio	19.5	20.5
Capital adequacy ratio	21.0	22.4

Capital requirement, EUR million	31 Dec 2019	31 Dec 2018
Capital base	11,685	11,752
Capital requirement	8,068	7,448
Buffer for capital requirements	3,617	4,304

The capital requirement of 14.5% comprises the minimum requirement of 8%, the capital conservation buffer of 2.5%, the O-SII buffer requirement of 2.0%, the minimum requirement (P2R) of 2.0% (1.75 a year ago) set by the ECB and the changing capital conservation buffers by country for foreign exposures.

Note 95. OP Financial Group's capital adequacy

Note 2, OP Financial Group's risk and capital adequacy management principles, provides a description of how the Group organises its Group-level risk and capital-adequacy management process. OP Financial Group and all of its entities fulfil the capital adequacy requirements set by the authorities.

Capital base and capital adequacy under the Act on the Supervision of Financial and Insurance Conglomerates

EUR million	31 Dec 2019	31 Dec 2018
OP Financial Group's equity capital	12,570	11,835
Hybrid instruments and debenture bonds	866	1,075
Other sector-specific items excluded from capital base	-349	-349
Goodwill and intangible assets	-1,393	-1,501
Insurance business valuation differences*	720	735
Proposed profit distribution	-97	-94
Items under IFRS deducted from capital base**	-150	-46
Shortfall of ECL minus expected losses	-402	-262
Conglomerate's capital base, total	**11,766**	**11,393**
Regulatory capital requirement for credit institutions***	7,132	6,528
Regulatory capital requirement for insurance operations*	1,386	1,199
Conglomerate's total minimum capital requirement	**8,518**	**7,727**
Conglomerate's capital adequacy	**3,248**	**3,666**
Conglomerate's capital adequacy ratio (capital base/minimum of capital base) (%)	**138**	**147**

* Differences between fair values and carrying amounts based on the solvency of insurance companies and an estimate of SCR.

** Excess funding of pension liability, portion of cash flow hedge of fair value reserve.

*** Total risk exposure amount x 14.3 %.

Transitional provisions have been taken into account in figures. The SCR figures of insurance companies are presented in Notes 60 and 72. The FiCo calculation is unaudited. Because of regulation and capital buffers set by the supervisor, the 100% capital adequacy is not a minimum level but the level above which the Group can operate without the measures required by the supervisor.

Statement concerning the financial statements

We have approved the Report by the Board of Directors and the consolidated Financial Statements for 1 January–31 December 2019 of OP Financial Group, a financial entity as referred to in section 9 of the Act on the Amalgamation of Deposit Banks. The Report by the Board of Directors and the Financial Statements are presented to, and passed out at, the Annual Cooperative Meeting of OP Cooperative.

Helsinki, 18 February 2020

OP Cooperative Board of Directors

Jaakko Pehkonen
Chair of the Board of Directors

Timo Ritakallio
OP Financial Group's President and Group Chief Executive Officer

Jarna Heinonen

Leif Enberg

Jari Himanen

Kati Levoranta

Riitta Palomäki

Olli Tarkkanen

Mervi Väisänen

Statement by the OP Cooperative Supervisory Council

The Supervisory Council has read and analysed the financial statements of OP Financial Group's financial statements. For the Annual Cooperative Meeting of 2020, the Supervisory Council states that OP Financial Group has been managed in compliance with laws and regulations and that the Supervisory Council has no comment or cause for complaint with respect to OP Financial Group's financial statements for 2019.

Helsinki, 19 February 2020
On behalf of the Supervisory Council

Annukka Nikola
Supervisory Council
Chair

Markku Sotarauta
Supervisory Council
1st Vice Chair

Auditors' note

We have today issued an auditor's report on the audit performed

Helsinki, 20 February 2020

KPMG Oy Ab
Audit firm

Juha-Pekka Mylén
Authorised Public Accountant

This document is an English translation of the Finnish auditor's report. Only the Finnish version of the report is legally binding.

Auditor's Report

To the members of OP Cooperative

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of the amalgamation OP Financial Group pursuant to the Act on the Amalgamation of Deposit Banks for the year ended on 31 December 2019. The financial statements comprise the consolidated balance sheet, income statement, statement of comprehensive income, statement of changes in equity capital, cash flow statement and notes, including a summary of significant accounting policies.

In our opinion the consolidated financial statements give a true and fair view of OP Financial Group's financial position and financial performance and cash flows in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU.

Our opinion is consistent with the additional report submitted to the Board of Directors and the Audit Committee of OP Cooperative.

Basis for Opinion

We conducted our audit in accordance with good auditing practice in Finland. Our responsibilities under good auditing practice are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of our report.

We are independent of member institutions within OP Financial Group in accordance with the ethical requirements that are applicable in Finland and are relevant to our audit, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

In our best knowledge and understanding, the non-audit services that we have provided to member institutions within OP Financial Group are in compliance with laws and regulations applicable in Finland regarding these services, and we have not provided any prohibited non-audit services referred to in Article 5(1) of regulation (EU) 537/2014. The non-audit services that we have provided have been disclosed in note 11 to the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Materiality

The scope of our audit was influenced by our application of materiality. The materiality is determined based on our professional judgement and is used to determine the nature, timing and extent of our audit procedures and to evaluate the effect of identified misstatements on the financial statements as a whole. The level of materiality we set is based on our assessment of the magnitude of misstatements that, individually or in aggregate, could reasonably be expected to have influence on the economic decisions of the users of the financial statements. We have also taken into account misstatements and/or possible misstatements that in our opinion are material for qualitative reasons for the users of the financial statements.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. The significant risks of material misstatement referred to in the EU Regulation No 537/2014 point (c) of Article 10(2) are included in the description of key audit matters below.

We have also addressed the risk of management override of internal controls. This includes consideration of whether there was evidence of management bias that represented a risk of material misstatement due to fraud.

THE KEY AUDIT MATTER	HOW THE MATTER WAS ADDRESSED IN THE AUDIT
Receivables from customers (notes 1, 4, 12, 19 and 49 to the financial statements)	
Receivables from customers, totalling €91.5 billion, are the most significant item on the OP Financial Group's consolidated balance sheet representing 62 percent of the total assets. Interest income accruing on receivables, in aggregate €1.2 billion, forms a material part of the OP Financial Group's result. OP Financial Group has applied IFRS 9 Financial Instruments to recognition of impairment losses on receivables as from 1 January 2018. Calculation of expected credit losses involves assumptions, estimates and management judgement, for example, in respect of the probability and amount of the expected credit losses as well as determining the significant increases in credit risk. Due to the significance of the carrying amount involved, complexity of the accounting methods used for measurement purposes and management judgement involved, receivables from customers are addressed as a key audit matter.	We evaluated compliance with the lending instructions and assessed principles and controls over recognition and monitoring of loan receivables and interest in the entities of OP Cooperative Consolidated. We utilised data analysis in our audit focusing on the lending process and loan portfolios. We assessed the methods and the key assumptions for calculating expected credit losses as well as tested the controls related to the calculation process and credit risk models for the expected credit losses. Our IFRS and financial instruments specialists were involved in the audit. We also requested other auditors of OP Financial Group entities to issue an opinion that the entities within OP Financial Group have complied with the instructions provided by OP Cooperative in respect of the financing process. Furthermore, we considered the appropriateness of the notes provided by OP Financial Group in respect of receivables and expected credit losses.

Investment assets and derivative contracts (notes 1, 3, 7, 18, 20, 29 and 49 to the financial statements)

The carrying value of investment assets totals €23.5 billion mainly consisting of investments measured at fair value. The aggregate derivative assets are €4.8 billion and derivative liabilities €3.3 billion comprising contracts held for trading and hedging purposes. Derivatives are measured at fair value in preparing the financial statements.

The fair value of financial instruments is determined using either prices quoted in an active market or OP Financial Group's own valuation techniques where no active market exists. Determining fair values for investments and derivatives involves management judgements, especially in respect of those instruments for which market-based data is not available.

In 2019, OP Financial Group changed the revenue recognition method for the customer margin related to a derivative clause attached to loans with an interest rate cap or interest rate collar. The effect of this change was adjusted retrospectively in the retained earnings in equity.

Due to the significant carrying values of investment assets and derivative positions involved, and management judgements related to measurement of illiquid investments, valuation of these assets is addressed as a key audit matter.

We evaluated the appropriateness of the accounting principles applied and the valuation techniques used by OP Financial Group, and tested accounting and valuation of investments and derivative contracts using data-analysis, for example.

In respect of derivative contracts, we considered the appropriateness of the accounting treatment applied in relation to the requirements set under IFRS. As regards the adoption of the amortisation-based revenue recognition method for the customer margin related to a derivative clause attached to loans with an interest rate cap or interest rate collar, we assessed the basis and implementation of the change.

As part of our year-end audit procedures, we compared the fair values used in valuation of investment assets and derivatives with market quotations and other external price references.

We also assessed the impairment principles applied and techniques used by OP Financial Group in respect of investments.

Finally, we considered the appropriateness of the notes on investment assets and derivatives.

Insurance liabilities (notes 1, 5 and 31 to the financial statements)

Measurement of insurance liabilities, amounting to €9.5 billion on the OP Financial Group's balance sheet, is based on various actuarial assumptions and calculation methods.

Calculation of insurance liabilities relies on data processed in many IT systems and combination of that data. The databases are extensive and

Our audit procedures included assessment of the principles related to calculation and recognition of insurance liabilities. Our actuary specialist evaluated the appropriateness of the assumptions and methods used in determining insurance liabilities and compared the assumptions to industry development and market information, among others.

data volumes processed by the IT systems are substantial.

Interest rate risk associated with insurance liabilities is hedged with derivatives and interest rate instruments, which are measured at fair value in the financial statements.

Due to the significant carrying value of insurance liabilities involved, and the complexity associated with actuarial models used, insurance liabilities are addressed as a key audit matter.

We evaluated internal control over the accuracy of data used in calculating insurance liabilities and assessed the related controls.

We analysed the hedging principles of interest rate risk for insurance liabilities and the appropriateness of the accounting treatment of hedging derivative instruments. Moreover, we assessed the accounting treatment of both the decrease made in the discount rate in the non-life insurance companies during the financial year and changes in value of the related hedging derivatives.

Furthermore, we considered the appropriateness of the notes on insurance liabilities.

Control environment relating to financial reporting process and IT systems

In respect of the accuracy of the financial statements of OP Financial Group, the key reporting processes are dependent on information systems. Therefore, information technology plays an essential role for business continuity, incident management and the accuracy of financial reporting. Consequently, the IT environment related to the financial reporting process and the application controls of individual IT systems have a significant effect on the selected audit approach.

As the consolidated financial statements of OP Financial Group are based on a large number of data flows from many systems, the financial reporting IT environment is addressed as a key audit matter.

We obtained an understanding of the IT systems related to financial reporting and the associated control environment and tested the effectiveness of the related internal controls.

Our audit procedures also concentrated on monitoring key data flows and transactions, change management, interfaces and outsourcing management.

As part of our audit, we performed extensive substantive procedures and data analyses relating to various aspects in the financial reporting process.

Responsibilities of the Board of Directors and the Managing Director for the Financial Statements

The Board of Directors and the Managing Director are responsible for the preparation of consolidated financial statements that give a true and fair view in accordance with International Financial Reporting Standards (IFRS) as adopted by the EU in a manner explained in more detail in the notes to the financial statements and comply with statutory requirements. The Board of Directors and the Managing Director are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board of Directors and the Managing Director are responsible for assessing OP Financial Group's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting. The financial statements are

prepared using the going concern basis of accounting unless there is an intention to liquidate OP Financial Group, or there is no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with good auditing practice will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with good auditing practice, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

— Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

— Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of OP Financial Group's internal control.

— Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

— Conclude on the appropriateness of the Board of Directors and the Managing Director's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on OP Financial Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause OP Financial Group to cease to continue as a going concern.

— Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events so that the financial statements give a true and fair view.

— Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within OP Financial Group to express an opinion on the consolidated financial statements. We remain solely responsible for our audit opinion.

— Audit of the consolidated financial statements of amalgamation OP Financial Group is based on the financial statements of OP Cooperative Consolidated and member cooperative banks, as well as the auditor's reports submitted for the audit of OP Financial Group's consolidated financial statements.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key

audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Other Reporting Requirements

Information on our audit engagement

We were first appointed as auditors by the Cooperative Meeting of OP Cooperative in 2002 and our appointment represents a total period of uninterrupted engagement of 18 years.

Other Information

The Board of Directors and the Managing Director are responsible for the other information. The other information comprises the report of the Board of Directors. Our opinion on the financial statements does not cover the other information.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. Our responsibility also includes considering whether the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

In our opinion, the information in the report of the Board of Directors is consistent with the information in the financial statements and the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

If, based on the work we have performed, we conclude that there is a material misstatement of the report of the Board of Directors, we are required to report that fact. We have nothing to report in this regard.

Helsinki, 20 February 2020

KPMG OY AB

JUHA-PEKKA MYLÈN
Authorised Public Accountant, KHT