RBC Investor Services Bank S.A.

Société anonyme

Consolidated Annual Report

For the year ended October 31, 2019

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R.C.S. Luxembourg: B 47.192

Contents

Directors' Report

This report should be read in conjunction with the consolidated financial statements, which have been prepared in accordance with International Financial Reporting Standards ("IFRS") as adopted by the European Union ("EU") and the related notes to the consolidated financial statements included in this consolidated annual report. The preparation of consolidated financial statements requires management to make estimates and assumptions in the application of certain accounting policies that materially affect the reported amounts of assets, liabilities, revenues and expenses. Actual results could differ from those estimates.

All references in this report to "RBC Investor Services", "RBCIS", "RBC IS Bank", "Group", "Bank", "we", "us", "our" or similar terms mean RBC Investor Services Bank S.A. and its subsidiaries on a consolidated basis.

All references in this report to "year", or "financial year" or similar terms mean the period from November 1, 2018 to October 31, 2019.

Readers should not place undue reliance on these statements as a number of important factors could cause the actual results to differ materially from the beliefs, plans, objectives, expectations and intentions expressed in such forward-looking statements.

Business Review and Results

Business description

RBC Investor Services Bank S.A. is a Bank headquartered in Luxembourg.

Operations are conducted throughout RBC Investor Services Bank S.A. and its subsidiaries and branches ("Group") around the world (see Note 34).

Branches and subsidiaries of the Bank are located in Hong Kong, Ireland, Italy, London, Switzerland, New York, France, Belgium, Singapore and Malaysia.

The Group offers institutional investors an integrated suite of products, including global custody, fund and pension administration, securities lending, shareholder services, analytics and other related services.

The Group offers clients a unique value proposition – the geographic reach of a global player, together with the client service quality of a local provider. The Group has 2,719 employees (average FTE) who provide award-winning client services. The Group operates through a global custody network that covers more than 80 markets.

The Group is owned by Royal Bank of Canada. It is independently capitalised and is rated AA- by Standard & Poor's. The Group and the RBC IS Investor Services Trust business ("IS Trust") together represent RBC's Investor & Treasury Services business segment which provides specialist custody services and integrated funding and liquidity solutions for clients.

The Group's activities

The Group provides services to clients which including Custody Services, Fund Administration, Shareholder Services, Treasury and Market Services, Trustee and Depositary Services and Private Capital Services.

Custody Services

The Group offers both Luxembourg and International clients global custody services that includes safekeeping, settlement, corporate actions, income collection, proxy voting, tax services and entitlements processing. The main objective of this unit is to manage the full range of custody products and services throughout their lifecycle. The unit adapts and develops product capabilities with clear focus on enhancing the client experience while protecting the Group's leadership in the industry.

Through its various initiatives, the unit supports business growth and helps drive product efficiency and profitability.

Fund Administration Services

The Group clients are drawn from a wide geographic base and promote a variety of fund structures that are distributed globally. The Group has a wealth of expertise with respect to a variety of fund structures, and coupled with a strong foothold in the industry, ensures the provision of fund services of the highest calibre. The main services include investment operations, trade order matching fund accounting, valuation, unit pricing and client reporting.

Fund Accounting is the most significant activity in this unit. This is carried out by the accounting team within the Fund Administration department. Operations includes Net Asset Value (NAV) production and maintenance of accounting records of the fund/sub-fund.

Shareholder Services

The Group provides its clients with the full spectrum of shareholders services including registrar and transfer agency, cash management, fee processing, dedicated quality assurance, e-business facilities (clearing, online dealing, SWIFT, National Securities Clearing Corporation (NSCC), investor communication (distributors and shareholders), and reporting.

The Group provides distribution support and accurate record keeping for its clients involved in global asset management. It delivers an integrated operating model in off-shore and on-shore markets for all types of products (mainstream, money market, hedge fund, insurance, ETF, real estate, private equity).

Shareholders services are integrated services designed to mitigate risks, efficiently manage costs and help clients, advance their growth strategies.

Treasury management

Treasury and Market Services provide the Group's clients with a wide range of services that support their business. The Group focuses on the evolution of treasury markets to understand asset management flows and to provide specific solutions to their clients' needs. Competitive pricing, accurate settlements and integrated systems are the basis to add value to clients' treasury processes. Treasury and Market Services include services such as Foreign Exchange, Treasury Services and Cash Management, Securities Lending and Client Lending.

Trustee and Depositary Services

Trustee & Depositary services (TDS) is a mandatory (regulatory) component of acting as a custodian of EU regulated funds. TDS activities include delivering high quality compliance monitoring for a broad range of investment funds, including Undertakings for Collective Investments in Transferable Securities (UCITS) and Alternative Investment Funds (AIF). The services include: monitoring investment compliance, oversight of NAV calculations, oversight of subscriptions and redemptions, oversight of distributions, monitoring timely settlement of transactions, cash flow monitoring and other fiduciary services.

Private Capital Services

The Group provides specialist services to the alternative asset sector which includes the real estate, private equity, infrastructure and debt funds. Services that are offered support the full life-cycle of alternative funds. The Group supports onshore and offshore regulated and unregulated structures from its locations in Luxembourg, France and Ireland. Our service offering is an extension of the existing product offering except that the product is targeted directly to this asset class and generally offered to clients as a bundled service. Services offered to clients includes; custody services, fund accounting, shareholder services, committed lending services, and fund corporate services.

Operating Environment

The 2019 operating environment was challenging for the business of the Group. Macro economic factors include rising trade tensions and uncertainty about the global economic outlook weighing on sentiment and negative interest rates in European Union and Switzerland. The US Federal Reserve cut its benchmark interest rate for the third time in calendar 2019 in October but signalled that further rate cuts are unlikely as long as the economic outlook evolves in line with expectations. Euro area Gross Domestic Product (GDP) is expected to grow by 1.2% in calendar year 2019, which is down from a 1.9% increase in calendar year 2018. Growth in Germany, the euro area's largest economy, has slowed amid a sustained downturn in the industrial sector. Growth in other major euro area remains modest, with weakness in manufacturing generally being offset by stronger services sector activity.

The European Central Bank (ECB) announced additional monetary policy stimulus in September 2019, cutting its key interest rate further into negative territory and restarting quantitative easing. Growth in the U.K. is expected to slow to 1.3% in calendar year 2019 from 1.4% in calendar year 2018 as ongoing uncertainty about Brexit continues to weigh on business sentiment and investment. Euro area GDP growth is expected to remain steady at a relatively modest pace in 2020, with some help from slightly more stimulative fiscal policy, while growth in the U.K. economy is expected to slow further.

We continue to monitor and prepare for regulatory developments and changes in a manner that seeks to ensure compliance with new requirements, while mitigating adverse business or financial impacts to the extent practicable. Such impacts could result from new or amended laws or regulations and the expectations of those who enforce them. Significant developments include continuing changes to standards on capital and liquidity, global trade agreements, legislative developments on data privacy, amendments to anti-money laundering regulations and European regulatory reforms.

Business Highlights of 2019

Lower interest rates have contributed to lower earnings from provision of treasury services and also resulted in margin compression associated with our client deposits. Competitive pressures in our markets has also resulted in a 5% decrease of assets under custody and compression of margins earned from provision of custody services.

In recognition of the challenging macroeconomic conditions and operating environment, the Board of the RBC IS Bank S.A. approved on October 23, 2019, a restructuring program, in order to make the business more competitive and position the business for future growth. The cost of the restructuring program is EUR 39 million and the provision was recorded in the financial statements in October 2019. The Bank has agreed a social plan with employee representatives of the Bank in respect of the restructuring plan.

Multi-jurisdictional clients and specialised investment funds such as private equity and real estate assets represented a significant share of new business, underscoring the strength of group's value proposition. The Group's dedication to quality and service excellence resonated with clients again this year.

The Group continues to benefit from the globalisation of the asset management business and increasing outsourcing activity across both middle and back office functions. Reflecting the growing sophistication of the fund industry, the demand for value-added services, a key revenue contributor, is expected to increase. The Group is well positioned to take advantage of future fund industry growth and increasing allocations to alternative investments in key jurisdictions.

The RBC Investor & Treasury Services platform implemented a new transfer pricing methodology called Residual Profit Split, ("RPS"), effective November 2018, which reflects the increasingly integrated business model across the Group and IS Trust businesses.

Key Figures

Analysis of the consolidated statement of profit or loss

Net profit after tax

In 2019, the Group's net profit after tax was EUR 28 million (2018: EUR 67 million). The decline in net profit after tax was due mainly to lower fee and commission income from investor services (EUR 19 million), lower income from financial instruments (EUR 23 million), costs of the restructuring program (EUR 36 million), offset by lower general and administrative expenses (EUR 32 million) and recognition of deferred tax asset in our French entities (EUR 6 million).

The Group derives its revenues principally from two streams: fee and commission income and income earned from financial instruments.

Fee and commission income

The Group earns fee income from the provision of custody, fund administration, shareholder services, securities lending and related value added services to clients. The Group sub contracts provision of custody services to third parties in specific markets and incurs commission expenses. The net fee and commission income for 2019 was EUR 313 million, which was a 6% decline compared with 2018 (EUR 332 million), driven by competitive pressures in our markets which the Group serves, which has resulted in a decline of 5% in Assets under Custody (2019 EUR 473 billion, 2018 EUR 501 billion).

Income from financial instruments

Income from financial instruments comprises mainly Net interest income (EUR +39 million) and Net income from financial instruments at fair value through profit or loss (EUR +114 million). Net Income from financial instruments at fair value through profit or loss comprises fees earned from provision of foreign exchange services and derivative products to customers. Net Income from financial instruments at fair value through profit or loss is dependent mainly on customer transactions, and upon the global stock markets, foreign exchange volatility and cross border client investment flows. The sum of Net interest income and Net income from financial instruments at fair value through profit or loss for the year ended October 31, 2019 was EUR 153 million, a reduction of 13% compared with 2018 (EUR 176 million). The principal drivers of this variance were lower fees from provision of foreign exchange services to customers as a result of lower client mandated FX transactions.

Net operating revenue was EUR 466 million, a decline of 9% versus 2018 (EUR 515 million) due mainly to lower revenue from financial instruments (EUR 23 million), and competitive pressures in our markets resulting in lower fees earned from provision of investors services (EUR 19 million).

Operating expenses

Total operating expenses were EUR 439 million, an increase of 2% versus 2018 (EUR 431 million), driven by the costs of restructuring program (EUR 39 million) in order to make the business more competitive and position the business for future growth, increased depreciation (EUR 4 million) arising from investment in technology, offset by lower general and administrative expenses (EUR 32 million) due to tight containment of costs including reduction in costs of professional fees and technology costs and positive impact resulting from the change in transfer pricing methodology, and lower provisions for litigations and operating risk events (EUR 4 million).

Income Tax

Income tax credit for the year ended October 31, 2019 of EUR 1.5 million compared to a tax expense of EUR 17.2 million for the year ended October 31, 2018. The key drivers of this variance are due to the decline in Profit before income tax from EUR 84.4 million (effective tax rate of 18.3%) to EUR 26.9 million (effective tax rate of 22.1%), and recognition of deferred tax asset (EUR 6.0 million) on the basis that there is a reasonable expectation of sustainable profits in the future and the management's forecast support the assumption that the results of the future operations will generate sufficient taxable income to utilize the deferred tax asset.

Consolidated balance sheet

Total assets as at October 31, 2019 were EUR 18.2 billion, a decrease of 1.2% over 2018 (EUR 18.4 billion).

Cash, balances with central banks and loans and advances due from banks

Total cash and balances with central banks and loan and advances due from banks were EUR 14.9 billion as at October 31, 2019, a decline of 3% compared with 2018 (EUR 15.4 billion). and representing 82% of total assets of the Group (84% 2018). Refer to Notes 14, 15 and 16 for additional information.

Loans and advances to customers

Loans and advances to customers amounted to EUR 940 million as at October 31, 2019 (5% of total assets), a decline of 28% compared to 2018 (EUR 1,299 million). The lending activity is correlated to the custody business. In this respect, most of the loans consist of securities settlement advances, temporary overdrafts, or funds finance facilities secured by guarantees, cash or securities. The decrease in lending activity was due mainly to increased origination of loans to clients from the RBC Capital Markets division in London. For additional information, refer to Note 17.

Investments securities

Investments securities amounted to EUR 1.4 billion as at October 31, 2019, an increase of 55% compared to 2018 (EUR 0.9 billion). Investment securities are 7.6% of total assets of the Group and consist mainly of bonds issued or backed by governments and entities operating in the Organisation for Economic Cooperation and Development "OECD" area. EUR 358 million of these securities have been provided as collateral to enable the Group to operate in financial markets. For additional information, refer to Notes 18 and 38.

Goodwill and other intangible assets

Goodwill amounted to EUR 84 million as at October 31, 2019 (2018: EUR 84 million), which was generated from the acquisition of businesses of the Group in prior years. Other intangible assets are EUR 68 million (2018: EUR 70 million). Other intangible assets consist mainly of internally developed software EUR 60 million (2018 EUR 57 million). Additions of internally developed software was EUR 48 million during the year. Disposals of internally developed software was EUR 36 million of which EUR 35 million was in respect of the sale by the Group to RBC Investor Services Trust UK Branch of Enhancement Assets developed for the Milvus custody system. RBC Investor Services Trust UK Branch will own these assets and provide account operator services to the Group, in accordance with the Master Services Agreement signed between the parties. For additional information, refer to Note 20.

Other assets

Other assets were EUR 223 million as at October 31, 2019 (2018: 193 million). Other assets consist mainly of accrued income not yet billed to clients and accounts receivable towards related parties. Refer to Note 21 for additional information.

Deposits from banks

Deposits from banks were EUR 316 million as at October 31, 2019 (2018 EUR 711 million) and consist mainly of demand, term and overnight deposits. For additional information, refer to Note 22.

Deposits from customers

Deposits from customers were EUR 15.9 billion (2018: EUR 15.8 billion) and represents 93%, of total liabilities as at October 31, 2019. These liabilities are generally in the form of interest bearing demand deposits and cash collateral received from counterparties. For additional information, refer to Note 23.

Equity

Total equity

Total equity was EUR 1,293 million, an increase of 2% compared to 2018 (EUR 1,264 million). Our total equity qualifies as tier 1 capital. The capital ratio was 25.2% as at October 31, 2019, an increase of 385 basis points compared to 2018 (21.35%) and was well in excess of the capital ratio requirement per Pillar 2 Basel III requirements (16%). For additional information, refer to Note 31(c).

Assets under Custody & Administration

Assets under Custody ("AUC") as at October 31, 2019 were EUR 473 billion, a decrease of 5.0% over 2018 (EUR 501 billion), reflecting competitive pressures in the markets.

Assets under Administration ("AUA") was EUR 1,105 billion and consistent with 2018 (EUR 1,107 billion).

Strategic Outlook 2020

The Group expects continued headwinds to impact the asset services industry over the next 12 months. In particular, the Group believe the investment industry will continue to face pressures and will, in turn, continue to press asset services providers on fees. In response, asset services providers need to be disciplined and focused on the right clients and geographies. Custodian Banks need to deliver high-quality services that represent value for money and a best-in-class client experience. Custodian Banks must implement robust and flexible technology solutions to meet evolving client data needs.

As one of RBC's primary operating subsidiaries in Europe, the Group supports RBC's objectives to deliver stable earnings growth, to support RBC's asset-liability management, to improve operational efficiency, and to underpin the competitiveness of RBC's wholesale and institutional businesses.

The Group is continually looking to develop better ways to meet the evolving needs of its clients and to ensure that it builds and strengthens its capabilities. The continued expansion of the Group funds finance activity is supporting this goal.

The Group will continue to focus on helping its clients achieve their ambitions by building sustainable relationships and delivering exceptional experiences. The Group is focused on its long-term strategies and targets. At a high level, these goals are to maintain the Group's global reputation for high service quality and to realise the full potential of the enterprise, particularly through leveraging the RBC brand to increase organic growth through deeper client relationships.

To support the Group in the achievement of these goals, the Group has identified the following business priorities for 2020:

1. Lead in selected fast growing asset servicing segments, including Private Capital Services and Shareholder Services.

2. Lead in the key offshore markets of Luxembourg and Ireland where it competes in the offshore domicile markets as a leading provider of fund services.

3. Continue to provide customers with seamless digital journeys and superior, secure and robust service, to enable our clients' success.

4. Continue to invest in technology and continue the transition to the target operating model, reducing costs and improve efficiencies.

Post-balance sheet events

Since the closure of the financial year, no event that might affect the financial or commercial situation of the Group has occurred.

Corporate Governance as at 31 October 2019

Board of Directors

Chairman

Stephen Walker	Independent Non Executive Director (until 30 October 2019)

Members

Philippe Renard	Chief Executive Officer (from 14 November 2019)
Sergio de Horna	Director (Interim Chief Executive from Officer 19 December 2018 to 31 August 2019)
Francis Jackson	Director
Bruce Maclaren	Director
David Morgan	Director
Julian Presber	Independent Non Executive Director
Hervé Cloquette	Non executive Director, Staff Representative
Isabelle David	Non executive Director, Staff Representative
Gennaro Casale	Non executive Director, Staff Representative

Audit and Compliance Committee

Chairman	*Members*
Julian Presber	Stephen Walker (until 30 October 2019) David Morgan

Risk Committee

Chairman	*Members*
Bruce Maclaren	Stephen Walker (until 30 October 2019) Francis Jackson

Nomination Committee

Chairman	*Members*
Francis Jackson	Stephen Walker (until 30 October 2019) Bruce Maclaren

Remuneration Committee

Chairman	*Members*
Francis Jackson	Stephen Walker (until 30 October 2019) Gennaro Casale

Risk Management

The mission of Risk Management is to oversee that identification, assessment, mitigation, monitoring and reporting of all material risks types are performed within the Group, in order to ensure at all times that the risk exposure is in compliance with regulatory constraints and aligned with the business strategy and risk appetite. To execute this mission, the Risk Management function operates under an enterprise risk management framework in which Risk Management establishes and maintains other risk frameworks and organizational arrangements to ensure that all risk types are properly identified, assessed, mitigated and monitored. Tasks are executed by Risk Management and by other divisions (shared accountability).

The risk management function:

- Is headed by the Chief Risk Officer ("CRO") of the Group, with established functional roles for Credit Risk Management, Market Risk Management, Operational Risk Management, Liquidity Risk Management, Cyber and Technology Risk Management and Enterprise Risk Management. In addition to the risk roles in RBCIS Bank Luxembourg, risk management roles are established in subsidiaries and branches of RBCIS Bank where deemed appropriate in line with local regulation and internal requirements. Risk Management roles in subsidiaries/branches of RBCIS Bank have a reporting line into the CRO of RBCIS Bank.
- Will be adequately staffed and has adequate information systems to manage risks appropriately.
- Leverages and makes use of risk management services offered by the parent company and by Royal Bank of Canada (RBC) Group Risk Management Competence Centres. More specifically, the Group is integrated in the RBC credit approval process using the RBC credit analysis competence centres whilst keeping final assessment/decision right.
- Provides all required information to RBC Group Risk Management allowing RBC to establish consolidated risk limit and exposure monitoring and reporting.
- Is part of the RBC Group Risk Management ("GRM") Function with additional functional reporting lines established where required.

Risk Management function owns the ICAAP jointly with Corporate Treasury and is responsible for maintaining and updating the policy and the internal capital assessment.

The Risk Management function is also in charge of coordinating the multiple stake holders of the Recovery Plan and the contributors to the Resolution Plan.

Three Lines of Defence Governance Model

The Three Lines of Defence model is articulated in the following manner within the Group:

First Line of Defence

Employees at all levels of the organization are responsible for managing the day-to-day risks that arise in the context of their mandate. The First Line of Defence is provided by employees across the Businesses and Corporate Support Segments who are responsible for providing products and services, and for the execution of activities. The First Line has the ownership and accountability for:

- Risk identification, assessment, mitigation, monitoring and reporting of regulatory Compliance risk in accordance with established Risk Policies and Risk Appetite.
- Ensuring appropriate and adequate capabilities to manage risks relevant to the Segment; and alignment of business and operational strategies with strong Risk Conduct and Culture and Risk Appetite.
- Execution of Business and Corporate Segments' Risk Governance practices.

The first line of defence is provided by specific areas:

- The operational control function is part of the first line of defence.
- Legal has a significant role in the management and control of Legal & Regulatory Compliance Risk. This includes assisting in the identification of new or changed regulatory compliance requirements and provides advice and counsel on the interpretation and application of regulatory compliance requirements.
- Human Resources is jointly responsible with Compliance for the establishment and maintenance of RBC's Code of Conduct and related training and awareness programs, and oversees and reports on resolution of breaches HR develops and administers policies on employment-related regulatory requirements, develops and maintains solid working relationships, credibility and reputation with employment regulators. HR assists with the administration and development of regulatory compliance training and links to business courses (or curriculum).
- Finance is responsible for ensuring RBC's compliance with the regulatory requirements governing financial, capital and stress testing related regulatory reporting and disclosures. It shall also ensure RBC's financial position is appropriately reported and disclosed.

It ensures completeness and accuracy of RBC's enterprise-wide projects and initiatives impacting including contributing to the finance risk assessment and approval process of the Project Approval Request (PAR) process.

- Corporate Treasury is responsible for managing the balance sheet and ensure that liquidity, capital and non-trading interest risks arising from business activities, individual transactions and investments are identified, monitored, managed, and where appropriate, supported by adequate level of capital and liquidity that reflects inherent risk. Corporate Treasury works in partnership with RBC Corporate Treasury and with business platforms and functions of I&TS and RBC.

Second Line of Defence

The Second Line of Defence is provided by areas with independent oversight accountabilities residing in the internal control functions, which:

- Establishes the enterprise level risk management frameworks, and provides risk guidance.
- Provides oversight for the effectiveness of First Line risk management practices.
- Monitors and independently reports on the level of risk against the established appetite.

The second line of defence oversight is provided by specific areas within the following Control and Group Functions:

i. Group Risk Management (GRM)

GRM, under the direction of the CRO, is primarily responsible for the enterprise-wide alignment of risk frameworks in support of the Enterprise Risk Management Framework, primarily relating to Risk Appetite, Risk Conduct and Culture, Credit, Market, Operational, Reputational and Insurance Risks with new and existing regulatory requirements and expectations. This responsibility includes providing oversight to subsidiary/local level Credit, Market, Operational, Liquidity and Insurance risk programs, Capital as well as Cyber and Technology risks to ensure alignment with the enterprise level requirements.

ii. Global Compliance

Global Compliance is responsible for providing oversight of the Group's system of compliance policies and processes designed to mitigate and manage Regulatory Compliance Risk in all jurisdictions where the Group conducts business.

Third Line of Defence

The Third Line of Defence is provided by internal and external audit. The Third Line provides independent assurance to senior management and the Board of Directors on the effectiveness of risk management policies, processes and practices in all areas of the Group. Internal Audit reports significant issues and recommendations as appropriate to Global Compliance, senior management and the Audit Committee.

Risk Governance of the Group

The Group has established a clear and robust risk governance framework in order to manage, control and provide assurance with respect to risk. That framework includes, amongst others, the following key roles and responsibilities.

Board of Directors

The Board of Directors defines the risk strategy and guiding principles of RBCIS Bank, as outlined in CSSF circular 12/552 as amended and in CSSF Regulation n°15-02 relating to the supervisory review and evaluation process that applies to CRR institutions. It entrusts Authorized Management with the implementation of these internal governance principles through internal written policies. The Board of Directors monitors the implementation by Authorized Management of its internal governance strategies. To this end, it approves the related frameworks and policies laid down by Authorized Management.

The Board of Directors has final responsibility with respect to risk matters, either directly or through delegation to a sub-committee of the Board of Directors. It has a risk oversight role (acknowledging the risk exposure of the organization reported by management) and ensures that all organizational arrangements have been put in place by management to manage risk effectively. For liquidity risk matters, the Board of Directors delegates its daily management in compliance with the principles laid down in the frameworks and policies approved by the Board or Risk Committee, to the RBCIS Bank ALCO.

Risk Committee ("RC")

The Risk Committee (RC) is a sub-committee of the Board of Directors as defined by CSSF Circular 12/552 (as amended).

The Risk Committee is established and defined by the Board of Directors. The RC comprises at least three non-executive directors. It may also invite, if need be, external independent experts of the institution. The Chair of the RC is appointed by the Board of Directors.

The RC is responsible for overseeing risk management at RBCIS Bank, balancing risks and rewards while ensuring that management has in place policies, processes and procedures designed to identify and effectively manage the significant risks to which RBCIS Bank is exposed. The RC reviews RBCIS Bank's program annually for identifying, measuring, controlling and reporting on the significant risks to RBCIS Bank. The RC also assists the Board of Directors in its oversight of the effectiveness and independence of RBCIS Bank's risk management function.

The Risk Committee's primary purpose is to advise the Board of Directors on RBCIS Bank's overall current and future risk appetite and strategy and assist the Board of Directors in overseeing the implementation of that strategy by the Authorized Management.

For that purpose, as required by the relevant regulation, the Risk Committee:

- Assists the Board of Directors in its mission to assess the adequacy between the risks incurred, the institution's ability to manage these risks and the internal and regulatory own funds and liquidity reserves.

- Confirms the specific (risk, capital and liquidity) policies of the authorized management in accordance with section 4.2.3. of the CSSF circular 12/552 (as amended).

- Assesses whether the human and material resources, as well as the organisation of the risk control function are sufficient and ensure that the members of the risk control function have the required skills, and

- Deliberates, on a regular basis, on:
    - The state of risk management and compliance with the prudential rules laid down in this respect;
    - The quality of the work carried out by the risk control function and compliance with the rules laid down in sections 6.2.3 and 6.2.5 of CSSF circular 12/552 (as amended);
    - The risk situation, its future development and its adequacy with the risk strategy of RBCIS Bank;
    - The appropriateness of the risks incurred against RBCIS Bank's current and future ability to manage these risks and the internal and regulatory own funds and liquidity reserves, taking into account the results of the stress tests;
    - The appropriate follow-up without undue delay by the Authorized Management of the recommendations of the risk control function;
    - The actions to be taken in case of problems, shortcomings and irregularities identified by the risk control function.

- Advises the Board of Directors on the definition of the overall risk strategy of RBCIS Bank, including its current and future risk tolerance;

- Reviews whether client pricing fully takes into account RBCIS Bank's business model and risk strategy, and where prices would not properly reflect risks, business model and risk strategy, present a remedy plan to the Board of Directors;

- Assist the Board of Directors in the establishment of sound remuneration policies and practices, examining whether incentives provided by the remuneration system takes into consideration risk, own funds, liquidity and likelihood and timing of earnings;

Collaborates and exchanges information with other committees of the Board of Directors, including the Nomination Committee, Audit & Compliance Committee and Remuneration Committee with regards to matters in the scope of its mandate.

Executive Committee

The Board of Directors has delegated under its general supervision the daily management as well as any other powers of the Group and the representation of the Company within such daily management to the Executive Committee, being "Authorized Management" of the Group. The Executive Committee will manage the daily affairs of the Company in a collegial manner, within the provisions of the applicable Law, regulations, circulars of the Commission de Surveillance du Secteur Financier, the Articles of Association and the global governance documents and organizes, both on the national and international front, the coordination of the activities of the Group. The Group has appointed one member of the Executive Committee as Chief Risk Officer responsible for the Risk Function, one member of the Executive Committee as Chief Compliance Officer responsible for the Compliance Function (the "CCO").

Group's Assets & Liabilities Committee (ALCO)

The purpose of the ALCO is:

- To review and recommend broad policy frameworks pertaining to Bank's balance sheet and capital management, interest rate risk management, liquidity and funding, and subsidiary balance sheet management.

- To provide regular central oversight and monitoring of the Bank balance sheet-related risks, including capital adequacy, structural interest rate risk, structural foreign exchange risk, liquidity and funding risk.

- To provide direction and review advice regarding the management of these areas in light of expected returns, competitive and regulatory environments, and economic and business forecasts.

- The Committee is responsible for ensuring that the balance sheet structure and profile of RBC IS Bank is consistent with its strategic objectives and objectives of the RBC Group. All material balance sheet initiatives will be reviewed and approved by the Committee, with advice and counsel provided by the relevant RBC centre of expertise to the Committee.

The ALCO reviews reports and monitors compliance on the Bank's exposure to balance sheet-related risks, including interest rate risk, liquidity and funding risk and capital adequacy. The ALCO reports to the Bank's Board of Directors on balance sheet related new strategic initiatives. The ALCO reviews and recommends for approval to the Bank's Board of Directors or its committees any capital transactions to be undertaken. The ALCO will be chaired by the Treasurer or in his absence, the Chief Financial Officer of RBC IS Bank (Deputy-Chair).

The ALCO is responsible for ensuring that the balance sheet structure and profile of the Bank is consistent with its strategic objectives and objectives of the RBC Group. All material balance sheet initiatives will be reviewed and approved by the ALCO, with advice and counsel provided by the relevant RBC centre of expertise to the ALCO.

Risk Management Principles

The following general principles apply to the management of risk at the Group including its branches and subsidiaries:

- Effectively balancing risk and reward to enable sustainable growth.

RBCIS Bank balances risk and reward to capitalize on opportunities within the Group's business strategy and risk appetite, avoid excessive concentrations of risk through diversification and risk transfer, manage earning volatility, and ensure the long-term viability and profitability of the organization.

- Responsibility for risk management is shared.

Collectively as One RBCIS Bank following the Three Lines of Defense risk governance model, employees at all levels of the organization are responsible for managing the day-to-day risks that arise in the context of their roles.

- Undertake only risks we understand. Make thoughtful and future-focused risk decisions.

In order to create long term value for RBCIS shareholders, clients, employees and communities, we exercise rigour in our risk assessments, analyze emerging risk factors and trends, ensure transparency in risk discussions, and improve processes and tools for simpler, better, faster decision-making without exposing us to undue risks.

- Always uphold RBCIS Purpose and Vision, and consistently abide by RBCIS Values and Code of Conduct to maintain the Group reputation and the trust of the clients, colleagues and communities.

Guided by our Collective Ambition, we exhibit Good Conduct and do business openly and fairly. We never compromise quality or integrity for growth. We adhere to the "Know You Client" standards, and ensure transparency and suitability of the products and services offered. We comply with all laws and regulatory requirements, and support transactions and relationships with proper and complete documentation.

- Maintain a healthy and robust control environment to protect RBCIS stakeholders.

To achieve RBCIS operational and financial performance goals while maintaining the reputation and integrity, and operating within the parameters of applicable laws and established risk appetite, we employ effective processes and controls and resiliency practices to minimize harm from internal and external threats, avoid business interruptions, and ensure timely resolution of control issues.

- Use judgment and common sense.

Policy and procedure cannot cover all circumstances. Employees should apply judgment and common sense, and when in doubt, escalate.

Hire the right people for the right jobs and provide proper training and support.

- Always be operationally prepared and financially resilient for a potential crisis.

RBCIS Bank strives to maintain effective protocols and escalation strategies to respond to all risks that we face, including regulatory, macroeconomic, market and other stakeholder developments. This includes maintaining operational readiness and financial resilience to effectively operate during and following a financial crisis. It is also critical to maintain agility and readiness to respond to potential disruptors to the financial industry.

Overall Risk Governance of the Group

RBCIS Bank has a clear and robust risk governance framework in order to manage, control, and provide assurance on risk. The following diagram reflects the direct access of the risk management function to the Board of Directors.

As RBCIS Bank is part of RBC Group, the Board of Directors may take guidance and Positive Advice and Counsel from RBC Group Risk Management and the RBC I&TS OC, or the I&TS Credit and Operational Risk Committees, on risk policies related matters ensuring alignment with all RBC risk management standards as well as with local regulation.

The Risk Committee of RBCIS Bank was established in October 2015 in order to heighten the Board risk oversight of the Bank and to ensure compliance with CSSF Circular 12/552 (as amended).

Its mission is to provide the BoD with critical assessments in respect of the organisation and operation of risk management, in order to increase the effectiveness of the BoD and enable its members to fulfil their supervisory responsibilities pursuant to circular CSSF 12/552 (as amended by circulars CSSF 13/563, CSSF 14/597, CSSF 16/342, CSSF 16/647 and CSSF 17/655).

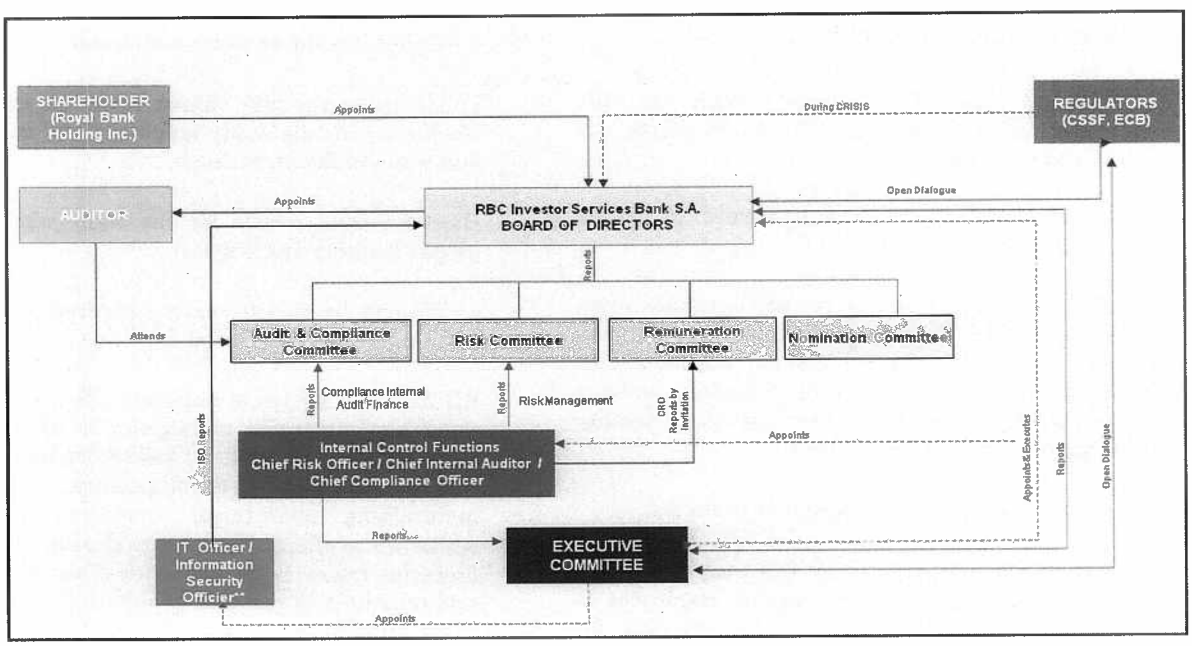
Approval

The Director's Report was approved by the Board of Directors of the Group. and signed on its behalf by Chairman of the Board of Directors and by the Chief Executive Officer and was approved by the members of the Board of Directors on February 5, 2020.

Francis Jackson
Director

Philippe Renard
Chief Executive Officer

February 5, 2020



Audit report

To the Board of Directors of
RBC Investor Services Bank S.A.

Report on the audit of the consolidated financial statements

Our opinion

In our opinion, the accompanying consolidated financial statements give a true and fair view of the consolidated financial position of RBC Investor Services Bank S.A. (the "Bank") and its subsidiaries (the "Group") as at 31 October 2019, and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union.

What we have audited

The Bank's financial statements comprise:

- the consolidated balance sheet as at 31 October 2019;
- the consolidated statement of profit or loss for the year then ended;
- the consolidated statement of comprehensive income for the year then ended;
- the consolidated statement of changes in equity for the year then ended;
- the consolidated statement of cash flows for the year then ended; and
- the notes to the consolidated financial statements, which include a summary of significant accounting policies.

Basis for opinion

We conducted our audit in accordance with the EU Regulation No 537/2014, the Law of 23 July 2016 on the audit profession (Law of 23 July 2016) and with International Standards on Auditing (ISAs) as adopted for Luxembourg by the "Commission de Surveillance du Secteur Financier" (CSSF). Our responsibilities under the EU Regulation No 537/2014, the Law of 23 July 2016 and ISAs as adopted for Luxembourg by the CSSF are further described in the "Responsibilities of the "Réviseur d'entreprises agréé" for the audit of the consolidated financial statements" section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

We are independent of the Group in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (IESBA Code) as adopted for Luxembourg by the CSSF together with the ethical requirements that are relevant to our audit of the consolidated financial statements. We have fulfilled our other ethical responsibilities under those ethical requirements.

To the best of our knowledge and belief, we declare that we have not provided non-audit services that are prohibited under Article 5(1) of the EU Regulation No 537/2014.

The non-audit services that we have provided to the Bank and its controlled undertakings, if applicable, for the year then ended, are disclosed in Note 12 to the consolidated 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 consolidated financial statements of the current period, and include the most significant assessed risks of material misstatement (whether or not due to fraud). These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matter	How our audit addressed the Key audit matter
Revenue recognition - Fee and commission income (Note 3), Net income from financial instruments at fair value through profit or loss (Note 5) We focus on fee and commission income and net income from financial instruments at fair value through profit or loss because they represent a significant portion (72%) of the revenues determining the Group's profitability. In addition, we have identified these 2 revenue streams as having heightened risk of misstatement. They were selected for the following reasons: Fee and commission income are mainly linked to the custodian, transfer agent and fund administration services, therefore to the core business of the Group. The calculation is based on high volume of data fed within different IT systems and several pricing structures and product types, affecting significantly the revenues. This complexity leads to a heightened risk that revenue may not be recognised appropriately, either as a result of fraud or error.	*Audit procedures performed over fee and commission income* We performed a walkthrough of the fee and commission income process and assessed the design effectiveness of key controls. We tested the key controls implemented by the Bank in relation to the clients on-boarding and setup, the client invoicing and the accruals booking. We agreed the business terms included in the contracts signed with the clients to the billing system for a sample of items; additionally, we ensured that the quantitative data generated by the custodian IT system correctly fed into the billing system. We re-performed the calculation of the commission income that flows into the accounting system for a sample of items. Finally, we included elements of "unpredictability" in the procedures performed in response to the risk of fraud by randomly selecting additional items and by ensuring segregation of duties, as well as the application of the "4 eyes principle", within the fee and commission income process. *Audit procedures performed over net income from financial instruments at fair value through profit or loss* We performed a walkthrough of the financial instruments process, and performed testing of the operating effectiveness of key controls in relation to the data input, the revenue recognition into the statement of profit or loss as well as the monitoring of the foreign currencies' exposure. We agreed the data reported in the trade tickets, determining the base for the calculation of the income, to the data reported in the back-office IT system for a sample of items. We recalculated the net income from financial instruments at fair value through profit or loss for a sample of items.

Key audit matter	How our audit addressed the Key audit matter
Net income from financial instruments at fair value through profit or loss mainly relates to the dealing in financial instruments on own account. Market volatility requires Group's clients to reduce market risks by dealing derivative financial instruments with the Group. The high volume of deals and the traded notional affect significantly the revenues of the Group, increasing the risk that revenue may not be recognised appropriately, either as a result of fraud or error.	Finally, we included elements of "unpredictability" in the procedures performed in response to the risk of fraud by randomly selecting additional items and by ensuring segregation of duties, as well as the application of the "4 eyes principle", within the financial instruments process.
Migration of the accounting system from BLS to SAP S/4HANA (Note 1) The Bank migrated its accounting system from BLS to SAP S/4HANA on 1 November 2018. SAP S/4HANA is used for the preparation of the financial information, therefore the migration of the accounting system gives rise to a risk at the level of governance of the migration project as such, as well as at the level of transfer of migrated data. We therefore considered the accounting migration as an area of focus due its the significant impact on the financial information of the Bank as at 31 October 2019 and as having heightened risk of incomplete transfer of accounting or static data from BLS to SAP S/4HANA.	We reviewed the work performed by the Bank regarding the governance of the migration project, the migration of the accounting data from BLS to SAP S/4HANA as at 1 November 2018 and the migration of the static data. We performed the following audit procedures: • We assessed the implementation of the migration process within the Bank, including the steering committee organisation, the risk assessment process and the review of the incident reports after the migration; • We assessed the methodology of the migration review performed by the Bank (including a sample of related documentation); • We checked the final validation of user acceptance testing; • We tested, on a sample basis, the validation process of logical access (definition of user groups, user allocation to appropriate groups) in order to ensure that the access rights have been granted appropriately in SAP S/4HANA; • We reviewed the migration procedures and the reconciliation process performed by the Bank as well as the investigation of the differences identified; • We checked that the closing balances in BLS as at 31 October 2018 correspond to the opening balances in SAP S/4HANA as at 1 November 2018, and we reviewed and investigated the differences;

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Key audit matter	How our audit addressed the Key audit matter
	• We tested a sample of the automatic reconciliations of the static data fed from the business applications into SAP S/4HANA.
Provision for the restructuring plan implemented by the Bank (Notes 11 and 24) The Board of Directors of the Bank approved a restructuring program on 23 October 2019. As a consequence, the Bank recorded a severance cost provision in the financial statements as at 31 October 2019. The Board of Directors of the Bank estimated the severance cost provision based on the legal and statutory requirements applicable in Luxembourg and the locations in scope for the restructuring plan and in which the Bank is established through its branches and subsidiaries. The recognition of a restructuring provision requires significant management judgement to estimate the value and the timing of net economic outflows. We therefore consider the restructuring program of the Bank as an area of focus due to its magnitude and the uncertainties concerning the related accounting estimates.	We obtained an understanding of the processes around identification, estimation and approval of the provision by performing interviews with the Bank's executive management and the human resources department. We further discussed with Bank's management the nature and the potential risks linked to the severance cost provision. In order to assess completeness of the severance cost provision, we performed the following audit procedures: • We reviewed the restructuring plan of the Bank, including the estimate of the value and the timing of the net economic outflows; • We obtained the communication of the management to the employees announcing the social plan, as well as the documentation concerning the negotiations of the social plan between the Bank and the employee representatives; • We ensured that the severance terms applied by the Bank were aligned to the legal requirements applicable in Luxembourg for the definition of severance costs. We re-performed the calculation of the severance costs for a sample of items.

Key audit matter	How our audit addressed the Key audit matter
Residual profit split model (Notes 1, 7, 12 and 33) The Bank implemented a new transfer pricing model based on Residual Profit Split (RPS) as from 1 November 2018. The purpose of the new methodology is to reward the integrated functions performed by the legal entities and the branches (the related parties) in respect of the Investor and Treasury Services business. The RPS model involves the aggregation of the total revenues of the Investor and Treasury Services business in a pool, the remuneration of the support functions and the compensation for the provision of capital against operational risks. The residual profit is finally allocated in order to reward the related parties based on the relative value of their contributions and their status of strategic market centres. We identified this as an area of focus considering the relevance of the arrangement from a Transfer Pricing perspective and the complexity of the RPS calculation model.	We reviewed, with the assistance of our transfer pricing specialists, the Transfer Pricing documentation prepared by the Bank concerning the RPS methodology to ensure that the RPS model could be considered as reasonably adhering to the general Transfer Pricing practice. In order to assess the reasonableness and mathematical accuracy of the RPS model, we performed the following audit procedures: • We tested the completeness and accuracy of the accounting data underlying the calculation of the total revenues and total expenses included in the pool; • We tested, on a sample basis, the mapping of the underlying data in order to ensure the correct categorisation of revenues and expenses with reference to the functional analysis performed by the Bank; • We checked that the remuneration of the functions and the related expenses are coherent with the RPS methodology; • We ensured that the compensation for the provision of capital against operational risks is accurately calculated; • We reviewed the allocation of the residual profit to the related parties and its coherence to the RPS methodology; • We tested the mathematical accuracy of the formulas used in the RPS calculation; • We tested the intragroup receivable and payable accounts concerning the RPS model.
Goodwill (note 20) As at 31 October 2019, the carrying amount of goodwill amounted to 84 million EUR; no impairment losses have been recorded against goodwill following the annual impairment test performed by the Bank.	We reviewed, with the assistance of our corporate finance specialists, the impairment test methodology used by the Bank. We assessed whether the cash generating unit identified by the Bank, and subject to the impairment test, is aligned with our understanding of the Bank's activities. We identified and tested the significant assumptions used by the Bank, performing the following audit procedures: • We assessed the reasonableness of the long-term growth rate and the discount rate used by the Bank;

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Key audit matter	How our audit addressed the Key audit matter
The annual impairment test is performed using a discounted cash flows (DCF) model. The DCF model calculates a value-in-use based on the Bank's ability to generate free cash flows. The estimate of the free cash flows is based on the assumptions embedded in the business plan covering a five-year period; the terminal value is calculated based on the Gordon growth model. We considered the valuation of goodwill as an area of focus as the Management of the Bank makes significant judgements with respect to the estimate of the recoverable amount of the goodwill when performing the impairment test.	• We assessed the reasonableness of assumptions used by the Bank to determine the free cash flows over a five-years period. We assessed the consistency and reasonableness of these assumptions by performing a back-testing on the assumptions used by the Bank in previous years. We finally verified the arithmetical accuracy of the calculation performed by the Bank.

Other information

The Board of Directors is responsible for the other information. The other information comprises the information stated in the directors' report but does not include the consolidated financial statements and our audit report thereon.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Board of Directors and those charged with governance for the consolidated financial statements

The Board of Directors is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with IFRSs as adopted by the European Union, and for such internal control as the Board of Directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Board of Directors is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Responsibilities of the "Réviseur d'entreprises agréé" for the audit of the consolidated financial statements

The objectives of our audit are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an audit 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 the EU Regulation No 537/2014, the Law of 23 July 2016 and with ISAs as adopted for Luxembourg by the CSSF 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 these consolidated financial statements.

As part of an audit in accordance with the EU Regulation No 537/2014, the Law of 23 July 2016 and with ISAs as adopted for Luxembourg by the CSSF, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- identify and assess the risks of material misstatement of the consolidated 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 the Group's internal control;

- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Board of Directors;

- conclude on the appropriateness of the Board of Directors' 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 the 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 audit report to the related disclosures in the consolidated 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 audit report. However, future events or conditions may cause the Group to cease to continue as a going concern;

- evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

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.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our audit report unless law or regulation precludes public disclosure about the matter.

Report on other legal and regulatory requirements

The directors' report is consistent with the consolidated financial statements and has been prepared in accordance with applicable legal requirements.

We have been appointed as "Réviseur d'Entreprises Agréé" of the Group by the Board of Directors on 27 March 2019 and the duration of our uninterrupted engagement, including previous renewals and reappointments, is 4 years.

PricewaterhouseCoopers, Société coopérative
Represented by

Philippe Sergiel

Luxembourg, 5 February 2020

Consolidated statement of profit or loss

EUR'000	Notes	For the year ended Oct 31, 2019	Oct 31, 2018	
Interest income	2	169,547	135,977	
Interest expense	2	(130,769)	(112,508)	
Net interest income	**2**	**38,778**	**23,469**	
Fee and commission income	3	352,579	377,417	
Fee and commission expense	3	(39,216)	(45,176)	
Net fee and commission income	**3**	**313,363**	**332,241**	
Net income from financial instruments at fair value through profit or loss	5	114,011	152,622	
Net income on investments	6	(2,128)	6,254	
Other income	7	7,771	5,038	*
Other expense	8	(6,250)	(2,543)	*
Net operating revenue before impairment charges on loans and other receivables		**465,545**	**517,081**	
Allowance for expected credit loss	10	207	(1,817)	
Net operating revenue		**465,752**	**515,264**	
Staff expenses	11	(247,633)	(208,390)	
General and administrative expenses	12	(163,753)	(195,309)	*
Depreciation and amortisation of tangible and intangible assets	19,20	(22,495)	(18,013)	
Provisions for litigations and operating risk events	9	(3,466)	(8,232)	*
Impairment of tangible and intangible assets	19,20	(1,549)	(933)	*
Operating expenses		**(438,896)**	**(430,877)**	
Profit before income tax		**26,856**	**84,387**	
Income tax credit/(expense)	13	1,542	(17,174)	
Profit for the year		**28,398**	**67,213**	
Attributable to owners of the parent		27,978	66,351	
Attributable to non-controlling interests		420	862	

*Prior year numbers have been reclassified in order to align with 2019 classification of income and expenses. Please refer to relevant notes for additional information.

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated statement of comprehensive income

EUR'000	Notes	For the year ended Oct 31, 2019	Oct 31, 2018
Profit for the year		**28,398**	**67,213**
Other comprehensive income			
Items that will be reclassified subsequently to statement of profit or loss when specific conditions are met:			
Unrealised (losses)/gains on investments in debt instruments measured at FVOCI		454	(3,114)
Net loss on financial assets measured at FVOCI reclassified to profit or loss on disposal		(281)	(6,254)
Income taxes relating to investment securities	13	(21)	2,697
Currency translation differences		1,906	1,931
Items that will not be reclassified subsequently to statement of profit or loss:			
Defined benefit pension plans			
Post retirement employee benefit plans	24	(1,934)	1,670
Income taxes related to post retirement employee benefit plans	13	849	(30)
Other comprehensive income for the year, net of tax		**973**	**(3,100)**
Total comprehensive income for the year		**29,371**	**64,113**
Total comprehensive income attributable to:			
Attributable to owners of the parent		28,795	63,054
Attributable to non-controlling interests		576	1,059

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated balance sheet

			As at
EUR'000	Notes	Oct 31, 2019	Oct 31, 2018
Assets			
Cash and balances with central banks	15	8,708,420	8,579,486
Loans and advances to banks	16	6,232,797	6,825,424
Loans and advances to customers	17	940,123	1,299,342
Investments securities	18	1,445,271	880,308
Derivatives	27	471,424	482,339
Current tax assets		8,525	1,147
Tangible assets	19	32,670	35,261
Goodwill and other intangible assets	20	152,150	154,642
Deferred tax assets	13	9,117	1,070
Other assets	21	222,705	192,522
Total assets		**18,223,202**	**18,451,541**
Liabilities			
Deposits from banks	22	316,459	710,671
Deposits from customers	23	15,875,635	15,793,881
Derivatives	27	474,038	437,109
Current tax liabilities	13	1,552	2,942
Provisions and other obligations	24	74,118	30,848
Deferred tax liabilities	13	586	2,441
Finance lease liabilities*	25b	2,275	4,864 *
Other liabilities*	25a	185,651	204,925 *
Total liabilities		**16,930,314**	**17,187,681**
Equity			
Subscribed capital	28	554,075	554,075
Share premium		27,446	27,446
Consolidated retained earnings		595,727	574,117
Other reserves		103,784	97,416
Other components of equity		2,476	1,659
Total shareholder's equity		**1,283,508**	**1,254,713**
Non-controlling interests		9,380	9,147
Total equity		**1,292,888**	**1,263,860**
Total liabilities and equity		**18,223,202**	**18,451,541**

*These amounts have been restated for the year ended October 31, 2018 in order to align with 2019 classification. Please refer to Note 25 for additional information

The consolidated financial statements were approved by the Board of Directors on February 5, 2020 and signed on its behalf by:

Francis Jackson,

Director

Philippe Renard,

Chief Executive Officer

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated statement of changes in equity

For the year ended October 31, 2019

EUR'000	Core shareholder's equity					Other components of equity (4)						
	Subscribed capital	Share premium	Consolidated retained earnings (1)	Legal reserves (2)	Untaxed unavailable reserves (3)	Available-for-sale fair value reserve	Currency translation adjustment	Net investment hedge	Employee benefit plans	Total attributable to the owners of the parent	Non-controlling interest	Total equity
Balance as at November 1, 2018	**554,075**	**27,446**	**574,117**	**29,139**	**68,277**	**53**	**2,672**	**(5,264)**	**4,198**	**1,254,713**	**9,147**	**1,263,860**
Profit after tax	-	-	27,978	-	-	-	-	-	-	27,978	420	28,398
Other comprehensive income net of tax										-		-
Currency translation adjustment	-	-	-	-	-	-	1,751	-	(36)	1,715	156	1,871
Investments securities	-	-	-	-	-	172	-	-	-	172	-	172
Tax impact of investments securities	-	-	-	-	-	(21)	-	-	-	(21)	-	(21)
Post retirement employee benefit plans	-	-	-	-	-	-	-	-	(1,883)	(1,883)	-	(1,883)
Tax impact of post retirement employee benefit plans	-	-	-	-	-	-	-	-	834	834	-	834
Result appropriation	-	-	(6,368)	3,645	2,723	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-	-	-	-
Total other comprehensive income	-	-	**21,610**	**3,645**	**2,723**	**151**	**1,751**	-	**(1,085)**	**28,795**	**576**	**29,371**
Dividends	-	-	-	-	-	-	-	-	-	-	(343)	(343)
Total movements	-	-	**21,610**	**3,645**	**2,723**	**151**	**1,751**	-	**(1,085)**	**28,795**	**233**	**29,028**
Balance as at October 31, 2019	**554,075**	**27,446**	**595,727**	**32,784**	**71,000**	**204**	**4,423**	**(5,264)**	**3,113**	**1,283,508**	**9,380**	**1,292,888**

(1) Non distributable retained earnings amounts to EUR 15,942 thousand (legal reserve 5% of profit for the year EUR 1,942 thousands and allocation to non distributable reserves for reduction in Net Wealth Tax EUR 14 million).

(2) Legal reserve: local legislation requires at least 5% of the non-consolidated net profit to be transferred from retained earnings to a non-distributable statutory reserve until the reserve reaches 10% of share capital.

(3) To reduce the Net Wealth Tax liability in proportion to Corporate Income Tax due, the Group allocates under non-distributable reserves an amount that corresponds to five times the amount of reduction of the Net Wealth Tax. This reserve is non-distributable for a period of five years from the year following the one in which the Net Wealth Tax reduction was requested.

(4) Other components of equity are non-distributable.

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated statement of changes in equity (cont'd)

For the year ended October 31, 2018

EUR'000	Core shareholder's equity: Subscribed capital	Share premium	Consolidated retained earnings (1)	Legal reserves (2)	Untaxed unavailable reserves (3)	Other components of equity (4): Available-for-sale fair value reserve	Currency translation adjustment	Net investment hedge	Employee benefit plans	Total attributable to the owners of the parent	Non-controlling interest	Total equity
Balance as at November 1, 2017	554,075	27,446	524,964	25,869	54,777	6,619	938	(5,264)	2,558	1,191,982	8,393	1,200,375
Changes on initial application of IFRS 9 (see Note 1)	-	-	(428)	-	-	105	-	-	-	(323)	-	(323)
Restated balance as at November 1, 2017	554,075	27,446	524,536	25,869	54,777	6,724	938	(5,264)	2,558	1,191,659	8,393	1,200,052
Profit after tax	-	-	66,351	-	-	-	-	-	-	66,351	862	67,213
Other comprehensive income net of tax												
Currency translation adjustment	-	-	-	-	-	(1)	1,734	-	(21)	1,712	197	1,909
Investments securities	-	-	-	-	-	(9,295)	-	-	-	(9,295)	-	(9,295)
Tax impact of investments securities	-	-	-	-	-	2,625	-	-	-	2,625	-	2,625
Post retirement employee benefit plans	-	-	-	-	-	-	-	-	1,705	1,705	-	1,705
Tax impact of post retirement employee benefit plans	-	-	-	-	-	-	-	-	(44)	(44)	-	(44)
Result appropriation	-	-	(16,770)	3,270	13,500	-	-	-	-	-	-	-
Total other comprehensive income	-	-	49,581	3,270	13,500	(6,671)	1,734	-	1,640	63,054	1,059	64,113
Dividends	-	-	-	-	-	-	-	-	-	-	(305)	(305)
Total movements	-	-	49,581	3,270	13,500	(6,671)	1,734	-	1,640	63,054	754	63,808
Balance as at October 31, 2018	554,075	27,446	574,117	29,139	68,277	53	2,672	(5,264)	4,198	1,254,713	9,147	1,263,860

(1) Non distributable retained earnings amounts to EUR 17,645 thousand.

(2) Legal reserve: local legislation requires at least 5% of the non-consolidated net profit to be transferred from retained earnings to a non-distributable statutory reserve until the reserve reaches 10% of share capital.

(3) To reduce the Net Wealth Tax liability in proportion to Corporate Income Tax due, the Group allocates under non-distributable reserves an amount that corresponds to five times the amount of reduction of the Net Wealth Tax. This reserve is non-distributable for a period of five years from the year following the one in which the Net Wealth Tax reduction was requested.

(4) Other components of equity are non-distributable.

The accompanying notes form an integral part of these consolidated financial statements.

Consolidated statement of cash flows

EUR'000	Note(s)	For the year ended Oct 31, 2019	Oct 31, 2018
Cash flow from operating activities			
Profit for the year		28,398	67,213
Adjustment for			
Depreciation, amortisation and other impairment	19,20	24,044	18,946
Impairment on financial assets and provisions for expected credit loss		(236)	995
Net loss/(income) on investments		1,647	(62)
Provisions and other obligations	24	55,489	20,367
Deferred tax	13	(9,049)	(1,777)
Change in loans and advances to customers		359,243	(340,754)
Change in loans and advances to banks		2,730,525	59,223
Change in investment securities		(551,554)	2,250,162
Change in accrued income from financial assets		(11,012)	5,307
Change in fair value adjustment to derivatives		47,844	(9,676)
Change in borrowings due to banks		(394,247)	20,476
Change in customer borrowings and deposits		81,903	2,458,174
Change in accrued expenses from financial liabilities		(160)	846
Change in other assets and liabilities		(108,103)	(126,503)
Net cash provided by operating activities		**2,254,732**	**4,422,937**
Cash flow from investing activities			
Purchase of tangible assets and intangible assets	19,20	(62,483)	(69,992)
Disposal of tangible assets and intangible assets		44,337	778
Sale of subsidiaries and of business units		(2,410)	(3)
Net cash used by investing activities		**(20,556)**	**(69,217)**
Cash flow from financing activities			
Commitment in relation to finance lease		(2,591)	4,864
Dividend paid		(343)	(305)
Net cash used by financing activities		**(2,934)**	**4,559**
Net increase in cash and cash equivalents		2,231,242	4,358,279
Cash and cash equivalents at the beginning of the year		10,409,321	5,936,713
Summary of Activities:			
Cash flow from operating activities		2,254,732	4,422,937
Cash flow from investing activities		(20,556)	(69,217)
Cash flow from financing activities		(2,934)	4,559
Effect of exchange rates in cash and cash equivalent		35,431	114,329
Cash and cash equivalents at the end of the year	14	**12,675,994**	**10,409,321**
Additional information			
Tax paid		(16,320)	(20,560)
Interest received		158,301	141,413
Interest paid		(130,684)	(111,662)

The accompanying notes form an integral part of these consolidated financial statements.

Notes to the consolidated financial statements

1. Group Accounting Policies

RBC Investor Services Bank S.A.

These consolidated financial statements are financial statements of RBC Investor Services Bank S.A. (the 'Company'), its branches and its subsidiaries (collectively the 'Group').

The consolidated financial statements comprise the Consolidated statement of profit or loss, the Consolidated statement of comprehensive income, the Consolidated balance sheet, the Consolidated statements of changes in equity, the Consolidated cash flow statement, and the notes to the consolidated financial statements.

RBC Investor Services Bank S.A. is a bank incorporated as a "société anonyme" in Luxembourg.

The registered office and headquarters of RBC Investor Services Bank S.A. is 14, Porte de France, L-4360 Esch-sur-Alzette Luxembourg.

RBC Investor Services Bank S.A.'s authorised and issued share capital amounts to EUR 554,075,000 divided into 22,163,000 shares, each with a nominal value of EUR 25.

Operations are conducted throughout RBC Investor Services Bank S.A. and its subsidiaries and branches around the world.

The Group is indirectly wholly owned by Royal Bank of Canada ("RBC") which is the ultimate parent company. The immediate parent company is Royal Bank Holding Inc. ("RBHI"), incorporated in Canada.

The Group is part of RBC's Investor & Treasury Services™ (RBC I&TS) business segment.

RBC Investor & Treasury Services is a specialist provider of custody, payments and treasury services for financial and other institutional investors worldwide. RBC Investor & Treasury Services is comprised of three businesses: Global Financial Institutions, Investor Services and Treasury Services.

As a core operating entity of RBC Investor & Treasury Services, the Group provides global custody, investment administration and treasury services.

The main accounting system of the Bank is SAP S/4HANA. The Bank migrated from the previous accounting system BLS to the new accounting system SAP S/4HANA on 1 November 2018.

Basis of Preparation

The Consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union.

In preparing these Consolidated financial statements, management is required to make critical judgments that affect the carrying amounts of certain assets and liabilities, and the reported amounts of revenues and expenses recorded during the period. The accounting policies and critical accounting estimates applied by the Group are included in Note 1 of the Consolidated financial statements.

The consolidated financial statements are stated in thousands of euros ("EUR").

Going Concern

The Group's business activities, together with factors likely to affect its future development, performance and position are set out in the Director's Report. The Group's financial and other risk management objectives, policies and processes for managing its capital, and details of its financial instruments and its exposures to credit risk and liquidity risk are described in Note 31 of the financial statements.

The Group's business plans project profitability in the foreseeable future. The Company also holds considerable capital resources, well in excess of regulatory requirements. Liquidity positions within the Company are actively managed on a daily basis to ensure sufficient liquidity is maintained at all times to support the business while at the same time remaining well within regulatory and internal limits. Taking these factors into consideration, management believes that the Group is well placed to manage its business risks successfully despite the continuing uncertain economic outlook.

After undertaking a detailed analysis of its financial resource requirements under both normal and stressed operating conditions management has a reasonable expectation that the Group has adequate resources to meet its minimum capital and liquidity regulatory requirements and appropriate contingency plans to ensure that the Group continues to operate with a prudent capital and liquidity buffer over its internal requirements for the foreseeable future. Therefore the Group continues to adopt the going concern basis in preparing the annual reports and financial statements.

Changes in Accounting Policies

Effective November 1, 2018, the Group adopted IFRS 15 Revenue from Contracts with Customers (IFRS 15).

The objective of IFRS 15 is to establish the principles that an entity shall apply to report useful information to users of financial statements about the nature, amount, timing and uncertainty of revenue and cash flows arising from a contract with a customer. The Group recognises revenue to depict the transfer of promised services to customers in an amount that reflects the consideration to which the Group expects to be entitled in exchange for those services, meaning that revenue under the new standard is recognised when the control over the services is transferred to the customer. The standard provides a single, principles based five-step model to be applied to all contracts with customers. Revenue arising from financial instruments, insurance contracts and leases are excluded from scope of the standard.

As permitted by the transition provisions of IFRS 15, the Group elected not to restate comparative period results; accordingly, all comparative information is presented in accordance with previous accounting policies, as indicated below. The adoption of IFRS 15 did not have an effect on the current period or any prior period financial results of the Group.

Accounting Standards Issued Not yet Effective

The following standards and amendments will be relevant to the Group but were not effective at October 31, 2019 and have not been applied in preparing these Consolidated financial statements. The Group's current view of the impact of these accounting changes is outlined as follows:

IFRS 16 Leases

In January 2016, the IASB issued IFRS 16 Leases (IFRS 16), which sets out principles for the recognition, measurement, presentation and disclosure of leases. The standard removes the current requirement for lessees to classify leases as finance leases or operating leases by introducing a single accounting model that requires the recognition of right-of-use assets and lease liabilities on the balance sheet for most leases. Lessees will recognize depreciation expense on the right-of-use asset and interest expense on the lease liability in the statement of profit or loss. There are no significant changes to lessor accounting. IFRS 16 will be effective for the Group from November 1, 2019.

The Group plans to adopt IFRS 16 by adjusting the Consolidated Balance Sheet at November 1, 2019, the date of initial application, with no restatement of comparative periods. On transition to IFRS 16, the Group intend to apply certain practical expedients, including the following:

- Election not to separate lease and non-lease components, to be applied to the Group's real estate leases;
- Election to measure the right-of-use asset as if IFRS 16 had been applied since the commencement date of the lease, to be applied on a lease-by-lease basis to a selected number of properties;
- Election not to apply IFRS 16 to leases of intangible assets; and
- Exemption from recognition for short-term leases.

The adoption of IFRS 16 as at November 1, 2019 is expected to result in an increase of the total assets of approximately EUR 96 million, primarily representing right-of-use assets for leased premises, and an increase in total liabilities of approximately EUR 96 million, primarily representing liabilities for future lease payments. On transition, the Group estimates a decrease of the CET1 ratio of 54 bps.

Conceptual Framework for Financial Reporting

In March 2018, the IASB issued its revised Conceptual Framework for Financial Reporting (Conceptual Framework). This replaces the previous version of the Conceptual Framework issued in 2010. The revised Conceptual Framework will be effective for the Group on November 1, 2020. The impact of this adoption is not expected to have a material impact on the financial statement of the Group.

IFRIC 23 Uncertainty over Income Tax Treatments

In June 2017, the International Accounting Standards Board (IASB) issued IFRIC 23 which clarifies the accounting for uncertainties in income taxes. The interpretation is to be applied to the determination of taxable profit (tax loss), tax bases, unused tax losses, unused tax credits and tax rates, when there is uncertainty over income tax treatments under IAS 12.

The interpretation is effective for annual periods beginning on or after 1 January 2019. As at the date of this reporting, no uncertain tax treatment to be disclosed under IFRIC 23 for the Group and its subsidiaries has been detected.

IAS 19 'Employee benefits' on plan amendment, curtailment or settlement

On 7 February 2018, the IASB published Plan Amendment, Curtailment or Settlement (Amendments to IAS 19) to harmonise accounting practices and to provide more relevant information for decision-making. An entity applies the amendments to plan amendments, curtailments or settlements occurring on or after the beginning of the first annual reporting period that begins on or after 1 January 2019. The impact of this adoption is not expected to have a material impact on the financial statement of the Group.

Significant accounting estimates and judgments

In preparing the Consolidated Financial Statements, management is required to make subjective estimates and assumptions that affect the reported amount of assets, liabilities, net income and related disclosures. Estimates made by management are based on historical experience and other assumptions that are believed to be reasonable. Key sources of estimation uncertainty include: securities impairment, determination of fair value of financial instruments, the allowance for expected credit loss, pensions and other post-employment benefits, income taxes, goodwill and litigation provisions.

Accordingly, actual results may differ from these and other estimates thereby impacting the future Consolidated Financial Statements. Refer to the relevant accounting policies in this Note for details on Group's use of estimates and assumptions.

In preparation of these Consolidated Financial Statements, management is required to make significant judgments that affect the carrying amounts of certain assets and liabilities, and the reported amounts of revenues and expenses recorded during the period. Significant judgments have been made in the following areas and discussed as noted in the Consolidated Financial Statements:

Impairment	Note 1
Income taxes	Note 3 and 13
Goodwill and other intangibles assets	Note 20
Provisions and other obligations	Note 24
Share based compensation	Note 26
Fair value of financial instruments	Note 29
Allowance for expected credit losses	Note 31(ii)

Significant Accounting Policies

The significant accounting polices used in the preparation of these consolidated financial statements are summarised below.

These accounting policies conform, in all material respects, to IFRS. Except where indicated the same accounting policies have been applied to all periods presented.

Basis of Consolidation

The Group's Consolidated Financial Statements includes the assets and liabilities and results of operations of the company, and its subsidiaries including branches, after elimination of intercompany transactions, balances, revenues and expenses.

Consolidation

Subsidiaries are those entities, including branches, over which we have control. We control an entity when we are exposed, or have rights, to variable returns from our involvement with the entity and have the ability to affect those returns through our power over the investee. We have power over an entity when we have existing rights that give us the current ability to direct the activities that most significantly affect the entity's returns (relevant activities). Power may be determined on the basis of voting rights.

We consolidate all subsidiaries from the date we obtain control and cease consolidation when an entity is no longer controlled by us. Group's consolidation conclusions affect the classification and amount of assets, liabilities, revenues and expenses reported in the Consolidated Financial Statements.

Non-controlling interests in subsidiaries that we consolidate are shown in the Consolidated Balance Sheet as a separate component of equity which is distinct from our shareholders' equity. The net income attributable to non-controlling interests is separately disclosed in the Consolidated Statement of Profits or Loss.

Business combination

All business combinations are accounted for using the acquisition method. Non-controlling interests, if any, are recognized at their proportionate share of the fair value of identifiable assets and liabilities, unless otherwise indicated. Identifiable intangible assets are recognized separately from goodwill and included in Other intangibles.

The consideration transferred for the acquisition is measured at the fair value of the assets given, equity instruments issued and liabilities incurred or assumed. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Acquisition related costs are expensed as incurred. The excess of the consideration paid in an acquisition over the Group's share of the fair value of the identifiable net assets acquired is recorded as goodwill.

Business combinations of entities under common control which are out of scope of IFRS 3, are accounted for using predecessor values.

The Consolidated Financial Statements incorporates the results of the entities controlled by the Group (its subsidiaries) made up to 31 October each year.

Entities exclusively controlled are consolidated according to the full consolidation method:

- Combination of assets, liabilities, equity, income and expenses on a line by line basis;
- Elimination of inter-company transactions, including income, expenses and dividends and unrealised gains and losses on transactions;
- Elimination of carrying amounts of the parent's investment in each subsidiary and the parent's portion of equity of each subsidiary;
- Identification of non-controlling interest in the consolidated statement, profit or loss, balance sheet and consolidated statement of changes in equity.

The consolidated financial statements are prepared using uniform accounting policies for similar transactions and other events in similar circumstances.

Transactions with non-controlling interests are accounted for using the Economic Entity Model. This accounting model requires that any surplus or deficit that arises on any transaction(s) with non-controlling interests, to dispose of or to acquire additional interests in the entity, is settled through equity.

Foreign currency translation

Items included in the financial statements of each entity of the Group are measured using the currency of the primary economic environment in which the entity operates (the "functional currency"). The Group's foreign branches are accounted for as integrated foreign operations.

The consolidated financial statements of the Group and the financial statements of the Company are presented in euro.

Foreign currency transactions are translated into functional currency at the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognized in the statement of profit or loss. Non-monetary assets and liabilities are translated into functional currency at historical rates. Non-monetary financial assets classified as Fair Value through Other Comprehensive Income, such as investment securities, are measured at fair value are translated into functional currency at rates prevailing at the balance sheet date, and the resulting foreign exchange gains and losses are recorded in Other Comprehensive Income until the asset is sold or becomes impaired.

Exchange differences arising on translation to presentation currency and on consolidation of overseas net investments, are recognized in other comprehensive income.

Assets, liabilities and equity of all the Group's entities that have a functional currency different from the presentation currency ('foreign operations') are translated at the closing rate at the balance sheet date and items of income and expense are translated at average exchange rates. All resulting exchange differences are recognized in other comprehensive income and accumulated in a separate component of equity.

On disposal of a foreign operation the amount accumulated in the separate component of equity is reclassified from equity to profit or loss. The Group may dispose of its interest in a foreign operation through sale, liquidation, repayment of share capital, abandonment or through loss of control or significant influence.

Goodwill and fair value adjustments arising on the acquisition of a foreign entity are treated as assets and liabilities of the foreign entity and translated at the closing rates.

Revenue Recognition

Interest

Interest income and Interest expense are recognized in the Consolidated Statements of Profit or Loss for all interest-bearing financial instruments using the effective interest method. The effective interest rate is the rate that discounts estimated future cash flows over the expected life of the financial asset or liability to the net carrying amount upon initial recognition. Significant judgment is applied in determining the effective interest rate due to uncertainty in the timing and amounts of future cash flows.

When calculating the effective interest rate, the Group estimates cash flows considering all contractual terms of the financial instrument (for example, prepayment options) but does not consider future credit losses. 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. Accrued interest income and expense is reported in the same line as the related financial asset and liability in the consolidated balance sheet.

Once a financial asset or group of similar financial assets has been written down as a result of an impairment loss, interest income is recognized using the rate of interest used to discount the future cash flows for the purposes of measuring the impairment loss.

Negative interest income and expense arises from interest rates applied which are below zero. Negative interest income is earned from deposits placed by customers with the Company, and is presented in interest income and disclosed as negative interest on customer deposits. Negative interest expense is recognized on deposits owned by the Company, and is presented in interest expense and disclosed as negative interest on deposits placed.

Transaction costs

Transaction costs are expensed as incurred for financial instruments classified or designated as at FVTPL. For other financial instruments, transaction costs are capitalized on initial recognition. For financial assets and financial liabilities measured at amortized cost, capitalized transaction costs are amortized through net income over the estimated life of the instrument using the effective interest method.

For Investment Securities financial assets measured at fair value that do not have fixed or determinable payments and no fixed maturity, capitalized transaction costs are recognized in net income when the asset is derecognized or becomes impaired.

Dividend income

Dividend income is recognised when the right to receive income is established. This is the ex-dividend date for listed securities, and usually the date when shareholders approve the dividend for unlisted securities. Dividend received from subsidiaries have been eliminated upon consolidation.

Fee and commission income and expense

Commissions and fees primarily relate to Custody fees, Fund Administration revenue and Transfer Agency Service fees, Securities brokerage commissions are recognized based on the applicable service contracts with customers. Custody fees and Fund Administration revenue are generally calculated as a percentage of daily or period-end net asset values based on the terms of the contract with customers and are received monthly, quarterly, semi-annually or annually, depending on the terms of the contract. Custody fees are generally derived from assets under custody (AUC) when customers solicit the investment capabilities of an investment manager or from assets under administration (AUA) where the investment strategy is directed by the client or a designated third party manager. Fund Administration income is based upon the daily net asset value (NAV) of the funds.

Commissions earned on brokerage services that are related to the provision of specific transaction type services are recognized when the service is fulfilled. Where services are provided over time, revenue is recognized as the services are provided. When service fees and other costs are incurred in relation to commissions and fees earned, the Group records these costs on a gross basis.

Loan commitment fees for loans that are likely to be drawn down, are deferred (together with related direct costs) and recognized as an adjustment to the effective interest rate on the loan once drawn. Otherwise such fees are deferred and amortised to Fee and commission income over the commitment period.

Fees that are earned on the execution of a significant transaction are recognised as revenue when performance obligations under the contract have been performed.

Transaction Price

The transaction price is the amount of consideration to which an entity expects to be entitled in exchange for transferring promised goods or services to a customer, excluding amounts collected on behalf of third parties. The transaction price is documented in the contract with customers for all services provided.

Financial instruments

Classification of financial assets

Financial assets are measured upon initial recognition at fair value, are classified and subsequently measured at fair value through profit or loss (FVTPL); fair value through other comprehensive income (FVOCI), or amortized cost based on the business model of the Group for managing the financial instruments and the contractual cash flow characteristics of the instrument.

Debt instruments are measured at amortized cost if both of the following conditions are met and the asset is not designated as FVTPL: (a) the asset is held within a business model that is Held-to-Collect (HTC) as described below, and (b) the contractual terms of the instrument give rise to cash flows that are solely payments of principal and interest on the principal amount outstanding (SPPI).

Debt instruments are measured at FVOCI if both of the following conditions are met and the asset is not designated as FVTPL: (a) the asset is held within a business model that is Held-to-Collect-and-Sell (HTC&S) as described below, and (b) the contractual terms of the instrument give rise, on specified dates, to cash flows that are SPPI.

This election is made on an instrument-by-instrument basis.

Business model assessment

The Group determines its business models at the level that best reflects how it manages portfolios of financial assets to achieve the business objectives. Judgment is used in determining the Group's business models, which is supported by relevant, objective evidence including:

- How the economic activities of Group's businesses generate benefits, for example through trading revenue, enhancing yields or hedging funding or other costs and how such economic activities are evaluated and reported to key management personnel.
- The significant risks affecting the performance of Group's businesses, for example, market risk, credit risk, or other risks as described in the Risk Management section of the Directors' Report, and the activities undertaken to manage those risks.
- Historical and future expectations of sales of the loans or securities portfolios managed as part of a business model.
- The compensation structures for managers of the Group's businesses, to the extent that these are directly linked to the economic performance of the business model. The Group business models fall into three categories, which are indicative of the key strategies used to generate returns.
- HTC: The objective of this business model is to hold loans and securities to collect contractual principal and interest cash flows. Sales are incidental to this objective and are expected to be insignificant or infrequent.
- HTC&S: Both collecting contractual cash flows and sales are integral to achieving the objective of the business model.
- Other fair value business models: These business models are neither HTC nor HTC&S, and primarily represent business models where assets are held-for-trading or managed on a fair value basis.

SPPI assessment

Solely Payment of Principal and Interest ("SPPI") assessment is performed by the Bank annually. Instruments held within a HTC or HTC&S business model are assessed to evaluate if their contractual cash flows are comprised of solely payments of principal and interest. SPPI payments are those which would typically be expected from basic lending arrangements. Principal amounts include par repayments from lending and financing arrangements, and interest primarily relates to basic lending returns, including compensation for credit risk and the time value of money associated with the principal amount outstanding over a period of time. Interest can also include other basic lending risks and costs (for example, liquidity risk, servicing or administrative costs) associated with holding the financial asset for a period of time, and a profit margin.

Where the contractual terms introduce exposure to risk or variability of cash flows that are inconsistent with a basic lending arrangement, the related financial asset is classified and measured at FVTPL.

Securities

Investment securities include all securities classified as FVOCI and amortized cost. All investment securities are initially recorded at fair value and subsequently measured according to the respective classification.

Debt securities carried at FVOCI are measured at fair value with unrealized gains and losses arising from changes in fair value included in other components of equity. Impairment losses are included in Allowance for credit losses and correspondingly reduce the accumulated changes in fair value included in other components of equity. When a debt instrument measured at FVOCI is sold, the cumulative gain or loss is reclassified from other components of equity to Net gain or (loss) on Investments.

Fair value option

A financial instrument with a reliably measurable fair value can be designated as FVTPL (the fair value option) on its initial recognition even if the financial instrument was not acquired or incurred principally for the purpose of selling or repurchasing. The fair value option can be used for financial assets if it eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise from measuring assets or liabilities, or recognizing related gains and losses on a different basis (an accounting mismatch). The fair value option can be elected for financial liabilities if: (i) the election eliminates an accounting mismatch; (ii) the financial liability is part of a portfolio that is managed on a fair value basis, in accordance with a documented risk management or investment strategy; or (iii) there is an embedded derivative in the financial or non-financial host contract and the derivative is not closely related to the host contract. These instruments cannot be reclassified out of the FVTPL category while they are held or issued.

Financial assets designated as at FVTPL are recorded at fair value and any unrealized gain or loss arising due to changes in fair value is included in Net income from financial instruments at fair value through profit or loss.

Financial liabilities designated as at FVTPL are recorded at fair value and fair value changes attributable to changes in the group's own credit risk are recorded in OCI. The Group credit risk amounts recognized in OCI will not be reclassified subsequently to net income. The remaining fair value changes not attributable to changes in our own credit risk are recorded in Net income from financial instruments at fair value through profit or loss. Upon initial recognition, if we determine that presenting the effects of own credit risk changes in OCI would create or enlarge an accounting mismatch in net income, the full fair value change in Group's debt designated as at FVTPL is recognized in net income.

To make that determination, RBCIS assess whether the Group expect that the effects of changes in the liability's credit risk will be offset in profit or loss by a change in the fair value of another financial instrument measured at FVTPL. Such an expectation is based on an economic relationship between the characteristics of the liability and the characteristics of the other financial instrument. The determination is made at initial recognition and is not reassessed. To determine the fair value adjustments on the Group's debt designated as at FVTPL, we calculate the present value of the instruments based on the contractual cash flows over the term of the arrangement by using the effective funding rate at the beginning and end of the period.

Loans

Loans are debt instruments recognized initially at fair value and are subsequently measured in accordance with the classification of financial assets policy provided above. All of the group loans are carried at amortized cost using the effective interest method, which represents the gross carrying amount less allowance for credit losses.

Interest on loans is recognized in interest income using the effective interest method. The estimated future cash flows used in this calculation include those determined by the contractual term of the asset and all fees that are considered to be integral to the effective interest rate. Also included in this amount are transaction costs and all other premiums or discounts.

Fees that relate to activities such as originating, restructuring or renegotiating loans are deferred and recognized as interest income over the expected term of such loans using the effective interest method. Where there is a reasonable expectation that a loan will be originated, commitment and standby fees are also recognized as interest income over the expected term of the resulting loans using the effective interest method. Otherwise, such fees are recorded as other liabilities and amortized into Fee and commission income over the commitment or standby period.

For loans carried at amortized cost or FVOCI, impairment losses are recognized at each balance sheet date in accordance with the three-stage impairment model outlined below.

For loan commitments, expected credit loss estimates consider the portion of the commitment that is expected to be drawn over the relevant time period. For financial guarantees, expected credit loss estimates are based on the expected payments required under the guarantee contract. For finance lease receivables, expected credit loss estimates are based on cash flows consistent with the cash flows used in measuring the lease receivable.

Allowance for expected credit losses

An allowance for expected credit losses (ECL) is established for all financial instruments, except for financial assets classified or designated as FVTPL and equity securities designated as FVOCI, which are not subject to impairment assessment. Assets subject to impairment assessment include loans, debt securities, interest-bearing deposits with banks, accounts and accrued interest receivable.

ACL on loans is presented in Allowance for loan losses. ACL on debt securities measured at FVOCI is presented in other components of equity. Other financial assets carried at amortized cost are presented net of ACL on the Consolidated Balance Sheet.

Off-balance sheet items subject to impairment assessment include financial guarantees and undrawn loan commitments. ACL on Off-balance sheet items is separately calculated and included in Other Liabilities – Provisions.

The Group measures the ACL on each balance sheet date according to a three-stage expected credit loss impairment model:

- Performing financial assets
  - Stage 1 – From initial recognition of a financial asset to the date on which the asset has experienced a significant increase in credit risk relative to its initial recognition, a loss allowance is recognized equal to the credit losses expected to result from defaults occurring over the 12 months following the reporting date.
  - Stage 2 – Following a significant increase in credit risk relative to the initial recognition of the financial asset, a loss allowance is recognized equal to the credit losses expected over the remaining lifetime of the asset.
- Impaired financial assets
  - Stage 3 – When a financial asset is considered to be credit-impaired, a loss allowance is recognized equal to credit losses expected over the remaining lifetime of the asset. Interest revenue is calculated based on the carrying amount of the asset, net of the loss allowance, rather than on its gross carrying amount.

The ACL is a discounted probability-weighted estimate of the cash shortfalls expected to result from defaults over the relevant time horizon. For loan commitments, credit loss estimates consider the portion of the commitment that is expected to be drawn over the relevant time period. For financial guarantees, credit loss estimates are based on the expected payments required under the guarantee contract. For finance lease receivables, credit loss estimates are based on cash flows consistent with the cash flows used in measuring the lease receivable.

Increases or decreases in the required ACL attributable to purchases and new originations, derecognitions or maturities, and remeasurements due to changes in loss expectations or stage transfers are recorded in provision for credit losses. Write-offs and recoveries of amounts previously written off are recorded against the ACL.

The ACL represents an unbiased estimate of expected credit losses on the Group's financial assets as at the balance sheet date. Judgment is required in making assumptions and estimations when calculating the ACL, including movements between the three stages and the application of forward looking information. The underlying assumptions and estimates may result in changes to the provisions from period to period that significantly affect the group results of operations.

Measurement of expected credit losses

Expected credit losses are based on a range of possible outcomes and consider all available reasonable and supportable information including internal and external ratings, historical credit loss experience, and expectations about future cash flows. The measurement of expected credit losses is based primarily on the product of the instrument's Probability of Default (PD), Loss Given Default (LGD), and Exposure at Default (EAD) discounted to the reporting date.

Probability of Default (PD) represents an estimate of the probability that Borrowers, within a particular credit score, will Default on their contractual obligations within a given time period.

Exposure at Default (EAD) is an estimate of the expected gross exposure of the facility upon Default of the Borrower, without reflecting specific provisions or partial write-offs.

Loss Given Default (LGD) is a rate that reflects the potential economic loss expected in the event of Borrower Default, and is expressed as a percentage of the EAD. Economic loss includes material discount effects as well as all material direct or indirect collection costs.

The main difference between Stage 1 and Stage 2 expected credit losses for performing financial assets is the respective calculation horizon. Stage 1 estimates project PD, LGD and EAD over a maximum period of 12 months while Stage 2 estimates project PD, LGD and EAD over the remaining lifetime of the instrument.

An expected credit loss estimate is produced for each individual exposure. Relevant parameters are modelled on a collective basis using portfolio segmentation that allows for appropriate incorporation of forward looking information. To reflect other characteristics that are not already considered through modelling, expert credit judgment is exercised in determining the final expected credit losses.

For a small percentage of the group's portfolios which lack detailed historical information and/or loss experience, we apply simplified measurement approaches that may differ from what is described above. These approaches have been designed to maximize the available information that is reliable and supportable for each portfolio and may be collective in nature. Expected credit losses are discounted to the reporting period date using the effective interest rate.

Expected life

For instruments in Stage 2 or Stage 3, loss allowances reflect expected credit losses over the expected remaining lifetime of the instrument. For most instruments, the expected life is limited to the remaining contractual life.

An exemption is provided for certain instruments with the following characteristics: (a) the instrument includes both a loan and undrawn commitment component; (b) we have the contractual ability to demand repayment and cancel the undrawn commitment; and (c) RBCIS exposure to credit losses is not limited to the contractual notice period. For products in scope of this exemption, the expected life may exceed the remaining contractual life and is the period over which the Group exposure to credit losses is not mitigated by the Group normal credit risk management actions. This period varies by product and risk category and is estimated based on the historical experience with similar exposures and consideration of credit risk management actions taken as part of the group's regular credit review cycle. Products in scope of this exemption include, overdraft balances and certain revolving lines of credit. Judgment is required in determining the instruments in scope for this exemption and estimating the appropriate remaining life based on our historical experience and credit risk mitigation practices.

Assessment of significant increase in credit risk (SICR)

The assessment of significant increase in credit risk requires significant judgment. Movements between Stage 1 and Stage 2 are based on whether an instrument's credit risk as at the reporting date has increased significantly relative to the date it was initially recognized. For the purposes of this assessment, credit risk is based on an instrument's lifetime PD, not the losses we expect to incur. The assessment is generally performed at the instrument level.

The Group's assessment of significant increases in credit risk is performed at least quarterly based on three factors. If any of the following factors indicates that a significant increase in credit risk has occurred, the instrument is moved from Stage 1 to Stage 2:

(1) The Group has established thresholds for significant increases in credit risk based on both a percentage and absolute change in lifetime PD relative to initial recognition.
(2) Additional qualitative reviews are performed to assess the staging results and make adjustments, as necessary, to better reflect the positions whose credit risk has increased significantly.
(3) Instruments which are 30 days past due are considered to have experienced a significant increase in credit risk, even if our other metrics do not indicate that a significant increase in credit risk has occurred.

The thresholds for movement between Stage 1 and Stage 2 are symmetrical. After a financial asset has migrated to Stage 2, if its credit risk is no longer considered to have significantly increased relative to its initial recognition, the financial asset will move back to Stage 1.

For certain instruments with low credit risk as at the reporting date, it is presumed that credit risk has not increased significantly relative to initial recognition. Credit risk is considered to be low if the instrument has a low risk of default, and the borrower has the ability to fulfil their contractual obligations both in the near term and in the longer term, including periods of adverse changes in the economic or business environment. Certain interest-bearing deposits with banks and assets purchased under reverse repurchase agreements have been identified as having low credit risk.

Use of forward-looking information

The measurement of expected credit losses for each stage and the assessment of significant increase in credit risk considers information about past events and current conditions as well as reasonable and supportable projections of future events and economic conditions. The estimation and application of forward-looking information requires significant judgment.

The PD, LGD and EAD inputs used to estimate Stage 1 and Stage 2 credit loss allowances are modelled based on the macroeconomic variables (or changes in macroeconomic variables) that are most closely correlated with credit losses in the relevant portfolio. Each macroeconomic scenario used in the expected credit loss calculation includes a projection of all relevant macroeconomic variables used in the models for a five year period, subsequently reverting to long-run averages. Macroeconomic variables used in the expected credit loss models include, but are not limited to, gross domestic product, unemployment rates, bond yields, equity return indices, commercial real estate indices, and commodity prices. Depending on their usage in the models, macroeconomic variables may be projected at a country, or more granular level.

The Group's estimation of expected credit losses in Stage 1 and Stage 2 is a discounted probability-weighted estimate that considers a minimum of three future macroeconomic scenarios. The Group base case scenario is based on macroeconomic forecasts published by our internal economics group. Upside and downside scenarios vary relative to the group base case scenario based on reasonably possible alternative macroeconomic conditions. Additional and more severe downside scenarios are designed to capture material non-linearity of potential credit losses in portfolios. Scenario design, including the identification of additional downside scenarios, occurs at least on an annual basis and more frequently if conditions warrant.

Scenarios are designed to capture a wide range of possible outcomes and weighted according to the Group best estimate of the relative likelihood of the range of outcomes that each scenario represents. Scenario weights take into account historical frequency, current trends, and forward-looking conditions and are updated on a quarterly basis. All scenarios considered are applied to all portfolios subject to expected credit losses with the same probabilities.

The Group assessment of significant increases in credit risk is based on changes in probability-weighted forward-looking lifetime PD as at the reporting date, using the same macroeconomic scenarios as the calculation of expected credit losses.

Definition of default

The definition of default used in the measurement of expected credit losses is consistent with the definition of default used for RBC internal credit risk management purposes. The Group's definition of default may differ across products and consider both quantitative and qualitative factors, such as the terms of financial covenants and days past due. Default occurs when the borrower is more than 90 days past due on any material obligation to us, and/or the group consider the borrower unlikely to make their payments in full without recourse action on RBCIS part, such as taking formal possession of any collateral held. The definition of default used is applied consistently from period to period and to all financial instruments unless it can be demonstrated that circumstances have changed such that another definition of default is more appropriate.

Credit-impaired financial assets (stage 3)

Financial assets are assessed for credit-impairment at each balance sheet date and more frequently when circumstances warrant further assessment. Evidence of credit-impairment may include indications that the borrower is experiencing significant financial difficulty, probability of bankruptcy or other financial reorganization, as well as a measurable decrease in the estimated future cash flows evidenced by the adverse changes in the payments status of the borrower or economic conditions that correlate with defaults. An asset that is in Stage 3 will move back to Stage 2 when, as at the reporting date, it is no longer considered to be credit-impaired. The asset will transfer back to Stage 1 when its credit risk at the reporting date is no longer considered to have increased significantly from initial recognition, which could occur during the same reporting period as the transfer from Stage 3 to Stage 2.

When a financial asset has been identified as credit-impaired, expected credit losses are measured as the difference between the asset's gross carrying amount and the present value of estimated future cash flows discounted at the instrument's original effective interest rate. For impaired financial assets with drawn and undrawn components, expected credit losses also reflect any credit losses related to the portion of the loan commitment that is expected to be drawn down over the remaining life of the instrument.

When a financial asset is credit-impaired, interest ceases to be recognized on the regular accrual basis, which accrues income based on the gross carrying amount of the asset. Rather, interest income is calculated by applying the original effective interest rate to the amortized cost of the asset, which is the gross carrying amount less the related ACL. Following impairment, interest income is recognized on the unwinding of the discount from the initial recognition of impairment.

ACL for credit-impaired loans in Stage 3 are established at the borrower level, where losses related to impaired loans are identified on individually significant loans, or collectively assessed and determined through the use of portfolio-based rates, without reference to particular loans.

Individually assessed loans (stage 3)

When individually significant loans are identified as impaired, we reduce the carrying value of the loans to their estimated realizable value by recording an individually assessed ACL to cover identified credit losses. The individually assessed ACL reflects the expected amount of principal and interest calculated under the terms of the original loan agreement that will not be recovered, and the impact of time delays in collecting principal and/or interest (time value of money). The estimated realizable value for each individually significant loan is the present value of expected future cash flows discounted using the original effective interest rate for each loan. When the amounts and timing of future cash flows cannot be estimated with reasonable reliability, the estimated realizable amount may be determined using observable market prices for comparable loans, the fair value of collateral underlying the loans, and other reasonable and supported methods based on management judgment.

Individually-assessed allowances are established in consideration of a range of possible outcomes, which may include macroeconomic or non-macroeconomic scenarios, to the extent relevant to the circumstances of the specific borrower being assessed. Assumptions used in estimating expected future cash flows reflect current and expected future economic conditions and are generally consistent with those used in Stage 1 and Stage 2 measurement.

Significant judgment is required in assessing evidence of credit-impairment and estimation of the amount and timing of future cash flows when determining expected credit losses. Changes in the amount expected to be recovered would have a direct impact on the allowance for credit losses and may result in a change in the ACL.

Collectively assessed loans

Loans that are collectively assessed are grouped on the basis of similar risk characteristics, taking into account loan type, industry, geographic location, collateral type, past due status and other relevant factors.

The collectively-assessed ACL reflects: (i) the expected amount of principal and interest calculated under the terms of the original loan agreement that will not be recovered, and (ii) the impact of time delays in collecting principal and/or interest (time value of money).

The expected principal and interest collection is estimated on a portfolio basis and references historical loss experience of comparable portfolios with similar credit risk characteristics, adjusted for the current environment and expected future conditions. A portfolio specific coverage ratio is applied against the impaired loan balance in determining the collectively-assessed ACL. The time value of money component is calculated by using the discount factors applied to groups of loans sharing common characteristics. The discount factors represent the expected recovery pattern of the comparable group of loans, and reflect the historical experience of these groups adjusted for current and expected future economic conditions and/or industry factors. Significant judgment is required in assessing evidence of impairment and estimation of the amount and timing of future cash flows when determining expected credit losses. Changes in the amount expected to be recovered would have a direct impact on the allowance for credit losses and may result in a change in the ACL.

Write-offs

Loans and advances are written off against the ACL, when there is no realistic prospect of recovery. Where loans are secured, they are generally written off after receipt of any proceeds from the realization of collateral.

In circumstances where the net realizable value of any collateral has been determined and there is no reasonable expectation of further recovery, write off may be earlier.

Modifications

The original terms of a financial asset may be renegotiated or otherwise modified, resulting in changes to the contractual terms of the financial asset that affect the contractual cash flows. The treatment of such modifications is primarily based on the process undertaken to execute the renegotiation and the nature and extent of changes expected to result. Modifications which are performed for credit reasons, primarily related to troubled debt restructurings, are generally treated as modifications of the original financial asset. Modifications which are performed for other than credit reasons are generally considered to be an expiry of the original cash flows; accordingly, such renegotiations are treated as a derecognition of the original financial asset and recognition of a new financial asset.

If a modification of terms does not result in derecognition of the financial asset, the carrying amount of the financial asset is recalculated as the present value of the renegotiated or modified contractual cash flows, discounted at the original effective interest rate and a gain or loss is recognized. The financial asset continues to be subject to the same assessments for significant increase in credit risk relative to initial recognition and credit-impairment, as described above. A modified financial asset will transfer out of Stage 3 if the conditions that led to it being identified as credit-impaired are no longer present and relate objectively to an event occurring after the original credit-impairment was recognized. A modified financial asset will transfer out of Stage 2 when it no longer satisfies the relative thresholds set to identify significant increases in credit risk, which are based on changes in its lifetime PD, days past due and other qualitative considerations. The financial asset continues to be monitored for significant increases in credit risk and credit-impairment.

If a modification of terms results in derecognition of the original financial asset and recognition of the new financial asset, the new financial asset will generally be recorded in Stage 1, unless it is determined to be credit-impaired at the time of the renegotiation. For the purposes of assessing for significant increases in credit risk, the date of initial recognition for the new financial asset is the date of the modification.

Amortised cost

The amortised cost of a financial asset or financial liability is the amount at which the financial asset or liability is measured at initial recognition, minus principal repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between the initial amount recognised and the maturity amount (fees, premiums or discounts), minus any reduction for impairment.

Fair value

All financial instruments are initially recognised at fair value. The fair value of a financial instrument on initial recognition is normally the transaction price, that is, the fair value of the consideration given or received.

Subsequent to initial recognition, fair valuation of financial instruments measured at fair value is performed in accordance with RBCIS valuation methodologies which are described in Note 29.

Non-derivative financial assets and financial liabilities classification and measurement

Note 29 sets out the fair value of each class of financial asset or liability. A description of the basis of measurement for each designation is set out hereafter for each asset or liability class.

Loans and advances due from banks and customers

Loans and advances not classified as trading or measured at fair value through profit or loss, or investment securities, are classified as loans and advances and measured at amortised cost.

Fair value through profit or loss

Assets and liabilities held for trading

Trading assets and liabilities are those acquired or incurred principally for the purpose of selling or repurchasing in the near term, or held as part of a portfolio which is managed together for short-term profit or position taking.

Trading assets and liabilities are initially recognised and subsequently measured at fair value in the consolidated balance sheet with transaction costs taken directly to the income statement. All changes in fair value are recognised as part of “net income from financial instruments at fair value through profit or loss” in the consolidated income statement. Trading assets and liabilities are not reclassified subsequent to their initial recognition.

Assets and liabilities designated at fair value through profit or loss

Financial assets and liabilities are designated at fair value through profit or loss when:

- doing so significantly reduces measurement inconsistencies that would arise from measuring assets or liabilities or recognising the gains and losses on them on different basis; and
- certain investments, managed and evaluated on a fair value basis in accordance with a documented risk management or investment strategy and reported to key management personnel on that basis, are designated at fair value through profit or loss.

The classification at fair value through profit or loss is made on initial recognition provided it fulfils the stated conditions. No reclassification is possible subsequent to their initial recognition.

During 2019 and 2018, RBCIS did not have any items designated at fair value through profit or loss.

Financial investments

Financial investments only include investment securities.

Investment securities

Available-for-sale investments are non-derivative investments that are not designated as another category of financial assets. Unquoted equity securities whose fair value cannot be reliably measured are carried at cost. All other available-for-sale investments are carried at fair value.

Foreign exchange gains or losses on available-for-sale debt security investments are recognised in the consolidated income statement. Other fair value changes are recognised directly in other comprehensive income until the investment is sold or impaired and the balance in other comprehensive income is recycled to the consolidated statement of profit or loss.

Financial liabilities

Financial liabilities are non-derivative liabilities that are not designated as at fair value through profit or loss or as trading liabilities.

Financial liabilities are initially measured at fair value net of transaction costs and subsequently carried at amortised cost.

Derivatives

Derivatives are used to manage Group's exposure to currency risk. The most frequently used derivative products are foreign exchange swaps and forward rate agreements. All derivative instruments are recorded on the Consolidated Balance Sheet at fair value on the date a derivative is entered into, and they are subsequently remeasured to their fair value at the end of each reporting period.

When derivatives are used in trading activities, the realized and unrealized gains and losses on these derivatives are recognized in Net income from financial instruments at fair value through profit or loss. Derivatives with positive fair values are reported as Derivative assets and derivatives with negative fair values are reported as Derivative liabilities. In accordance with Group's policy for offsetting financial assets and financial liabilities, the net fair value of certain derivative assets and liabilities are reported as an asset or liability, as appropriate. Valuation adjustments are included in the fair value of Derivative assets and Derivative liabilities. Premiums paid and premiums received are shown in Derivative assets and Derivative liabilities, respectively.

The Group uses foreign exchange contracts and foreign currency-denominated liabilities to manage the foreign currency exposures to net investments in foreign operations having a functional currency other than the euro.

Determination of fair value

The fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The group determine fair value by incorporating all factors that market participants would consider in setting a price, including commonly accepted valuation approaches.

Valuation adjustments are recorded for the credit risk of Group's derivative portfolios in order to arrive at their fair values. Credit valuation adjustments (CVA) take into account the Group's counterparties' creditworthiness, the current and potential future mark-to-market of transactions, and the effects of credit mitigants such as master netting and collateral agreements. CVA amounts are derived from estimates of exposure at default, probability of default, recovery rates on a counterparty basis, and market and credit factor correlations. Exposure at default is the value of expected derivative related assets and liabilities at the time of default, estimated through modeling using underlying risk factors. Probability of default and recovery rate are implied from the market prices for credit protection and the credit ratings of the counterparty.

When market data is unavailable, it is estimated by incorporating assumptions and adjustments that market participants would use for determining fair value using these inputs. Correlation is the statistical measure of how credit and market factors may move in relation to one another. Correlation is estimated using historical data. CVA is calculated daily and changes are recorded in Net income from financial instruments at fair value through profit or loss.

Where required, a valuation adjustment is made to reflect the unrealized gain or loss at inception of a financial instrument contract where the fair value of that financial instrument is not obtained from a quoted market price or cannot be evidenced by other observable market transactions based on a valuation technique incorporating observable market data.

A bid-offer valuation adjustment is required when a financial instrument is valued at the mid-market price, instead of the bid or offer price for asset or liability positions, respectively. The valuation adjustment takes into account the spread from the mid to either the bid or offer price.

Some valuation models require parameter calibration from such factors as market observable option prices. The calibration of parameters may be sensitive to factors such as the choice of instruments or optimization methodology.

A valuation adjustment is also estimated to mitigate the uncertainties of parameter calibration and model limitations.

In determining fair value, a hierarchy is used which prioritizes the inputs to valuation techniques. The fair value hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). Determination of fair value based on this hierarchy requires the use of observable market data whenever available. Level 1 inputs are unadjusted quoted prices in active markets for identical assets or liabilities that we have the ability to access at the measurement date. Level 2 inputs include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, and model inputs that are either observable, or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 3 inputs are one or more inputs that are unobservable and significant to the fair value of the asset or liability. Unobservable inputs are used to measure fair value to the extent that observable inputs are not available at the measurement date. The availability of inputs for valuation may affect the selection of valuation techniques. The classification of a financial instrument in the hierarchy for disclosure purposes is based upon the lowest level of input that is significant to the measurement of fair value.

Where observable prices or inputs are not available, management judgment is required to determine fair values by assessing other relevant sources of information such as historical data, proxy information from similar transactions, and through extrapolation and interpolation techniques. For more complex or illiquid instruments, significant judgment is required in the determination of the model used, the selection of model inputs, and in some cases the application of valuation adjustments to the model value or quoted price for inactively traded financial instruments, as the selection of model inputs may be subjective and the inputs may be unobservable. Unobservable inputs are inherently uncertain as there is little or no market data available from which to determine the level at which the transaction would occur under normal business circumstances. Appropriate parameter uncertainty and market risk valuation adjustments for such inputs and other model risk valuation adjustments are assessed in all such instances.

Derecognition of financial assets

Financial assets are derecognized from the Consolidated Balance Sheet when Group's contractual rights to the cash flows from the assets have expired, when we retain the rights to receive the cash flows of the assets but assume an obligation to pay those cash flows to a third party subject to certain pass-through requirements or when we transfer our contractual rights to receive the cash flows and substantially all of the risk and rewards of the assets have been transferred. When we retain substantially all of the risks and rewards of the transferred assets, the transferred assets are not derecognized from the Consolidated Balance Sheet and are accounted for as secured financing transactions. When we neither retain nor transfer substantially all risks and rewards of ownership of the assets, we derecognize the assets if control over the assets is relinquished. If we retain control over the transferred assets, we continue to recognize the transferred assets to the extent of our continuing involvement.

Derecognition of financial liabilities

The Group derecognizes a financial liability from the consolidated balance sheet when Group's obligation specified on the contract expires, or is discharged or cancelled, the Group recognizes the difference between the carrying amount of a financial liability transferred and the consideration paid in the consolidated statements of profit or loss.

Financial investments: reclassification of prior year presentation

Certain prior year amounts have been reclassified for consistency with the current period presentation.

Financial liabilities

Financial liabilities are non-derivative liabilities that are not designated as at fair value through profit or loss or as trading liabilities.

Financial liabilities are initially measured at fair value net of transaction costs and subsequently carried at amortised cost.

Derivatives

Derivatives are used to manage exposure to currency risk. The most frequently used derivative products are foreign exchange swaps and forward rate agreements. All derivative instruments are recorded on the Balance Sheet at fair value.

When derivatives are used in trading activities, the realized and unrealized gains and losses on these derivatives are recognized in Net Income from financial instruments at fair value through profit or loss. Derivatives with positive fair values are reported as Derivatives in Assets and derivatives with negative fair values are reported as Derivatives in Liabilities. Valuation adjustments are included in the fair value of Derivatives in Assets and Derivatives in Liabilities.

Offsetting a financial asset and a financial liability

A financial asset and a financial liability shall be offset and the net amount presented on the consolidated balance sheet, when and only when, an entity:

- currently has an enforceable right to set off the recognised amounts; and
- intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

This is not generally the case with master netting agreements, therefore the related assets and liabilities are presented gross in the balance sheet, unless actual net settlement takes place.

Tangible assets

Tangible assets are measured at cost less accumulated depreciation and impairment losses.

Cost includes expenditures that are directly attributable to the acquisition of the asset.

Depreciation is recognised in the consolidated statement of profit or loss principally on a straight-line basis over the estimated useful lives of assets which are:

- Buildings 15-50 years
- IT equipment 3-5 years
- Fixtures and fittings 5 years
- Leasehold improvements Lesser of the useful life of the improvement or the lease term plus one renewal option period up to a maximum of 10 years.

Land is not depreciated.

When parts of tangible assets have different useful lives, they are accounted for as separate items (major components).

The cost of replacing part of tangible assets is recognised in the carrying amount of the item if it is probable that the future economic benefits embodied within the part will flow to the Group and its cost can be measured reliably. The costs of the day-to-day servicing of tangible assets are recognised in the consolidated statement of profit or loss as incurred.

Gains and losses on disposals are recognised in the statement of profit or loss as other income or expense.

Goodwill

Goodwill is allocated to cash-generating units or groups of cash-generating units for the purpose of impairment testing, which is undertaken at the lowest level at which goodwill is monitored for internal management purposes. Impairment testing is performed annually as at August 1, or more frequently if there are objective indicators of impairment, by comparing the recoverable amount of a cash-generating unit (CGU) with its carrying amount. The recoverable amount of a CGU is the higher of its value in use and its fair value less costs of disposal. Value in use is the present value of the expected future cash flows from a CGU. Fair value less costs of disposal is the amount obtainable from the sale of a CGU in an orderly transaction between market participants, less disposal costs. The fair value of a CGU is estimated using valuation techniques such as a discounted cash flow method, adjusted to reflect the considerations of a prospective third-party buyer. External evidence such as binding sale agreements or recent transactions for similar businesses within the same industry is considered to the extent that it is available.

Significant judgment is involved in estimating the model inputs used to determine the recoverable amount of our CGUs, in particular future cash flows, discount rates and terminal growth rates, due to the uncertainty in the timing and amount of cash flows and the forward-looking nature of these inputs. Future cash flows are based on financial plans agreed by management which are estimated based on forecast results, business initiatives, planned capital investments and returns to shareholders. Discount rates are based on the Group's cost of capital, adjusted for CGU-specific risks and currency exposure as reflected by differences in expected inflation. Bank-wide cost of capital is based on the Capital Asset Pricing Model. CGU-specific risks include country risk, business/operational risk, geographic risk (including political risk, devaluation risk, and government regulation), currency risk, and price risk (including product pricing risk and inflation). Terminal growth rates reflect the expected long-term gross domestic product growth and inflation for the countries within which the CGU operates. Changes in these assumptions may impact the amount of impairment loss recognized.

The carrying amount of a CGU includes the carrying amount of assets, liabilities and goodwill allocated to the CGU. If the recoverable amount is less than the carrying value, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the CGU and then to the other assets of the CGU proportionately based on the carrying amount of each asset. Any impairment loss is charged to income in the period in which the impairment is identified. Goodwill is stated at cost less accumulated impairment losses. Subsequent reversals of goodwill impairment are prohibited.

Upon disposal of a portion of a CGU, the carrying amount of goodwill related to the portion of the CGU sold is included in the determination of gains or losses on disposal. The carrying amount is determined based on the relative fair value of the disposed portion to the total CGU.

Other intangible assets

Intangible assets represent identifiable non-monetary assets and are acquired either separately or through a business combination, or generated internally. Intangible assets acquired through a business combination are recognized separately from goodwill when they are separable or arise from contractual or other legal rights, and their fair value can be measured reliably. The cost of a separately acquired intangible asset includes its purchase price and directly attributable costs of preparing the asset for its intended use. In respect of internally generated intangible assets, cost includes all directly attributable costs necessary to create, produce, and prepare the asset to be capable of operating in the manner intended by management. Research and development costs that are not eligible for capitalization are expensed. After initial recognition, an intangible asset is carried at its cost less any accumulated amortization and accumulated impairment losses, if any. Intangible assets with a finite-life are amortized on a straight-line basis over their estimated useful lives as follows: computer software – 3 to 10 years; and customer relationships – 10 to 20 years. We do not have any intangible assets with indefinite lives.

Intangible assets are assessed for indicators of impairment at each reporting period. If there is an indication that an intangible asset may be impaired, an impairment test is performed by comparing the carrying amount of the intangible asset to its recoverable amount. Where it is not possible to estimate the recoverable amount of an individual asset, we estimate the recoverable amount of the CGU to which the asset belongs. If the recoverable amount of the asset (or CGU) is less than its carrying amount, the carrying amount of the intangible asset is written down to its recoverable amount as an impairment loss.

An impairment loss recognized previously is reversed if there is a change in the estimates used to determine the recoverable amount of the asset (or CGU) since the last impairment loss was recognized. If an impairment loss is subsequently reversed, the carrying amount of the asset (or CGU) is revised to the lower of its recoverable amount and the carrying amount that would have been determined (net of amortization) had there been no prior impairment.

Due to the subjective nature of these estimates, significant judgment is required in determining the useful lives and recoverable amounts of our Group's intangible assets, and assessing whether certain events or circumstances constitute objective evidence of impairment. Estimates of the recoverable amounts of Group's intangible assets rely on certain key inputs, including future cash flows and discount rates. Future cash flows are based on sales projections and allocated costs which are estimated based on forecast results and business initiatives. Discount rates are based on the Group's cost of capital, adjusted for asset-specific risks.

Changes in these assumptions may impact the amount of impairment loss recognized in Impairment of tangible and intangible assets expense.

Other intangible assets mainly consist of internally generated and acquired software, and from long-term client contracts acquired as part of a business acquisition.

Expenditures on internally developed software are recognised as an asset when the Group is able to demonstrate its intention and ability to complete the development and use the software in a manner that will generate future economic benefits, and can reliably measure the costs to complete the development. Projects fulfilling this requirement are qualified strategic projects and eligible for capitalisation.

The capitalised costs of internally developed software, that are part of strategic projects, include all internal and external costs directly attributable to developing the software.

Software and other intangible assets that have finite useful lives are measured at cost less accumulated amortisation and accumulated impairment losses.

A pooled methodology is applied to internal software development projects when the total cost of the project is under CAD $5 million, as follows.

- Monthly expenditures are pooled together and a standard capitalization rate is applied.
- The capitalization rate is assessed on an annual basis, and adjusted if necessary to reflect the nature of the actual expenditures.
- Amortization of the pool begins 1 year from the month the expense is incurred, which is usually when the software is available for use.
- Capitalized costs are amortized over 36 months.
- Interest costs are not capitalized as they are deemed immaterial for project's of this size.

Amortisation is charged through the consolidated statement of profit or loss on a straight-line basis over the estimated useful life. The estimated useful life for capitalised development costs and other intangibles varies from 2 to 10 years.

Subsequent expenditures are capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates; otherwise it is expensed.

Leases

A lease is an agreement whereby the lessor conveys to the lessee the right to use an asset for an agreed upon period of time in return for a payment or series of payments. A finance lease is a lease that transfers substantially all the risks and rewards incidental to ownership of the leased asset to the lessee, where title may or may not eventually be transferred. An operating lease is a lease other than a finance lease.

Operating leases

When the Group is the lessee in an operating lease, the Group record rental payments on a straight-line basis over the lease term in General and Administrative expenses.

Finance leases

When the Group is the lessee in a finance lease, the Group initially record both the leased asset and the related lease obligation in Premises and equipment, Other intangibles and Other liabilities on the Consolidated Balance Sheet at an amount equal to the fair value of the leased asset or, if lower, the present value of the minimum lease payments, each determined at the date of inception of the lease. Initial direct costs directly attributed to the lease are recognized as an asset under the finance lease.

Income tax

Income tax expense comprises current tax and deferred tax and is recognized in the Consolidated Statements of profit or loss except to the extent that it relates to items recognized directly in equity, in which case it is recognized in equity.

Current income tax payable on profits is recognized as an expense based on the applicable tax laws in each jurisdiction in the period in which profits arise, calculated using tax rates enacted or substantively enacted at the balance sheet date. Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities for accounting and tax purposes. A deferred income tax asset or liability is determined for each temporary difference, except for earnings related to Group's subsidiaries, branches, associates and interests in joint ventures where the temporary differences will not reverse in the foreseeable future and we have the ability to control the timing of reversal.

Deferred tax assets and liabilities are determined based on the tax rates that are expected to be in effect in the period that the asset is realized or the liability is settled, based on tax rates and tax laws that have been enacted or substantively enacted at the balance sheet date. Current tax assets and liabilities are offset when they are levied by the same taxation authority on either the same taxable entity or different taxable entities within the same tax reporting group (which intends to settle on a net basis), and when there is a legal right to offset. Deferred tax assets and liabilities are offset when the same conditions are satisfied. The Consolidated Statements of profit or loss include items that are non-taxable or non-deductible for income tax purposes and, accordingly, this causes the income tax provision to be different from what it would be if based on statutory rates.

On a quarterly basis, the group review deferred income tax assets to determine whether it is probable that the benefits associated with these assets will be realized; this review involves evaluating both positive and negative evidence that the deferred tax asset is recognized only if it is probable that future taxable amounts will be available to utilize those temporary differences or losses.

The Group is subject to income tax laws in various jurisdictions where we operate, and the complex tax laws are potentially subject to different interpretations by us and the relevant taxation authorities. Significant judgment is required in the interpretation of the relevant tax laws, and the determination of our Group's tax provision which includes the roup's best estimate of tax positions that are under audit or appeal by relevant taxation authorities. The Group performs a review on a quarterly basis to incorporate Group's best assessment based on information available, but additional liability and income tax expense could result based on decisions made by the relevant tax authorities.

The determination of Group's deferred tax asset or liability also requires significant management judgment as the recognition is dependent on RBCIS projection of future taxable profits and tax rates that are expected to be in effect in the period the asset is realized or the liability is settled. Any changes in the group's projection will result in changes in deferred tax assets or liabilities on the Consolidated Balance Sheet, and also deferred tax expense in the Consolidated Statements of profit or loss.

Employee benefits Pensions

The Group offers a number of defined benefit and defined contribution plans for pensions and other benefits to employees.

The defined benefit pension expense, which is included in Staff Expense, consists of the cost of employee pension benefits for the current year's service, net interest on the net defined benefit liability (asset), past service cost and gains or losses on settlement. Re-measurements of the net defined benefit obligation, which comprise actuarial gains and losses and return on plan assets (excluding amounts included in net interest on the net defined benefit liability), are recognized immediately in Other Comprehensive Income ("OCI") in the period in which they occur. Actuarial gains and losses comprise experience adjustments (the effects of differences between the previous actuarial assumptions and what has actually occurred), as well as the effects of changes in actuarial assumptions. Amounts recognized in OCI will not be reclassified subsequently to net income. Past service cost is the change in the present value of the defined benefit obligation resulting from a plan amendment or curtailment and is charged immediately to income.

For each defined benefit pension plan, we recognize the present value of Group's defined benefit obligations less the fair value of the plan assets as a defined benefit liability reported in Other liabilities - Employee benefit liabilities on the Consolidated Balance Sheet. For plans where there is a net defined benefit asset, the amount is reported as an asset in Other assets - Employee benefit assets on the Consolidated Balance sheet.

The calculation of defined benefit expenses and obligations requires significant judgment as the recognition is dependent on discount rates and various actuarial assumptions such as healthcare cost trend rates, projected salary increases, retirement age, and mortality and termination rates. Due to the long-term nature of these plans, such estimates and assumptions are subject to inherent risks and uncertainties. For the group pension and other post-employment benefit plans, the discount rate is determined by reference to market yields on high quality corporate bonds. Since the discount rate is based on currently available yields, and involves management's assessment of market liquidity, it is only a proxy for future yields. Actuarial assumptions, set in accordance with current practices in the respective countries of the group plans, may differ from actual experience as country specific statistics are only estimates of future employee behaviour. These assumptions are determined by management and are reviewed by actuaries at least annually. Changes to any of the above assumptions may affect the amounts of benefits obligations, expenses and remeasurements that the group recognizes.

The Group contribution to defined contribution pension plans are expensed when employees have rendered services in exchange for such contributions. Defined contribution pension expense is included in Staff Expenses. (See Note 11).

Other long-term employee benefits

The Group offers a number of other long-term employee benefits. These plans are unfunded.

The net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods. Such benefits are discounted to determine their present value. The discount rate is based on the yield at the reporting date of credit-rated bonds with maturity dates approximating the terms of the Group's obligations. Any actuarial gains or losses are recognised in the consolidated statement of profit or loss in the period in which they arise.

Termination benefits

Termination benefits are recognised as an expense when the Group is demonstrably committed, without realistic possibility of withdrawal, to a formal detailed plan to terminate employment before the normal retirement date.

Short-term benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided.

A provision is recognised for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

Employee entitlements

Employee entitlements to annual leave and long service leave are recognised when they accrue to employees. A provision is made for the estimated liability for annual leave and long-service leave as a result of services rendered by employees up to the balance sheet date.

Share-based compensation

The Group also offers share-based compensation plans to certain key employees and to non-employee directors on a cash-settled basis.

For cash-settled awards, RBCIS accrued obligations are adjusted to their fair value at each balance sheet date. Changes in the Group's obligations, net of related hedges, are recorded in Staff Expenses in the Consolidated Statements of profit or loss with a corresponding increase in Other liabilities.

Compensation expense is recognized in the year the awards are earned by plan participants based on the vesting schedule of the relevant plans, net of estimated forfeitures.

The Group contributions to the employee savings and share ownership plans are expensed as incurred.

Provisions

Provisions are liabilities of uncertain timing or amount and are recognized when we have a present legal or constructive obligation as a result of a past event, it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation. Provisions are measured as the best estimate of the expenditure required to settle the present obligation at the reporting date. Significant judgment is required in determining whether a present obligation exists and in estimating the probability, timing and amount of any outflows. We record provisions related to litigation, asset retirement obligations, and the allowance for off-balance sheet and other items. Provisions are recorded under Other liabilities on the Consolidated Balance Sheet.

The Group is required to estimate the results of ongoing legal proceedings, expenses to be incurred to dispose of capital assets, and credit losses on undrawn commitments and guarantees. The forward-looking nature of these estimates requires us to use a significant amount of judgment in projecting the timing and amount of future cash flows. RBCIS record provisions on the basis of all available information at the end of the reporting period and make adjustments on a quarterly basis to reflect current expectations. Should actual results differ from the Group's expectations, the group may incur expenses in excess of the provisions recognized.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, such as an insurer, a separate asset is recognized if it is virtually certain that reimbursement will be received.

Financial guarantees contracts and loan committments

A financial guarantee contract is defined as a contract that requires the issuer to make specified payments to reimburse the holder for a loss it incurs because a specified debtor fails to make payment when due in accordance with the original or modified terms of a debt instrument.

Where a contract meets the definition above, it is recognised as a financial liability and it is measured initially at fair value and subsequently, measured at the higher of:

- The amount of the loss allowance (See Note 31).
- The premium received on initial recognition less income recognised in accordance with the principles of IFRS 15.

For loan commitments and financial guarantee contracts, the loss allowance is recognised as a provision. However, for contracts that include both a loan and an undrawn commitment, and the Group cannot separately identify the expected credit losses (ECL) on the undrawn amount component from those on the loan commitment, the expected credit losses on the undrawn commitment are recognised together with the loss allowance for the loan. To the extent that the combined expected credit losses exceed the gross carrying amount of the loan, the expected credit losses are recognised as a provision.

Dividends on ordinary shares

Dividends for the year that are declared after the balance sheet date but before issuing consolidated financial statements are disclosed in the subsequent events note.

Assets held on behalf of clients

Non-cash client assets, liabilities, and related income and expenses arising thereon are excluded from these consolidated financial statements.

Cash and cash equivalents

For the purpose of presentation in the consolidated statement of cash flow, cash and cash equivalents include notes and coins on hand, balances held with central banks and highly liquid financial assets with original maturities of less than three months, including loans and advances due from banks, which are held for the purpose of meeting short-term cash commitments rather than for investment or other purposes.

Non-current assets held for sale and discontinued operations

Non-current assets (and disposal groups) are classified as held for sale if their carrying amounts will be recovered principally through a sale transaction rather than through continuing use and a sale is considered highly probable. This condition is satisfied when the asset is available for immediate sale in its present condition, management is committed to the sale, and it is highly probable to occur within one year.

Non-current assets (and disposal groups) classified as held for sale are measured at the lower of their previous carrying amount and fair value less costs to sell except for asset such as deferred tax asset, assets arising from employee benefit, financial assets and investments property that are carried at fair value and contractual rights under insurance contracts which are specifically exempted from this requirement, and if significant, are presented separately from other assets on the Consolidated Balance Sheet.

Residual Profit Split (RPS)

RBC Investor and Treasury Services platform implemented a new transfer pricing methodology called RPS, effective November 2018, which reflects the increasingly integrated business model across the platform and IS Trust businesses platform. The financial impact of RPS is recorded in statement of profit or loss, under other income. The net financial impact as determined as per the RPS methodology is recorded in statement of profit or loss, under other income/other expense.

2. Interest income and expense

EUR'000	For the year ended Oct 31, 2019	Oct 31, 2018
Interest income		
Interest income on financial assets and financial liabilities not at fair value through profit or loss		
Loans and advances to banks	96,518	60,579
Loans and advances to customers	21,793	20,329
Investment securities	-	4,944
Negative interest on customer deposits	51,236	50,125
Total interest income	**169,547**	**135,977**
Interest expense		
Interest expense on financial liabilities and financial assets not at fair value through profit or loss		
Due to banks	(3,258)	(2,411)
Investment securities	(246)	-
Customer borrowings and deposits	(75,562)	(56,826)
Negative interest on deposits placed	(51,703)	(53,271)
Total interest expense	(130,769)	(112,508)
Net interest income	38,778	23,469

3. Fee and commission income and expense

EUR'000	For the year ended Oct 31, 2019			Oct 31, 2018		
A. Custody, transfer agent and administration services	Income	Expense	Net	Income	Expense	Net
Custody	106,723	(22,642)	84,081	116,720	(29,236)	87,484
Fund administration	70,109	(5,925)	64,184	70,665	(5,596)	65,069
Transfer agent	86,438	(869)	85,569	96,716	(1,517)	95,199
Trustee & Compliance	19,033	-	19,033	19,553	-	19,553
Transfer agent, custody and administration services	25,566	-	25,566	26,744	-	26,744
Derivative processing and settlement fees	11,668	-	11,668	10,994	-	10,994
Subtotal	319,537	(29,436)	290,101	341,392	(36,349)	305,043
B. Other commissions						
Securities lending	5,614	(117)	5,497	6,253	(3)	6,250
Other (1)	27,428	(9,663)	17,765	29,772	(8,824)	20,948
Subtotal	33,042	(9,780)	23,262	36,025	(8,827)	27,198
Total	352,579	(39,216)	313,363	377,417	(45,176)	332,241

(1) Other commission income and expenses largely comprise fees from tax reclaims, intragroup recharges (refer to Note 33), loan facility fees as well as payment agent and correspondent banking fees.

4. Dividend income

The Group received no dividend income in either 2019 or 2018.

5. Net income from financial instruments at fair value through profit or loss

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018
Net gains on foreign exchange	114,011	152,622
Total	114,011	152,622

Net income from financial instruments at fair value through profit or loss includes changes in fair value of derivatives and foreign exchange revaluation of assets and liabilities.

6. Net income on investments

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018
Gains on disposal of investment securities	281	6,254
Loss on disposal of operation (1)	(2,409)	-
Total net(loss)/gain on investments	(2,128)	6,254

(1) During the year, the Group sold its Global Funds Platform (GFP) to MFEX Mutual Funds Exchange AB. A loss of EUR 2,409 thousands was incurred on disposal.

7. Other Income

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018*
Residual profit split	2,865	-
Re-invoicing of costs	3,351	3,979
Gains on sale of tangible assets	763	62
Others	792	997
Total (1)	7,771	5,038

*EUR 1.4 million of operational risk events in the prior year have been reclassified to Provisions for Litigation and Operational Risk Events (Note 9) in order to align with 2019 classification.
RBC Investor and Treasury Services platform implemented a new transfer pricing methodology called RPS, effective November 2018, which reflects the increasingly integrated business model across the platform. The financial impact of RPS is recorded in statement of profit or loss, under other income.

8. Other Expenses

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018*
Operational taxes (withholding tax)	(6,250)	(2,543)
Total (1)	(6,250)	(2,543)

*EUR 29.4 million of costs were reclassified to General and Administrative Expenses for prior year figures (Re-invoicing of costs, EUR15.8 million, and Other operating expenses EUR13.6m) , EUR 6.0 million of Operational Risk Events were reclassified as follows: EUR5.2 million was reclassified to Provisions for Litigations and Operational risk Events, and EUR 0.9 million were reclassified to Allowance for Expected Credit Loss in Note 10. EUR 0.9 million Provisions for Other Receivables was reclassified to Allowance for Expected Credit Loss. Prior year number have been reclassified in order to align with 2019 classification.

9. Provisions for litigation & operational risk events

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018*
Litigations	(419)	(4,429)
Operational risk events	(3,047)	(3,803)
Total (1)	(3,466)	(8,232)

* A net expense of EUR 3.8 million Operational Risk Events (EUR 1.4 million) reclassified from Other Income and EUR (5.2 million) reclassified from Other Expenses. Litigation cost of EUR 4.4 million was reclassified from General and Administrative Expenses Prior number have been reclassified in order to align with 2019 classification.

10. Allowance for expected credit loss

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018*
Loans and advances to customers	49	36
Investment securities at FVOCI	(91)	72
Other assets	264	(1,906)
Off Balance Sheet Commitments	(15)	(19)
Total	207	(1,817)

* Allowance for expected credit loss includes provisions for trade receivables to align with 2019 classification of income and expenses. EUR 1.8 million was reclassified from Other Expenses (EUR 874 thousands from Operational risk events and EUR 887 thousands from Provisions for Other Receivables).

11. Staff expenses

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018
Wages and salaries	161,677	161,830
Social security and insurance costs	25,599	25,381
Pension costs – defined benefit plans	329	1,406
Pension costs – defined contribution plans	5,912	6,032
Long term employee benefits	6,055	4,021
Severance costs (2)	44,987	4,792
Other expenses (1)	3,074	4,928
Total	247,633	208,390

(1) Other staff expenses include temporary staff and other staff related expenses.

(2) In recognition of the challenging macroeconomic conditions and operating environment, the Board of the RBC IS Bank S.A. approved on October 23, 2019, a restructuring program, in order to make the business more competitive and position the business for future growth. The cost of the restructuring program is EUR 39 million and was recorded in the financial statements in October 2019.
The costs of the restructuring program are in respect of employee severance and related costs. The expected timing of the resulting outflows of economic benefits is estimated to take place in financial year 2020 commencing Quarter 1 2020. Severance costs have been estimated based on statutory requirements and social plan agreed with employee representatives. The provision is based upon managements best estimates of costs and timing of economic outflows , and is subject to uncertainties with respect to the timing of the full execution of the restructuring program in 2020.

11. Staff Expenses (cont'd)

Breakdown by country

Average full time employees for the year ended Oct 31, 2019

	Senior executives	Employees	Total
Belgium	1	29	30
France	1	160	161
Hong Kong	3	41	44
Ireland	3	156	159
Italy	2	86	88
Luxembourg	17	1,135	1,152
Malaysia	2	1,026	1,028
Singapore	4	15	19
Switzerland	1	30	31
United Kingdom	1	3	4
United States	2	1	3
Total	**37**	**2,682**	**2,719**

Average full time employees for the year ended Oct 31, 2018

	Senior executives	Employees	Total
Belgium	1	30	31
France	1	168	169
Hong Kong	3	51	54
Ireland	1	142	143
Italy	2	86	88
Luxembourg	13	1,129	1,142
Malaysia	7	970	977
Singapore	1	19	20
Switzerland	1	31	32
United Kingdom	1	3	4
United States	1	3	4
Total	**32**	**2,632**	**2,664**

12. General and administrative expenses

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018*
Technology and system costs	56,065	59,332
Professional fees	41,846	53,407
Properties and office equipment rental expense	14,653	14,329
Business taxes, including VAT	11,615	3,278
Market data costs	9,123	11,506
Software costs and research	6,783	7,184
Occupancy	4,140	3,671
Repair and maintenance expense	3,472	3,733
Business travel	2,807	2,862
Re-invoicing of costs (2), (3)	1,625	15,755
Marketing, advertising and public relations	473	1,024
Insurance (except related to pension plans)	110	212
Other general and administrative expenses (2), (3)	11,041	19,016
Total (1)	163,753	195,309

(1) Where applicable, 2018 comparatives have been changed to reflect 2019 expenses categorisation.
(2) Variance due to impact of methodology changes in transfer pricing.
(3) The following amounts were reclassified from Other Expenses to General and Administrative Expenses for prior year figures (Re-invoicing of costs, EUR 15.8 million, and Other operating expenses EUR 13.6 million) in order to align with 2019 classification. Litigation cost EUR 4.4 million was reclassified from General and Administrative Expenses to Provision for Litigation and Operational Risk Events.

Analysis of fees charged by Independent Auditors (excluding VAT)

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018
Audit fees	1,427	1,320
Other assurance services	828	712
Total	2,255	2,032

The other assurance services refer to non-audit services provided to the Group in the period from 1 November 2018 to 31 October 2019. The non-audit services includes report on the Group's description of its Fund Administration, Custody and Transfer Agency operations and on the suitability of the Design and Operating Effectiveness of its controls.

13. Income taxes

Income tax expense

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018
Current income tax	(8,967)	(18,862)
Adjustments to prior years	1,460	(89)
Total current income tax	(7,507)	(18,951)
Current year deferred tax	3,741	1,890
Adjustments to prior years	5,308	(113)
Total deferred tax	9,049	1,777
Total	1,542	(17,174)

13. Income taxes (cont'd)

Reconciliation of Group tax rate

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018
Profit before income tax	26,856	84,387
Group tax rate (1)	22.07%	18.34%
Income tax expense at applicable statutory tax rate	5,928	15,479
(Decrease)/Increase in income tax expense resulting from:		
Tax effect of non deductible expenses	2,045	974
Tax effect of non-taxable income	(1,668)	(383)
Tax effect of impairment on branches	-	-
Movement in unrecognised deferred tax assets	(30)	1,314
Adjustments in respect of prior periods	(6,768)	202
Effect of changes in tax rates for deferred tax	63	45
Others	(1,112)	(457)
Income tax expense	(1,542)	17,174
Effective tax rate	-5.74%	20.35%

(1) The Group tax rate represents the weighted average of result before income tax by jurisdiction multiplied by the applicable statutory tax rate.

(2) Deferred tax asset (EUR 6.0 million) on historic losses and temporary differences in RBCIS Investor Services Bank France S.A. and RBC Investor Services France S.A. was recognised in 2019 on the basis that there is a reasonable expectation of sustainable profits in the future. Management's forecasts support the assumption that the results of the future operations will generate sufficient taxable income to utilise the deferred tax asset.

There were no temporary differences associated with the Group's investment in its branches and subsidiaries.

Deferred tax

a. Analysis by nature

EUR'000	Oct 31, 2019	Oct 31, 2018
Deferred tax liabilities	(586)	(2,441)
Deferred tax assets	9,117	1,070
Net deferred income tax assets/(liabilities)	8,531	(1,371)

Deferred tax balances are presented in the consolidated balance sheet after offsetting assets and liabilities balances where RBCIS has the legal right to offset and intends to settle on a net basis.

The deferred tax asset on historic losses in RBCIS Bank France was recognised in 2019 on the basis that there is a reasonable expectation of sustainable profits in the future. Management's forecasts support the assumption that the results of the future operations will generate sufficient taxable income to utilise the deferred tax asset.

13. Income taxes (cont'd)

b. Movements

EUR'000	For the year ended Oct 31, 2019	Oct 31, 2018
Opening balance	(1,371)	(5,816)
Movements during the year:		
Items recognised in the consolidated statement of profit or loss	9,049	1,777
Items recognised in consolidated OCI	400	3,147
of which relate to changes in tax rates	*14*	*(9)*
of which relate to movements for the year	*386*	*3,156*
Termination of defined benefit Pension Plan	414	(479)
Revaluation	39	15
of which relate to Revaluation of OCI	*14*	*15*
Other movements	-	(1)
Closing balance	8,531	(1,371)
Deferred income tax derived from assets		
Securities	(29)	(8)
Tangible and intangible assets	(949)	(2,786)
Subtotal	(978)	(2,794)
Deferred income tax derived from liabilities		
Provisions	1,667	581
Pensions	1,641	693
Other non allocated and non applicable liabilities	1,830	148
Tax losses carried forward	4,371	-
Subtotal	9,509	1,422
Total	8,531	(1,372)

c. Deductible temporary differences and unused tax losses available for which no deferred tax asset is recognised

Analysis by remaining maturity

EUR'000	Oct 31, 2019	Oct 31, 2018
Within 5 years	-	875
Unlimited maturity	-	1,781
Deductible temporary differences	**-**	**2,656**
Unlimited maturity	-	18,923
Tax losses available for carry forward	**-**	**18,923**
Total	-	21,579

As of 31 October 2018, no deferred tax asset was recognized on unused tax losses and temporary differences within RBC Investor Services France S.A. and RBC Investor Services Bank France S.A. During the year 2019, deferred tax on losses and temporary differences were recognized.

Tax losses

Unused tax losses and deductible temporary differences for which no deferred tax asset is recognised at October 2018 relate to RBC Investor Services France S.A. and RBC Investor Services Bank France S.A..

Deductible temporary differences

Deductible temporary differences relate to RBC Investor Services Bank France S.A. and RBC Investor Services France S.A..

14. Cash and cash equivalents

For the purpose of the consolidated statement of cash flows, cash and cash equivalents includes notes and cash on hand, balances held with central banks and highly liquid financial assets with maturity dates of less than 90 days from the date of acquisition excluding accrued interest. It includes loans and advances due from banks, which are held for the purpose of meeting short-term cash commitments rather than for investment or other purposes.

Analysis by nature

EUR'000	Oct 31, 2019	Oct 31, 2018
Cash and balances with central banks	8,710,889	8,582,105
Loans and advances due from banks	3,965,105	1,827,216
Total	12,675,994	10,409,321

Of which restricted cash

EUR'000	Oct 31, 2019	Oct 31, 2018
Mandatory reserves (1)	296,481	191,567

(1) Mandatory reserves: minimum reserve deposit banks must have with central banks.

15. Cash and balances with central banks

EUR'000	Oct 31, 2019	Oct 31, 2018
Balances with central banks other than mandatory reserve deposits	8,411,939	8,387,919
Mandatory reserve deposits	296,481	191,567
Total	8,708,420	8,579,486
of which included in cash and cash equivalents (excl. accrued interest)	*8,710,889*	*8,582,105*

16. Loans and advances due from banks

Analysis by nature

EUR'000	Oct 31, 2019	Oct 31, 2018
Nostro accounts	223,711	308,983
Cash collateral (1)	4,907	518,830
Loans and other advances	6,004,179	5,997,611
Total	6,232,797	6,825,424
of which included in cash and cash equivalents (excl. accrued interest and cash collateral)	*3,965,105*	*1,827,216*

(1) As of October 31, 2019 and 2018 collateral was provided for open derivatives positions.

17. Loans and advances to customers

Analysis by nature

EUR'000	Oct 31, 2019	Oct 31, 2018
Cash collateral – derivative transactions	137,448	5,931
Loans and other advances	802,875	1,293,660
IFRS9 – ECL	(200)	(249)
Total	940,123	1,299,342

The majority of the loans and advances to customers is represented by short-term advances to clients in the form of overdraft facilities and loans granted to clients pursuant to committed credit facilities.

18. Investment securities

In 2019 and 2018, investment securities consist solely of financial assets at FVOCI.

a. Analysis by counterpart

EUR'000	Oct 31, 2019	Oct 31, 2018
Government issued or backed bonds	-	129,849
Banks	1,445,271	750,459
Total	1,445,271	880,308

b. Analysis by nature

EUR'000	Oct 31, 2019	Oct 31, 2018
Bonds issued or backed by public bodies	-	129,849
Other bonds and fixed income instruments	1,445,271	750,459
Total	1,445,271	880,308

Investments securities mainly include bonds issued by European entities and European governments.

Certain assets have been provided as collateral for central banks and clearing houses. Please see Note 38 for guarantees, commitments and other off-balance sheet arrangements.

No items were impaired this year or last year.

No bonds were lent during 2019 and 2018.

19. Tangible assets

For the year ended

EUR'000	Oct 31, 2019			Oct 31, 2018		
	Land and buildings	Office furniture and other equipment	Total	Land and buildings	Office furniture and other equipment	Total
Opening cost	**14,838**	**39,114**	**53,952**	**13,545**	**18,105**	**31,650**
Additions (1)	1,635	11,937	13,572	1,693	22,107	23,800
Disposals (2)	(1,912)	(7,423)	(9,335)	(57)	(626)	(683)
Write-off	(208)	(2,242)	(2,450)	(545)	(582)	(1,127)
Transfers	-	31	31	-	(21)	(21)
Translation adjustments	106	71	177	202	131	333
Closing cost	**14,459**	**41,488**	**55,947**	**14,838**	**39,114**	**53,952**
Opening accumulated depreciation and impairment	**(7,290)**	**(11,401)**	**(18,691)**	**(5,956)**	**(9,105)**	**(15,061)**
Depreciation charge	(1,801)	(5,864)	(7,665)	(1,695)	(3,259)	(4,954)
Impairment charge	(30)	(162)	(192)	(134)	(180)	(314)
Disposals	969	7	976	8	626	634
Write-off	208	2,242	2,450	545	582	1,127
Transfers	-	(62)	(62)	-	21	21
Translation adjustments	(41)	(52)	(93)	(58)	(86)	(144)
Closing accumulated depreciation and impairment	**(7,985)**	**(15,292)**	**(23,277)**	**(7,290)**	**(11,401)**	**(18,691)**
Net book value (3) (4)	**6,474**	**26,196**	**32,670**	**7,548**	**27,713**	**35,261**

(1) Equipment additions include the purchase for EUR 9 million in respect of IT equipment and related infrastructure costs incurred on the infrastructure transformation program, and EUR 1 million in respect of office furniture additions.

(2) Equipment disposals include EUR 7.4 million from the sale of IT equipment to other RBC affiliates, arising from the scope change of the the infrastructure transformation program, moving to a hybrid of insourcing some services for Partial Workplace and Wide Area Network and outsourcing the remaining services to IBM.

20. Goodwill and other intangible assets

For the year ended

EUR'000	Oct 31, 2019 Goodwill	Internally developed software	Acquired software	Other intangible assets (1)	Total	Oct 31, 2018 Goodwill	Internally developed software	Acquired software	Other intangible assets(1)	Total
Opening cost	**85,492**	**125,932**	**19,637**	**56,813**	**287,874**	**85,492**	**84,580**	**16,344**	**56,813**	**243,229**
Additions	-	48,363	548	-	48,911	-	42,910	3,282	-	46,192
Disposals (1)	-	(36,419)	(19)	-	(36,438)	-	(666)	-	-	(666)
Write-off	-	(320)	(540)	-	(860)	-	(892)	-	-	(892)
Transfers	-	-	(31)	-	(31)	-	-	21	-	21
Translation adjustments	-	-	3	-	3	-	-	4	-	4
Other	-	-	-	-	-	-	-	(14)	-	(14)
Closing cost	**85,492**	**137,556**	**19,598**	**56,813**	**298,459**	**85,492**	**125,932**	**19,637**	**56,813**	**287,874**
Opening accumulated amortisation and impairment	**(1,314)**	**(69,325)**	**(15,025)**	**(47,568)**	**(133,232)**	**(1,314)**	**(63,700)**	**(13,680)**	**(41,727)**	**(120,421)**
Amortisation charge	-	(8,181)	(809)	(5,840)	(14,830)	-	(5,898)	(1,320)	(5,841)	(13,059)
Impairment charge	-	(1,357)	-	-	(1,357)	-	(619)	-	-	(619)
Disposals (1)	-	1,220	2	-	1,222					
Write-off	-	320	540	-	860	-	892	-	-	892
Transfers	-	-	31	-	31	-	-	(21)	-	(21)
Translation adjustments	-	-	(3)	-	(3)	-	-	(4)	-	(4)
Closing accumulated amortisation and impairment	**(1,314)**	**(77,323)**	**(15,264)**	**(53,408)**	**(147,309)**	**(1,314)**	**(69,325)**	**(15,025)**	**(47,568)**	**(133,232)**
Net book value	**84,178**	**60,233**	**4,334**	**3,405**	**152,150**	**84,178**	**56,607**	**4,612**	**9,245**	**154,642**

(1) Disposals include the sale by RBC Investor Services Bank S.A. to RBC Investor Services Trust, UK Branch, of enhancement asse ts (EUR 35 million) which were developed for the custody system.

20. Goodwill and other intangible assets (cont'd)

Goodwill impairment testing

Impairment tests carried out for Goodwill as at July 31, 2019 were based on the value in use of the Cash Generating Unit (CGU) identified in accordance with Note 1, for the consolidated Group, which represents the lowest level at which goodwill is monitored for internal management purposes.

The recoverable amount for the CGU to which goodwill has been allocated was determined based on its value in use at each testing date in 2019 and 2018. The value in use was determined by calculating the discounted cash flow projections for the CGU.

The cash flow projections for the CGU were based on forecasted cash flows for 2019 quarter 4 and on the strategic plan of 2020 to 2024. The free cash flows were discounted at a rate which reflects the average cost of capital for the CGU and which incorporates the risk carried by the operating assets, along with other economic variables such as a risk free rate and a tax rate. The long-term growth rate used to extrapolate the cash flows to perpetuity reflects the market assessment of growth and inflation for the countries where the CGU operates.

Cash-generating unit	Goodwill at Oct 31 2019 EUR'000	Discount rate (%)	Growth rate beyond initial cash flow projections (%)	Goodwill at Oct 31, 2018 EUR'000	Discount rate (%)	Growth rate beyond initial cash flow projections (%)
Consolidated Group	84,178	8.8	3	84,178	8.9	3

Based on the considerations above and after comparing the recoverable amount with the carrying amount of the CGU, no impairment of goodwill was identified during 2019 and 2018.

These key inputs and assumptions used to determine the recoverable amount of each CGU using value in use were tested for sensitivity by applying a reasonably possible change to those assumptions. In addition, to ensure reasonability of the discount rates used internally they were compared with external capital rates which better reflect current market and economic conditions. As a result of their comparison, it was concluded that internally determined cost of capital rates were in line with external rates. As at October 31, 2019, no change in an individual key input or assumption as described, would result in a CGU's carrying value exceeding its recoverable amount.

21. Other assets

Analysis by nature

EUR'000	Oct 31, 2019	Oct 31, 2018
Accrued income (1)	66,208	92,039
Deferred expenses	13,780	10,228
Business taxes	859	920
Accounts receivable (2)	106,627	49,241
Others(3)	35,231	40,094
Total	222,705	192,522

(1) Accrued income consists of invoices to be issued for services rendered to RBC affiliates EUR 15 million (2018 EUR 22 million) and third parties for EUR 51 million (2018 EUR 70 million). Key drivers of decrease are: (a) improvement in client billing processes resulting in timely billing of clients and reduction of accrued income of EUR 19 million and (b) reduction of receivables with RBC affiliates of EUR 7 million.

(2) Accounts receivables consists of (a) third party invoices billed not yet paid for EUR 47 million (2018 EUR 47 million) and (b) receivables from RBC affiliates EUR 60 million (2018 EUR 3 million). Key drivers of increase compared with 2018 are receivables from RBC affiliates: (a) Sale of Scuba Enhancement Assets by the Bank to RBC IS Trust UK Branch for EUR 33 million, (b) Sale of Infrastructure transformation hardware to RBC affiliates EUR 7 million

(3) Other assets largely consist of short-term transitory accounts.

22. Deposits from banks

Analysis by nature

EUR'000	Oct 31, 2019	Oct 31, 2018
Demand deposits	191,308	141,305
Term & Overnight deposits	24	540,035
Cash collateral	111,747	19,422
Other borrowings	13,380	9,909
Total	316,459	710,671

23. Deposits from customers

Analysis by nature

EUR'000	Oct 31, 2019	Oct 31, 2018
Demand deposits	15,633,182	15,312,128
Deposits redeemable at notice	-	2
Cash collateral	88,282	422,352
Other borrowings	154,171	59,399
Total	15,875,635	15,793,881

24. Provisions and other obligations

a. Analysis by nature

EUR'000	Oct 31, 2019	Oct 31, 2018
Litigation and potential claims	4,225	4,779
Defined benefit pension plans	6,393	4,259
Other long term employee benefits (1)	13,973	12,208
Severance provisions (2)	42,188	3,163
Other provisions	7,339	6,439
Total	74,118	30,848

(1) Other long term employee benefits largely comprises of provisions for the various share based benefit plans offered to employees. See note 26 for further details.

(2) In recognition of the challenging macroeconomic conditions and operating environment, the Board of the RBC IS Bank S.A. approved on October 23, 2019, a restructuring program, in order to make the business more competitive and position the business for future growth. The cost of the restructuring program is EUR 39 million and was recorded in the financial statements in October 2019.
The costs of the restructuring program are in respect of employee severance and related costs. The expected timing of the resulting outflows of economic benefits is estimated to take place in financial year 2020 commencing Quarter 1 2020. Severance costs have been estimated based on statutory requirements and social plan agreed with employee representatives. The provision is based upon managements best estimates of costs and timing of economic outflows, and is subject to uncertainties with respect to the timing of the full execution of the restructuring program in 2020.

(3) Other provision comprise provisions related to staff, asset retirement obligations and operational risk events.

24. Provisions and other obligations (cont'd)

b. Analysis of movements (cont'd)

						For the year ended Oct 31, 2019
EUR'000	Litigation claims	Defined benefit pension plans	Other employee benefits	Severance provisions	Other provisions	Total
Opening balance	**4,779**	**4,259**	**12,208**	**3,163**	**6,439**	**30,848**
Additional provisions - P&L	720	723	6,056	45,415	6,469	59,383
OCI movements	-	1,886	-	-	17	1,903
Unused amounts reversed	(301)	(394)	(3)	(428)	(2,768)	(3,894)
Utilised during the year	(981)	(121)	(7,046)	(5,965)	(2,877)	(16,990)
Transfers	-	-	2,703	-	13	2,716
Exchange difference	8	40	55	3	46	152
Closing balance	**4,225**	**6,393**	**13,973**	**42,188**	**7,339**	**74,118**

						For the year ended Oct 31, 2018
EUR'000	Litigation claims	Defined benefit pension plans	Other employee benefits	Severance provisions	Other provisions	Total
Opening balance	**745**	**6,862**	**12,614**	**2,592**	**5,791**	**28,604**
Additional provisions - P&L	4,581	1,406	4,028	5,016	7,590	22,621
OCI movements	-	(1,418)	-	-	34	(1,384)
Unused amounts reversed	(201)	-	(8)	(224)	(1,819)	(2,252)
Utilised during the year	(427)	(2,621)	(6,980)	(4,221)	(5,159)	(19,408)
Transfers	77	-	2,491	-	-	2,568
Exchange difference	4	30	63	-	2	99
Closing balance	**4,779**	**4,259**	**12,208**	**3,163**	**6,439**	**30,848**

c. Pension plans

The Group operates funded defined benefit pension plan for qualifying employees. The defined benefit plan is administered by a pension fund that is legally separated from the Group.

Plan characteristics

The Group sponsors a number of defined benefit programs, which provide pension benefits to eligible employees.

The defined benefit pension plans provide benefits based on years of service, contributions and average earnings at retirement. All of the plans are located in Europe. The Group measures benefit obligations and pension assets as at October 31 each year. All plans are valued using the projected unit-credit method. The Group funds the registered defined benefit pension plans in accordance with actuarially determined amounts required to satisfy employee benefit obligations under current pension regulations.

The Group also operates a number of defined contribution plan for qualifying employees.

On August 31, 2018, the Board of the Luxembourg Defined Benefit pension fund (ASSEP) approved the transfer of the pension rights and assets of the ASSEP, to a Defined Contribution Group Pension Scheme, which is provided by Foyer Vie S.A. (Le Foyer).

The transfer of the ASSEP to the Group Pension Plan was determined based upon the present value of accrued benefits of the ASSEP plans as of December 31, 2017. The transaction was accounted for as a curtailment and settlement of the ASSEP.

The transfer was executed on September 25, 2018, and an amount of EUR 41.5MM was transferred by the ASSEP to Le Foyer on this date. The ASSEP was liquidated following this transfer.

24. Provisions and other obligations (cont'd)

Total company contributions to our pension plan (defined benefit and defined contribution plans) were EUR 124 thousand and EUR 5,912 thousand (2018 – EUR 2,334 thousand and EUR 6,032 thousand), respectively.

Risks

The defined benefit plan expose the Group to actuarial risks such as: investment risk, interest rate risk, longevity risk and salary risk as described below:

- Investment risk: the present value of the benefit obligation is determined by reference to market yields at the end of the year on high quality corporate bonds with maturity consistent with the estimated term of the post-retirement obligation. If the return on plan assets is below this rate, it will create a plan deficit.
- Interest rate risk: a decrease in the bond interest rate will increase the plan liability.
- Longevity risk: the present value of the benefit obligation takes into consideration the best estimate of expected mortality of plan members both during and after employment. An increase in life expectancy will increase the plans liability.
- Inflation and salary risk: the present value of the benefit obligation takes into account estimated future inflation and salary increases that would affect the benefits payable. Increases in inflation or salaries greater than assumed will increase the plans liability.

The principal assumptions used for the purpose of the actuarial valuations were as follows:

	Oct 31, 2019 Defined benefit pension plans	Oct 31, 2018 Defined benefit pension plans
A: Range of assumptions to determine post retirement defined benefit obligation		
Discount rate	0.10% - 1.90%	0.00% - 2.00%
Compensation increase rate	1.50% - 3.00%	1.50% - 4.25%
Average longevity at 65 for a member currently at 65 (years)		
- Males	20.6	20.9
- Females	24.2	24.6
Average longevity at 65 for a member currently at 45 (years)		
- Males	20.9	21.4
- Females	24.8	25.3

The amount included in the balance sheet arising from the Group's obligation in respect of the defined benefit obligation for pension and other post retirement plan are as follows:

EUR'000	Oct 31, 2019 Defined benefit pension plans	Oct 31, 2018 Defined benefit pension plans
B. Amounts recognised in the balance sheet		
Plans that are wholly unfunded and plans that are wholly and partially funded		
Present value of funded obligation	13,420	11,134
Fair value of plan assets	(8,270)	(7,911)
Deficit for funded plans	5,150	3,223
Present value for unfunded obligations	1,243	1,036
Net liability	6,393	4,259

24. Provisions and other obligations (cont'd)

Movements in the present value of the defined benefit obligation for pension and other post retirement plan is as follows:

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018
	Defined benefit pension plans	Defined benefit pension plans
C. Change in present value of benefit obligation		
Beginning of the year	12,170	55,219
Current service cost	664	1,111
Past service cost	(425)	190
Interest cost	188	766
Plan participants' contributions	40	324
Remeasurements:		
Actuarial loss arising from changes in demographic assumptions	1,480	(1,469)
Actuarial (gain) arising from experience adjustments	347	(1,307)
Benefits paid	14	(1,113)
Settlements of Luxembourg Defined Benefit pension plans	-	(41,548)
Exchange difference on non EUR plans	283	156
Other	(98)	(159)
Benefit obligations at end of year	14,663	12,170

Movements in the fair value of plan assets are as follows:

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018
	Defined benefit pension plans	Defined benefit pension plans
D. Change in fair value of plan assets		
Beginning of the year	7,911	48,358
Interest income	108	675
Return on plan assets	(27)	(1,074)
Employer contributions	124	2,334
Member contributions	40	324
Settlements of Luxembourg Defined Benefit pension plans	-	(41,548)
Benefits paid	14	(1,113)
Exchange difference on non EUR plans	218	131
Other	(118)	(176)
Fair value of plan assets at end of year	8,270	7,911

24. Provisions and other obligations (cont'd)

Amounts recognised in other comprehensive income in respect of the defined benefit obligation for pension plans are as follows:

		For the year ended
EUR'000	Oct 31, 2019	Oct 31, 2018
	Defined benefit pension plans	Defined benefit pension plans
E. Components of pension and other post retirement cost		
Service cost:		
- Current service cost	664	1,111
- Past service cost	(431)	190
Interest cost	80	91
Administrative cost	16	14
Components of defined benefit costs recognised in the income statement	329	1,406
Re-measurement of the net defined benefit liability:		
- Return on plan assets	27	1,074
- Actuarial loss/(gain) arising from changes in financial assumptions	1,480	(1,469)
- Actuarial loss/(gain) arising from experience adjustments	347	(1,307)
- Other	29	62
Components of defined benefit costs recognised in Other comprehensive income	1,883	(1,640)
Total	2,212	(234)

The service cost and interest cost for the year are included in staff expense in the income statement.

Defined benefit pension plan assets

The fair value of the plan assets at the end of the reporting period for each category, are as follows.

			Oct 31, 2019			Oct 31, 2018
F. Fair value of plan assets	EUR'000	%	Quoted in active market %	EUR'000	%	Quoted in active market %
Cash and cash equivalents	227	2.7%	0.0%	210	2.7%	0.0%
Equity investment funds						
- Other	136	1.6%	100.0%	349	4.4%	100.0%
Total equity investment funds	136	2.0%		349	4.4%	
Debt investment funds						
- Mixed corporate and government bonds	3,799	56.3%	100.0%	3,693	46.6%	100.0%
Total debt investment funds	3,799	56.3%		3,693	46.6%	
Alternative investment funds and other	4,108	49.4%	0.0%	3,659	46.3%	0.0%
Total	8,270	100.00%		7,911	100.0%	

24. Provisions and other obligations (cont'd)

Maturity profile

The following table presents the maturity profile of our defined benefit pension plan obligation.

EUR'000	Oct 31, 2019	Oct 31, 2018
G. Maturity profile		
Number of plan participants	299	310
Actual benefit payments during current year	(14)	1,113
Benefits expected to be paid current year +1	621	695
Benefits expected to be paid current year +2	606	499
Benefits expected to be paid current year +3	398	508
Benefits expected to be paid current year +4	373	321
Benefits expected to be paid current year +5	436	339
Benefits expected to be paid current year +6 to +10	2,688	2,409
Duration in years	13.0	12.4

Sensitivity analysis

Assumptions adopted can have a significant effect on the obligations and expense for post retirement defined plans. The following table presents the sensitivity analysis of key assumptions.

EUR'000	Oct 31, 2019	Oct 31, 2018
	Defined benefit pension plans	Defined benefit pension plans
H. Sensitivity analysis		
Change in obligation		
Discount rate		
Impact of 0.5% increase in discount rate	(2,296)	(738)
Impact of 0.5% decrease in discount rate	2,701	837
Rate of increase in future compensation		
Impact of 0.5% increase in rate of increase in future compensation	591	531
Impact of 0.5% decrease in rate of increase in future compensation	(573)	(499)
Mortality rate		
Impact of 1 year increase of longevity	191	116

The 2019 and 2018 sensitivity information above is based on full actuarial valuations carried out by plan actuaries using the same data used to calculate the main results but with the relevant different assumptions.

For funded plans, 56% of the underlying assets are predominantly invested in bonds via bond investment funds. The assets are therefore matched to the liabilities to some extent but there is a mismatching risk due to exposure to other asset categories as well as differences in the duration of the assets relative to the benchmark used to measure the liabilities.

25. Other liabilities and finance lease liabilities

a. Other Liabilities

EUR'000	Oct 31, 2019	Oct 31, 2018
Accrued costs (1)	75,479	73,295
Deferred income	1,546	1,302
Business taxes (2)	3,496	5,618
Accounts payable (3)	4,099	2,784
Salaries and social charges payable	32,666	35,969
Others (4)	68,365	85,957
Total	185,651	204,925

(1) Accrued costs consist of invoices to be received for services rendered from related (refer to Note 33) and third parties.
(2) Business taxes consist of withholding and sales tax.
(3) Accounts payable consist mainly of invoices to be paid for services rendered at year end from related (refer to Note 33) and third parties.
(4) Others consist mainly of short-term transitory accounts.

b. Finance lease liabilities*

EUR'000	Oct 31, 2019	Oct 31, 2018
Finance lease liability	2,275	4,864
Total	2,275	4,864

* Finance lease liabilities have been disclosed as a separate line in 2019, and 2018 amount has been reclassified accordingly

26. Share based compensation

The Group offers share based compensation to certain employees. The RBC share based compensation scheme was introduced to Group's employees during the 2013 year end, as part of the alignment with RBC. This alignment was finalized during 2014.

Employee savings and share ownership plans

The RBC International Savings Program is an employee reward program that allows eligible participants an opportunity to build their savings through a deferral of a portion of their annual cash bonus and in return receive a matching company contribution (up to specified limits). In 2019, the Group contributed EUR 2,166 (2018: 1,289) thousands, under the terms of these plans.

Deferred share plans

The Group offers performance deferred share award plans to certain employees, all of which vest at the end of three years. Awards under the plans are deferred in the form of deferred share units. A portion of the award under some plans can be increased or decreased up to 25%, depending on the total shareholder return of RBC compared to a defined peer group of global financial institutions. The value of the award paid will be equivalent to the original award, adjusted for dividends and changes in the market value of RBC's common shares at the time the award vests.

The Group offers a deferred share unit plan to executives and to certain key employees. Under these plans, the eligible person may receive all or a percentage of their annual variable short-term incentive bonus in the form of deferred share units. The cash value of the deferred share units is equivalent to the market value of RBC common shares when conversion takes place.

The Group's liabilities for the awards granted under the deferred share and other plans are measured at fair value, determined based on the quoted market price of our common shares. The following tables present RBCIS obligations under the deferred share and other plans, and the related compensation expenses (recoveries) recognized for the year.

26. Share based compensation (cont'd)

Obligations under deferred share plans

	Oct 31, 2019			Oct 31, 2018		
		Units Granted during the year	Units outstanding at the end of the year		Units granted during the year	Units outstanding at the end of the year
	Number granted (thousands)	Weighted average fair value EUR	Carrying amount EUR'000	Number granted (thousands)	Weighted average fair value EUR	Carrying amount EUR'000
Deferred share unit plans	32	62.45	5,236	23	67.00	3,679
Performance deferred share award plans	6	61.73	1,145	7	67.48	1,264
Total	38	62.33	6,381	30	67.11	4,943

Compensation expenses recognised under deferred share plans

	For the year ended	
EUR'000	Oct 31, 2019	Oct 31, 2018
Deferred share unit plan	3,004	1,948
Performance deferred shares award plans	442	407
Total	3,446	2,355

27. Derivatives

The principal derivatives used by the Group are foreign exchange rate contracts; particular attention is paid to the liquidity of the markets and products in which the Group trades to ensure that there are no undue concentrations of activity and risk.

Exchange rate related contracts include over-the-counter forward foreign exchange contracts and currency swaps. A forward foreign exchange contract is an agreement to buy or sell a specified amount of foreign currency on a specified future date at an agreed rate. Currency swaps generally involve the exchange of interest payment obligations denominated in different currencies; the exchange of principal can be notional or actual.

a. Analysis by nature

EUR'000	Oct 31, 2019		Oct 31, 2018	
	Assets	Liabilities	Assets	Liabilities
Derivatives	471,424	474,038	482,339	437,109
Total	471,424	474,038	482,339	437,109

b. Detail of derivatives

The amount shown as foreign exchange derivatives represents the fair value of derivatives transactions entered with Group's clients.

EUR'000	Oct 31, 2019				Oct 31, 2018			
	Notional amount				Notional amount			
	To receive	To deliver	Assets	Liabilities	To receive	To deliver	Assets	Liabilities
Foreign exchange derivatives	90,747,993	90,697,338	471,424	474,038	83,432,636	83,380,881	482,339	437,109

The term to maturity of the Group's derivatives is within one year.

28. Subscribed capital

By class of shares

EUR	Oct 31, 2019	Oct 31, 2018
Number of shares authorised	22,163,000	22,163,000
Number of shares issued and fully paid	22,163,000	22,163,000
Value per share	25	25
Outstanding as of beginning and end of the year	22,163,000	22,163,000
Total value of shares issued	554,075,000	554,075,000

29. Fair value

The Group measures fair values in accordance with IFRS 13 'Fair Value Measurement', which defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The Group also uses a fair value hierarchy that categorises into three levels the inputs to valuation techniques used to measure fair value, which gives highest priority to quoted prices. (Please refer to the Group accounting policies in Note 1 for details of fair value determination and hierarchy level).

Credit valuation adjustment (CVA)

Valuation adjustments are recorded for the credit risk of bank's derivative portfolios in order to arrive at their fair values. CVA takes into account our counterparties' creditworthiness, the current and potential future mark-to-market of the transactions, and the effects of credit mitigants such as master netting and collateral agreements. CVA amounts are derived from estimates of exposure at default, probability of default, recovery rates on a counterparty basis, and market and credit factor correlations. Exposure at default is the amounts of expected derivative related assets and liabilities at the time of default, estimated through modelling using underlying risk factors. Probability of default and recovery rate is generally implied from the market prices for credit protection and credit ratings of the counterparty. Correlation is the statistical measure of how credit and market factors may move in relation to one another, if any. Correlation is estimated using historical data and market data where available.

a. Breakdown of fair value of financial instruments

The following table compares the carrying amount of financial instruments recognised at amortised cost to their estimated fair values.

EUR'000					Oct 31, 2019			
					Fair value measurements using			
	Carrying amount	Fair value always approximates carrying value	Fair value may not approximate carrying value (4)	Total fair value	Level 1 (1)	Level 2 (2)	Level 3 (3)	Total
Financial assets								
Cash and balances with central banks	8,708,420	8,708,420	-	8,708,420	-	-	-	-
Loans and advances due from banks	6,232,797	5,532,685	700,112	6,232,797	-	700,112	-	700,112
Loans and advances to customers	940,123	734,070	206,053	940,123	-	206,053	-	206,053
Other financial assets	222,705	222,705	-	222,705	-	-	-	-
Total	16,104,045	15,197,880	906,165	16,104,045	-	906,165	-	906,165
Financial liabilities								
Due to banks	316,459	316,459	-	316,459	-	-	-	-
Customer borrowings and deposits	15,875,635	15,875,635	-	15,875,635	-	-	-	-
Other financial liabilities	185,651	185,651	-	185,651	-	-	-	-
Total	16,377,745	16,377,745	-	16,377,745	-	-	-	-

29. Fair value (cont'd)

(1) Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical financial assets or financial liabilities.
(2) Level 2 fair value measurements are those derived from quoted prices for similar instruments in an active market, or quoted market prices for identical or similar instruments in inactive markets, or values using models where the inputs are observable.
(3) Level 3 fair value measurements are those derived from valuation techniques that include inputs for the financial asset or financial liability that are not based on observable market data (unobservable inputs).
(4) Fair value which may not approximately carrying amounts are those with interest maturity greater than 3 months.

EUR'000								Oct 31, 2018
					Fair value measurements using			
	Carrying amount	Fair value always approximates carrying value	Fair value may not approximate carrying value	Total fair value	Level 1	Level 2	Level 3	Total
Financial assets								
Cash and balances with central banks	8,579,486	8,579,486	-	8,579,486	-	-	-	-
Loans and advances due from banks	6,825,424	6,075,312	750,112	6,825,424	-	750,112	-	750,112
Loans and advances to customers	1,299,342	844,108	455,234	1,299,342	-	455,234	-	455,234
Other financial assets	192,522	192,522	-	192,522	-	-	-	-
Total	16,896,774	15,691,428	1,205,346	16,896,774	-	1,205,346	-	1,205,346
Financial liabilities								
Due to banks	710,671	710,671	-	710,671	-	-	-	-
Customer borrowings and deposits	15,793,881	15,793,881	-	15,793,881	-	-	-	-
Other financial liabilities	209,789	209,789	-	209,789	-	-	-	-
Total	16,714,341	16,714,341	-	16,714,341	-	-	-	-

b. Analysis of fair value of financial instruments

The following table provides an analysis of financial instruments that are measured at fair value subsequently to initial recognition at fair value, grouped into levels 1 to 3 based on the degree to which the fair value is observable.

EUR'000				Oct 31, 2019				Oct 31, 2018
	Level 1 (1)	Level 2 (2)	Level 3 (3)	Total	Level 1	Level 2	Level 3	Total
Financial assets								
Financial investments	-	1,445,271-	-	1,445,271-	-	880,308	-	880,308
Derivatives	-	471,424	-	471,424	-	482,339	-	482,339
Total financial assets	-	1,916,695	-	1,916,695	-	1,362,647	-	1,362,647
Financial liabilities								
Foreign exchange contracts	-	474,038	-	474,038	-	437,109	-	437,109
Total financial liabilities	-	474,038	-	474,038	-	437,109	-	437,109

(1) Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical financial assets or financial liabilities.
(2) Level 2 fair value measurements are those derived from quoted prices for similar instruments in an active market, or quoted market prices for identical or similar instruments in inactive markets, or values using models where the inputs are observable.
(3) Level 3 fair value measurements are those derived from valuation techniques that include inputs for the financial asset or financial liability that are not based on observable market data (unobservable inputs).

c. Transfer between level 1 and level 2 fair value hierarchy

No transfers between fair value hierarchy levels were made during 2018 to 2019.

29. Fair value (cont'd)

d. Reconciliation of level 3 financial instruments

No reconciliation were made during 2018 to 2019 as the Group has no level 3 financial instruments.

30. 30 Financial assets and liabilities subject to offsetting, enforceable master netting arrangements and similar agreements

Offsetting within the Consolidated Balance Sheet may be achieved where financial assets and liabilities are subject to master netting arrangements that provide the currently enforceable right of offset and where there is an intention to settle on a net basis, or realize the assets and settle the liabilities simultaneously. For derivative contracts and repurchase and reverse repurchase arrangements, this is generally achieved when there is a market mechanism for settlement (e.g., central counterparty exchange or clearing house) which provides daily net settlement of cash flows arising from these contracts. Margin receivables and margin payables are generally offset as they settle simultaneously through a market settlement mechanism.

Amounts that do not qualify for offsetting include master netting arrangements that only permit outstanding transactions with the same counterparty to be offset in an event of default or occurrence of other predetermined events. Such master netting arrangements include the ISDA Master Agreement or certain derivative exchange or clearing counterparty agreements for derivative contracts, global master repurchase agreement and global master securities lending agreements for repurchase, reverse repurchase and other similar secured lending and borrowing arrangements.

The following tables presents the effects of offsetting and potential offsetting of financial assets and liabilities. For assets purchased under reverse repurchase agreements and securities borrowed, the Group holds highly rated securities as collateral. These securities can be offset in case of default of the borrower, but are not recognised on the balance sheet. For certain derivative counterparties Master Netting Agreements are in place that allow for netting in case of default. In addition, for certain counterparties, collateral is given or received. This collateral can be netted against derivative transactions in case of default.

EUR'000								Oct 31, 2019
	Amounts subject to enforceable netting arrangements							
				Amount subject to master netting arrangement or similar agreements but do not qualify for offsetting on the balance sheet (1)				
Financial assets subject to offsetting, enforceable master netting arrangements and similar agreements	Gross amount of financial assets before balance sheet offsetting	Amount of financial liabilities offset on the balance sheet	Net amount of financial assets presented on the balance sheet	Impact of master netting agreement	Financial collaterals received	Net amount	Amounts not subject to enforceable netting agreements	Total amount recognised on the balance sheet
Derivative assets	465,639	3,578	452,061	208,468	114,806	128,787	19,363	471,424
Other financial assets	-	-	-	-	-	-	17,549,316	17,549,316
Total	455,639	3,578	452,061	208,468	114,806	128,787	17,568,679	18,020,740

EUR'000								Oct 31, 2019
	Amounts subject to enforceable netting arrangements							
				Amount subject to master netting arrangement or similar agreements but do not qualify for offsetting on the balance sheet (1)				
Financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements	Gross amount of financial liabilities before balance sheet offsetting	Amount of financial assets offset on the balance sheet	Net amount of financial liabilities presented on the balance sheet	Impact of master netting agreement	Financial collaterals pledged	Net amount	Amounts not subject to enforceable netting agreements	Total amount recognised on the balance sheet
Derivative liabilities	453,669	3,578	450,091	208,468	87,836	153,787	23,948	474,03
Other financial liabilities	-	-	-	-	-	-	16,192,094	16,192,094
Total	453,669	3,578	450,091	208,468	87,836	153,787	16,216,042	16,666,133

30. Financial assets and liabilities subject to offsetting, enforceable master netting arrangements and similar agreements (cont'd)

(1) Financial collateral is reflected at fair value. The amount of financial instruments and financial collateral disclosed is limited to the net balance sheet exposure.

EUR'000								Oct 31, 2018
	Amounts subject to enforceable netting arrangements							
				Amount subject to master netting arrangement or similar agreements but do not qualify for offsetting on the balance sheet (1)				
Financial assets subject to offsetting, enforceable master netting arrangements and similar agreements	Gross amount of financial assets before balance sheet offsetting	Amount of financial liabilities offset on the balance sheet	Net amount of financial assets presented on the balance sheet	Impact of master netting agreement	Financial collaterals received	Net amount	Amounts not subject to enforceable netting agreements	Total amount recognised on the balance sheet
Derivative assets	476,231	20,891	455,340	165,429	165,292	124,619	26,999	482,339
Other financial assets	-	-	-	-	-	-	17,777,082	17,777,082
Total	476,231	20,891	455,340	165,429	165,292	124,619	177,804,081	18,259,421

EUR'000								Oct 31, 2018
	Amounts subject to enforceable netting arrangements							
				Amount subject to master netting arrangement or similar agreements but do not qualify for offsetting on the balance sheet (1)				
Financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements	Gross amount of financial liabilities before balance sheet offsetting	Amount of financial assets offset on the balance sheet	Net amount of financial liabilities presented on the balance sheet	Impact of master netting agreement	Financial collaterals pledged	Net amount	Amounts not subject to enforceable netting agreements	Total amount recognised on the balance sheet
Derivative liabilities	438,070	20,891	417,179	165,429	218,991	32,759	19,930	437,109
Other financial liabilities	-	-	-	-	-	-	16,714,341	16,714,341
Total	438,070	20,891	417,179	165,429	218,991	32,759	16,734,271	17,151,450

(1) Financial collateral is reflected at fair value. The amount of financial instruments and financial collateral disclosed is limited to the net balance sheet exposure.

31. Risk management

a. Credit and Counterparty risk

Credit risk is defined as the risk of loss associated with a counterparty's potential inability or unwillingness to fulfil obligations on a timely basis. Credit risk may arise directly from the risk of default of a primary obligor (e.g. issuer, debtor, borrower or policyholder), or indirectly from a secondary obligor (e.g. guarantor, reinsurance) and/or through off-balance sheet exposures, contingent credit risk and/or transactional risk. Credit risk includes both loans and counterparty credit risk arising from trading activities. Exposure to credit risk occurs any time funds are extended, committed or invested through an actual or implied contractual agreement.

Counterparty Credit risk is the risk of potential financial loss arising from the failure of a counterparty or client with whom RBCIS Bank has entered into derivatives transactions, interbank (cash) placements, securities finance, cash securities or spot FX/precious metals transactions.

Overview

Our core business activity is custodian services to institutional investors around the world. Lending products offered are primarily supporting our custody client's activity. We act as an agent for our clients to settle securities trades on their behalf or as their agent in securities lending transactions. We have also committed lending to institutional clients for Capital Bridge financing purposes guaranteed by uncalled capital commitments of the underlying investors. Our core credit exposures originate from the Treasury activities in reinvestment of client cash through money market deposits and investments in high quality bonds mostly with Sovereigns, Sovereign Agencies and the RBC Group. Other credit exposures are client activity-driven related to temporary overdrafts; committed credit facilities granted to institutional clients; cash balances with our correspondents; foreign exchange derivatives contracts with custody and market clients.

Below is a summary of the key activities of RBCIS Bank that generate credit and counterparty risk:

- Treasury Activities – our Treasury function manages balance sheet in line with approved Treasury policies, which generally require investments in high quality sovereign debt or secured activity with global banks with high level of liquidity.
- Foreign Exchange – we offer to clients foreign exchange services (primarily FX swaps and forwards) to facilitate their global investment and share class currency hedging activities. The transactions are restricted to short term duration (less than one year). Accumulated client positions are offset in the market to minimize market risk. Both client and market activities are conducted within approved credit limits and daily settlement limits, security package is generally taken under the form of an ISDA agreement with a CSA providing lien on clients' assets.
- Committed Lending and Overdrafts – we provide clients with secured committed or uncommitted credit facilities to facilitate clients' settlement of securities or bridge capital. The straight through processing of settling transactions in client accounts may result in temporary short cash positions. These temporary overdrafts are generally secured with a lien on the client's assets. The committed lending is undertaken to provide liquidity (bridge financing) between the capital calls. These commitments are secured with a lien over the uncalled capital of the underlying investors.

Governance and Policies

The Board of Directors has final responsibility with respect to credit risk matters, directly or through delegation to the Risk Committee reporting to the Board of Directors. Responsibilities include:

- Shaping and influencing Risk Conduct; approving Risk Appetite;
- Ensuring that management has in place frameworks, policies, processes and procedures to manage credit risk (including approval authority for Credit Risk Framework and key enterprise-wide credit risk policies), and evaluating the organization's effectiveness in managing credit risk;
- Approving credit risk limits, delegating approval authorities to management and approving credit transactions in excess of management's authorities;
- Reviewing credit reporting, stress testing, significant exposures and exceptions to limits.

31. Risk management (cont'd)

The Board of Directors takes guidance and Positive Advice and Counsel from Group Risk Management and the RBC I&TS Credit Risk Committee, which is an Executive Committee that provides oversight of credit risk for RBC I&TS, and in particular provides positive advice, strategic direction and broad guidance in order to manage all material credit risks.

Key tenets of the RBC and RBC IS Bank Credit Risk Management Frameworks / governance are as follows:

Credit Risk Approval Authorities

Approval of Credit Transaction: The Board of Directors, through its Risk Committee, delegates credit risk approval authorities to the Chief Risk Officer / Executive Committee. Credit transactions in excess of these authorities must be approved by the Risk Committee. To facilitate day-to-day business operations, RBCIS Bank Chief Risk Officer has been empowered to further delegate credit risk approval authorities to individuals within GRM as necessary. These controls are further supported by processes embedded within systems and in place in operations centres to ensure that appropriate approvals have been obtained before funds are advanced.

Approval of Credit Products and Services: RBC's products are subject to robust risk review and approval processes. New, amended and existing products must be reviewed relative to all risks in RBC's risk pyramid, including credit risk. Approval authorities are set out in RBC's Product Risk Review and Approval Policy. The level of approval authority required increases as the level of risk increases.

Credit Risk Limits

Risk Appetite and credit risk limits are set by the Board of Directors to enable RBCIS Bank to protect the bank from an unacceptable level of earnings volatility while supporting business opportunities and objectives. Risk limits take into account both regulatory constraints and internal risk management analysis and judgement.

Credit Risk Policies

RBC's enterprise-wide credit risk policies are developed, communicated and maintained by GRM's Enterprise Risk Policy Group. These policies set out the minimum requirements for the prudent management of credit risk in a variety of transactional and portfolio management contexts. These enterprise-wide credit risk policies may be supplemented by counterparty credit risk policies and business-specific credit risk policies, procedures or standards, developed by either GRM or particular business areas. In this context, RBCIS Bank has implemented specific additional policies and procedures that specify Bank specific limits, authorities and processes.

Credit Risk Processes and Tools

Credit Risk Identification and Assessment: RBC has developed robust and comprehensive systems, processes and tools to support the identification and assessment of credit risk suited to the size, nature and complexity of the exposure. This leverages on:

- Mandatory Use of Credit Risk Rating and Scoring Systems;
- Consistent Credit Risk Assessment Criteria; and
- Standard Content Requirements in Credit Application Documents.

Credit Risk Mitigation: RBC has a detailed process around credit adjudication, which is integral to the management and mitigation of credit risk. In addition, RBC seeks to reduce its exposure to credit risk through a variety of means, including:

- Structuring of Transactions: A variety of credit policies and procedures set out requirements for the structuring of transactions. Risk mitigant elements in that regard include loan-to-value requirements, repayment terms, covenants, etc. Standardized provisions and documents assist in ensuring that these are clear and have legal force. Product-specific guidelines set out appropriate product structuring and client criteria.
- Collateral Security: Having borrowers or third parties pledge collateral to RBC as security when advancing credit protects RBC's interests in case of default. The extent of risk mitigation provided by collateral depends on the type and quality of the collateral taken. Specific requirements relating to collateral security (e.g. acceptable types, environmental and social due diligence, documentation and registration requirements, etc.) and the impact on capital (e.g. through LGD rates) are captured in policies and procedures.

31. Risk management (cont'd)

- Credit Risk Mitigation Techniques: RBC uses a variety of techniques to reduce credit risk or transfer it to third parties. These techniques include sales or participations, guarantees, insurance and credit derivatives.

Credit Risk Monitoring: As credit exposures and/or a client's ability to repay may change over time, ongoing monitoring and specific review processes are undertaken by the businesses in partnership with GRM.

Credit Deterioration: Problem Loan Management Processes: where review and monitoring activities identify potential problem loans, these portfolios, borrowers and facilities are actively managed.

Allowances and Provisioning for Credit Losses: RBC maintains an allowance for credit losses at an appropriate level to cover expected credit losses in the portfolio as well as losses consistent with the requirements for IFRS 9. The RBC Enterprise Policy on Credit Provisioning Methodologies sets out the minimum requirements for the methodologies, and responsibilities in establishing and maintaining an appropriate level of allowance for credit losses.

Credit Risk Reporting: GRM provides a number of enterprise level credit-risk reports to RBC senior management and the Board of Directors (Risk Committee) to ensure that changes in our credit risk profile are highlighted to enable appropriate actions to be taken, if necessary.

Credit Risk Measurement Methodologies

A variety of methodologies are used to measure and quantify credit risk, and outline and document the underlying assumptions, approaches, management considerations and responsibilities.

- Measurement of RBC's Expected Credit Loss.
  Expected Loss represents those losses that are statistically expected to occur as a result of conducting business. RBC has developed methodologies to calculate expected loss and continually reviews its assumptions and data inputs to accurately estimate this on an ongoing basis. For RBC and RBCIS Bank, the key credit risk rating parameters (risk measures) used to measure and monitor RBCIS Bank's exposure to expected loss are:
- Probability of Default (at the borrower level);
- Loss Given Default (at the facility level, based on a facility's estimated loss in the event of default); and
- Exposure at Default (represents the expected level of usage of the credit facility when the default occurs).

i. Credit risk exposure

Maximum exposure to credit risk

The following tables contains analysis of the credit risk exposure of financial instruments for which an ECL allowance is recognised. The gross carrying amount of financial assets below also represents the Group's maximum exposure to credit risk on these assets.

Maximum credit exposure covers counterparty risk in the consolidated balance sheet and off balance sheet.

31. Risk management (cont'd)

ECL Staging – Cash and balances with central banks

EUR'000				Oct 31, 2019
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Investment grade	8,708,420	-	-	8,708,420
Impaired	-	-	-	-
Gross Carrying amount	8,708,420	-	-	8,708,420
Loss allowance	-	-	-	-
Carrying amount at 31 October 2019	8,708,420	-	-	8,708,420

EUR'000				Oct 31, 2018
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Investment grade	8,579,487	-	-	8,579,487
Impaired	-	-	-	-
Gross Carrying amount	8,579,487	-	-	8,579,487
Loss allowance	-	-	-	-
Carrying amount at 31 October 2018	8,579,487	-	-	8,579,487

ECL Staging – Loans and advances from banks

EUR'000				Oct 31, 2019
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Investment grade	6,144,909	-	-	6,144,909
Non-Investment grade	87,888	-	-	87,888
Impaired	-	-	-	-
Gross Carrying amount	6,232,797	-	-	6,232,797
Loss allowance	-	-	-	-
Carrying amount at 31 October 2019	6,232,797	-	-	6,232,797

EUR'000				Oct 31, 2018
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Investment grade	6,676,460	-	-	6,676,460
Non-Investment grade	148,965	-	-	148,965
Impaired	-	-	-	-
Gross Carrying amount	6,825,425	-	-	6,825,425
Loss allowance	-	-	-	-
Carrying amount at 31 October 2018	6,825,425	-	-	6,825,425

31. Risk management (cont'd)

ECL Staging – Loans and advances to customers

EUR'000				Oct 31, 2019
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Investment grade	837,102	-	-	837,102
Non-Investment grade	103,221	-	-	103,221
Impaired	-	-	-	-
Gross Carrying amount	940,323	-	-	940,323
Loss allowance	(200)	-	-	(200)
Carrying amount at 31 October 2019	940,123	-	-	940,123

EUR'000				Oct 31, 2018
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Investment grade	1,271,227	-	-	1,271,227
Non-Investment grade	28,364	-	-	28,364
Impaired	-	-	-	-
Gross Carrying amount	1,299,591	-	-	1,299,591
Loss allowance	(249)	-	-	(249)
Carrying amount at 31 October 2018	1,299,342	-	-	1,299,342

ECL Staging – Investment securities at FVOCI

EUR'000				Oct 31, 2019
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Investment grade	1,445,395	-	-	1,445,395
Non-Investment grade	-	-	-	-
Impaired	-	-	-	-
Default other receivables	-	-	-	-
Gross Carrying amount	1,445,395	-	-	1,445,395
Loss allowance	(124)	-	-	(124)
Carrying amount at 31 October 2019	1,445,271	-	-	1,445,271

EUR'000				Oct 31, 2018
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Investment grade	880,340	-	-	880,340
Non-Investment grade	-	-	-	-
Impaired	-	-	-	-
Gross Carrying amount	880,340	-	-	880,340
Loss allowance	(32)	-	-	(32)
Carrying amount at 31 October 2018	880,308	-	-	880,308

31. Risk management (cont'd)

ECL Staging – Off Balance sheet

EUR'000				Oct 31, 2019
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Investment grade	673,011	-	-	673,011
Non-Investment grade	36,851	-	-	36,851
Impaired	-	-	-	-
Total	709,862	-	-	709,862
Loss allowance	(67)	-	-	(67)
Balance at 31 October 2019	709,795	-	-	709,795

EUR'000				Oct 31, 2018
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Investment grade	690,694	-	-	690,694
Non-Investment grade	72,964	-	-	72,964
Impaired	-	-	-	-
Total	763,658	-	-	763,658
Loss allowance	(52)	-	-	(52)
Balance at 31 October 2018	763,606	-	-	763,606

Exposure by counterparty type

	Oct 31, 2019		Oct 31, 2018	
Category of counterparty type	In EUR'000	In %	In EUR'000	In %
Financial Institutions	8,177,815	43.89	7,780,354	41.17
Governments and Supranational	8,732,712	46.87	7,462,063	39.49
Investment Funds	1,722,174	9.24	3,655,274	19.34
Total	18,632,701	100.00	18,897,691	100.00

Exposure by geographical region

	Oct 31, 2019		Oct 31, 2018	
Geography	In EUR'000	In %	In EUR'000	In %
European Union	11,313,749	60.72	10,400,971	55.04
Asia Pacific	346,433	1.86	67,580	0.36
North America	4,235,262	22.73	3,938,108	20.84
Rest of Europe	2,678,356	14.37	4,481,343	23.71
Central and Latin America	1,064	0.01	5,434	0.03
Others	57,837	0.31	4,255	0.02
Total	18,632,701	100.00	18,897,691	100.00

ii. Allowance for credit loss

The following tables following tables reconcile the opening and closing for financial assets at amortised cost and FVOCI by stage. Reconciling items include the following:

- Transfers between stages, which are presumed to occur before any corresponding remeasurement of the allowance.
- Purchases and originations, which reflect the allowance related to assets newly recognized during the period, including those assets that were derecognized following a modification of terms.
- Derecognitions and maturities, which reflect the allowance related to assets derecognized during the period without a credit loss being incurred, including those assets that were derecognized following a modification of terms.

31. Risk management (cont'd)

- Remeasurements, which comprise the impact of changes in model inputs or assumptions, including changes in forward-looking macroeconomic conditions; and partial repayments and changes in the measurement following a transfer between stages; and unwinding of the time value discount due to the passage of time.
- During the twelve months ended October 31, 2019, there were no significant changes to the models used to estimate expected credit losses.
- Expected credit losses on debt securities at FVOCI are not separately recognized on the balance sheet as the related securities are recorded at fair value. The cumulative amount of credit losses recognized in profit or loss is presented in Other components of equity.
- ECL on cash and balances with central banks and ECL on loans and advances to banks are less than one thousand Euros.

EUR'000				Oct 31, 2019
	Balance at beginning of Period	Provisions for Credit Losses	Write-offs	Balance at end of Period
Allowance for Credit Losses:				
Loans at Amortised Cost	249	(49)	-	200
Other Assets	2 496	(613)	-	1 883
Other Liabilities – Off Balance Sheet Commitments	52	15	-	67
Subtotal	2 797	(647)	-	2 150
Other Comprehensive Income:				
Investment Securities at FVOCI	32	92	-	124
Total	2 829	(555)	-	2 274

EUR'000		Oct 31, 2019
Reconciliation to Statement of profit or loss:	Other Assets	Total
Provision for credit losses as per above schedule	(613)	(555)
Credit losses recorded directly to profit or loss	348	348
Total allowance for expected credit loss/(gain)	(264)	(207)

EUR'000				Oct 31, 2018
	Balance at beginning of Period	Provisions for Credit Losses	Write-offs	Balance at end of Period
Allowance for Credit Losses:				
Loans at Amortised Cost	286	(36)	-	249
Other Assets	2 117	1 492	(1 113)	2 496
Other Liabilities – Off Balance Sheet Commitments	35	18	-	52
Subtotal	2 438	1 474	(1 113)	2 797
Other Comprehensive Income:				
Investment Securities at FVOCI	105	(72)	-	32
Total	2 543	1 402	(1 113)	2 829

EUR'000		Oct 31, 2018*
Reconciliation to Statement of profit or loss:	Other Assets	Total
Provision for credit losses as per above schedule	1 492	1 402
Credit losses recorded directly to profit or loss	415	415
Total allowance for expected credit loss/(gain)	1 906	1 817

*prior year figures have been restated to include provision related to the collectability of fees invoiced to customer. Refer also to note 10.

31. Risk management (cont'd)

Allowance for credit loss – Loans and advances to customers

EUR'000				Oct 31, 2019
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Loss allowance as at 1 Nov 2018	249	-	-	249
Provisions for credit losses:	-	-	-	-
Model changes	-	-	-	-
Transfers in (out) to Stage 1	-	-	-	-
Transfers in (out) to Stage 2	-	-	-	-
Transfers in (out) to Stage 3	-	-	-	-
Originations	124	-	-	124
Derecognitions and maturities	(261)	-	-	(261)
Remeasurements	88	-	-	88
Write-offs	-	-	-	-
Recoveries	-	-	-	-
Others	-	-	-	-
Balance at end of the year	200	-	-	200

EUR'000				Oct 31, 2018
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Loss allowance as at 1 Nov 2017	286	-	-	286
Provisions for credit losses:				
Model changes	-	-	-	-
Transfers in (out) to Stage 1	-	-	-	-
Transfers in (out) to Stage 2	-	-	-	-
Transfers in (out) to Stage 3	-	-	-	-
Originations	220	-	-	220
Derecognitions and maturities	(91)	-	-	(91)
Remeasurements	(165)	-	-	(165)
Write-offs	-	-	-	-
Recoveries	-	-	-	-
Others	(1)	-	-	(1)
Balance at end of the year	249	-	-	249

31. Risk management (cont'd)

Allowance for credit loss – Investment securities at FVOCI

EUR'000				Oct 31, 2019
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Loss allowance as at 1 Nov 2018	32	-	-	32
Provisions for credit losses:	-	-	-	-
Model changes	-	-	-	-
Transfers in (out) to Stage 1	-	-	-	-
Transfers in (out) to Stage 2	-	-	-	-
Transfers in (out) to Stage 3	-	-	-	-
Originations	103	-	-	103
Derecognitions and maturities	(15)	-	-	(15)
Remeasurements	3	-	-	3
Write-offs	-	-	-	-
Recoveries	-	-	-	-
Others	1	-	-	1
Balance at end of the year	124	-	-	124

Expected credit losses on debt securities at FVOCI are not separately recognized on the balance sheet as the related securities are recorded at fair value. The cumulative amount of credit losses recognized in profit or loss is presented in Other components of equity.

EUR'000				Oct 31, 2018
	Stage 1 12 – month ECL	Stage 2 Lifetime ECL	Stage 3 Lifetime ECL	Total
Loss allowance as at 1 Nov 2017	105	-	-	105
Provisions for credit losses:				
Model changes	-	-	-	-
Transfers in (out) to Stage 1	-	-	-	-
Transfers in (out) to Stage 2	-	-	-	-
Transfers in (out) to Stage 3	-	-	-	-
Originations	10	-	-	10
Derecognitions and maturities	(42)	-	-	(42)
Remeasurements	(40)	-	-	(40)
Write-offs	-	-	-	-
Recoveries	-	-	-	-
Others	(1)	-	-	(1)
Balance at end of the year	32	-	-	32

Collateral management

The Group policies foresee granting confirmed credit facilities only to custody clients and only on a secured basis (i.e. with a pledge on existing and future assets). In addition, reverse repos as well as some money market placements and derivative transactions are also performed on a collateralised basis.

The collateral received represents cash or the fair value of debt and equity instruments held against counterparty exposures. Debt collateral received are highly rated corporate and government bonds.

The Group's policies regarding obtaining collateral have not significantly changed during the reporting period and there has been no significant change in the overall quality of the collateral held by the Group since the prior year.

Collateral and other credit enhancements obtained by taking possession of collateral held

There were no collateral, or other credit enhancements, obtained by taking possession of collateral held due to a default in 2019 and 2018.

31. Risk management (cont'd)

Collateral received

There was no collateral received which could be sold or repledged in 2019 and 2018.

b. Market risk

Market Risk is the impact of market prices upon the financial condition of the firm. This includes potential gains or losses due to changes in market determined variables such as interest rates, credit spreads, equity prices, commodity prices, foreign exchange rates and implied volatilities.

Market risk can be exacerbated by thinly-traded or illiquid markets. For an overview of Market Risk sub-risks, please refer to the RBC Enterprise Market Risk Framework.

Overview

The different business areas within RBCIS Bank with a contribution to Market risk are:

- Cash and Liquidity Management – This business holds an inventory of institutional, supranational, government and financial (covered) bonds and is sensitive to credit spread risk and – to a lesser extent – to interest rate risk. The portfolio has a relatively short duration, high credit quality and is used to manage Group's liquidity. Treasury investments are made in the banking book in accordance with the Investment Policy approved by the Board. The policy permits investment of assets in a prudent manner that avoids undue risk of loss while earning a reasonable rate of return.
- Forex exchange services – which are incidental to supporting clients' needs. Limited intraday FX positions and very small overnight positions are authorised to allow for residual small client trades to be aggregated intraday and placed through professional market counterparties. Limits are established based on the volumes and currency volatility by trading location. These positions are monitored tightly on a daily basis by the Market Risk Unit in Risk Management. No speculative trading positions are allowed. The Group's policy is to avoid market risk, and proprietary trading activities are not part of the strategy given the current risk appetite. Therefore there is no material exposure to market risk in the RBCIS Bank's Trading book.
- In addition, from time to time, operational events for securities transactions may cause RBCIS to hold relatively small short-term positions; these are then typically liquidated in an orderly fashion. The risk inherent in these positions is kept to a minimum as they are liquidated or hedged at the earliest possible time. These positions are captured by the operational risk processes.

Market risk governance and policies

The Group's Market risk appetite is set and reviewed by the Board. RBCIS Bank has a range of limits in place covering the risk measurement metrics noted above. All limits set by RBCIS Bank are consistent with the stated risk appetite. In addition to the RBCIS Bank Board approved limits, operational limits can also be set at the RBCIS Bank CRO level. Exposures are also limited by the RBC Group limit structure.

The Market risk management function produces daily reports for the business and senior management detailing the Group's Market risk profile against limits, as well as monthly summary reports to the RBCIS Bank Board of Directors (or its risk Committee) and the RBCIS Bank Executive Committee (ExCo).

Breaches of Board limits are reported to the Risk Committee of the RBCIS Bank Board and the RBCIS Bank Executive Committee (ExCo) at its next meeting. Excesses to Operational limits are reported to the RBCIS Bank ExCo.

The following policies and frameworks apply at the level of RBCIS Bank:

- RBC Enterprise Market Risk Framework;
- RBCIS Bank Addendum to RBC Market Risk Framework;
- RBC Enterprise Model Risk Policy;
- RBCIS Bank Addendum to RBC Enterprise Model Risk Policy;
- RBCIS Bank Interest Rate Risk in the Banking Book (IRRBB) Policy.

31. Risk management (cont'd)

Market Risk – Specific Aspects

Market risk measures – Non trading banking activities

Through its non-trading activities, such as deposit taking and reinvestment of its funds, the Group has exposure to market risks, including interest rate risk and credit spread risk. The Group's global structure and activities also give rise to structural foreign exchange risk.

Interest rate risk in the Banking Book ("IRRBB")

Interest Rate Risk of the Banking Book ("IRRBB") refers to the current or prospective risk to the Group's capital and earnings arising from adverse movements in interest rates that affect the bank's banking book positions. When interest rates change, the present value and timing of future cash flows change. This in turn changes the underlying value of a bank's assets, liabilities and off-balance sheet items and hence its economic value (EVE).

Changes in interest rates also affect a Group's earnings by altering interest rate-sensitive income and expenses, affecting its net interest income (NII). Excessive IRRBB can pose a significant threat to a Group's current capital base and/or future earnings if not managed appropriately.

The IRRBB policy defines the management standards and approved limits within which risks to net interest income over a 12-month horizon, and the economic value of equity, are to be contained.

Objectives of the IRRBB Policy

RBCIS Bank Interest Rate Risk in the Banking Book Policy defines the following Interest Rate Risk objectives:

- To preserve the Group 'safety and soundness by limiting the vulnerability of EVE and NII to adverse interest rate movements. Since some degree of IRR is inherent to the banking business, total or concurrently elimination of either NII risk or value risk is not practical.
- To protect the Group ability to pursue its core business strategies by addressing creditor concerns and regulatory requirements. This objective implies a requirement to manage IRR in a prudent and professional manner.
- To improve current and future earnings by managing IRR in a cost-effective manner within the constraints of the first two objectives.
- To favour the management of Value Risk over NII Risk, subject to the constraints of the risk limits specified in this policy and the first two objectives. EVE Risk management is favoured because it is a more comprehensive, longer-term economic measure of interest rate risk, while NII Risk is an accounting-income based measure and provides no insight into IRR inherent in a balance sheet beyond a certain measurement horizon.
- To operate within the risk limits allocated to the Group and specified in this policy in order to manage the day to day operations, taking into account the constraints of its processes and risk measurement capabilities, while adhering to other applicable frameworks, policies, and standing orders which cover, on a standalone basis, specific risk aspects of RBCIS's balance sheet.

RBCIS's philosophy is to manage the IRR of the non-trading balance sheet while taking into consideration all components of IRR. RBCIS may implement risk management strategies for managing the structural balance sheet risk positions. Such risk positions, if taken, will be taken within limits allocated.

RBCIS ALCO will monitor and direct risk positioning within delegated authorities given to the Treasurer of RBCIS. Interest rate risk reports are reviewed regularly by RBCIS ALCO, ExCo, risk management and the Board of Directors.

31. Risk management (cont'd)

Interest Rate Risk measurement performed by RBCIS Bank Corporate Treasury are including:

Activity / Process	Service Level
Monthly Reporting	• Value Risk and NII Risk exposures under an instantaneous up / down 100 basis points rate change. • Change in economic value resulting from calculating the outcome of the standard shock, as referred to in Article 98(5) of Directive 2013/36/EU and in the section 4.5 of the EBA guideline; • Measurement of the IRR sensitivity under different stress test scenarios for potential changes in the level and shape of the interest rate yield curve including the 6 prescribed shock scenarios as outlined in the EBA guideline (Annex III). Measurement of the risk subcomponents (Gap risk, Basis Risk and Option Risk) as outlined in the EBA guideline.
Quarterly Reporting	• Contribution to the update of the quantitative and qualitative sections of the IRRBB template as part of the supervisory STE.
Semi Annual Reporting	• Contribution to the update of the quantitative and qualitative section of the IRRBB CSSF regulatory reporting.
Annual Reporting	• Annual supervisory stress-test exercise on IRRBB launched by the ECB and subsequent quality assurance process as an input to the SREP; • Annual ICAAP review with the inclusion of a 3 year projection of the Pillar II capital charge on IRRBB and a description of the tools used to perform the iteration; • Other annual supervisory requirements including qualitative/quantitative assessments in the context of the SREP.

The Interest Rate Risk Limits are recommended annually by the RBCIS ALCO and Exco for approval by RBCIS Bank's Board of Directors.

The Value and NII Risk exposure will be managed such that an instantaneous up or down 100 basis point rate change will not cause a loss of Value or NII greater than approved limits.

Moreover the maximum loss under a supervisory standard shock of 200 basis point on the Economic Value of Equity (EVE) can only account for up to at 15% of Bank's unconsolidated own funds.

Internal stress testing including hypothetical, historical and single risk factors scenarios are produced monthly as part of the IRRBB report and the maximum loss can only account for up to 15% of RBCIS Bank's unconsolidated own funds. In addition to internal stress testing, 6 standardized IRRBB scenario for EVE risk calculations as prescribed by the EBA guideline are produced monthly.

The following table provides the potential before-tax impact of an instantaneous up or down 100 basis point rate on net interest income and Economic Value of Equity and a supervisory standard shock of 200 basis point rate on the Economic Value of Equity of the Group's ALM portfolio.

In line with Pillar 3 disclosure requirements – consolidated and enhanced framework issued by the Basel Committee on Banking Supervision, further information can be retrieved under the Pillar 3 disclosure published on the internet site of the Bank.

EUR million	Oct 31, 2019		Oct 31, 2018	
	up 100 bps	down 100 bps	up 100 bps	down 100 bps
Economic value of equity risk	(10,7)	(1,2)	16,6	(7,3)
Net interest income risk	8,3	2,9	30	(8,6)

EUR million	Oct 31, 2019		Oct 31, 2018	
	up 200 bps	down 200 bps	up 200 bps	down 200 bps
Economic value of equity risk	(29,1)	3,7	18,6	(11,3)
As % of Available Capital	19%	-	15%	9%

31. Risk management (cont'd)

The following table provides a breakdown of financial assets and financial liabilities by the earlier of their remaining maturity or their rate reset date. The table does not incorporate Management's expectation of future events where expected repricing or maturity dates differ significantly from the contractual dates.

EUR'000							Oct 31, 2019
Financial assets	Immediately interest rate sensitive	Within 3 months	Between 3 and 12 months	Between 1 and 5 years	After more than 5 years	Non rate sensitive	Total
Cash and balances with central banks	8,710,889	-	-	-	-	(2,469)	8,708,420
Loans and advances due from banks	323,470	5,397,377	600,181	100,000	112	11,657	6,232,797
Loans and advances to customers	348,598	380,889	165,437	40,615	-	4,584	940,123
Investment securities	-	472,676	925,167	36,171	-	11,257	1,445,271
Derivatives	471,424	-	-	-	-	-	471,424
Other assets	-	-	-	-	-	222,705	222,705
Total financial assets	9,854,381	6,250,942	1,690,785	176,786	112	247,734	18,020,740
Liabilities							
Due to banks	303,080	-	-	-	-	13,379	316,459
Customer borrowings and deposits	15,873,876	-	-	-	-	1,759	15,875,635
Derivatives	474,038	-	-	-	-	-	474,038
Finance lease liabilities	-	-	-	-	-	2,275	2,275
Other liabilities	-	-	-	-	-	185,651	185,651
Total financial liabilities	16,650,994	-	-	-	-	203,064	16,854,058

Net position

	Immediately interest rate sensitive	Within 3 months	Between 3 and 12 months	Between 1 and 5 years	After more than 5 years
On balance sheet sensitivity gap	(6,796,613)	6,250,942	1,690,785	176,786	112

31. Risk management (cont'd)

EUR'000							Oct 31, 2018
Financial assets	Immediately interest rate sensitive	Within 3 months	Between 3 and 12 months	Between 1 and 5 years	After more than 5 years	Non rate sensitive	Total
Cash and balances with central banks	8,582,105	-	-	-	-	(2,619)	8,579,486
Loans and advances due from banks	930,814	5,133,234	700,184	50,000	112	11,080	6,825,424
Loans and advances to customers	683,777	395,341	213,005	262	-	6,957	1,299,342
Investment securities	-	826,413	53,505	-	-	390	880,308
Derivatives	482,339	-	-	-	-	-	482,339
Other assets	-	-	-	-	-	192,522	192,522
Total financial assets	10,679,035	6,354,988	966,694	50,262	112	208,330	18,259,421
Liabilities							
Due to banks	701,671	-	-	-	-	9,000	710,671
Deposits from customers	15,787,942	-	-	-	-	5,939	15,793,881
Derivatives	437,109	-	-	-	-	-	437,109
Finance lease liabilities	-	-	-	-	-	4,864	4,864
Other liabilities	-	-	-	-	-	204,925	204,925
Total financial liabilities	16,926,722	-	-	-	-	224,728	17,151,450

Net position

	Immediately interest rate sensitive	Within 3 months	Between 3 and 12 months	Between 1 and 5 years	After more than 5 years
On balance sheet sensitivity gap	(6,247,687)	6,354,988	966,694	50,262	112

iii. Non-trading Foreign exchange rate risk

Foreign exchange rate risk is the potential adverse impact on earnings and economic value due to changes in foreign currency rates. The Group's revenue, expenses and income denominated in currencies other than EURO are subject to fluctuations as a result of changes in the value of the average EURO relative to the average value of those currencies. The Group's net exposure to foreign exchange risk is not material as it is the bank's policy not to maintain material open currency positions.

31. Risk management (cont'd)

c. Liquidity risk

Liquidity risk is the risk that the Group may be unable to generate or obtain sufficient liquidity or its equivalent in a timely and cost-effective manner to meet its commitments as they fall due.

i. Liquidity risk management

The Group's consolidated balance sheet structure has inherently low liquidity risk; the principal source of funding, demand deposits, is matched against short-term investments and available liquidity buffers. RBCIS Bank monitors the composition of its deposit base with respect to liquidity risk.

The Group has in place a robust liquidity risk management framework enabling to maintain a solid Liquidity Risk Profile and complies with regulatory limits alongside internal limits and control framework. The Bank holds substantial high quality securities that are prudently valued and maintains sufficient levels of funding, with all illiquid assets funded for greater than 1 year. Funding derives primarily from stable sources in a sector that has significant barriers to facilitate withdrawals of deposits in the short term. Moreover the Bank has not received any central Bank support (either directly or indirectly) and is not reliant on incremental group liquidity in the event of a liquidity crisis.

The liquidity risk management of RBCIS Bank is adequate. The development of relevant indicators, such as liquidity position combined with survival period, client deposits trend, value of unencumbered assets, daily Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) prediction under stress test are monitored consistently by the Bank. The amount and composition of liquidity buffers at October, 31 2019 are adequate and enable the Bank to be able to continue to meet its payment obligations both under normal and stress conditions on a present and prospective basis. RBCIS Bank complies structurally with internal and external requirements, including standards for maintaining healthy balance sheet.

RBCIS Bank Corporate Treasury team has ultimate responsibility to produce the Internal Liquidity Adequacy Assessment Process (ILAAP) on an annual basis to summarize the key liquidity risks it faces. The results of this exercise are used to inform Senior Management and the independent non-executives of the risks being run in RBCIS Bank and the material controls that are in place to manage them. RBCIS Bank's risk appetite is informed by the ILAAP.

ii. Liquidity Stress Testing

RBCIS Bank Corporate Treasury runs stress tests on a daily basis. European regulation requires liquidity stress testing to consider at least 3 scenarios consisting of a market shock, an idiosyncratic shock and a combined shock scenario. For the purposes of the Daily Liquidity Stress Test, three stress scenarios covering these requirements are used to highlight potential areas of weakness within the liquidity profile of the entity, RBC (Parent) Specific, Country/Region Eurozone Crisis and a combined RBC Specific/ Country/Region Eurozone Crisis. RBCIS Bank stress tests includes an analysis of cash-flow, the evolution of the liquidity position, the predictability of the LCR and NSFR, as well as considering balance sheet, and solvency assumptions across all future time buckets. RBCIS's stress methodology also calculates the impact of an intraday liquidity stress focused on the three first days of the stressed period. The net liquidity buffer available same day is calculated. All assets encumbered against this risk are excluded from the calculation, reflecting the continuing need to use these to mitigate the Intraday risk. This stress test allows RBCIS to conclude whether the liquidity buffer is of sufficient volume to combat an intraday stress.

In addition to stress-testing activities that assess the impact of certain assumptions on its liquidity position, the Bank also performs reverse stress-testing assessments. These assessments start from the identification of the pre-defined outcome to challenge the comprehensiveness and conservatism of the ILAAP framework assumptions.

31. Risk management (cont'd)

iii. Liquidity Risk Fund Transfer Pricing and Liquidity Contingency Plan

The Liquidity Risk Fund Transfer Pricing Policy evaluates the Group's balance sheet for the terms and rates at which RBCIS excess funds can be placed with other RBC entities after taking into consideration the liquidity value of its deposits and the liquidity requirements of its assets; and the value of, and compensation for, any excess liquidity that remains after accounting for these placements.

RBCIS maintains a well-developed and robust set of protocols related to liquidity contingency planning. The Liquidity Contingency Plan describes the action plan for maintaining RBCIS ability to fulfil commitments under stress conditions. The plan is developed by assessing the impact of a stress event on RBCIS's liquidity profile, and identifying recovery actions that could be undertaken to restore liquidity levels to be within the stated Risk Appetite.

The plan includes a menu of liquidity options and an approach for assessing, monitoring and reporting crises stages, including explicit escalation procedures and authorities. The Liquidity Contingency Plan can be activated in conjunction with the initiation of the Recovery Plan or to respond to sudden and material changes in liquidity conditions.

RBCIS Corporate Treasury, Group Risk Management (GRM), and Treasury and Market Services (TMS) perform ongoing monitoring of market developments, looking for early warning signals and risk indicators to assess the potential for a change in liquidity conditions and, when in a crisis situation, to determine if a change in crisis stage is warranted. The status of the selected indicators as well as utilization of risk limits are monitored along with expected trends on an on-going basis and tracked in a Liquidity Scorecard which is reviewed quarterly by ALCO and LCT to support the decision for activating the liquidity crisis plans or moving from one crisis stage to another.

iv. Funding plan

As to the annual funding plan, RBCIS has performed a back testing of the 2019 plan, i.e. the projection build last year compared to that actuals as at end October 2019 supplemented by a 3 year projection of the Consolidated Balance Sheet extended with a projection of LCR and NSFR under a normal business conditions and under the worst ILAAP stress test scenario to evidence that RBCIS continues to maintain appropriate liquidity resources.

The funding plan is primarily driven by the prospective three years strategic plan prepared by RBCIS Bank's CFO office approved by the Board of Directors.

v. The role of the ALCO

The ALCO oversees liquidity risk management, monitoring liquidity against approved limits. ALCO reviews the Liquidity Limits Document, the Liquidity Risk Policy, the Liquidity Risk Management Framework, the Pledging Policy and the Liquidity Contingency Plan and provides recommendations for approval to the Board of Directors. RBCIS Corporate Treasury delegates responsibility for the maintenance of the Liquid Asset Buffer to RBCIS TMS in line with directions and constraint outlined in the Investment Policy owned by RBCIS Corporate Treasury. Liquidity measures are reviewed by ALCO, ExCO and by the Board of Directors.

31. Risk management (cont'd)

vi. Internal and regulatory reporting

A suite of internal and regulatory reports are produced by RBCIS Corporate Treasury to inform both internal and external stakeholders of changes in the liquidity risk profile of the Bank.

Liquidity Risk limits including internal and regulatory metrics are set for RBC IS Bank and its subsidiaries and branches. RBC IS Bank and its subsidiaries and branches will comply with any applicable limits or other requirements as defined in the Enterprise frameworks, policies and regulatory requirements.

The limits are consistent with the liquidity indicators and early warning indicators set out in the Liquidity Contingency Plan and are aligned with the regulatory recommendations. Liquidity limits are primarily set as Board limits and are the expression of the Risk Appetite.

The Group applies a minimum LCR and NSFR requirements of 100% to be consistent with the Enterprise-wide liquidity framework and OSFI's requirement. The Group manages the LCR and NSFR based on the following limit structure:

Level	Limit	Exceptional approval authority
Board Limit	105%	Board, exceptions below 105% down to 100%
Operational Limit	107%	RBC IS Bank CRO and CFO, exceptions below 107% down to 105%
Desk Limit	110%	RBC IS Bank Corporate Treasurer, exceptions below 110% down to 107%

vii. Maturity analysis for financial assets and liabilities

The following table analyses the Group's non-derivative financial assets and liabilities and net settled derivative financial assets and liabilities into relevant maturity grouping based on the remaining period at the balance sheet date to the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows.

31. Risk management (cont'd)

Non-derivative financial assets and financial liabilities

EUR'000						Oct 31, 2019
	Breakdown of contractual cash flows					
Non derivative financial assets	At sight and on demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after more than 5 years	Total
Cash and balances with central banks	8,708,420	-	-	-	-	8,708,420
Loans and advances due from banks	357,731	5,203,704	599,640	100,084	112	6,261,271
Loans and advances to customers	590,360	143,710	165,437	40,615	-	940,122
Investment securities	-	62,978	402,208	960,031	-	1,425,217
Other financial assets	115,920	96,363	4,455	5,737	230	222,705
Total non derivative financial assets	9,772,431	5,506,755	1,171,740	1,106,467	342	17,557,735
Non derivative financial liabilities						
Due to banks	191,030	12,918	741	-	-	204,689
Deposits from customers	15,987,264	117	-	-	-	15,987,381
Finance lease liabilities	-	-	1,584	691	-	2,275
Other financial liabilities	70,285	111,180	2,741	1,217	228	185,651
Total non derivative financial liabilities	16,248,579	124,215	5,066	1,908	228	16,379,996

Net position

EUR'000					Oct 31, 2019
	At sight and on demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after more than 5 years
Net liquidity gap	(6,476,148)	5,382,540	1,166,674	1,104,559	114

Derivatives

EUR'000						Oct 31, 2019
Derivatives settled on a gross basis	At sight and on demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after more than 5 years	Total
Outflow	-	87,813,561	2,883,776	-	-	90,697,337
Inflow	-	87,862,767	2,885,226	-	-	90,747,993

Breakdown contractual amounts for other off balance sheet items

EUR'000						Oct 31, 2019
Regular way trades	At sight and on demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after more than 5 years	Total
Outflow	1,414,128	-	-	-	-	1,414,128
Inflow	2,493,607	-	-	-	-	2,493,607
Loan commitments						
Outflow	709,862	-	-	-	-	709,862
Inflow	-	-	-	-	-	-
Guarantees						
Outflow	18,176	-	-	-	-	18,176
Inflow	-	-	-	-	-	-

31. Risk management (cont'd)

Non-derivative financial assets and financial liabilities

EUR'000						Oct 31, 2018
	Breakdown of contractual cash flows					
Non derivative financial assets	At sight and on demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after more than 5 years	Total
Cash and balances with central banks	8,579,439	-	-	-	-	8,579,439
Loans and advances due from banks	1,994,831	4,082,808	699,789	50,081	112	6,827,621
Loans and advances to customers	660,438	417,478	222,235	262	-	1,300,413
Financial investments	-	605 259	115,539	161,167	-	881,965
Other financial assets	46,137	141,480	2,550	2,126	229	192,522
Total non derivative financial assets	11,280,845	5,247,025	1,040,113	213,636	341	17,781,960
Non derivative financial liabilities						
Due to banks	682,661	8,632	-	-	-	691,293
Customer borrowings and deposits	15,808,752	4,551	-	-	-	15,813,303
Other financial liabilities	78,677	123,314	1,633	1,097	204	204,925
Total non derivative financial liabilities	16,570,090	136,497	1,633	1,097	204	16,709,521

*the contractual cash flows of finance lease liabilities have been reclassified separately in order to align with 2019 classification.

Net position

EUR'000					Oct 31, 2018
	At sight and on demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after more than 5 years
Net liquidity gap	(5,289,245)	5,110,528	1,038,480	212,539	137

Derivatives

EUR'000						Oct 31, 2018
Derivatives settled on a gross basis	At sight and on demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after more than 5 years	Total
Outflow	-	77,275,026	3,706,690	-	-	80,981,716
Inflow	-	77,318,424	3,713,591	-	-	81,032,015

Breakdown contractual amounts for other off balance sheet items

EUR'000						Oct 31, 2018
Regular way trades	At sight and on demand	Due within 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after more than 5 years	Total
Outflow	2,390,860	-	-	-	-	2,390,860
Inflow	3,449,013	-	-	-	-	3,449,013
Loan commitments						
Outflow	763,658	-	-	-	-	763,658
Guarantees						
Outflow	17,893	-	-	-	-	17,893

The balances in the above tables will not agree directly with those in the consolidated balance sheet as the tables incorporate, on an undiscounted basis, all cash flows relating to the principal and future coupon payments.

31. Risk management (cont'd)

d. Operational Risk Management

RBC Enterprise Operational Risk Management Framework defines Operational Risk as the risk of loss or harm resulting from people, inadequate or failed internal processes and systems, or from external events. Operational Risk sub-risks recognized by RBCIS Bank are as follows.

Operational Risk Category	Definition
Business Continuity Risk	The risk of being unable to maintain, continue, or restore essential business operations during and/or after an event that prevents RBC from conducting business in the normal course.
Finance Risk	The risk of failure to prepare internal and external financial reports that completely and accurately reflect the financial results.
Fraud Risk	The risk of intentional unauthorized activities designed to obtain benefits either from RBC or assets under RBC's care, or using RBC's products. Benefits can be in the form of cash, cash equivalent, or physical assets (including indirect benefit of continued employment or increased bonus).
Information Management Risk	The risk of loss or harm resulting from the failure to manage information appropriately throughout its lifecycle – i.e., when information is acquired or created, processed, used, shared, accessed, retained and disposed. This includes legal and regulatory consequences due to mismanagement of information.
Information Technology Risk	The risk to the business associated with the use, ownership, operation, involvement, influence and adoption of IT within RBC. It includes risks associated with security and information protection, availability and recovery, accuracy and timeliness, performance and scalability & agility and appropriateness.
Legal Risk	The risk an agreement or arrangement, either establishing or modifying a legally binding relationship, does not reflect the business activities or commitments or fails to comply with applicable laws.
Model Risk	The risk of error in the design, development, implementation or subsequent use of models.
Money Laundering Risk	The risk that RBC's products and services are used to facilitate the laundering of proceeds of crime, including the financing of terrorist activity.
People Risk	The risk of loss or harm to RBC resulting from a failure in employment practices or to comply with employment-related laws.
Privacy Risk	The risk of improper creation or collection, use, disclosure, retention or destruction of Personal Information.
Processing & Execution Risk	The risk of failure to effectively design, implement and execute a process, including Project Delivery Risk, defined as the risk that individual projects are not managed on time, on scope and on budget and will not meet the objectives for which they were initiated.
Product, Suitability Risk & Fiduciary Risk	The risk of failure to design, implement and maintain a product or service to achieve expected outcomes throughout the lifecycle of the product. This includes Suitability Risk, which is the risk of offering inappropriate advice or product(s) to an RBC client, as well as Fiduciary Risk, which is the risk of failing to fulfill RBC's obligations to a person to whom a duty is owed under applicable law within the jurisdiction when RBC or the individual employee is acting in a fiduciary relationship, whether knowingly or unknowingly.
Regulatory Compliance Risk	The risk of failing to comply with laws, rules, regulations, or prescribed practices in any jurisdiction in which RBC operates.
Safety & Security Risk	The risk of failure in the physical safety and security of employees, clients and others when in or about RBC's premises or on RBC business; safeguarding of physical assets, operations and facilities.
Tax Risk	The risk of an unexpected result with impact to earnings, capital, business operations, or reputation as a result of failure to comply with regulatory tax requirements.
Third Party Risk	The risk of failure to effectively onboard, manage or terminate Third Party or Intra-Group service providers ("suppliers") where this failure may expose RBC to service disruptions, regulatory action, financial loss, litigation or reputational damage.

31. Risk management (cont'd)

Overview

Operational risk is the single most important risk to RBCIS. How well we manage and monitor the operational risk reflects on our success and reputation in the market place. For the nature and the complexity of our organisation, the inherent operational risk before mitigation would be high. RBCIS has the expertise and good operational risk management policies and practices to manage the operational risk in the business processes. Due to complexity and the nature of our operations, RBCIS has identified a number of key risk drivers determining the overall operational risk profile.

Third Party and Outsourcing risks

RBCIS has numerous outsourcing arrangements with other RBC Group legal entities and with a number of third-party service providers. Intra group outsourcing activities also exist within RBCIS when certain processes are performed by one legal entity on behalf of the others in the service delivery to the clients. Such arrangements are done at arm's length and formal service agreements are in place. RBCIS applies RBC Group policy and standards in managing all outsourcing arrangements, aligned to Canadian regulator OSFI requirements and to international and local regulated market standards, due to the fact that RBC operates on a global basis. Outsourcing arrangements are classified into material and non-material arrangements; each material arrangement risk is reviewed and re-assessed on a regular basis. Each arrangement has established a formal service level agreement (SLA) that stipulates the availability, reliability and performance targets, level of support to users, continuity planning and escalation process.

Processing and Execution risk

Processing and Execution risk is one of the main inherent risk the Business platform is submitted to.

Business first line of defence and second line of defence developed specific risk practices targeting process and execution risk:

- Automation of process in key operational areas prone to human errors (e.g. Shareholder Services (SHS) and Transition Management trade capture);
- Process Risk and Contest Self Assessment (RCSA) programs, driving a number of process controls enhancements.

Conduct Risk: RBC uses the term "Risk Conduct and Culture" to address the industry topics of Risk Culture and Conduct Risk. The term is defined as a shared set of behavioural norms that sustains our core Values and enables us to proactively identify, understand and act upon our risks, thereby protecting our clients, safeguarding our shareholders' value, and supporting the integrity, soundness and resilience of financial markets.

RBCIS Bank Business is mostly based on Institutional Clients instructions / mandated Business activities. Therefore inherent Conduct risk is lower than with Banks with more exposure to Private Asset Management and trading activities for own book.

Nonetheless RBCIS could face Conduct risk through the following events

- Front running large FX direct execution orders;
- Rogue FX trading – outside of trading mandate;
- Overcharging mandated FX fees;
- AML/KYC (pervasive Clients due diligence deficiencies);
- Internal Fraud;
- Non adherence to delegated lending authority;
- Conflict of interest such as representing the Client and the Bank for the same activity or External Directorship/Outside activity or Gifts and entertainment for Client facing staff;
- Misbehaviour of employees identified as material risk takers leading to exposures not in line with RBCIS Bank conservative risk policies and risk profile.

31. Risk management (cont'd)

RBCIS has developed extensive mitigation strategy that is composed of the following main elements:

- RBC Values and articulation into expected behaviours;
- Leading by example and Tone from the top management;
- Strong risk culture, framework and governance;
- Policies and framework: Code of Conduct Policy, Remuneration policy, Trading Policies and Standing orders,
- Generic Controls: employee interview & selection, employees screening, mandatory trainings, yearly employee performance discussion inclusive adherence to RBC values and code of conduct;
- Specific controls: mandatory leaves, AML /KYC checks, and a number of technical checks on transactions in the dealing room;
- Enforcement of Market Risk Takers (MRT) regulation.

Operational risk governance and policies

The Board of Directors has final responsibility with respect to operational risk matters, directly or through delegation to the Risk Committee reporting to the Board of Directors. Responsibilities include:

- Shaping and influencing Risk Conduct; approving Risk Appetite;
- Ensuring that management has in place frameworks, policies, processes and procedures to manage credit risk (including approval authority for Credit Risk Framework and key enterprise-wide credit risk policies), and evaluating the organization's effectiveness in managing credit risk;
- Reviewing operational reporting, stress testing, significant exposures and exceptions to limits.

Risk Assessment and Quantification approach

The overall Operational Risk is assessed through a combination of qualitative and quantitative methods. A variety of risk and control criteria are used to generate the risk profiles for each legal entity part of the group and for the material products part of client service offering. These risk profiles are analysed at an aggregate level to provide a view of the risk profile of the business and the local platform as a whole. These profiles are reported to various committees for discussion and action. Specific risks and issues as well as overall themes are discussed.

RBCIS has embedded Operational risk management in all of its activities by leveraging the main elements of the Operational Risk Management Framework outlined below:

- Risk and Control Self Assessment (RCSA) – Performed both at an Enterprise level and at a regional business unit or process level, these assessments provide an integrated source of Operational risk and control information.
- External Operational Risk Event Review – Provides 'lessons learned' and emerging industry trends. GRM Operational Risk team performs internal analysis to investigate whether or not controls are in place to mitigate against such events and recommends additional actions, where required.
- Internal Operational Risk Event Management – Operational risk events, including those resulting in actual losses and non-monetary events are monitored by Operational Control team (with oversight from GRM Operational Risk). The focus is on a complete understanding of root cause and mitigation plans for these events with a view to mitigating repeat occurrences.
- Operational Risk Scenarios – A number of Scenario analyses is undertaken on an annual basis to proactively identify plausible events with a potentially high impact but low probability of occurrence. The primary scenario topics are provided by Enterprise Operational Risk Management (EORM) and are further supplemented at a Business level via Business platform specific key identified risks.

31. Risk management (cont'd)

- Operational Risk Issue and Actions Tracking and Monitoring – Operational risk issues and actions identified as a result of RCAs/risk events are entered into RBC's global Enterprise Operational Risk Management database, Open Pages, and tracked by Operational Control team until resolution.
- Key Risk Indicator (KRI) Program – KRIs are set and monitored for each business on a continuous basis with thresholds set annually.
- New product/Initiatives Risk Assessment: Every new initiative, including changed/new product go through an assessment of potential contribution to future end state operational risk. Mitigations are identified and monitored throughout the initiative lifecycle in order to stay within risk appetite once delivered.

In addition to the above EORM practices, GRM Operational Risk Management team (and, where applicable, Operational Control) is informed of other risk types through Function specific programs in order to form an opinion on the complete risk profile across the RBC defined 16 operational risk types. This would be the case for the following one (non exhaustive list):

- Business Continuity Risk;
- Information Technology Risk;
- Regulatory Compliance Risk;
- Money Laundering Risk;
- Third Party risk.

Risk Control and Reporting

The Operational Risk Appetite Framework is a formally articulated structure comprised of an operational risk appetite, operational risk profile and operational risk tolerances and limits. The operational risk profile is compared to tolerances and limits, to help identifying mitigation actions where required. The risk profile is presented to the Executive Committee on a monthly basis and to the Risk committee of the Board on a quarterly basis In addition and support of the operational risk profile, the operational risk limits and tolerance are further articulated into ORM practice and tools:

- KRI limits definition;
- Risk Control Assessment definition and scale of tolerated residual risk. RCA is used in a wider range of practices;
- New Product/Initiatives: the New Business Committee and Integrated Risk Profile tools include level definition of acceptable risk.

Operational Risk Measurement Methodologies

RBCIS Bank has implemented a scenario-based loss-distribution approach which is already in place at in another RBC entity and that was vetted by the RBC Model Validation Team.

The submitted model employs a scenario-based loss-distribution approach to compute the Operational Risk Economic Capital ('OREC'). In this approach, various operational risk loss scenarios are developed by GRM Operational Risk and Business teams, in conjunction with the appropriate business functions and subject matter experts. The scenarios are specific to RBCIS Bank's operational risk profile and take into account information which includes internal/external historical loss data and business environment and internal control factors.

Each scenario is characterized by a frequency distribution and a severity distribution, assumed to be Poisson and lognormal, respectively, and calibrated to the following scenario data:

- Likelihood of occurrence, expressed as "1 in n years" (used to calibrate the Poisson process);
- Most likely and maximum possible loss amounts (assumed to correspond to the 50th and 99.9th percentiles of the lognormal distribution, respectively, and used to calibrate the severity process).

31. Risk management (cont'd)

For each scenario, once the frequency and severity distributions are calibrated, the model simulates 10 million possible losses for the next year. In each simulation, the number of loss occurrences is generated from the Poisson distribution and the amount for each loss is generated independently from the lognormal distribution, with the losses being added up. The final step is to aggregate the simulated losses across all scenarios to form a single distribution consisting of 10 million losses, from which the OREC is determined as the 99.9th percentile.

e. Capital Adequacy

Capital risk is the risk that the Group has insufficient capital resources to meet the minimum regulatory requirements, to support its credit rating and to support growth and strategic options.

i. Capital management

Capital adequacy and regulatory capital are monitored on a monthly basis by the RBCIS Executive committee and on a quarterly basis by the RBCIS Bank Assets & Liabilities (ALCO.)

The purpose of the ALCO is:

- to review and recommend broad policy frameworks pertaining to RBCIS's balance sheet and capital management, interest rate risk management, liquidity and funding, and subsidiary balance sheet management; and
- to provide regular central oversight and monitoring of RBCIS balance sheet-related risks, including capital adequacy, structural interest rate risk, structural foreign exchange risk, liquidity and funding risk;
- to provide direction and review advice regarding the management of these areas in light of expected returns, competitive and regulatory environments, and economic and business forecasts;
- The Committee is responsible for ensuring that the balance sheet structure and profile of RBCIS is consistent with its strategic objectives and objectives of the RBC Group. All material balance sheet initiatives will be reviewed and approved by the Committee, with advice and counsel provided by the relevant RBC center of expertise to the Committee.

The Committee reviews reports and monitors compliance on RBCIS's exposure to balance sheet related risks, including interest rate risk, liquidity and funding risk and capital adequacy.

The Committee is chaired by the RBCIS Bank Treasurer or in his absence, the Chief Financial Officer (Deputy Chair).

During 2019, the capital and leverage ratios of RBCIS and its subsidiaries have complied with the prescribed regulatory requirements and internal minimum ratios contained in the Capital Management Policy set on the basis of assessment of the results of various risk capital measures and business considerations, taking into account all regulatory minimum requirements, and including a cushion determined by stress tests, historical volatilities of capital, capital requirements and balance sheet.

The regulatory report (COREP) is sent to the CSSF quarterly.

ii. Regulatory capital

Basel III Accords set the standards and provided necessary guidelines for European and national regulators to define the legislation and regulations for banking supervision and minimum regulatory capital requirements. The three-pillar based Accord renders mandatory for all banks to define, approve and implement their own approaches to measure capital requirements for credit, market and operational risk exposures under the Pillar I. Also, it induces banks to implement risk management best practices and to define complementary measures through economic capital calculation for risks not covered under the Pillar I of the accord.

As a significant bank in Luxembourg, RBC Investor Services Bank Group and all its subsidiaries are subject to the direct supervision of the European Central Bank, operated by a Joint Supervisory Team composed of members from the ECB and from its consolidating regulator ("CSSF") and the application of the provisions of CRD IV package - Capital Regulatory Directives 2013/36/EU (including subsequent delegated acts) and circular 575/2013 (Capital Regulatory Requirements).

Under the CRD IV framework, the CSSF requires each bank or banking group to: (a) hold the minimum level of regulatory capital of EUR 8,700,000, and (b) maintain a ratio of total regulatory capital to the risk-weighted asset (the "Basel ratio") at or above the internationally agreed minimum of 8%, in addition to it, a

31. Risk management (cont'd)

countercyclical buffer (set internally at an average percentage of 0.5% for the Year 2018 based on observed countercyclical information across countries where the Bank has exposure). Also, the CSSF, in its "Règlement 18-03" dated June 5, 2018 has requested the banks under its supervision to maintain an additional buffer ("Capital Conservation Buffer") of 2.5%.

In October 2017 the CSSF designated RBCIS as Other Systematically Important Institution (O-SII) in application of the law of July 23, 2015 amending the law of April 5, 1993 on the financial sector (LFS), complemented by the EBA Guidelines (EBA/GL/2014/10) of the December 16, 2014. As a result, RBCIS Bank is required to maintain an additional 0.5% O-SII buffer in 2019.

Corporate Treasury, European Treasury, Capital Measurement Unit has the responsibility to apply appropriate techniques of calculation and to monitor any changes of the regulation. This team is constantly improving the data quality and fine-tuning the calculation process.

The following approaches are applied to produce the COREP reporting for the jurisdictions of RBC Investor Services Bank S.A. where it is expected:

- Standardised approach for credit risk;
- Standardised measurement approach for market risk and;
- Standardised approach for operational risk.

RBCIS regulatory capital is only composed of Tier 1 high quality capital. Therefore, during 2019, the regulatory capital was composed of share capital, retained earnings and reserves created by appropriations of retained earnings. The book value of intangible assets is deducted from the Common Equity Tier 1 capital. Current year profit is not taken into account for the determination of regulatory capital.

In line with EBA guideline 2016/11 version 2, further information on capital adequacy is available in Pillar III disclosure report published on the internet site of the Bank.

Capital ratio under Basel III requirements

EUR'000	Oct 31, 2019	Oct 31, 2018
Tier 1 Capital	1,264,705	1,197,487
Total Deduction Tier 1	(152,204)	(154,642)
Total Tier 1 Capital	**1,112,501**	**1,042,845**
Eligible own funds	**1,112,504**	**1,042,845**
Capital requirements:		
Credit risk and counterparty risk	278,862	316,329
Operational risk	65,115	60,889
Market risk:		
Interest rate risk	6,165	10,880
Foreign exchange risk	3,007	2,581
Total capital requirements	353,149	390,679

$$\frac{\textbf{Eligible own funds}}{\textbf{Capital requirements} \times 12.5} \qquad \textbf{25.20\%} \qquad \textbf{21.35\%}$$

The Group has complied with all the capital requirements imposed by ECB/CSSF during all periods presented.

31. Risk management (cont'd)

Portfolio exposures by Risk Weights under Standard Approach

October 31, 2019 Portfolios	Total Exposure after CRM (1) (amount in EUR'000)	Weighted Avg. RW (2) (%)
Banking Institutions	8,401,212	20.75
Central Government, supranational and multilateral development Banks	8,727,025	0.15
Corporate	2,651,548	100.34
Other	292,175	62.35
Total	20,071,959	18.00

October 31, 2018 Portfolios	Total Exposure after CRM (1) (amount in EUR'000)	Weighted Avg. RW (2) (%)
Banking Institutions	7,860,648	21.37
Central Government, supranational and multilateral development Banks	8,808,824	97.63
Covered Bond	-	-
Corporate	3,912,298	0.05
Other	181,157	100.00
Total	20,762,927	20.52

Large exposure exemption towards RBC

As of June 25, 2012, the Group received the agreement by the Commission de Surveillance du Secteur Financier (CSSF) of the large exposure exemption towards Royal Bank of Canada and towards other subsidiaries of Royal Bank of Canada.

32. Leasing

RBC Investor Services as lessor

The Group is not active in leasing as a lessor.

RBC Investor Services as lessee

a. Finance Lease

The Group classified leases that transfer substantially all of the risks and rewards of ownership as finance leases. The leased assets were measured initially at an amount equal to the lower of their fair value and the present value of the minimum lease payments Minimum lease payments were the payments over the lease terms that the lessee was required to make, excluding contingent rent.

Finance Lease Assets

EUR'000	Oct 31, 2019	Oct 31, 2018
Opening balance	4,601	-
Additions to right-of-use assets	78	5,367
Depreciation charge for the year	(2,342)	(766)
Closing Balance	2,337	4,601

The present value of finance lease liabilities

EUR'000	Oct 31, 2019	Oct 31, 2018
Not later than 1 year	1,584	2,389
Later than 1 year and not later than 5 years	691	1,783
Total	2,275	4,172

32. Leasing (cont'd)

b. Operating Leases

Future net minimum lease payments under non cancellable operating leases, essentially for buildings and computer equipment, are as follows:

EUR'000	Oct 31, 2019	Oct 31, 2018
Not later than 1 year	15,881	17,174
Later than 1 year and not later than 5 years	47,250	44,051
Later than 5 years	44,492	51,402
Total	107,623	112,627

Amount of future minimum sublease payments expected to be received under non-cancellable subleases at the balance sheet date:

EUR'000	Oct 31, 2019	Oct 31, 2018
Amount of future minimum sublease payments expected to be received under non-cancellable subleases	(404)	(633)
Total	(404)	(633)

Lease payments recognised in the consolidated profit or loss during the year:

		For the year ended
EUR'000	Oct 31, 2019	Oct 31, 2018
Minimum lease payments (1)	18,783	18,931
Sublease payment	(239)	-
Total	18,544	18,931

(1) Relates to rental properties, office equipment and information technology lease costs

There were no contingent rents recognised in the consolidated income statement during 2019 and 2018.

33. Related party disclosures

Related parties include the parent bank, Royal Bank of Canada (RBC), associated companies, post-employment benefit plans for the benefit of the Group's employees, key management personnel, the Board of Directors of RBC (Directors), close family members of key management personnel and Directors, and entities which are, directly or indirectly, controlled by, jointly controlled by or significantly influenced by key management personnel, Directors or their close family members.

The Group implemented a new transfer pricing methodology based upon Residual Profit Split Model (RPSM) effective November 2018. The financial impact of RPSM is recorded in the Statement of Profit or Loss.

a. Related party transactions

EUR'000	Oct 31, 2019	Oct 31,2018
	Related parties (1)	Related parties (1)
Balance sheet		
Loans and receivables	5,954,303	6,421,728
Derivatives (assets)	322,824	87,279
Other assets	74,605	24,660
Borrowings and deposits	231,415	639,182
Derivatives (liabilities)	142,936	325,540
Other liabilities	43,324	37,648
Profit or loss		
Interest income	91,815	61,691
Interest expense	(6,495)	(4,824)
Fee and commission income	21,117	25,212
Fee and commission expense	(678)	(4,889)
Net gain on investments	-	-
Net income from financial instruments at fair value through profit or loss	418,354	(58,300)
Other income and expense	6,380	(18,422)
General and administrative expenses	(24,710)	(20,409)
Off balance-sheet		
Derivatives/Spot transactions to receive (2)	45,604,601	39,023,852
Derivatives/Spot transactions to deliver (2)	45,422,908	39,308,701
Derivatives/Spot transactions to receive highest month-end notional during year (2)	49,837,725	39,294,504
Derivatives/Spot transactions to deliver highest month-end notional during year (2)	50,042,876	39,308,701
Loans to be delivered	1,078,846	1,058,388
Collateral received	-	6,351
Custody assets entrusted to	25,230,619	24,299,831

Related parties include parties having the ability to control, jointly control or significantly influence the Group. There were no transactions with the immediate shareholder of the Group, Royal Bank Holding Inc.

(1) This represents transactions with related parties in the RBC Group, other than the immediate shareholder.
(2) The Group entered into foreign exchange derivatives and spot foreign exchange contracts with RBC London Branch to facilitate client transactions. The disclosure of notional amounts as of the end of the year and the highest month-end notional amount during the year is considered the most meaningful information to represent transactions during the year.

All transactions with related parties have been dealt on an arms' length basis.

Transactions linked to post-employment defined benefit plans were entirely carried out with counterparties outside the Group.

33. Related party disclosures (cont'd)

a. Key management compensation

Key management personnel and Directors

Key management personnel are defined as those persons having authority and responsibility for planning, directing and controlling the activities of RBC and its subsidiaries, directly or indirectly. They include the senior members of RBC called the Group Executive (GE). The Group Executive is comprised of the President and Chief Executive Officer and individuals that report directly to him, including the Chief Administrative Officer, Chief Financial Officer, Chief Human Resources Officer, Group Chief Risk Officer, Chief Strategy & Corporate Development Officer, and Group Heads for Wealth Management and Insurance, Capital Markets and Investor & Treasury Services, Technology & Operations, and Personal & Commercial Banking. The GE is ultimately responsible for all material decisions of RBC. The GE is also responsible for establishing the overall strategic direction of the RBC group and, in that regard, sets global parameters for the RBC group within which the board of directors and management of the Company exercise their respective discretion to make decisions concerning the strategic direction and day-to-day management of the Company. The Directors of RBC do not plan, direct, or control the activities of RBCIS; they oversee the management of the business and provide stewardship.

Compensation of key management personnel and Directors

The following tables present the compensation paid to key management personnel and Directors.

	For the year ended (1)	
EUR million	Oct 31, 2019	Oct 31, 2018
Salaries and other short-term employee benefits (2)	18	23
Post-employment benefits (3)	1	1
Share based payments	30	28
Total	**49**	**52**

(1) Key management personnel and RBC Directors received their remuneration from RBC. No direct compensation is charged to the subsidiary by RBC in respect of the services provided.

(2) Includes the portion of the annual variable short-term incentive bonus that certain executives elected to receive in the form of deferred share units. RBC Directors receive retainers but do not receive salaries and other short-term employee benefits.

(3) RBC Directors do not receive post-employment benefits.

Stock options, stock awards and shares held by key management personnel, Directors and their close family members

	Oct 31, 2019		Oct 31, 2018	
	Nr. of units held	Value EUR million	Nr. of units held	Value EUR million
Stock options (1)	2,372,714	35	2,154,835	25
Other non-option stock base awards (1)	1,481,096	107	1,440,002	93
RBC common and preferred shares	463,362	33	453,316	29
Total	4,317,172	175	4,048,153	147

(1) Directors do not receive stock options or any other non-option stock based awards.

Transactions, arrangements and agreements involving key management personnel, Directors and their close family members.

In the normal course of business, RBC provides certain banking services to key management personnel, Directors, and their close family members. These transactions were made on substantially the same terms, including interest rates and security, as for comparable transactions with persons of a similar standing and did not involve more than the normal risk of repayment or present other unfavourable features.

As at October 31, 2019, total loans to key management personnel, RBC Directors and their close family members were EUR 5 million (October 31, 2018 – EUR 7 million). RBC had no stage 3 allowance or provision for credit losses relating to these loans as at and for the years ended October 31, 2019 and October 31, 2018. No guarantees, pledges or commitments had been given to key management personnel, RBC Directors or their close family member.

34. List of subsidiaries

Fully consolidated subsidiaries

Name	Country of incorporation	Percentage of capital held
RBC Investor Services Belgium S.A.	Belgium	100.00
RBC Investor Services Bank France S.A.	France	100.00
RBC Investor Services France S.A.	France	100.00
RBC Investor Services Holding (Hong Kong) Limited	Hong Kong	80.00
RBC Corporate Services Hong Kong Limited	Hong Kong	80.00
RBC Investor Services Trust Hong Kong Limited	Hong Kong	80.00
RBC Investor Services Ireland Limited	Ireland	100.00
RBC Investor Services (Malaysia) Sdn Bhd	Malaysia	100.00
RBC Investor Services Trust Singapore Limited	Singapore	100.00
RBC Investor Services UK LLP	United Kingdom	66.67

Associated companies accounted for by the equity method

The Bank has no companies accounted for by the equity method

35. Recovery and settlement of on-balance sheet assets and liabilities

The table below presents an analysis of assets and liabilities recorded on the consolidated balance sheet by amounts to be recovered or settled within one year and after one year, as at the balance sheet date, based on contractual maturities and certain other assumptions outlined in the footnotes below. The Group manages the liquidity risk of various products based on historical behavioural patterns that are often not aligned with contractual maturities. Amounts to be recovered or settled within one year, as presented below, may not be reflective of management's long-term view of the liquidity profile of certain balance sheet categories.

EUR'000			Oct 31, 2019			Oct 31, 2018
	Within one year	After one year	Total	Within one year	After one year	Total
Assets						
Cash and balances with central banks (1)	8,708,420	-	8,708,420	8,579,486	-	8,579,486
Loans and advances due from banks	6,132,685	100,112	6,232,797	6,775,312	50,112	6,825,424
Loans and advances to customers	899,508	40,615	940,123	1,299,079	263	1,299,342
Financial investments	1,409,099	36,172	1,445,271	718,950	161,358	880,308
Derivatives (2)	471,424	-	471,424	482,339	-	482,339
Current tax assets	8,525	-	8,525	1,147	-	1,147
Tangible assets	-	32,670	32,670	-	35,261	35,261
Goodwill and other intangible assets	-	152,150	152,150	-	154,642	154,642
Deferred tax assets	7,174	1,943	9,117	377	693	1,070
Other assets	216,738	5,967	222,705	190,167	2,355	192,522
Total assets	**17,853,573**	**369,629**	**18,223,202**	**18,046,857**	**404,684**	**18,451,541**
Liabilities						
Due to banks	316,459	-	316,459	710,671	-	710,671
Customer borrowings and deposits (3)	15,875,635	-	15,875,635	15,793,881	-	15,793,881
Derivatives (2)	474,038	-	474,038	437,109	-	437,109
Current tax liabilities	1,552	-	1,552	2,942	-	2,942
Provisions and other obligations	20,862	53,256	74,118	12,157	18,691	30,848
Deferred tax liabilities	555	31	586	65	2,376	2,441
Finance lease liability	1,584	691	2,275	2,640	2,224	4,864
Other liabilities	184,206	1,445	185,651	203,594	1,331	204,925
Total liabilities	**16,874,891**	**55,423**	**16,930,314**	**17,163,059**	**24,622**	**17,187,681**

35. Recovery and settlement of on-balance sheet assets and liabilities (cont'd)

(1) Cash and balances with central banks are assumed to be recovered within one year.
(2) Derivatives not designated in hedging relationships are presented as within one year as this best represents in most instances the short-term nature of the trading activities.
(3) Demand deposits and term deposits are presented as within one year due to their being repayable on demand or at short notice on a contractual basis.

36. Subsequent events

There have been no material events after the reporting period that would require disclosure or adjustment to the Oct 31, 2019 consolidated financial statements.

37. Exchange rates

		Oct 31, 2019		Oct 31, 2018	
Currencies		Spot rates	Average rates	Spot rates	Average rates
Australian dollar	AUD	1.6189750	1.6038373	1.5970139	1.5765438
Canadian dollar	CAD	1.4673601	1.4930515	1.4876590	1.5291547
Swiss franc	CHF	1.1011500	1.1171250	1.1384500	1.1572417
Danish krone	DKK	7.4701664	7.4651285	7.4611977	7.4498117
Pound sterling	GBP	0.8618797	0.8812395	0.8854488	0.8841245
Hong Kong dollar	HKD	8.7397078	8.8017616	8.8914391	9.3107731
Japanese yen	JPY	120.5032815	122.9013292	128.1364070	131.1138151
Malaysian ringgit	MYR	4.6594454	4.6528047	4.7439677	4.7755258
Norwegian krone	NOK	10.2431971	9.8209821	9.5400200	9.6291991
Swedish krone	SEK	10.7532438	10.5483494	10.3932093	10.2374527
Singapore dollar	SGD	1.5175519	1.5328258	1.5703446	1.5973358
US dollar	USD	1.1151500	1.1231458	1.1338000	1.1882583

The above spot rates have been applied in the translation of monetary items at the end of each reporting period. In addition. the above spot and average rates have been applied in the translation of foreign entities into the reporting currency.

38. Guarantees, commitments and other off-balance sheet arrangements

Regular way trades

EUR'000	Oct 31, 2019	Oct 31, 2018
Loans to be delivered and purchases of assets	2,493,607	3,449,013
Borrowings to be received and sales of assets	1,414,128	2,390,860

Guarantees

EUR'000	Oct 31, 2019	Oct 31, 2018
Guarantees given to banks	17,989	17,694
Guarantees given to customers	187	199

Collaterals

EUR'000	Oct 31, 2019	Oct 31, 2018
Financial instruments given as collateral (1)	357,691	325,176
Financial instruments received as collateral (2)	-	6,351

(1) Securities pledged as collateral are provided to clearing houses.
(2) The amounts received represent collateral received to secure derivatives transactions.

38. Guarantees, commitments and other off-balance sheet arrangements (cont'd)

Loan commitments

EUR'000	Oct 31, 2019	Oct 31, 2018
Unused lines granted to customers (1)	709,862	763,658

(1) Committed credit facility

Other commitments

EUR'000	Oct 31, 2019	Oct 31, 2018
Banking activity - Commitments given	-	32,055

In 2019 and 2018, the amounts above represent commitments given in the context of fiduciary activity.

Assets under administration (AUA)

EUR'000	Oct 31, 2019	Oct 31, 2018
Assets under administration (rounded)	1,105,466,000	1,107,325,000

39. Profit and loss items by country

EUR'000			Oct 31, 2019
	Net operating revenue (1)	Profit before income tax (1)	Income tax
Members of the European Union			
Luxembourg	335,921	36,461	(2,573)
Ireland	30,400	5,471	(832)
Italy	23,315	916	(690)
France	28,707	(423)	5,883
UK	676	16	(10)
Belgium	5,500	190	(136)
Rest of Europe			
Switzerland	8,750	617	(136)
Asia			
Hong Kong	13,921	2,578	(506)
Singapore	4,360	274	(61)
Malaysia	43,065	1,855	785
Americas			
United States of America	1,885	272	(182)
Total	**496,500**	**48,227**	**1,542**

EUR'000			Oct 31, 2018
	Net operating revenue (1)	Profit before income tax (1)	Income tax
Members of the European Union			
Luxembourg	326,761	57,069	(6,291)
Ireland	68,226	46,822	(6,198)
Italy	28,248	4,986	(1,760)
France	20,751	(3,972)	-
UK	515	(241)	60
Belgium	7,932	3,367	(1,179)
Rest of Europe			
Switzerland	11,469	3,476	(766)
Asia			
Hong Kong	18,576	6,318	(957)
Singapore	4,335	718	(120)
Malaysia	38,547	1,373	(10)
Americas			
United States of America	1,132	54	47
Total	**526,492**	**119,970**	**(17,174)**

(1) Before intragroup eliminations.

40. Other notes

Deposit Guarantee Fund

Directive 2014/49/EU of the European Parliament and of the Council of April 16. 2014 has established the rules governing Deposit Guarantee Schemes (DGSs) to eliminate differences between Member States thereby strengthening the stability of the banking system and the protection of depositors.

The Directive encompasses the harmonisation of the funding mechanisms of DGSs. the introduction of risk based contributions and the harmonisation of the scope of products and depositors covered. The Directive has set the harmonised coverage level at €100.000 per eligible depositor with a higher protection permitted for temporary high balances. Eligible depositors exclude. amongst others. deposits placed by other credit institutions. financial institutions. investment firms. insurance and reinsurance undertakings. collective investment undertakings. pension and retirement funds and deposits by public authorities. The repayment period. in case of failure. is also reduced to a harmonised level of seven days. The Directive requires an amount equivalent to 0.8% of covered deposits to be paid into the DGS over a period of years. with this level being reached by 2018. Other requirements will also transition in over a period of time.

Within Luxembourg the AGDL (“Association pour la Garantie des Dépôts Luxembourg”) ceased to exist and was replaced by the Luxembourg DGS. The Bill transposing the Directive into Luxembourg Law was approved on December 17. 2015. The Law envisages annual contributions to reach the target level of 0.8% of covered deposits by 2018 with an additional 0.8% buffer to be contributed within 8 years. The Luxembourg DGS covers clients of RBCIS Bank Luxembourg including European branches. DGSs will also be separately funded in France to cover eligible clients’ deposits of those RBCIS subsidiaries.

RBC Investor Services is a member of the Luxembourg DGS. At present the vast majority of the Group’s clients are non-eligible depositors.

Resolution Fund

Directive 2014/59/EU of the European Parliament and of the Council of May 15. 2014 established a framework for the recovery and resolution of credit institutions and investment firms (“BRRD”). The BRRD provides comprehensive measures that would enable national authorities to intervene in a troubled institution at a sufficient early stage. thereby preserving financial stability. The Directive requires that each participating Member State establish a national resolution authority. overseen by the Single Resolution Board.

The BRRD requires that a Resolution Plan be prepared for all institutions in scope that defines the preferred resolution strategy for each institution. The Resolution Plan will be drawn up by the Single Resolution Board and National Resolution Authorities. for Luxembourg this is the Commission de Surveillance du Secteur Financier (“CSSF”). based on analysis of data provided by credit institutions within participating Member States. and will be subject to an annual update. The National Resolution Authority will remain largely independently responsible for the smaller and less significant credit institutions. For those under the supervision of the Single Supervisory Board. as is the case for RBC Investor Services. the Single Resolution Board will be responsible for the resolution plans. Resolution tools that will be available to the resolution authorities include bail-in of shareholders and creditors. sale of business. bridge institution and asset separation.

The financing of such resolutions would be borne by the banking sector. through Resolution Funds. These will be funded by annual contributions by credit institutions to reach the target of 1% of covered deposits by 2024. The contributions will be based on the relative proportion of total liabilities. less own funds. covered deposits. deductions & derivative adjustments. adjusted for relative risk factors. The 2016 contribution was based at a national level and from 2017 onwards the contributions will be based at the participating Member State level.

The Bill transposing the Directive into Luxembourg Law. was approved on December 17. 2015.

Interbank Offered Rate (IBOR)

IBOR is the most widely referenced interest benchmark rate across the globe for derivatives. bonds, loans and other floating rate instruments; However, there is a regulator-led push to transition the market from IBOR to alternative risk-free. or nearly risk-free. rates that are based on actual overnight transactions. The main accelerator for the change has been the U.K. Financial Conduct Authority’s (FCA) statement that after 2021. the FCA will no longer persuade or compel banks to make the submissions required to calculate IBOR. As a result. U.K. and U.S. regulators have warned market participants they will need to be prepared for IBOR to be discontinued at the end of 2021. The initial assessment of potential changes in IBOR benchmark has been carried out and the Bank expects no impact on the financial statements as at. As the transition date of benchmark rates varies according to geographical region, further assessment is being carried out by RBCIS.

RBC Investor & Treasury Services

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