Morgan Stanley International Limited Group

Pillar 3 Regulatory Disclosures Report

As at 31 December 2019

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1. Overview and Key Metrics

The principal activity of Morgan Stanley International Limited ("MSI") together with its subsidiaries (the "MSI Group") is the provision of financial services to corporations, governments and financial institutions. There have not been any significant changes in the MSI Group's principal activities during 2019 and no significant change is expected.

As at 31 December 2019, the following entities within the MSI Group were authorised by the Prudential Regulation Authority ("PRA") and regulated by the PRA and Financial Conduct Authority ("FCA"):

- Morgan Stanley & Co. International plc ("MSIP")
- Morgan Stanley Bank International Limited ("MSBIL")

The following entities within the MSI Group form the MSIM sub-consolidated group ("MSIM Group") and were authorised and regulated by the FCA:

- Morgan Stanley Investment Management Limited ("MSIM")
- Morgan Stanley Investment Management (ACD) Limited ("MSIM ACD")

The Pillar 3 disclosures of the MSI Group as at 31 December 2019 are prepared on the basis of the consolidated MSI Group. In addition, certain disclosures are provided for MSIP and MSIM Group.

Key Metrics

Table 1: Key metrics
$MM

MSI Group[1]	Q4'19	Q3'19	Q2'19	Q1'19	Q4'18
Common Equity Tier 1 Capital	19,734	18,815	19,072	18,898	18,667
Additional Tier 1 Capital	3,500	3,500	3,500	3,500	3,500
Tier 1 Capital	**23,234**	**22,315**	**22,572**	**22,398**	**22,167**
Tier 2 Capital	**5,383**	**5,358**	**5,369**	**5,376**	**5,370**
Total Own Funds	**28,617**	**27,673**	**27,941**	**27,774**	**27,537**
Risk Weighted Assets	137,333	137,019	132,222	130,495	130,963
Common Equity Tier 1 Ratio	14.4%	13.7%	14.4%	14.5%	14.3%
Tier 1 Capital Ratio	16.9%	16.3%	17.1%	17.2%	16.9%
Total Capital Ratio	20.8%	20.2%	21.1%	21.3%	21.0%
Leverage Exposure	455,153	468,322	455,281	440,401	421,386
Leverage Ratio	5.1%	4.8%	5.0%	5.1%	5.3%
Liquidity Coverage Ratio	229%	228%	232%	227%	223%

MSIP[1]	Q4'19	Q3'19	Q2'19	Q1'19	Q4'18
Common Equity Tier 1 Capital	15,394	15,043	15,113	15,112	15,648
Additional Tier 1 Capital	3,500	3,500	3,500	3,500	3,500
Tier 1 Capital	**18,894**	**18,543**	**18,613**	**18,612**	**19,148**
Tier 2 Capital	**5,000**	**5,000**	**5,000**	**5,000**	**5,000**
Total Own Funds	**23,894**	**23,543**	**23,613**	**23,612**	**24,148**
Risk Weighted Assets	127,347	129,381	126,670	120,789	124,950
Common Equity Tier 1 Ratio	12.1%	11.6%	11.9%	12.5%	12.5%
Tier 1 Capital Ratio	14.8%	14.3%	14.7%	15.4%	15.3%
Total Capital Ratio	18.8%	18.2%	18.6%	19.5%	19.3%
Leverage Exposure	445,417	455,937	445,514	428,313	417,315
Leverage Ratio	4.2%	4.1%	4.2%	4.3%	4.6%

1. The MSI Group and MSIP are required to maintain a minimum ratio of Own Funds to Risk Weighted Assets ("RWAs"). As at 31 December 2019, the MSI Group and MSIP are in compliance with the PRA capital requirements.

Morgan Stanley Group

The MSI Group's ultimate parent undertaking and controlling entity is Morgan Stanley, a Delaware corporation which, together with its consolidated subsidiaries, form the Morgan Stanley Group. Morgan Stanley is a "Financial Holding Company" as defined by the Bank Holding Company Act of 1956, as amended, and is subject to regulation and oversight of the Board of Governors of the Federal Reserve System.

The MSI Group is a wholly owned sub-group of the Morgan Stanley Group. Whilst the MSI Group is a material sub-group, the information disclosed in this document is not necessarily indicative of the Morgan Stanley Group as a whole, nor is it comprehensively representative of the Morgan Stanley Group's activity in any particular region. Investors, stakeholders, creditors or other users seeking information on capital adequacy, liquidity, risk exposure and risk management policies should consult the public disclosures of Morgan Stanley Group.

Details of the latest Morgan Stanley Group Pillar 3 disclosure can be accessed at http://www.morganstanley.com/about-us-ir/pillar-us. Details of the latest Morgan Stanley Group Liquidity Coverage Ratio disclosure can be accessed at https://www.morganstanley.com/about-us-ir/lcr-disclosures-us.

Morgan Stanley is listed on the New York Stock Exchange and is required, by the US Securities and Exchange Commission, to file public disclosures, including Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q. These can be accessed at http://www.morganstanley.com/pub/content/msdotcom/en/about-us-ir/sec-filings.

2. Regulatory Frameworks

2.1 Regulatory Overview

The Basel Capital Accord provides a global regulatory framework for capital and liquidity. This was revised in 2010 following the financial crisis, through a number of reforms collectively known as Basel III. The revised Basel Capital Accord has been implemented in the European Union ("EU") via the Capital Requirements Directive ("CRD") and the Capital Requirements Regulation ("CRR") (collectively known as "CRD IV"). These new requirements took effect from 1 January 2014.

The framework consists of three "Pillars":

- Pillar 1 – Minimum capital requirements: defines rules for the calculation of credit, market, operational and liquidity risk;
- Pillar 2 – Supervisory review process: including a requirement for firms to undertake an Internal Capital Adequacy Assessment ("ICAAP") and Internal Liquidity Adequacy Assessment ("ILAAP");
- Pillar 3 – Market discipline: requires expanded disclosures to allow investors and other market participants to understand capital and liquidity adequacy, particular risk exposures and risk management processes of individual firms.

This document represents the annual public Pillar 3 qualitative and quantitative disclosures required by CRD IV in relation to the MSI Group, as at 31 December 2019. The remuneration disclosure is published separately and can be found at https://www.morganstanley.com/about-us-ir/pillar-uk.html.

Pillar 3 Disclosure

MSI Group Pillar 3 disclosures are prepared in accordance with the requirements of Part Eight of the CRR. For certain disclosures, these requirements are further detailed through the European Banking Authority ("EBA") Regulatory Technical Standards ("RTS") and Implementing Technical Standards ("ITS") which include a number of common templates. Where applicable, these templates are used within this disclosure.

2.2 Regulatory Development

Basel Committee on Banking Supervision ("BCBS") – finalizing Basel III reforms

In December 2017, the BCBS released the final part of its Basel III reform package. The key amendments provide updates to the standardised measures for calculating capital requirements and include an RWA floor, calculated at 72.5% of total standardised RWA.

In January 2019, the BCBS published its revised final standard on the minimum capital requirements for market risk, also known as the Fundamental Review of the Trading Book ("FRTB"). The new regime:

- Clarifies the boundary between the banking book and trading book;
- Provides capital requirements for non-modellable risk factors;
- Introduces an internal models approach that uses expected shortfall methods; and
- Establishes a more risk-sensitive standardised approach that acts as a fallback for the internal models method

Given the above proposals will need to be transposed into national/EU law, the timing and impact of the final outcome remains uncertain.

Amendments to the CRR

In June 2019, the European Commission published the final rules, known as CRD V and CRR II, that amend the existing prudential regime (CRD IV and CRR), and the Bank Recovery and Resolution Directive ("BRRD"). These rules implement parts of the Basel III reform package finalised before December 2017.

The CRD V/CRR II package includes: Total Loss-Absorbing Capacity ("TLAC"), FRTB, Standardised Approach to Counterparty Credit Risk ("SA-CRR"), Net Stable Funding Ratio ("NSFR"), revised leverage ratio, revised Large

Exposure Framework, Intermediate Parent Undertaking ("IPU") requirement, and revised Pillar 3 disclosure requirements.

Final rules are effective 27 June 2019; however, implementation dates are staggered over a four year period, with TLAC applying from 27 June 2019 and the majority of new requirements applying from 28 June 2021.

Investment Firm Regulation / Directive

In December 2019, the European Commission published the Investment Firm Regulation ("IFR") and Investment Firm Directive ("IFD") that introduce a tailored capital adequacy and liquidity framework for EU investment firms based on their size and type of business activity, and make changes to governance and remuneration requirements. Large systemic investment firms remain subject to existing requirements based on the CRR and CRD, whilst the new regime applies to other investment firms.

Final rules are effective 25 December 2019; however, implementation dates are staggered over an 18 month period, with the majority of the new requirements applying from 26 June 2021.

UK Withdrawal from the EU

On 31 January 2020, the United Kingdom (the "UK") withdrew from the European Union (the "EU") under the terms of a withdrawal agreement between the UK and the EU. The withdrawal agreement provides for a transition period to the end of December 2020, during which time the UK will continue to apply EU law as if it were a member state, and UK firms' passporting rights to provide financial services in EU jurisdictions will continue. Under the terms of the withdrawal agreement the UK and the EU may agree to an extension of the transition period for up to two years.

With respect to financial services, the withdrawal agreement provides that the UK and the EU will endeavour to conclude whether they will grant each other equivalence under European financial regulations. Equivalence would provide a degree of access to EU markets for UK financial firms such as the Company, although the extent and duration of such access remains subject to negotiation. If equivalence (or any alternative arrangement) is not agreed, the Morgan Stanley Group's UK licensed entities, including the Company, may be unable to provide regulated services in many EU jurisdictions from the end of December 2020.

Potential effects of the UK exit from the EU and potential mitigation actions may vary considerably depending on the nature of the future trading arrangements between the UK and the EU.

The Morgan Stanley Group has prepared its European operations to be able to do business with its clients in the EU regardless of whether or not equivalence (or an alternative arrangement for financial services) is granted. Changes have been made to European operations in an effort to ensure that the Morgan Stanley Group can continue to provide cross-border banking and investment and other services in EU member states from within the EU where necessary.

These changes include use of a new licenced investment firm, Morgan Stanley Europe S.E ("MSESE"), based in Germany, which is passported throughout the EU and serves EU-based clients where required; and the existing EU German licensed bank Morgan Stanley Bank AG ("MSBAG"), which will provide licensable banking activities where required. In addition, a new holding company for this structure has been incorporated, Morgan Stanley Europe Holding SE ("MSEHSE"). The Morgan Stanley Group will also serve EU clients out of branches of these entities in the EU and existing regulated entities in France and Spain as necessary.

This new operating model went live in the first quarter of 2019, with MSESE commencing cash securities and derivatives trading. The Company has taken steps to support the build out of this new operating model, including transferring employees to MSESE and migrating a significant number of clients during 2019. The Morgan Stanley Group is continuing to build out the capabilities of its EU entities. The Company has taken steps to prepare the transfer of its existing branch operations in The Netherlands and Poland to MSESE. In addition, the Morgan Stanley Group expects that further clients of the Company and activities currently transacted by the Company, including capital markets activities will move from the Company to MSESE. The extent and timing of these moves will depend on client preferences and on licencing rules, which in turn will depend on the form of any future trading agreement between the UK and the EU in relation to financial services.

Following the reorganisations mentioned, the Group's principal activity and risks remain unchanged and the majority of current profitability and balance sheet remain within the Group.

As a result of the political uncertainty described above, it is currently unclear what the final post-Brexit structure of European operations will be for the Morgan Stanley Group overall. Given the potential negative disruption to regional and global financial markets, results of Morgan Stanley's operations and business prospects could be negatively affected.

Emergence of COVID-19

The coronavirus disease (COVID-19) pandemic has, and will likely continue to, severely impact global economic conditions, resulting in substantial volatility in the global financial markets, increased unemployment, and operational challenges such as the temporary closure of businesses, sheltering-in-place directives and increased remote work protocols. Governments and central banks around the world have reacted to the economic crisis caused by the pandemic by implementing stimulus and liquidity programs and cutting interest rates, though it is unclear whether these or future actions will be successful in countering the economic disruption. If the pandemic is prolonged or the actions of governments and central banks are unsuccessful, the adverse impact on the global economy will deepen, and the future results of operations and financial condition of Morgan Stanley and the Group will be adversely affected.

Since the emergence of the pandemic each business segment of Morgan Stanley and the business of the Group has been impacted and such impact will likely be greater in the future if conditions persist (e.g., decline and volatility of asset prices, reduction in interest rates, widening of credit spreads, credit deterioration, market volatility and reduced investment banking advisory activity). Operationally, although Morgan Stanley and the Group have initiated a work remotely protocol and restricted business travel and have not experienced any significant loss of operational capability, if significant portions of Morgan Stanley's or the Group's workforce, including key personnel, are unable to work effectively because of illness, government actions, or other restrictions in connection with the pandemic, the business impact of the pandemic could be exacerbated.

While the emergence of the COVID-19 pandemic has negatively impacted the results of Morgan Stanley, the extent to which it, and the related global economic crisis, affects the businesses, the results of operations and financial condition, as well as the regulatory capital and liquidity ratios of Morgan Stanley and the Company, will depend on future developments that are highly uncertain and cannot be predicted, including the scope and duration of the pandemic and any recovery period, future actions taken by governmental authorities, central banks and other third parties in response to the pandemic, and the effects on our customers, counterparties, employees and third-party service providers. Morgan Stanley and the Group continue to use their Risk Management framework, including Stress testing, to understand the attendant uncertainties and their potential impact on our operations, liquidity and capital. Morgan Stanley is maintaining an active dialogue with all its relevant global regulators during this period.

3. Risk Management

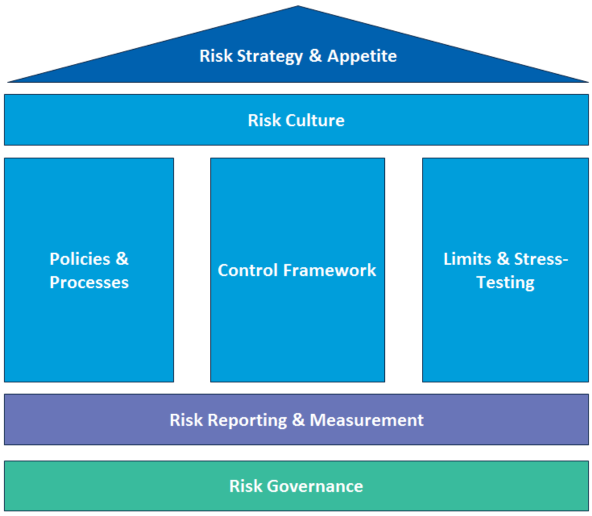
The quantitative disclosures in this document are calculated with reference to regulatory methodologies set out in CRD IV and are not necessarily the primary exposure measures used by management.

The business strategy acts as a key driver for the MSI Group's business model, which in turn drives the risk strategy and the consequent risk profile of the MSI Group. Business strategy and risk assessment are considered and aligned as part of the annual strategic review and subsequent planning process, or more frequently if necessary.

Risk Management Framework

Risk of loss is an inevitable consequence of the MSI Group's businesses activities and effective risk management is vital to the MSI Group's success. The MSI Group Risk Management Framework ("Framework") is embedded and operating appropriately. The Framework includes a well-defined, comprehensive risk governance structure with appropriate risk management expertise, including processes for periodically assessing its efficacy. The key elements of the Framework are outlined in Figure 1.

Figure 1: Risk Management Framework



Risk Strategy and Appetite

The MSI Group Risk Appetite Statement articulates the aggregate level and type of risk that Morgan Stanley is willing to accept in order to execute its business strategy and is set to be within the resource capacity constraints.

The Risk Appetite Statement includes risks that have both qualitative and quantitative elements such as market, credit, operational and liquidity risk, and risks that are qualitative across risk types including reputational, conduct and model risk, further details for which are set out in this document.

The combination of qualitative risk appetite and tolerance statements and quantitative limits aims to ensure that Morgan Stanley's businesses are carried out in line with the risk appetite approved by the MSI Board, and to protect Morgan Stanley's reputation in both normal and stressed environments.

The MSI Group risk appetite is set by the MSI Board in conjunction with its business strategy and in consideration of its capital & liquidity resource adequacy framework.

The cornerstone of the MSI Group's risk appetite is the execution of risk adjusted returns through prudent risk-taking that protects the MSI Group's capital base and franchise. The Firm acknowledges that certain risks, such as market, credit, liquidity, valuation, leverage and earnings risks are inherent to its business and taken in order to generate appropriate positive risk adjusted returns for its shareholders. Operational, reputational, conduct and model risks primarily arise from the provision of services and business processes. MSI Group does not have any appetite for transactions, business practices, clients or counterparties that could give rise to potentially significant franchise risk and jeopardise the Firm's reputation.

The Risk Appetite Framework defines a comprehensive approach to monitor, assess and report on the risk profiles of the MSI Group against the relevant risk limits and tolerances with regular reporting to the Risk Committees and escalation to the Boards, as appropriate. The reporting includes quantitative measurements and qualitative assessments that enable a comparison of the MSI Group's current risk profile against risk limits and risk tolerances where applicable.

Valuation risk represents the possibility that a valuation estimate of a position would differ from the price in a close-out transaction due to uncertainty around the actual price that could be obtained. The MSI Group sets valuation risk appetite to ensure sufficient capital to cover positions subject to valuation uncertainty. Valuation models are subject to annual recertification to reaffirm that the model is operating as intended and to determine whether the existing validation activities are sufficient.

Leverage risk is defined as the risk resulting from an institution's vulnerability due to leverage or contingent leverage that may require unintended corrective measures to its business plan, including distressed selling of assets which might result in losses or in valuation adjustments to its remaining assets. The MSI Group sets the leverage risk appetite to minimise the risk of excessive leverage under both normal and stressed conditions.

Earnings at Risk is defined as the aim to deliver a sustainable business model that allows for a strategic presence in its core businesses/core countries, targeting stable earnings, accumulation of profits allowing for capital accretion and expense efficiency. The Risk Identification Framework defines the responsibilities for the identification and evaluation of risks that present themselves under normal and stressed conditions, including earnings at risk, strategic, and reputation risks.

Conduct risk is defined as the risk of an adverse impact on clients, markets or the Firm's reputation as a consequence of the conduct of the Firm and/or its employees. The Conduct Risk Framework sets out a consistent and integrated approach for the identification, assessment and management of conduct risks, with oversight and escalation from the EMEA Conduct Risk Committee.

Reputational risk, sometimes referred to as franchise risk, describes the potential risks associated with the way in which the MSI Group conducts its business and the perception of the MSI Group by external parties including our shareholders, clients, regulators and the public. The MSI Group has policies in place to identify, escalate and report any situation which may pose potential franchise risk, which is overseen by the EMEA Franchise Committee. The MSI Group has no risk appetite for conduct risk or reputational risk. It acknowledges, however, that conduct risk and reputational risk remains inherent in doing business and thus cannot be entirely eliminated.

Model risk refers to the potential for adverse consequences from decisions based on incorrect or misused model outputs. Model risk can lead to financial loss, poor business and strategic decision making, or damage to a Firm's reputation. The MSI Group sets its model risk appetite to a level of model risk that after considering the MSI Group's model governance and control processes does not pose a material risk to the MSI Group's capital adequacy, reputation and regulatory standing. The MSI Group has policies and procedures in place to establish the standards, principles, governance processes and roles and responsibilities for sound model risk management for the MSI Group including but not limited to the independent validation of models to verify that the models are performing as expected and in line with their design objectives and ongoing performance monitoring such as backtesting, benchmarking, sensitivity analysis and outcomes analysis.

Risk Culture

The MSI Group’s risk management culture is rooted in five key principles: integrity, comprehensiveness, independence, accountability, and transparency.

The MSI Group has a risk culture that encourages open dialogue, effective challenge, escalation and reporting of risk to senior management, the MSI Risk Committee, the MSI Board and the MSI Group’s regulators, as well as external disclosures of risk matters. Developing the MSI Group’s risk culture is a continuous process, and builds upon the Firm’s commitment to “doing the right thing” and its values that managing risk is each employee’s responsibility.

The senior management practices of the MSI Group rewards and enables individuals to make appropriate risk decisions. The MSI Group’s Risk Appetite Statement is embedded in the MSI Group’s risk culture and linked to its short-term and long-term strategic, capital and financial plans, as well as compensation programs.

The EMEA Compliance Department is responsible for promoting a strong culture of compliance; defining an operating model and setting standards for compliance risk management; identifying, measuring, mitigating and reporting on compliance risks; maintaining a risk-based program for monitoring and testing compliance risk management providing management and staff with advice, guidance (including policies and, where appropriate, procedures) and training concerning the laws, regulations and policies associated with their responsibilities; managing a firmwide compliance risk reporting framework; reviewing new products and business initiatives; and supporting and facilitating the framework for managing significant communications with regulators and regulatory relationships. This is reinforced by the Code of Conduct which sets out the high standards of conduct and ethical behaviour expected from all employees.

The EMEA Compliance Department is also responsible for the design and development of an overall EMEA Conduct Risk Framework and for the execution of compliance’s related responsibilities as set out in the EMEA & MSI Group Conduct Risk Management Supplement, which is a supplement to the Global Conduct Risk Management Policy. The EMEA Conduct Risk Incident Procedure sets out the procedure for identifying, escalating, reviewing and reporting material conduct incidents and reporting and handling escalated concerns.

Within EMEA Risk Management, each risk type has a procedure which sets out the notification levels and process for breaches to risk limits and thresholds, including escalation process.

Risk Policies and Processes

Morgan Stanley has a number of well-established policies and processes which set out the standards that govern the identification, assessment, monitoring, management and mitigation of the various types of risk involved in its business activities. The MSI Group has implemented specific risk management policies to address local business and regulatory requirements where appropriate. These policies are approved by the MSI Board and reviewed annually.

The MSI Group Large Transactions Approval Policy establishes the approval process that employees must adhere to, prior to booking a Large Transaction, and supports EMEA Senior Management oversight of Large Transactions. Large Transactions are defined as transactions that are anticipated to utilise resources in excess of defined thresholds. Thresholds relate to RWAs, leverage exposure, Liquidity Coverage Ratio (“LCR”), unsecured funding and secured funding. The policy also establishes the monitoring process for Large Transaction requests, approvals, policy and/or threshold violations, transaction executions and approval expiries. For each trade, or related trades, that meet defined thresholds, EMEA Senior Management must approve prior to trade execution; they will assess approval based on factors including resource capacity on the entity, return on capital and return on leveraged assets.

Control Framework

The MSI Group operates a control framework consistent with the "Three Lines of Defence" model, with the business unit and support functions (such as Operations, Technology etc.) being the first line, Independent Risk Management being the second line and Internal Audit Department ("IAD") being the third line.

Business units and support functions are accountable for risks associated with their activities and are responsible for managing these risks in accordance with the MSI Group's risk appetite and its principles. They establish controls to comply with the policies and procedures and ensure compliance with applicable laws, rules and regulations, for every legal entity in the MSI Group and entities which may book exposures onto MSI Group.

The EMEA Legal Department reports to the EMEA General Counsel and provides legal and regulatory advice to protect the MSI Group's financial well-being and reputation, and to assist the businesses and operations of the MSI Group to understand legal risk and to comply with relevant financial services-related laws, regulations, firm policies and standards.

Second Line independent oversight and challenge is provided by the EMEA Risk Division and EMEA Compliance Department.

The Independent Risk Management identify, measure, monitor and control risks. It also provides governance and oversight of activities carried out by the business units. Independent Risk Management includes, for example, functions performed by the EMEA Risk Division, EMEA Compliance Department and EMEA Global Financial Crimes Department, as well as certain functions performed by the Valuation Control Department.

The EMEA Chief Risk Officer oversees the EMEA Risk Division, and is a member of the MSI Board. The EMEA Chief Executive Officer chairs the EMEA Risk Committee. EMEA Risk Division is independent of the business units and support functions and assists senior management and the EMEA Risk Committee in monitoring and managing risk through a number of control processes.

The EMEA Compliance Department is managed by the EMEA Head of Compliance, who ultimately reports to the Group Chief Legal Officer. The EMEA Compliance Department maintains an enterprise-wide, independent compliance risk management program, under which the EMEA Compliance Department is responsible for promoting a strong culture of compliance.

The EMEA Internal Audit Department are the third line of defence, and are an independent source of assurance to the MSI Board on financial, operational, and compliance controls. IAD reports to the MSI Audit Committee and is independent of the business units and support and control functions and risk management. IAD independently verifies that the Risk Management Framework has been implemented as intended and is functioning effectively, including opining on the overall appropriateness and adequacy of the framework and the associated governance processes.

During 2019, there were no changes to the EMEA Heads of Risk Management, Compliance, Legal and IAD.

There are no planned material changes to the internal control framework or the risk management functions.

Limits & Tolerance Framework

The MSI Group's risk appetite is translated into a comprehensive suite of limits and tolerance frameworks across four primary areas: market risk, credit risk, operational risk and liquidity risk. Other risks that are monitored regularly include leverage risk, valuation risk, conduct risk, reputational risk, model risk and earnings at risk. The MSI Group maintains risk limits and tolerances at various levels of the governance structure to support linkages between the MSI Group's overall risk appetite and more granular risk-taking decisions and activities. Using a suite of tools, most notably limits, these risks are tracked, monitored and reported to the appropriate executive risk committees, MSI Risk Committee and the MSI Board. All risk limits are reviewed periodically as appropriate and at least annually.

MSI Board-level risk limits address the most important aggregations of risk, primarily through stress limits. Stress tests set the boundary for risk-taking activities relative to the MSI Group's risk capacity and are used to set risk limits and tolerances. Figure 2 outlines the MSI Group's Risk Limit Framework for specific risk areas.

The Framework is comprised of market and credit risk limits including aggregate macroeconomic stress scenarios and proprietary tail risk metric limits, quantitative loss tolerances for each of the top operational risks and liquidity sufficiency limits which are all set by the MSI Board. These are complemented by granular business line limits that are set by the in-business risk senior management for day-to-day risk management.

Figure 2: MSI Group Limit Framework

	Market Risk	Credit Risk	Operational Risk	Liquidity and Funding Risk
Risk Metrics and Limits	• MSI Group-wide macroeconomic scenario loss limits • Legal entity Value at Risk ("VaR") and exposure limits • Detailed risk exposure limits are allocated by desk / products	• MSI Group-wide macroeconomic scenario loss limits • MSI Group credit limits • Single name, country and industry credit limits	• Quantitative tolerances for each top operational risk and against an aggregate risk tolerance level	• Liquidity and parent support limits • Portfolio level liquidity and funding mix limits • Granular business area specific limits on liquidity and funding

Stress Testing

Stress testing is one of the MSI Group's principal risk management tools, used to identify and assess the impact of severe stresses on its portfolios. It informs a number of processes and associated decisions. It complements other MSI Group risk metrics by providing a clear and flexible approach to assessing the MSI Group's resilience in the face of various scenarios over a range of severities, relevant to current market conditions and forward looking macroeconomic views. Most notably, stress testing is used for:

- Risk Management: Identifying areas of potential vulnerabilities in the portfolio, measuring portfolio losses and concentrations as a basis for senior management to review portfolio-level risk and determine risk mitigation actions and set exposure limits.
- Capital and Liquidity Planning: Informing the proposed stressed capital and liquidity forecasts through severe but plausible stress tests.
- Strategy Planning: Identifying business model vulnerabilities through reverse stress testing and identifying the potential mitigating actions available as part of recovery planning.

The MSI Group Stress Testing Framework utilises a range of stress testing methodologies to identify and assess the MSI Group's resilience to different scenarios. These include business area and product single and multifactor stress tests, holistic forward looking stress tests supported by a macroeconomic narrative and extreme stress tests designed to test business model failure. Stress tests are performed in line with internal policy and external regulatory requirements with results reported to senior management on a frequent basis.

Risk Reporting and Measurement

The MSI Group has a suite of risk reporting across the main risk types highlighted above. The reporting includes quantitative measurements and qualitative assessments that enable a comparison of the MSI Group's risk profile against risk limits and risk tolerance statements. Reporting identifies matters for escalation and highlights emerging risks. Material risk issues are investigated and escalated where appropriate, as per the specific escalation procedures set down by the MSI Group. Escalation triggers have been articulated, with separate triggers for notification and further escalation including to the MSI Board where relevant. The EMEA Risk Management Division has constituted specific committees which provide senior management review of the risk reporting including stress testing and data quality information.

The risk reporting capabilities are supported by a well-controlled infrastructure, including Front Office risk systems and Risk Management systems. Key risk data are subject to several control assessments, including: self-assessments, attestations, independent validation, reconciliation and internal audit reviews.

Various policies and procedures are in place to support the systematic and regular review of risk management strategies inclusive of the risk frameworks covering independent identification, analysis, monitoring, reporting, and escalation of risks across the risk types. Policies are subject to MSI Board annual review and approval.

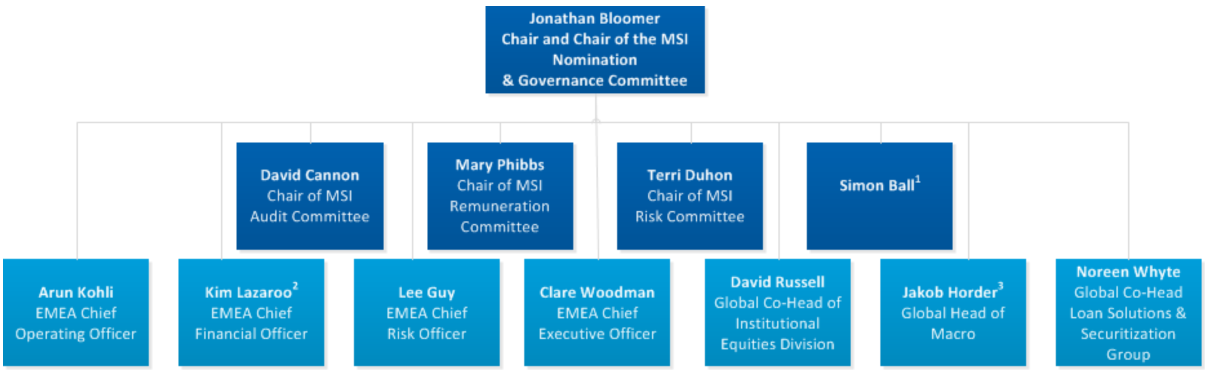
Risk Governance

The MSI Group has a comprehensive risk management governance framework which includes Board approved policies and a defined senior management risk oversight and escalation process. The MSI Board has overall responsibility for the business and affairs of the MSI Group and is ultimately responsible for MSI Group risk management. The MSI Risk Committee and EMEA Risk Committee assist and provide guidance to the MSI Board on the oversight of MSI Group risk management activities.

The MSI Board (and its committees) determines the strategy for the MSI Group and provides oversight of the key risk and control issues that the execution of the strategy presents, or is likely to present. The MSI Board has delegated authority to its Audit, Risk, Remuneration and Nomination and Governance committees. Each of the committees is comprised solely of non-executive directors. The MSI Board, through the MSI Risk Committee, is regularly informed of the MSI Group's risk profile and relevant trends impacting its risk profile.

As at 31 December 2019, the MSI Board was comprised of 12 directors (7 executive directors and 5 non-executive directors). Figure 3 provides an overview of the MSI Board of Directors.

Figure 3: MSI Board of Directors as at 31 December 2019

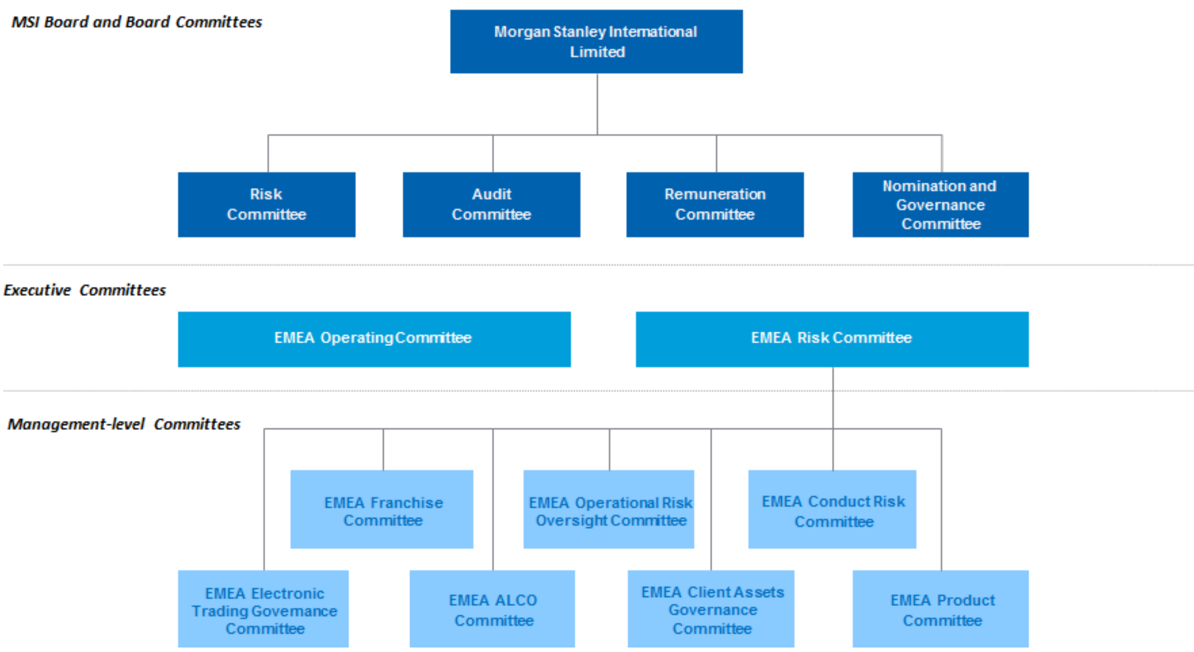


1. Simon Ball was appointed as a MSI non-executive director of MSI on 28 February 2019 and as Chair of the MSI Audit Committee in place of David Cannon from 29 January 2020.
2. Kim Lazaroo was appointed EMEA Chief Financial Officer and MSI executive director from 22 February 2019.
3. Jakob Horder is Global Head of Macro and has overall responsibility for EMEA Fixed Income.

For further details on the MSI Board members including detailed biographies and other directorships refer to Appendix I.

Day to day management of the MSI Group's business is delegated to executive management. The executive committees are the most senior MSI Group executive management committees and have responsibility for overseeing business performance, operations and risks identified in relation to the MSI Group. The management level committees support the executive committees in their oversight of specific areas of the MSI Group's activities.

Figure 4: MSI Board Committee Structure and EMEA Executive Management Structure



MSI Board Committees

The MSI Risk Committee is appointed by the MSI Board to assist and provide guidance to the MSI Board on its oversight of the management of financial and non-financial risks, including: (i) risk strategy and appetite; (ii) risk identification and management; (iii) risk governance framework and policies; (iv) measurement of risk and risk tolerance levels and limits; (v) risk culture; (vi) financial resource management and capital; and (vii) recovery and resolution. The MSI Risk Committee met 10 times in 2019. The MSI Risk Committee review quarterly detailed risk reports on portfolio risk, market risk, credit risk, operational risk, e-trading risk, liquidity risk, conduct risk, franchise risk, product governance and model changes.

The Committee's focus during 2019 included:

- The MSI Group risk appetite framework and risk appetite statement, including the risk framework in place for certain new or expanding types of business;
- Operational risks including cyber risk and third party vendor risk;
- Oversight of material event risks;
- Areas of regulatory focus and corresponding risk projects.

The MSI Audit Committee is appointed by the MSI Board to assist and provide guidance to the MSI Board in monitoring: (i) financial reporting; (ii) internal controls; (iii) legal and regulatory compliance; (iv) internal audit; and (v) external auditors.

The MSI Remuneration Committee is appointed by the MSI Board to (i) assist the Board in overseeing the implementation of remuneration policies and practices applicable to the MSI Group and (ii) oversee compliance by the MSI Group with applicable EU and UK remuneration rules, statements and guidance.

The MSI Nomination and Governance Committee is appointed by the MSI Board to assist and provide guidance in relation to (i) the recruitment of boards members; (ii) the assessment of the performance of the MSI Board and committees; and (iv) the corporate governance framework of the MSI Group.

EMEA Executive Committees

The EMEA Operating Committee is the forum for key decisions regarding matters affecting the operations and performance of the MSI Group and is responsible for the execution of strategy. The committee provides oversight of: (i) strategy; (ii) financial performance; (iii) risk and control; (iv) operational, legal and regulatory matters; and (v) human resources.

The EMEA Risk Committee ("ERC") assists in the oversight of the MSI Group's management of risk (including financial and non-financial risks) within the MSI Group. The committee provides oversight of: (i) risk strategy and appetite; (ii) risk identification and measurement; (iii) risk framework and policies; (iv) culture; and (v) financial resource management.

Management Level Committees (associated with Risk Governance)

The EMEA Franchise Committee assists in the oversight of potentially significant franchise risks including by reviewing relevant activities, transactions and clients, the franchise implications of situations that involve suitability or conflicts of interest concerns.

The EMEA Operational Risk Oversight Committee provides guidance to the ERC in relation to the oversight of the management of operational risk of the MSI Group.

The EMEA Conduct Risk Committee assists the ERC in the oversight and management of conduct risk within MSI Group.

The EMEA Electronic Trading Governance Committee reviews and challenges controls applicable to the electronic trading business undertaken by the MSI Group. Further, the committee monitors the risk appetite and limits set by the ERC which is applicable to electronic trading, provides a forum to oversee the resolution of identified control issues in an appropriate and timely manner and escalates matters to the ERC as necessary.

The EMEA Asset and Liability Committee ("EMEA ALCO") assists the ERC to oversee the capital adequacy, including the risk of excessive leverage, and liquidity risk management of the MSI Group.

The EMEA Client Assets Governance Committee provides support for MSI Group's compliance with Client Assets Sourcebook ("CASS") requirements, and acts as the principal body for providing governance of CASS related issues, being responsible for co-ordinating the approach to managing client money and client assets.

The EMEA Product Committee assists the ERC in discharging its responsibilities for the oversight of approvals of New Products and the oversight of product governance. In particular, the EMEA Product Committee reviews and challenges heightened risk New Product Approval ("NPA") proposals and provides recommendation to the ERC.

Adequacy of Risk Management Arrangements

The MSI Board is satisfied that the risk management arrangements and systems, as described above, are appropriate given the strategy and risk profile of the MSI Group. These elements are reviewed at least annually and, where appropriate, updated to reflect best practice, evolving market conditions and changing regulatory requirements.

4. Basis of Preparation and Linkage to Financial Accounts

Basis of Consolidation

The MSI Group completes its prudential consolidation in compliance with CRR Part One, Title II Chapter 2, with all entities fully consolidated. The basis of consolidation for prudential purposes is the same as consolidation for accounting purposes.

This disclosure is prepared for the MSI Group, rather than on an individual basis for each regulated entity, as permissible by CRD IV. The most significant subsidiary of the MSI Group is MSIP, the results of which are material to the MSI Group. The risk profile of MSIP is materially the same as the MSI Group and risk management policies and procedures are applied consistently. This disclosure comprehensively conveys the risk profile of the MSI Group and MSIP.

Financial Statements

This document does not constitute a set of financial statements and does not represent any form of forward looking statement. Audited (statutory) financial statements are prepared for all subsidiaries where there is a legal requirement to do so. This includes financial statements prepared in accordance with applicable UK company law; UK accounting requirements under Financial Reporting Standard 101 ("FRS 101") and for the MSIP Group in accordance with EU adopted International Financial Reporting Standards ("IFRS").

With effect from 2014, the MSI Group applied the UK Companies Act 2006 exemption from producing statutory group accounts. The exemption applies to a UK parent company where certain conditions are met. Specifically this includes where the UK parent and all of its subsidiaries are included in group accounts of a larger non-European Economic Area ("EEA") group prepared in accordance with accounting standards which are equivalent to EU-adopted IFRS. The MSI Group is consolidated into the accounts of Morgan Stanley, therefore does not publish statutory group accounts.

However, audited, consolidated non-statutory financial information has been produced for the MSI Group, as approved by the MSI Board and MSI Audit Committee, in accordance with the recognition and measurement principles of IFRS issued by the International Accounting Standards Board as adopted by the European Union. For further detail, refer to Appendix VII. All tables within the Pillar 3 disclosures for MSI Group which state their source to be financial statements are instead based on the audited, consolidated non-statutory financial information. MSIP financial statements can be found at https://www.morganstanley.com/about-us-ir/subsidiaries.

Trading Book / Non-Trading Book

In determining its overall capital requirement, the MSI Group classifies its exposures as either "Trading Book" or "Non-Trading Book" (otherwise referred to as Banking Book). Non-Trading Book positions, which may be accounted for at amortised cost, fair value or under the equity method, are subject to credit risk capital requirements as discussed in the Credit Risk section. Trading Book positions represent positions that the MSI Group holds as part of its market-making and underwriting businesses. These Trading Book positions, which reflect assets or liabilities that are accounted for at fair value, along with certain Non-Trading Book positions which are subject to both credit risk and market risk are subject to market risk capital requirements, as discussed in the Market Risk section. Some Trading Book positions, such as derivatives, are also subject to counterparty credit risk capital requirements. Credit and market risks related to securitisation exposures are discussed in the Securitisation section. Trading Book and Non-Trading Book definitions used in this document refer to the regulatory view and may differ from the accounting definitions.

Policies and Procedures

The MSI Group has policies and procedures in place to assess the appropriateness of its Pillar 3 disclosure. One or more members of the management body are required to confirm that the disclosure has been prepared in accordance with internal control processes agreed upon at the management body level. The MSI Group's Pillar 3 disclosures are not required to be, and have not been, audited by the MSI Group's auditor. The MSI Group's Pillar 3 disclosure as at 31 December 2019 is based on its current understanding of CRD IV and related legislation, which will be subject to change as CRR II and CRD V comes into effect.

Balance Sheet Under the Regulatory Scope of Consolidation

Table 2 shows MSI Group's balance sheet as at 31 December 2019 on both an accounting consolidation and regulatory consolidation basis. The carrying values under the scope of regulatory consolidation are broken down into the stated risk frameworks and where they are not subject to capital requirements or subject to deduction from capital.

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

$MM			Carrying value of items				
MSI Group[1,2]	Carrying values as reported in published financial statements	Carrying values under scope of regulatory consolidation	Credit risk framework	Counterparty credit risk framework	Securitisation framework	Market risk framework	Not subject to capital requirements or subject to deduction from capital
Assets carrying amount	**514,397**	**514,397**	**91,472**	**307,141**	**358**	**406,907**	**12,611**
Cash and short-term deposits	34,341	34,341	22,408	-	-	-	11,933
Trading financial assets	322,309	322,309	539	220,083	358	322,293	-
Secured financing	82,690	82,690	-	81,204	-	82,690	-
Loans and advances	289	289	289	-	-	289	-
Investment securities	141	141	141	-	-	-	-
Trade and other receivables	72,005	72,005	66,151	5,854	-	1,635	-
Current tax assets	305	305	305	-	-	-	-
Deferred tax assets	173	173	173	-	-	-	-
Other assets	219	219	219	-	-	-	-
Property plant and equipment	1,247	1,247	1,247	-	-	-	-
Intangible assets	678	678	-	-	-	-	678
Liabilities carrying amount	**(488,399)**	**(488,399)**	**(75,721)**	**(355,142)**	**-**	**(398,225)**	**(4,918)**
Bank loans and overdrafts	(124)	(124)	-	-	-	-	(124)
Trading financial liabilities	(266,673)	(266,673)	(2)	(219,435)	-	(266,644)	-
Secured borrowing	(75,908)	(75,908)	-	(75,908)	-	(75,908)	-
Trade and other payables	(90,856)	(90,856)	(34,545)	(52,681)	-	(1,998)	(3,631)
Debt and other borrowings	(53,675)	(53,675)	(41,174)	(7,118)	-	(53,675)	-
Provisions	(93)	(93)	-	-	-	-	(93)
Current tax liabilities	(59)	(59)	-	-	-	-	(59)
Deferred tax liabilities	-	-	-	-	-	-	-
Accruals and deferred income	(940)	(940)	-	-	-	-	(940)
Post-employment benefit obligations	(71)	(71)	-	-	-	-	(71)

1. MSI Group does not publish financial statements. See Appendix VII for MSI Group non-statutory financial information.
2. The total carrying values under the regulatory scope of consolidation do not equal the sum of the amounts shown in the remaining columns of this table as some of the assets included in these items are subject to regulatory capital charges in more than just one risk framework.

Table 3 shows the MSI Group consolidated regulatory balance sheet (Per EU LI1) reconciled to the Exposure at Default ("EAD") for items subject to the Credit Risk, Counterparty Credit Risk and Securitisation frameworks.

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

$MM	Items subject to:		
MSI Group	Credit risk framework	Counterparty credit risk framework	Securitisation framework
Assets carrying amount (per LI1)	91,472	307,141	358
Liabilities carrying amount (per LI1)	(75,721)	(355,142)	-
Total net amount under the regulatory scope of consolidation	**15,751**	**(48,001)**	**358**
Off balance sheet amounts[1]	6,139	-	-
Difference due to netting rules[2]	148,514	48,758	(180)
Regulatory adjustments and credit risk mitigation[3]	(136,701)	125,571	139
Exposure amounts considered for regulatory purposes	**33,703**	**126,328**	**317**

1. Under the credit risk framework, off balance amounts principally consist of undrawn credit facilities after the use of a conversion factor. Under the counterparty credit risk framework, the off balance sheet items consist of the collateral given against cash received for securities financing transactions ("SFT").
2. Under IFRS, netting is only permitted if legal right of set-off exists and the cash flows are intended to be settled on a net basis. Under the PRA's regulatory rules, however, netting is applied for capital calculations if there is legal certainty and the positions are managed on a net collateralised basis.
3. Differences due to the regulatory adjustments (ie impact of the Internal Models Method ("IMM") models) to transform the Balance Sheet value to an EAD along with differences due to consideration of collateral and haircuts to arrive at the net exposure value.

5. Capital Management

The MSI Group views capital as an important source of financial strength. It manages and monitors its capital in line with established policies and procedures and in compliance with local regulatory requirements. In line with Morgan Stanley Group capital management policies, the MSI Group manages its capital position based upon, among other things, business opportunities, risks, capital availability and rate of return together with, internal capital policies, regulatory requirements and rating agency guidelines. Therefore, in the future it may adjust its capital base in reaction to the changing needs of its businesses. The appropriate level of capital is determined at a legal entity level to safeguard that entity's ability to continue as a going concern and ensure that it meets all regulatory capital requirements. The key components of the capital management framework used by the MSI Group are set out in the MSI Group Capital Planning and Management Policy and include a point in time risk and leverage based capital assessment, forward looking capital projections and stress testing. The MSI Group conducts an ICAAP at least annually in order to meet its obligations under CRD IV.

The ICAAP is a key tool used to inform the MSI Board and the executive management on risk profile and capital adequacy. The MSI Group's ICAAP:

- Is designed to ensure the risks to which the MSI Group is exposed are appropriately capitalised and risk managed, including those risks that are either not captured, or not fully captured under Pillar 1; and
- Uses stress testing to size a capital buffer aimed at ensuring the MSI Group will continue to operate above regulatory requirements under a range of severe but plausible stress scenarios; and
- Assesses capital adequacy under normal and stressed operating environments over the three year capital planning horizon to ensure the MSI Group maintains a capital position in line with pre and post stress minimum levels.

The key elements of the ICAAP are embedded in the MSI Group's day-to-day management processes and decision making culture.

The PRA reviews the MSI Group ICAAP through its Supervisory Review and Evaluation Process ("SREP") and sets a Total Capital Requirement ("TCR"), comprising Pillar 1 and Pillar 2A, which establishes the minimum level of regulatory capital for the MSI Group and MSIP. Certain elements of the Pillar 2A requirement are a fixed quantum whilst others are a proportion of RWAs and are based on a point in time assessment. As of 31 December 2019 the MSI Group TCR was 11.4%. In addition, the PRA sets a buffer if required in addition to the Basel Combined Buffers, which is available to support the MSI Group in a stressed market environment.

The Capital Conservation Buffer ("CCB") requires banks to build up a capital buffer that can be utilised to absorb losses during period of stress, whilst remaining compliant with minimum requirements, and must be met with Common Equity Tier 1 ("CET1") capital. The CCB was fully phased in on 1 January 2019 at 2.5%.

The Countercyclical Capital Buffer ("CCyB") was introduced to ensure that excessive growth in specific countries is accounted for by increasing minimum capital ratios by between 0% and 2.5%, and must be met with CET1 Capital. As of 31 December 2019, the CCyB for the MSI Group stood at 0.4%. On 11 March 2020 however, the Financial Policy Committee ("FPC") reduced the UK CCyB to 0% with immediate effect. The FPC expects that the 0% rate will be effective until at least March 2022. Regulators in other jurisdictions have implemented similar actions.

Table 4 provides details of the notable CCyB rates as at 31 December 2019, with Appendix IV providing the geographical distribution of credit exposures relevant for the calculation of CCyB.

Table 4: Countercyclical Capital Buffer

	CCyB rate	Effective from	MSI Group impact on capital ratio	MSIP impact on capital ratio
United Kingdom	1.00%	28 November 2018	0.26%	0.28%
Iceland	1.75%	15 May 2019	0.01%	0.01%
France	0.25%	1 July 2019	0.01%	0.01%
Ireland	1.00%	5 July 2019	0.04%	0.04%
Sweden	2.50%	19 September 2019	0.01%	0.01%
Denmark	1.00%	30 September 2019	0.01%	0.01%
Hong Kong	2.00%	14 October 2019	0.02%	0.03%
Total			**0.36%**	**0.39%**

MSI Group capital is managed to ensure risk and leverage based requirements assessed through the ICAAP and SREP are met. Internal capital ratio minima are set by the MSI Board to ensure the MSI Group and its subsidiaries have sufficient capital to meet their regulatory requirements at all times.

The capital managed by the MSI Group broadly includes share capital, Additional Tier 1 ("AT1") capital instruments, subordinated debt and reserves. In order to maintain or adjust its capital structure, the MSI Group may pay dividends, return capital to its shareholders, issue new shares, or issue or repay AT1 capital instruments or subordinated debt.

There are no current or foreseen material, practical or legal impediments to the prompt transfer of capital resources or repayment of liabilities among the MSI Group and its subsidiaries.

6. Capital Resources

The capital resources of the MSI Group and MSIP are set out in Table 5. All capital resources included in Tier 1 and Tier 2 capital are of standard form and the main terms and conditions of the capital instruments are disclosed in Appendix II.

Table 5: Own funds

$MM	MSI Group	MSIP
Capital instruments eligible as CET1 capital	2,313	12,978
Retained earnings[1]	12,912	2,645
Accumulated other comprehensive income	(752)	(189)
Other reserves	7,461	1,403
Adjustments to CET1 due to prudential filters	(1,314)	(1,264)
Other intangible assets	(678)	(2)
Internal Ratings Based shortfall of credit risk adjustments to expected losses	(192)	(177)
Defined-benefit pension fund assets	(16)	-
CET1 capital	**19,734**	**15,394**
Additional Tier 1 capital	3,500	3,500
Tier 1 capital	**23,234**	**18,894**
Capital instruments and subordinated loans eligible as Tier 2 capital	5,383	5,000
Instruments issued by subsidiaries that are given recognition in Tier 2 capital	-	-
Tier 2 capital	**5,383**	**5,000**
Total own funds	**28,617**	**23,894**

1. Retained earnings includes independently reviewed interim profits net of any foreseeable charge or dividend.

Over the fourth quarter of 2019, the MSI Group Own Funds have increased, due to share capital and retained earnings.

The MSI Group relies on its policies, procedures and systems to determine the adequacy of valuation for financial assets and compliance with accounting standards. To comply with the requirements of CRD IV, additional valuation adjustments are applied to capital over and above those that are taken in order to comply with the accounting requirements. The regulatory adjustments are referred to in the above table as prudential filters. The capital resources of the MSI Group are based on audited, consolidated non-statutory financial information and MSIP's capital resources are based on audited financial statements. Table 6 provides a reconciliation of audited shareholders' equity to regulatory capital.

Table 6: Reconciliation of balance sheet total equity to regulatory capital

$MM	MSI Group				MSIP			
		CET1 capital	AT1 capital	Tier 2 capital		CET1 capital	AT1 capital	Tier 2 capital
Equity instruments	5,796	2,296	3,500	-	15,965	12,465	3,500	-
Share premium	17	17	-	-	513	513	-	-
Other reserves	7,461	7,461	-	-	1,403	1,403	-	-
Other comprehensive income	(752)	(752)	-	-	(189)	(189)	-	-
Retained earnings	13,372	13,372	-	-	2,932	2,932	-	-
Non-controlling interest	104	104	-	-	-	-	-	-
Balance sheet total equity	**25,998**	**22,498**	**3,500**	**-**	**20,624**	**17,124**	**3,500**	**-**
Add:								
Tier 2 instruments classified as debt and other borrowings	**5,383**	**-**	**-**	**5,383**	**5,000**	**-**	**-**	**5,000**
Less:								
Qualifying own funds subordinated debt instruments not included in consolidated Tier 2 capital	-	-	-	-	-	-	-	-
Part of interim or year-end profit not eligible	(460)	(460)	-	-	(287)	(287)	-	-
Minority interests (amount not allowed in consolidated CET1)	(104)	(104)	-	-	-	-	-	-
Additional value adjustments	(1,381)	(1,381)	-	-	(1,337)	(1,337)	-	-
Negative amounts resulting from the calculation of expected loss amounts	(192)	(192)	-	-	(177)	(177)	-	-
Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	67	67	-	-	73	73	-	-
Intangible assets (net of related tax liability)	(678)	(678)	-	-	(2)	(2)	-	-
Defined-benefit pension fund assets	(16)	(16)	-	-	-	-	-	-
Total own funds (transitional rules and fully loaded position)	**28,617**	**19,734**	**3,500**	**5,383**	**23,894**	**15,394**	**3,500**	**5,000**

7. Total Loss-Absorbing Capacity

MSI Group is subject to internal TLAC requirements via CRR II, which came into force in June 2019. These requirements are designed to enhance the resilience of the financial system by ensuring firms have sufficient capital to absorb losses and recapitalise under resolution. The minimum capacity requirements are initially set at 16% of risk weighted assets and 6% of leverage exposure, scaled at 90% for MSI Group as the subsidiary of a non-EU Global Systemically Important Institution ("G-SII"). The eligibility criteria for internal TLAC only takes into account instruments owned by the ultimate parent undertaking and issued directly or indirectly through other entities within the same group.

Morgan Stanley's preferred resolution strategy, is a Single Point of Entry ("SPOE") strategy. Further information on resolution strategy can be found in Morgan Stanley Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q.

The MSI Group TLAC key metrics are provided in Table 7.

Table 7: TLAC key metrics
$MM

MSI Group	Q4'19	Q3'19	Q2'19
Total loss absorbing capacity (TLAC) available	**34,617**	**30,173**	**30,441**
Total RWA at the level of the resolution group	**137,333**	**137,019**	**132,222**
TLAC as a percentage of RWA (row 1/row2) (%)[1]	25.2%	22.0%	23.0%
Leverage ratio exposure measure at the level of the resolution group	455,153	468,322	455,281
TLAC at a percentage of leverage ratio exposures measure (row1/row4) (%)[1]	7.6%	6.4%	6.7%

1. As at 31 December 2019, the MSI Group is in compliance with the TLAC requirements.

Table 8 provides details of the composition of the MSI Group's TLAC.

Table 8: TLAC composition
$MM

MSI Group	Q4'19
Common Equity Tier 1 Capital (CET1)	19,734
Additional Tier 1 Capital (AT1) before TLAC adjustments	3,500
AT1 ineligible as TLAC as issued out of subsidiaries to third parties	-
Other adjustments	-
AT1 instruments eligible under the TLAC framework	3,500
Tier 2 Capital (T2) before TLAC adjustments	5,383
Amortised portion of T2 instruments where remaining maturity >1 year	-
T2 Capital ineligible as TLAC as issued out of subsidiaries to third parties	-
Other adjustments	-
T2 instruments eligible under the TLAC framework	5,383
TLAC arising from regulatory capital	**28,617**
TLAC instruments subordinated to excluded liabilities	6,000
TLAC arising from non-regulatory capital instruments before adjustments	**6,000**
TLAC before deductions	**34,617**
Deduction of investments in own other TLAC liabilities	-
Other adjustments to TLAC	-
TLAC after deductions	**34,617**
Total risk-weighted assets adjusted as permitted under the TLAC regime	137,333
Leverage exposure measure	455,153
TLAC (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime)	25.2%
TLAC (as a percentage of leverage exposure)	7.6%
Institution-specific buffer requirement	**2.86%**
Of which: capital conservation buffer requirement	2.50%
Of which: bank specific countercyclical buffer requirement	0.36%

Table 9 provides a breakdown of eligible instruments in the creditor hierarchy of the MSI Group.

Table 9: TLAC creditor ranking

	Creditor ranking				
$MM	1	2	3	4	
MSI Group	(most junior)			(most senior)	Total
Description of creditor ranking	Ordinary Shares[1]	AT1 instruments	Subordinated loans	Senior Subordinated loans	
Total capital and liabilities	**2,296**	**3,500**	**5,383**	**6,000**	**17,179**
Excluded liabilities [2]	-	-	-	-	-
Total capital and liabilities less excluded liabilities	2,296	3,500	5,383	6,000	17,179
Eligible as TLAC	2,296	3,500	5,383	6,000	17,179
with 1 year ≤ residual maturity < 2 years	-	-	-	6,000	6,000
with 2 years ≤ residual maturity < 5 years	-	-	-	-	-
with 5 years ≤ residual maturity < 10 years	-	-	5,383	-	5,383
with residual maturity ≥ 10 years	-	-	-	-	-
perpetual securities	2,296	3,500	-	-	5,796

1. Ordinary Shares excludes the value of share premium and reserves.
2. As at 31 December 2019 MSI Group has no excluded liabilities as defined in CRR II Article 72a (2).

8. Leverage

The Basel III framework introduced a simple, transparent, non-risk based leverage ratio to act as a supplementary measure to the risk-based capital requirements. The Basel Committee is of the view that a simple leverage ratio framework is critical and complementary to the risk-based capital framework and that a credible leverage ratio ensures broad and adequate capture of both the on and off-balance sheet sources of banks' leverage.

Although there is no current binding leverage requirement under CRD IV, the MSI Group manages its risk of excessive leverage through the application of business unit leverage exposure limits and leverage ratio early warning trigger levels. Limits are calibrated in line with legal entity capacity and ensure that leverage exposure remains within the MSI Board’s risk appetite. MSI Group and MSIP’s leverage exposures are calculated monthly and weekly, respectively, and reported to EMEA ALCO who monitor this, as well as maturity mismatches and asset encumbrance metrics, to ensure that any excessive risk is highlighted, assessed and mitigated appropriately.

The MSI Group leverage ratio and the MSIP leverage ratio have increased 0.3% and 0.1% respectively from 30 September 2019 to 31 December 2019, due to a decrease in exposures and an increase in Tier 1 capital.

The disclosures in the tables below have been made in accordance with the EU Delegated Act and are disclosed on a fully phased in basis. Table 10 provides a reconciliation between total assets in the financial statements and the leverage exposure measure for MSI Group and MSIP as at 31 December 2019.

Table 10: Reconciliation of accounting assets and leverage ratio exposures

$MM	MSI Group	MSIP
Total assets as per published financial statements[1]	**514,397**	**502,376**
Adjustments for derivative financial instruments	(83,260)	(80,700)
Adjustments for securities financing transactions	19,163	19,431
Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	7,020	6,305
(Adjustment for intragroup exposures excluded from the leverage ratio exposure measure in accordance with Article 429 (7) of Regulation (EU) No 575/2013)	-	(579)
Other adjustments	(2,167)	(1,416)
Total leverage ratio exposure	**455,153**	**445,417**

1. MSI Group does not publish financial statements. See Appendix VII for MSI Group non-statutory financial information.

Table 11 provides a detailed breakdown of the components of the leverage ratio exposure for MSI Group and MSIP as at 31 December 2019.

Table 11: Leverage ratio common disclosure

$MM	MSI Group	MSIP
On-balance sheet exposures (excluding derivatives and SFTs)		
On-balance sheet items (excluding derivatives, SFTs and fiduciary assets, but including collateral)	220,614	205,647
(Asset amounts deducted in determining Tier 1 capital)	(2,267)	(1,517)
Total on-balance sheet exposures (excluding derivatives, SFTs and fiduciary assets)	**218,347**	**204,130**
Derivative exposures		
Replacement cost associated with *all* derivatives transactions (i.e. net of eligible cash variation margin)	19,261	17,946
Add-on amounts for PFE associated with *all* derivatives transactions (mark-to-market method)	143,208	139,135
Gross-up for derivatives collateral provided where deducted from the balance sheet pursuant to the applicable accounting framework	4,258	4,020
(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	(26,572)	(25,324)
(Exempted CCP leg of client-cleared trade exposures)	(9,512)	(6,349)
Adjusted effective notional amount of written credit derivatives	186,076	182,001
(Adjusted effective notional offsets and add-on deductions for written credit derivatives)	(179,951)	(175,839)
Total derivative exposures	**136,768**	**135,590**
Securities financing transaction exposures		
Gross SFT assets (with no recognition of netting), after adjusting for sales accounting transactions	177,407	184,158
(Netted amounts of cash payables and cash receivables of gross SFT assets)	(93,956)	(94,022)
Counterparty credit risk exposure for SFT assets	9,567	9,835
Total securities financing transaction exposures	**93,018**	**99,971**
Other off-balance sheet exposures		
Off-balance sheet exposures at gross notional amount	14,299	12,903
(Adjustments for conversion to credit equivalent amounts)	(7,279)	(6,598)
Total other off-balance sheet exposures	**7,020**	**6,305**
Exempted exposures in accordance with CRR Article 429 (7) and (14) (on and off balance sheet)		
(Intragroup exposures (solo basis) exempted in accordance with Article 429(7) and (14) of Regulation (EU) No 575/2013 (on and off balance sheet))	-	(579)
Capital and total exposure measure		
Tier 1 capital	**23,234**	**18,894**
Total leverage ratio exposures	**455,153**	**445,417**
Leverage ratio	**5.1%**	**4.2%**
Choice on transitional arrangements for the definition of the capital measure	**Fully phased in**	**Fully phased in**

Table 12 provides a breakdown of the on-balance sheet exposures into trading and non-trading book exposures for MSI Group and MSIP as at 31 December 2019.

Table 12: Split of on-balance sheet exposures (excluding derivatives, SFTs and exempted exposures)

$MM	MSI Group	MSIP
Total on-balance sheet exposures (excluding derivatives, SFTs, and exempted exposures), of which:	**220,614**	**205,647**
Trading Book exposures	179,505	173,563
Non-Trading Book exposures, of which:	41,109	32,084
Exposures treated as sovereigns	16,712	12,078
Institutions	18,506	17,125
Corporate	2,873	1,983
Exposures in default	21	1
Other exposures (e.g. equity, securitisations, and other non-credit obligation assets)	2,997	897

9. Capital Requirements and RWAs

RWAs reflect both on- and off-balance sheet risk, as well as capital charges attributable to the risk of loss arising from the following.

Credit and Counterparty Credit Risk ("CCR") refers to the risk of loss arising when a borrower, counterparty or issuer does not meet its financial obligations. Credit and Counterparty Credit capital requirements are derived from RWAs, determined using approved internal modelling approaches – the Foundation Internal Ratings Based approach ("IRB") for credit risk and the IMM for counterparty risk – as well as the Standardised Approach ("SA") and Mark-to-Market Method ("MTMM") for exposures not covered by internal models.

Credit Valuation Adjustment ("CVA") is the capital requirement that covers the risk of mark-to-market losses on the counterparty risk of Over-the-Counter ("OTC") derivatives. It is calculated using a combination of advanced internal modelling and standardised approaches.

Settlement risk refers to the capital requirement that covers the risk due to the possibility that a counterparty will fail to deliver on the terms of a contract at the agreed-upon time.

Securitisations exposures are a transaction or scheme, whereby the credit risk associated with an exposure or pool of exposures is tranched, having the following characteristics. Payments in the transaction or scheme are dependent upon the performance of the exposure or pool of exposures. Also, the subordination of tranches determines the distribution of losses during the ongoing life of the transaction or scheme.

Market risk refers to the risk that a change in the level of one or more market prices, rates, indices, implied volatilities (the price volatility of the underlying instrument imputed from option prices), correlations or other market factors, such as market liquidity, will result in losses for a position or portfolio. The Market Risk capital requirements comprise of capital associated with the Internal Modelling Approaches ("IMA") approved by the PRA and those associated with the Standardised Approach.

Large exposures refer to the capital requirement that covers the risk due to concentrated exposures to a single counterparty or group of connected counterparties.

Operational risk refers to the risk of loss, or of damage to reputation, resulting from inadequate or failed processes, people and systems or from external events (e.g. fraud, theft, legal and compliance risks, cyber-attacks or damage to physical assets). Capital requirements for operational risk are currently calculated under the Basic Indicator Approach ("BIA").

Amounts below the thresholds for deduction correspond to items not deducted from Own Funds, as they are below the applicable thresholds for deduction, in accordance with the CRR.

The MSI Group enhances its risk management strategy and incorporates improvements in modelling techniques while maintaining compliance with the regulatory requirements. For further discussion on credit risk, counterparty credit risk, market risk and operational risk, please refer to the specific sections within this document.

Table 13 summarises RWAs and minimum capital requirements ("MCR") for MSI Group and MSIP by risk type. MSI Group and MSIP calculate Pillar 1 capital requirements as 8% of RWAs in accordance with CRD IV.

Table 13: Overview of RWAs (EU OV1)

$MM MSI Group	RWAs Q4'19	RWAs Q3'19	MCR Q4'19
Credit risk (excluding CCR)	**13,036**	**12,548**	**1,043**
Of which standardised approach	4,523	4,559	362
Of which foundation IRB (FIRB) approach	5,887	5,117	471
Of which advanced IRB (AIRB) approach	-	-	-
Of which equity IRB under the simple risk-weighted approach or the IMA	2,626	2,872	210
CCR	**52,788**	**56,455**	**4,223**
Of which mark-to-market	9,029	10,466	722
Of which original exposure	-	-	-
Of which standardised approach	362	348	29
Of which internal model method	21,713	21,567	1,737
Of which Financial collateral comprehensive method (for SFTs)	7,968	7,844	637
Of which risk exposure amount for contributions to the default fund of a CCP	877	1,200	70
Of which CVA	12,839	15,030	1,028
Settlement risk	**108**	**164**	**9**
Securitisation exposures in banking book (after cap)	**164**	**160**	**13**
Of which IRB	104	102	8
Of which IRB supervisory formula approach (SFA)	-	-	-
Of which internal assessment approach (IAA)	-	-	-
Of which standardised approach	60	58	5
Market risk	**49,583**	**45,442**	**3,967**
Of which standardised approach	14,073	12,570	1,126
Of which IMA	35,510	32,872	2,841
Large exposures	**9,129**	**10,906**	**730**
Operational risk	**12,094**	**11,037**	**968**
Of which basic indicator approach	12,094	11,037	968
Of which standardised approach	-	-	-
Of which advanced measurement approach	-	-	-
Amounts below the thresholds for deduction (subject to 250% risk weight)	**431**	**307**	**34**
Floor adjustment	**-**	-	**-**
Total	**137,333**	**137,019**	**10,987**
MSIP			
Credit risk (excluding CCR)	**10,058**	**9,745**	**805**
Of which standardised approach	2,898	3,008	232
Of which foundation IRB (FIRB) approach	4,667	3,978	374
Of which advanced IRB (AIRB) approach	-	-	-
Of which equity IRB under the simple risk-weighted approach or the IMA	2,493	2,759	199
CCR	**51,470**	**54,866**	**4,118**
Of which mark-to-market	8,690	10,159	695
Of which original exposure	-	-	-
Of which standardised approach	337	323	27
Of which internal model method	21,138	20,958	1,691
Of which Financial collateral comprehensive method (for SFTs)	8,419	8,187	674
Of which risk exposure amount for contributions to the default fund of a CCP	576	721	46
Of which CVA	12,310	14,518	985
Settlement risk	**90**	**151**	**7**
Securitisation exposures in banking book (after cap)	**164**	**160**	**13**
Of which IRB	104	102	8
Of which IRB supervisory formula approach (SFA)	-	-	-
Of which internal assessment approach (IAA)	-	-	-
Of which standardised approach	60	58	5
Market risk	**42,535**	**39,679**	**3,403**
Of which standardised approach	8,081	6,990	647
Of which IMA	34,454	32,689	2,756
Large exposures	**13,776**	**16,082**	**1,102**
Operational risk	**8,823**	**8,361**	**706**
Of which basic indicator approach	8,823	8,361	706
Of which standardised approach	-	-	-
Of which advanced measurement approach	-	-	-
Amounts below the thresholds for deduction (subject to 250% risk weight)	**431**	**337**	**34**
Floor adjustment	-	-	-
Total	**127,347**	**129,381**	**10,188**

Over the fourth quarter RWAs increased, primarily driven by Market Risk as a result of increased risk exposures and Operational Risk; partially offset by CCR and Large exposures mainly due to a decrease in derivative exposures.

10. Credit Risk

10.1 Credit and Counterparty Credit Risk Management

Credit and counterparty risk refers to the risk of loss arising when a borrower, counterparty or issuer does not meet its financial obligations. The MSI Group is exposed to Credit Risk from the extension of credit to clients through lending commitments, derivatives, securities financing and prime brokerage activities. The MSI Group primarily incurs credit risk exposure to Corporates, Institutions, Central Governments and Central Banks through its Institutional Securities business segment.

The MSI Group Credit Risk Management department is an independent risk oversight group headed by the Chief Credit Officer who reports directly to the EMEA Chief Risk Officer. The MSI Group Credit Risk Management department is responsible for managing and overseeing the credit risk profile of the UK Group, including the design and oversight of the credit risk and limits framework covering the independent identification, analysis, monitoring, reporting and escalation of credit risks. In order to help protect the MSI Group from losses resulting from its business activities, Credit Risk Management establishes practices to evaluate, monitor and control credit risk exposure at the transaction, obligor and portfolio levels. Credit Risk Management analyses material lending and derivative transactions and ensures that the creditworthiness of the MSI Group's counterparties and borrowers is reviewed regularly and that credit exposure is actively monitored and managed.

Credit Risk Policies and Procedures

The Credit Risk Management policies and procedures of the MSI Group aim to ensure transparency of material credit risks, compliance with established limits, requisite approvals for material extensions of credit, and escalation of risk concentrations to appropriate senior management.

Credit Risk Limits

Credit risk exposure is managed under limits delegated by the MSI Board. The MSI Group Credit Limits Framework ("CLF") is one of the primary tools used to evaluate and manage credit risk levels. The CLF includes single name limits and portfolio concentration limits by country, industry and product type (counterparty, lending, settlement and treasury). The MSI Group credit limit restricts potential credit exposure to any one borrower or counterparty and to groups of connected borrowers or counterparties. The limits are assigned based on multiple factors including the size of counterparty, the counterparty's Probability of Default ("PD"), the perceived correlation between the credit exposure and the counterparty's credit quality, and the Loss-Given Default ("LGD") and tenor profile of the specific credit exposure taking into account the effect of enforceable netting and eligible collateral.

Credit Evaluation

The MSI Group is exposed to single-name credit risk and country risk, requiring credit analysis of specific counterparties, both initially and on an ongoing basis. Credit risk management takes place at the transaction, counterparty and portfolio levels. For lending transactions, the MSI Group evaluates the relative position of its particular exposure in the borrower's capital structure and relative recovery prospects. The MSI Group also considers collateral arrangements and other structural elements of the particular transaction.

10.2 Counterparty and Credit Risk Capital Requirements

The regulatory framework distinguishes between Credit Risk and Counterparty Credit Risk capital requirements. The Credit Risk capital component reflects the capital requirements attributable to the risk of loss arising from a borrower failing to meet its obligations and relates to investments made in the Non-Trading Book such as loans and other securities that the MSI Group holds until maturity with no intention to trade. Counterparty credit exposure arises from the risk that counterparties are unable to meet their payment obligations under contracts for traded products including OTC derivatives, securities financing transactions and margin lending. The distinction between Credit Risk and Counterparty Credit Risk exposures is due to the bilateral nature of the risk for Counterparty Credit Risk exposures, see Section 11 Counterparty Credit Risk.

RWAs are determined using the IRB approach which reflects the MSI Group's internal estimate of a borrower or counterparty's creditworthiness.

For exposures not covered by the IRB approach, the standardised approach is applied, typically for certain business units which are non-significant and certain exposure classes or types of exposures which are immaterial in terms of size and perceived risk profile.

The standardised approach assigns fixed risk weights to the following exposures classes in accordance with the CRR: Central Governments and Central Banks, Corporates, Institutions, Multilateral Development Banks, International Organisations, Regional Governments and Local Authorities.

The exception to this is exposures to European Central Governments denominated in local currency which are risk-weighted at 0%.

Table 14 shows Credit Risk and Counterparty Credit Risk for MSI Group and MSIP as at 31 December 2019.

Table 14: Credit and counterparty risk RWA summary

$MM	MSI Group			MSIP		
	RWAs Q4'19	RWAs Q3'19	MCR Q4'19	RWAs Q4'19	RWAs Q3'19	MCR Q4'19
Credit risk	13,036	12,548	1,043	10,058	9,745	805
Of which FIRB	5,887	5,117	471	4,667	3,978	374
Counterparty credit risk (excluding CVA)	39,949	41,425	3,195	39,160	40,348	3,133
Of which IMM	21,713	21,567	1,737	21,138	20,958	1,691
Securitisation	164	160	13	164	160	13
Amounts below the thresholds for deduction	431	307	34	431	337	34
Total (excluding CVA)	**53,580**	**54,440**	**4,285**	**49,813**	**50,590**	**3,985**
CVA	12,839	15,030	1,028	12,310	14,518	985
Total	**66,419**	**69,470**	**5,313**	**62,123**	**65,108**	**4,970**

Table 15 shows the Credit Risk and Counterparty Credit Risk for MSI Group and MSIP as at 31 December 2019, for each exposure class as per the classification set out in the CRR.

Table 15: Credit and counterparty credit risk summary

$MM	MSI Group			MSIP		
	EAD[2]	RWAs	MCR	EAD	RWAs	MCR
IRB[1]						
Central governments or central banks	25,441	1,782	143	20,553	1,396	112
Corporates	56,536	27,703	2,216	53,038	26,031	2,083
Equity	881	2,626	210	939	2,750	220
Institutions	58,094	14,259	1,141	59,452	14,691	1,175
Securitisation[3]	108	104	8	108	104	8
Total (IRB)	**141,060**	**46,474**	**3,718**	**134,090**	**44,972**	**3,598**
Standardised[1]						
Central governments or central banks	484	115	9	457	114	9
Corporates	2,329	2,372	189	2,046	2,097	168
High Risk	-	-	-	-	-	-
Institutions	17,339	1,784	142	18,417	1,776	142
Multilateral development banks	1	-	-	1	-	-
International organisations	-	-	-	-	-	-
Public sector entities	-	-	-	-	-	-
Regional government or local authorities	2	1	-	2	1	-
Securitisation	211	60	5	211	60	5
Other items	1,639	1,898	152	111	216	17
Total (standardised)	**22,005**	**6,230**	**497**	**21,245**	**4,264**	**341**
Total (CCP default fund)[4]	**1,086**	**876**	**70**	**741**	**577**	**46**
Total[5]	**164,151**	**53,580**	**4,285**	**156,076**	**49,813**	**3,985**

1. Exposure classes which have no exposure are not shown in the table.
2. EAD figures are post credit risk mitigation ("CRM") and post Credit Conversion Factor ("CCF")
3. The IRB Securitisation exposures are after a financial guarantee which reduced one re-securitisation exposure purchased position by $21MM, based on year-end market value.
4. CCP Default Fund requirements have been included in the table to reflect the full population of Credit and CCR. CCP Default Fund exposures are shown in Table CCR8.
5. Exposures calculated under the FIRB approach account for 86% and the Standardised Approach account for 14%.

Credit Risk RWA flow statements

Table 16 summarises the movements of RWAs and MCR for MSI Group and MSIP's credit risk exposures under the IRB approach.

Table 16: RWA flow statements of credit risk exposures under the IRB approach (EU CR8)

$MM	MSI Group		MSIP	
	RWAs	MCR	RWAs	MCR
RWAs at the end of the previous reporting period[1]	**5,117**	**409**	**3,978**	**318**
Asset size	394	32	249	21
Asset quality	(38)	(3)	25	2
Model updates	-	-	-	-
Methodology and policy	414	33	415	33
Acquisitions and disposals	-	-	-	-
Foreign exchange movements	-	-	-	-
Other	-	-	-	-
RWAs at the end of the reporting period	**5,887**	**471**	**4,667**	**374**

1. Previous reporting period was Q3'19.

Over the fourth quarter, MSI Group and MSIP RWAs increased, primarily driven by methodology changes impacting cash exposures and new corporate loans.

External Credit Risk Assessments

External credit risk assessments are used within the Group as part of the determination of risk weightings for exposure classes. We have nominated three External Credit Assessment Institutions ("ECAI") for this purpose – Moody's Investor Service ("Moody's"), Standard and Poor's rating agency ("S&P") and Fitch Ratings ("Fitch"). When calculating the risk-weighted value of an exposure using ECAI risk assessments, the ratings are pulled from a central database using client identifiers. The systems then map ECAI ratings to credit quality steps ("CQS") to derive the relevant risk weight. All other exposure classes are assigned risk weightings as prescribed in CRR.

Table 17: External Credit Assessments Institutions

Credit quality step	Moody's	Standard & Poor's/Fitch
1	Aaa to Aa3	AAA to AA-
2	A1 to A3	A+ to A-
3	Baa1 to Baa3	BBB+ to BBB-
4	Ba1 to Ba3	BB+ to BB-
5	B1 to B3	B+ to B-
6	Caa1 and below	CCC+ and below

10.3 Internal Ratings Based Approach

The MSI Group has permission to use the FIRB approach for the calculation of credit and counterparty credit risk capital requirements. The permission covers all material portfolios and is applicable to exposures to Central Governments, Central Banks, Institutions and Corporates.

The MSI Group leverages the FIRB process for internal risk management processes. Internal ratings are used in the sizing of credit limits and also influence the terms under which credit exposures are undertaken, including collateral and documentation.

Rating Process

Credit Risk Management expresses the creditworthiness of each counterparty by assigning it a rating. The rating scale includes 17 segments on a scale from AAA to CCC, plus a single category for defaulted counterparties.

Each rating is linked to an exposure limit and mapped to a specific PD. To monitor the credit risk of the portfolio, the MSI Group uses quantitative models to estimate various risk parameters related to each counterparty and/or facility.

Ratings are assigned using exposure specific methodologies based on quantitative and/or qualitative obligor risk drivers. These include but are not limited to counterparty's financial statements, market position, strategy, management, legal and environmental, industry dynamics, security prices and other financial data reflecting a market view of the counterparty. Outputs from the models are supplemented by expert judgment to include exogenous factors not captured by the methodology in the final rating.

MSI Group wholesale exposures fall into the following exposure classes: Central Governments or Central Banks, Institutions and Corporates. The Central Governments or Central Banks exposure class mainly includes traded products, lending and treasury exposures to Sovereign Governments, Central Banks, Government Guaranteed Entities, Government Guaranteed Banks and Supranational.

The Sovereign ratings process, used for Central Governments or Central Banks, applies a methodology based on quantitative and qualitative factors which incorporate consideration of the financial systems, legal and regulatory risks (e.g. macro-prudential supervision) as well as the reputational risk of extending credit in the country. MSI Group has two key models for this exposure category.

The Institutions exposure class mainly includes traded products, lending and treasury exposures to banks. The ratings process for Institutions applies a methodology that is based on a range of risk factors including capital adequacy, asset quality, earnings, funding and management. The regulatory environment and implicit government support is incorporated where applicable and permitted. MSI Group has one key model for this exposure category.

The Corporates exposure class mainly includes traded products and lending to wholesale counterparties not covered under the Central Governments or Central Banks and Institutions exposure classes. The ratings process for Corporates has different methodologies depending on the industry to which the counterparty belongs. The general characteristics employed include quantitative factors such as leverage, interest coverage, cash flow and company size, as well as qualitative factors such as industry and business risk, market position, liquidity/funding, event risk, management and corporate governance. Implicit government support may be incorporated where applicable and permitted. Tailored methodologies are applied for certain specialist sectors such as broker-dealers, insurance and funds. MSI Group has six key models for this exposure type.

Ratings for Special Purpose Vehicles ("SPV") reflect Credit Risk Management's assessment of the risk that the SPV will default. The rating therefore incorporates the MSI Group relative position in the counterparty's payment structure as well as the default risk associated with the underlying assets. Ratings are often "tranche specific" (e.g. the AAA rated senior tranche or the BBB subordinated tranche).

Rating Philosophy and PD Estimation

The MSI Group internal rating process and philosophy are similar to S&P's. For credit risk capital and risk management purposes, Credit Risk Management maps internal ratings to S&P ratings and then applies S&P's extensive default history to determine the PD. Minor adjustments are made for specific items, such as preserving the monotonic relationship among rating grade PDs and maintaining the regulatory floor of 0.03% for counterparties which are not Central Governments or Central Banks.

The MSI Group follows the PRA regulatory guidance and takes different approaches to estimate PDs for its low default portfolio ("LDP") and its non-LDP.

The MSI Group calculates PD for the non-LDP based on the long-run average of S&P's annual corporate default rates from 1981-2014. The incorporation of this data period ensures that the PD is representative of a long-run average default rate and therefore appropriate. The methodology employs an update rule, to determine the appropriateness of an update in the PDs based on annual data becoming available.

Portfolios where the MSI Group has experienced less than 20 defaults historically, and where no external default data is available for the reliable estimation of PDs are classified as low default. The methodology for deriving PDs for the low default portfolio, is based on a Bayesian approach, and derives a single scaling factor that is used to scale the non-LDP PD into an appropriate and conservative PD for the low default portfolio. This scaling factor is floored at 100%.

The MSI Group confirms through an internal validation process that the PD values it uses are prudent when compared to actual Morgan Stanley Group default experience. The MSI Group uses supervisory-prescribed factors to calculate LGDs and conversion factors.

Table 18 summarises the IRB Geographical Breakdown of Exposure Weighted Average PD for the MSI Group.

Table 18: IRB geographical breakdown of exposure weighted average PD

MSI Group[1,2]	Americas	EMEA	Asia	Other
Central governments or central banks	0.04%	0.03%	0.04%	0.02%
Corporates	1.13%	0.51%	0.72%	0.18%
Institutions	0.06%	0.28%	0.10%	0.00%

1. The table does not include the IRB Equities and IRB Securitisation exposure classes, as these exposures are treated through the IRB simple risk weight approach (CRR Article 155.2), and the IRB ratings based method (CRR Article 261) respectively.
2. Supranational exposures have been allocated to the region of the headquarters of the institution.

Control Mechanisms for the Rating System

The rating system and its components are validated on a periodic basis. The model validation process is independent of the internal models' development, implementation and operation. The validation process includes tests of the model's sensitivity to key inputs and assumptions and evaluation of conceptual soundness. Model governance committees are in place to provide appropriate technical and business review and oversight. IAD serves as the third line of defence with regards to the internal rating model development process and practices, through independent review it performs periodically.

The performance of the rating system is assessed on a quarterly basis. This includes a review of key performance measures including comparison of internal ratings versus agency ratings, ratings of defaulted parties, transitions across grades, and analysis of expert overrides.

Non-Trading Book Equity Exposure and Specialised Lending

The MSI Group applies the IRB simple risk weight approach for equity exposures falling outside of the Trading Book. The majority of the equity positions are held as hedges for employee long-term compensation schemes. A Specialised Lending Slotting methodology is used in capital calculation for loans secured by Income Producing Real Estate. Table 19 shows the MSI Group's specialised lending and equity exposures using the simple risk-weighted approach.

Table 19: IRB (Specialised Lending and Equities) (EU CR10)

MSI Group[1]		Specialised Lending					
Regulatory Categories	Remaining Maturity	On-balance sheet amount $MM	Off-balance sheet amount $MM	Risk weight %	Exposure amount $MM	RWAs $MM	Expected losses $MM
Category 1	Less than 2.5 years	-	-	50%	-	-	-
	Equal to or more than 2.5 years	-	-	70%	-	-	-
Category 2	Less than 2.5 years	-	-	70%	-	-	-
	Equal to or more than 2.5 years	74	-	90%	74	67	-
Category 3	Less than 2.5 years	-	-	115%	-	-	-
	Equal to or more than 2.5 years	-	-	115%	-	-	-
Category 4	Less than 2.5 years	-	-	250%	-	-	-
	Equal to or more than 2.5 years	-	-	250%	-	-	-
Category 5	Less than 2.5 years	-	-	-	-	-	-
	Equal to or more than 2.5 years	-	-	-	-	-	-
Total	**Less than 2.5 years**	**-**	**-**	**-**	**-**	**-**	**-**
	Equal to or more than 2.5 years	**74**	**-**	**-**	**74**	**67**	**-**

Equities under the simple risk-weight approach						
MSI Group	On-balance sheet amount $MM	Off-balance sheet amount $MM	Risk weight %	Exposure amount $MM	RWAs $MM	Capital requirements $MM
Private equity exposures	-	-	190%	-	-	-
Exchange-traded equity exposures	425	366	290%	791	2,293	183
Other equity exposures	90	-	370%	90	333	27
Total	**515**	**366**	**-**	**881**	**2,626**	**210**
MSIP						
Private equity exposures	-	-	190%	-	-	-
Exchange-traded equity exposures	421	331	290%	752	2,181	174
Other equity exposures	84	-	370%	84	312	25
Total	**505**	**331**	**-**	**836**	**2,493**	**199**

1. MSIP has no specialised lending.

Over the second half of 2019, there have been no material changes.

Table 20 shows realised and unrealised gains and losses for equity exposures falling outside of the Trading Book for the MSI Group.

Table 20: Non-trading book equity gains and losses

MSI Group	$MM
Cumulative amount of realised gains or (losses) resulting from sales and liquidations in the period	(49)
Total unrealised gains or (losses)	72
Total latent revaluation gains or (losses)	-
Amount of unrealised gains or (losses) or latent revaluation gains or losses included in Tier 1 capital	-

Estimates Versus Actual Probability of Default and Losses

An analysis of estimated versus actual default rates by exposure class for the MSI Group is shown in Table 21. The estimated PDs are expressed as the simple average PD calculated on the number of obligors covered in each exposure class. These estimated PDs are a prediction, as at the end of prior year, of the 1-year forward looking default rate on a through-the-cycle basis, and are compared with the actual (realised) defaults in the current year. The comparatively low percentage of actual defaults reflects the benign credit environment and the conservativeness of internal estimates.

Table 21: Estimated versus actual PD by exposure class

MSI Group[1]	Estimate at 2017	Actual at 2018	Estimate at 2018	Actual at 2019
Central governments or central banks	0.29%	-	0.34%	-
Corporates	2.84%	0.01%	2.11%	0.03%
Institutions	0.88%	0.13%	1.00%	-
Corporates – specialised lending	0.29%	-	-	-

1. The averaging approach for estimated PDs facilitates a meaningful comparison with actual defaults.

An analysis of credit risk adjustments and expected loss by IRB exposure class for the MSI Group is shown in Table 22 including additional information on charges to the profit and loss for loss events that occurred during the respective periods. The credit risk adjustments balances reflect impaired legacy loans entered into pre-2008 that were affected by the economic downturn and have not recovered. Charges to the profit and loss reflect continued write-downs of these positions.

Table 22: IRB credit risk adjustments, expected loss and charge to the profit and loss

$MM MSI Group	Specific risk adjustments 2019	Expected loss[1] 2019	Charge to the profit and loss[2] 2019	Specific risk adjustments 2018	Expected loss[1] 2018	Charge to the profit and loss[2] 2018
Central governments or central banks	-	4	-	-	4	-
Corporates	(9)	193	1	(22)	187	3
Institutions	(6)	37	2	(15)	31	3
Equity	-	8	-	-	7	-
Total	**(15)**	**242**	**3**	**(37)**	**229**	**6**

1. Expected Losses mainly arise from exposures on MSIP.
2. Charge to the Profit and Loss represents loss events that occurred during the period, and does not include the effect of other movements in the Credit Risk Adjustments balance due to: currency translation; changes in estimates of losses arising on events which occurred in the preceding period.

The MSI Group does not establish credit reserves for traded products. Incurred credit valuation adjustments and debit valuation adjustments are taken through profit and loss.

10.4 Credit Risk Adjustments

The main considerations for the impairment assessment include whether there are any known difficulties in the cash flows of counterparties, credit rating downgrades, or infringement of the original terms of the contract.

The MSI Group determines the allowance appropriate for each individually significant asset on an individual basis. Items considered when determining the allowance amount include the sustainability of the counterparty's business plan, the counterparty's ability to improve performance once a financial difficulty has arisen, the realisable value of collateral, and the timing of expected cash flows. The impairment losses are evaluated, at least, at each reporting date.

Table 23: Impaired and past due exposures, credit risk adjustments by industry type

$MM MSI Group	Past due[1]	Impaired exposures[2,3]	Specific credit risk adjustments	General credit risk adjustments	Charges for specific and general credit risk adjustments[4]
Sovereigns	19	-	-	-	-
Banks and securities firms	1,952	10	(6)	-	2
General industrials	-	-	-	-	-
Other corporates	168	16	(9)	-	1
Real estate	-	-	-	-	-
Total	**2,139**	**26**	**(15)**	**-**	**3**
MSIP					
Sovereigns	19	-	-	-	-
Banks and securities firms	1,492	7	(6)	-	2
General industrials	-	-	-	-	-
Other corporates	168	17	(9)	-	1
Real estate	-	-	-	-	-
Total	**1,679**	**24**	**(15)**	**-**	**3**

1. A financial asset is considered 'past due' when a counterparty has failed to make a payment when contractually due.
2. A financial asset is considered 'impaired' under the Impairment policy if, and only if, there is objective evidence of impairment resulting from events occurring after initial recognition that have an impact on estimated future cash flows of the financial asset, and the impact on those cash flows can be reliably estimated.
3. Impairment requirements are based on expected credit losses ("ECL"). In calculating ECL and assessing evidence for a significant increase in credit risk, the MSI Group considers whether exposures are past due as well as other quantitative and qualitative factors. For further details refer to the MSIP Annual Accounts - Impairments of Financial Instruments.
4. Charges for Specific and General Credit Risk Adjustments represents the movement in the Credit Risk Adjustments balance for the year and may include: loss events that occurred during the period and changes in estimates of losses arising on events which occurred in the preceding period.

Table 24: Impaired and past due exposures, credit risk adjustments by geographic region

$MM	America	EMEA	Asia	Other	Total
MSI Group					
Impaired	2	23	1	-	26
Past due exposures	244	1,684	211	-	2,139
General credit risk adjustments	-	-	-	-	-
Specific credit risk adjustments	(1)	(13)	(1)	-	(15)
Total	**245**	**1,694**	**211**	**-**	**2,150**
MSIP					
Impaired	2	21	1	-	24
Past due exposures	191	1,322	165	-	1,678
General credit risk adjustments	-	-	-	-	-
Specific credit risk adjustments	(1)	(13)	(1)	-	(15)
Total	**192**	**1,330**	**165**	**-**	**1,687**

10.5 Credit Risk Mitigation

The MSI Group may seek to mitigate credit risk from its lending and trading activities in multiple ways, including netting, collateral, guarantees and hedges. At the transaction level, the MSI Group seeks to mitigate risk through management of key risk elements such as size, tenor, financial covenants, seniority and collateral. The MSI Group actively hedges its lending and derivatives exposure through various financial instruments that may include single-name, portfolio and structured credit derivatives. Additionally, the MSI Group may sell, assign or syndicate funded loans and lending commitments to other financial institutions in the primary and secondary loan market. In connection with its derivatives trading activities, the MSI Group generally enters into master netting agreements and collateral arrangements with counterparties. These agreements provide the MSI Group with the ability to demand collateral, as well as to liquidate collateral and offset receivables and payables covered under the same master agreement in the event of a counterparty default.

Netting

The MSI Group has policies and procedures in place for assessing the validity, enforceability and treatment of netting agreements with clients in connection with its derivative trading activities. In order to net a group of similar exposures with counterparty, a qualifying master netting agreement must be in place between Morgan Stanley and the counterparty. The agreement must be valid and legally enforceable. Upon an event of default, including in the event of bankruptcy or insolvency of the counterparty, all transactions within the netting set are terminated in a timely manner and a single net close-out amount is determined under a qualifying master netting agreement. Repo-style transactions must also be executed under an agreement that provides for the close-out on a net basis. The MSI Group does not make use of on-balance-sheet netting of loans and deposits in regulatory capital calculations.

Collateral

The amount and type of collateral required by the MSI Group depends on an assessment of the credit risk of the counterparty, and any relevant regulation. Collateral held is managed in accordance with the MSI Group's guidelines and the relevant underlying agreements.

The MSI Group actively manages its credit exposure through the application of collateral arrangements. The use of collateral in managing OTC derivative risk is standard in the market place, and is governed by appropriate documentation; for example, the Credit Support Annex to the International Swaps and Derivatives Association documentation. In line with these standards, the Morgan Stanley Group generally accepts only cash and G7 government bonds, corporate debt and main index equities as eligible collateral. Other securities may be accepted in securities lending, repo and prime brokerage, subject to conservative haircuts based on assessments of collateral volatility and liquidity. There is an established and robust infrastructure to manage, maintain and value collateral on a daily basis. Haircuts are taken on eligible collateral to act as a buffer against adverse price movements prior to liquidation of the collateral during the close out process following a counterparty's default. Standard haircuts are reviewed periodically and during volatile markets.

In the warehouse lending business residential mortgage loans can be used as eligible financial collateral. Commercial Real Estate loans can be secured by physical collateral including commercial property or land. Credit Risk Management review and analyse the value of the collateral posted by the obligor. It is common practice for third-party appraisals to be updated on at least an annual basis. These updated appraisals are reviewed and evaluated by Credit Risk Management.

The MSI Group's collateral management policies include arrangements for maintaining the integrity of the margining process, including the capture of collateral terms and haircuts and the underlying legal rights, interest and ownership of collateral transferred. The policies also include arrangements for safeguarding collateral, rehypothecation, collateral concentrations and dispute resolution. Collateral concentration in OTC derivatives is assessed through considering concentration relative to the liquidity of the underlying assets.

11. Counterparty Credit Risk

11.1 Counterparty Credit exposures

The MSI Group uses the IMM and the MTMM for calculating its Counterparty Credit Risk exposure. The majority of OTC derivatives within the MSI Group are in scope of the IMM permission. The IMM approach uses a Monte Carlo simulation technique to measure and monitor potential future exposures of derivative portfolios. The models used simulate risk factors and replicate the risk mitigation techniques such as netting and collateral. The most material risk factors are calibrated daily to market implied data, while other risk factors are calibrated based on three years or more of historical data.

Table 25 shows a comprehensive view of the methods used to calculate CCR regulatory requirements and the main parameters used within each method for the MSI Group as at 31 December 2019.

Table 25: Analysis of the CCR exposure by approach (EU CCR1)

$MM MSI Group	Notional	Replacement cost/current market value	Potential future exposure	Effective expected positive exposure	Multiplier	EAD post CRM	RWAs
Mark-to-market		2,715	23,666			19,284	8,733
Original exposure	-					-	-
Standardised approach		699			1.4	699	362
IMM (for derivatives and SFTs)				28,894	1.4	41,685	21,713
Of which securities financing transactions				-	-	-	-
Of which derivatives & long settlement transactions				28,894	1.4	41,685	21,713
Of which from contractual cross product netting				-	-	-	-
Financial collateral simple method (for SFTs)						-	-
Financial collateral comprehensive method (for SFTs)						48,100	7,921
VaR for SFTs						-	-
Total							**38,729**

Table 26 summarises the movements of RWAs and MCR for MSI Group and MSIP's CCR exposures under the IMM Model.

Table 26: RWA flow statements of CCR exposures under the IMM (EU CCR7)

$MM	MSI Group		MSIP	
	RWAs	MCR	RWAs	MCR
RWAs at the end of the previous reporting period[1]	**21,567**	**1,725**	**20,958**	**1,677**
Asset size	27	2	67	5
Credit quality of counterparties	301	25	289	23
Model updates (IMM only)	(182)	(15)	(176)	(14)
Methodology and policy (IMM only)	-	-	-	-
Acquisitions and disposals	-	-	-	-
Foreign exchange movements	-	-	-	-
Other	-	-	-	-
RWAs at the end of the reporting period	**21,713**	**1,737**	**21,138**	**1,691**

1. Previous reporting period was Q3'19.

Over the fourth quarter, there were no material movements.

11.2 Credit Valuation Adjustment

CVA is the capital requirement that covers the risk of mark-to-market losses on the counterparty risk of OTC derivatives. It is calculated using a combination of an advanced approach based on using internal modelling approaches and a standardised approach.

Table 27 shows CVA by approach for the MSI Group as at 31 December 2019.

Table 27: CVA capital charge (EU CCR2)

$MM MSI Group	Exposure value	RWAs
Total portfolios subject to the advanced method	26,523	7,298
(i) VaR component (including the 3× multiplier)		1,192
(ii) Stressed VaR component (including the 3× multiplier)		6,106
All portfolios subject to the standardised method	19,075	5,541
Based on the original exposure method	-	-
Total subject to the CVA capital charge	**45,598**	**12,839**

Over the second half of 2019, the increase in exposures is due to portfolio changes.

11.3 Derivatives and SFTs credit exposure

Table 28 shows the impact of netting and collateral held on exposures on derivative and SFTs held as at 31 December 2019 for the MSI Group.

Table 28: Impact of netting and collateral held on exposure values (EU CCR5-A)

$MM MSI Group	Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure
Derivatives[1]	297,029	252,056	44,973	32,832	12,141
SFTs[2]	616,233	-	616,233	543,760	72,473
Total	**913,262**	**252,056**	**661,206**	**576,592**	**84,614**

1. Derivatives exposures are predominately driven by OTC derivatives.
2. SFTs carrying amount reflects netting benefit. MSI Group does not engage in any cross product netting.

Gross positive fair value represents any long market value on derivative transactions before netting benefits are applied but after any regulatory eliminations and exemptions are applied. Collateral held represents the market value of enforceable collateral received after regulatory eliminations and exemptions are applied. Net derivatives credit exposure represents the net exposure after collateral received has been applied.

Table 29 shows the breakdown of all types of collateral posted or received by banks to support or reduce CCR exposures related to derivative transactions or to SFTs, including transactions cleared through a Central Counterparty ("CCP") as at 31 December 2019 for the MSI Group.

Table 29: Composition of collateral for exposures to CCR (EU CCR5-B)

$MM	Collateral used in derivative transactions				Collateral used in SFTs	
	Fair value of collateral received		Fair value of collateral posted		Fair value of collateral received	Fair value of collateral posted
MSI Group	Segregated	Unsegregated	Segregated	Unsegregated		
Cash	2,627	63,302	4,735	29,877	385,223	361,947
Corporate bonds	1,484	2,115	1,361	1,359	8,023	6,231
Equity securities	1,323	4,364	1,837	690	110,884	112,633
Government agency debt	1,581	1,915	-	12	9,357	19,134
Sovereign debt	1,993	6,411	1,066	3,821	135,316	158,153
Total	**9,008**	**78,107**	**8,999**	**35,759**	**648,803**	**658,098**

Over the second half of 2019, collateral values have moved in line with exposures.

Guarantees

Letters of credit and guarantees can be used to transfer the credit risk of an exposure to another counterparty. For specific transactions or counterparties, the MSI Group will accept letters of credit and guarantees following an appropriate level of due diligence. In such instances, the exposure is assumed to be to the provider of the letter of credit or guarantee. The acceptable types of provider of letters of credit and guarantees are sovereigns, certain supranational and multilateral development banks, banks and other financial institutions, and corporates that are rated at least investment grade. A provider is not deemed acceptable if the provider's creditworthiness is positively correlated with the credit risk of the exposures for which it has provided guarantees.

11.4 Exposures to CCPs

Table 30 shows the breakdown of the exposures by qualifying and non-qualifying CCPs as at 31 December 2019 for the MSI Group.

Table 30: Exposures to CCPs (EU CCR8)

$MM MSI Group	EAD post CRM	RWAs
Exposures to Qualifying CCPs ("QCCP") (total)		**1,361**
Exposures for trades at QCCPs (excluding initial margin and default fund contributions); of which	14,646	296
(i) OTC derivatives	2,556	54
(ii) Exchange-traded derivatives	9,763	195
(iii) SFTs	2,327	47
(iv) Netting sets where cross-product netting has been approved	-	-
Segregated initial margin	-	
Non-segregated initial margin	9,397	188
Prefunded default fund contributions	819	142
Alternative calculation of own funds requirements for exposures		735
Exposures to non-QCCPs (total)		**25**
Exposures for trades at non-QCCPs (excluding initial margin and default fund contributions); of which	73	25
(i) OTC derivatives	-	-
(ii) Exchange-traded derivatives	73	25
(iii) SFTs	-	-
(iv) Netting sets where cross-product netting has been approved	-	-
Segregated initial margin	-	
Non-segregated initial margin	-	-
Pre-funded default fund contributions	-	-
Unfunded default fund contributions	-	-

Over the second half of 2019, the underlying movements are driven by market, collateral and portfolio changes.

Credit Derivative Transactions

Table 31 shows the extent of an institution's exposures to credit derivative transactions broken down between derivatives bought or sold for the MSI Group.

Table 31: Credit derivatives exposures (EU CCR6)

$MM	Credit derivative hedges		
MSI Group[1]	Protection bought	Protection sold	Other credit derivatives
Notionals			
Credit Derivative Products used for own credit portfolio			
Single-name credit default swaps	-	-	2,367
Index credit default swaps	-	-	-
Total return swaps	-	-	1,208
Credit options	-	-	-
Other credit derivatives	-	-	345
Total Notionals used for own credit portfolio	-	-	**3,920**
Credit Derivative Products used for intermediation			
Single-name credit default swaps	-	-	215,859
Index credit default swaps	-	-	117,306
Total return swaps	-	-	16,163
Credit options	-	-	11,550
Other credit derivatives	-	-	28,572
Total Notionals used for intermediation	-	-	**389,450**
Total credit derivative notionals	-	-	**393,370**
Fair values			
Positive fair value (asset)	-	-	6,774
Negative fair value (liability)	-	-	(7,059)

1. Credit Derivatives are not used as a CRM technique for RWA benefits.

Over the second half of 2019, credit derivative products used for intermediation increased, primarily on single-name credit default swaps.

11.5 Collateral Impact of a Downgrade

In connection with certain OTC trading agreements and certain other agreements where the MSI Group is a liquidity provider to certain financing vehicles, the MSI Group may be required to provide additional collateral or immediately settle any outstanding liability balances with certain counterparties or pledge additional collateral to certain exchanges and clearing organisations in the event of a future credit rating downgrade irrespective of whether the MSI Group is in a net asset or net liability position.

The additional collateral or termination payments that may be called in the event of a future credit rating downgrade vary by contract and can be based on ratings by either or both of Moody's and S&P. As at 31 December 2019, the future potential collateral amounts and termination payments that could be called or required by counterparties or exchanges and clearing organisations, in the event of one-notch or two-notch downgrade scenarios, from the lowest of Moody's or S&P ratings, based on the relevant contractual downgrade triggers, were $130 million and an incremental $241 million, respectively.

11.6 Wrong Way Risk

Specific wrong way risk arises when a transaction is structured in such a way that the exposure to the counterparty is positively correlated with the PD of the counterparty. For example, a counterparty writing put options on its own stock or a counterparty collateralised by its own or related party stocks. The MSI Group considers these matters when approving transactions. Ongoing monitoring of transactions with specific wrong way risk is facilitated by systematic identification from inception of the trade throughout the entire lifecycle of the trade. Further, credit and capital exposures are adjusted to reflect the identified specific wrong way risk.

General wrong way risk arises when the counterparty PD is correlated, for non-specific reasons, with the market or macroeconomic factors that affect the value of the counterparty's trades. Single-factor stress tests are used to probe for general wrong way risk, and counterparties with identified sensitivities are subject to heightened monitoring. Where positions raise concerns, a risk mitigation strategy is agreed between Credit Risk Management and the business units.

12. Securitisation

12.1 Securitisation Activities

The MSI Group acts, or has historically acted, as originator, sponsor, liquidity provider, servicer and derivative counterparty to its own originated and sponsored securitisations, as well as those of third party securitisations. The MSI Group also acts as market maker for, and refinancer of securitised products in EMEA. The majority of the securitisation exposures result from this activity and are Trading Book as at 31 December 2019.

The MSI Group's strategy has been to use securitisations for customer facilitation. The MSI Group has engaged in securitisation activities related to commercial and residential mortgage loans, corporate bonds and loans, and other types of financial instruments. Derivative exposures to securitisations are generally interest rate swaps and usually with senior payment priority.

The MSI Group participated as a book runner or lead manager in a number of new securitisations during 2019, primarily refinancing. The MSI Group did not originate or sponsor any new securitisations in 2019.

12.2 Regulatory Capital Treatment

The MSI Group employs the IRB approach and the Standardised approach to calculate the capital on its securitisation positions. The IRB approach is applied to securitisation exposures where the MSI Group has regulatory approval to use the IRB approach for the assets underlying the securitisation and the Standardised approach for all other assets. In general, this means securitisations of retail exposures are treated under the Standardised Approach, whilst securitisations of non-retail exposures are captured under the IRB Approach. Both approaches use rating agency credit ratings to determine risk weights. The MSI Group uses ratings from three ECAIs: Moody's, S&P's and Fitch across all types of exposures.

12.3 Securitisation Exposures

Table 32 shows the securitisation exposures and MCR within the MSI Group as at 31 December 2019.

Table 32: Securitisation exposures summary

$MM MSI Group[1]	Trading book	Non-trading book
Exposures	1,041	319
Of which subject to the revised securitisation framework	322	-
MCR	370	14
Of which subject to the revised securitisation framework	56	-

1. Securitisation exposures increased by $212MM and capital requirements decreased by $(51)MM, compared to 2018. The decrease in capital requirements was primarily driven by decreased exposure in unrated Trading Book activity.

Table 33 and 34 provide a summary of the types of securitisation exposures within the MSI Group as at 31 December 2019.

Table 33: Trading book securitisation exposures by exposure type

$MM MSI Group[1]	Traditional	Positions retained	Positions purchased
Residential mortgages	499	-	499
Commercial mortgages	53	-	53
Credit card receivables	6	-	6
Loans to corporates or SMEs (treated as Corporates)	452	-	452
Consumer loans	27	-	27
Other assets	4	-	4
Total	**1,041**	**-**	**1,041**

1. There were no off-balance sheet or synthetic exposures in the Trading Book as at 31 December 2019.

Table 34: Non-trading book securitisation exposures by exposure type

$MM MSI Group[1]	Traditional	Positions retained	Positions purchased
Residential mortgages	214	12	202
Commercial mortgages	1	-	1
Loans to corporates or SMEs (treated as corporates)	104	43	61
Other assets	-	-	-
Total	**319**	**55**	**264**

1. There were no off-balance sheet or synthetic securitisation exposures in the Non-Trading Book as at 31 December 2019.

Table 35 and 36 show the securitisation positions broken down by capital approach and CQS within the MSI Group as at 31 December 2019. These tables however do not include securitisations issued during 2019 which are subject to the revised securitisation framework ($322MM trading book exposure and $56MM MCR).

Table 35: IRB securitisation exposures and capital requirements by CQS

$MM MSI Group[1]	Trading book exposure	Non-trading book exposure	Trading book capital requirements	Non-trading book capital requirements
Amount of securitisation purchased				
CQS 1-3	56	-	1	-
CQS 4-6	41	-	1	-
CQS 7-11	111	61	31	4
All other CQS	156	2	94	2
Unrated	59	1	62	1
Amount of securitisation retained				
CQS 1-3	-	43	-	1
CQS 4-6	-	-	-	-
CQS 7-11	-	-	-	-
All other CQS	-	-	-	-
Unrated	-	-	-	-
Amount of re-securitisation purchased				
CQS 1-3	-	-	-	-
CQS 4-6	-	-	-	-
CQS 7-11	-	-	-	-
All other CQS	-	-	-	-
Unrated	-	1	-	1
Amount of re-securitisation retained				
Unrated	-	-	-	-
Total	**423**	**108**	**189**	**9**

1. The exposures above are after a financial guarantee which reduced one re-securitisation exposure purchased position by $21MM, based on year-end market value.

Table 36: Standardised securitisation exposures and capital requirements by CQS

$MM MSI Group	Trading book exposure	Non-trading book exposure	Trading book capital requirements	Non-trading book capital requirements
Amount of securitisation purchased				
CQS 1-3	147	199	4	3
CQS 4-5	62	-	34	-
Unrated	39	-	39	-
Amount of securitisation retained				
CQS 1-3	-	8	-	1
CQS 4-5	-	4	-	1
Amount of re-securitisation purchased				
Unrated	48	-	48	-
Total	**296**	**211**	**125**	**5**

12.4 Accounting

In the event that the MSI Group acts as the originator of a securitisation, transfers of financial assets in the transaction are generally accounted for as sales when the MSI Group has relinquished control over the transferred assets and met CRR requirements for significant risk transfer. The gain or loss on sale of such financial assets depends, in part, on the previous carrying amount of the assets involved in the transfer (generally at fair value), the sum of the proceeds and fair value of the retained interests on the date of sale.

For further information on the MSI Group's financial instruments and de-recognition accounting policies, please refer to notes 2(c) and 2(e) in Appendix VII.

12.5 Valuation

The MSI Group may retain interests in the securitised financial assets of one or more tranches of the securitisation. These retained interests are included at fair value. Any changes in the fair value of such retained interests are recognised through the profit and loss in the audited financial statements of the entity holding such interests. For further information on the MSI Group's valuation techniques related to securitisation, please refer to note 2(d) in Appendix VII.

12.6 Risk Monitoring

The credit risk of the MSI Group's securitisations is controlled by actively monitoring and managing the associated credit exposures. The MSI Group evaluates collateral quality, credit subordination levels and structural characteristics of securitisation transactions at inception and on an ongoing basis, and manages exposures against internal limits.

The MSI Group follows a set of rigorous procedures for risk managing market risk on securitised products, evolving them with changes in market conditions:

- The MSI Group conducts an assessment of risk limits at least once a year, and more often if required. Market conditions, collateral quality, liquidity and downside risk are important factors for setting market risk limits.
- The MSI Group measures downside risk using various metrics, such as VaR and scenarios analysis, differentiating products based on collateral, seniority and liquidity.

13. Market Risk

Market risk refers to the risk that a change in the level of one or more market prices, rates, indices, implied volatilities (the price volatility of the underlying instrument imputed from option prices), correlations or other market factors, such as market liquidity, will result in losses for a position or portfolio.

The MSI Group manages the market risk associated with its trading activities at both a division, business area and individual product level, and includes consideration of market risk at the legal entity level.

Sound market risk management is an integral part of the Morgan Stanley Group culture. The MSI Group is responsible for ensuring that market risk exposures are well-managed and monitored. The MSI Group Market Risk Department ("MRD") is responsible for ensuring transparency of material market risks, monitors compliance with established limits, and escalates risk concentrations to appropriate senior management. MRD is an independent risk oversight group headed by the EMEA Head of Market Risk, who reports directly to both the EMEA Chief Risk Officer and the Global Head of Market Risk.

To execute these responsibilities, MRD monitors the market risk against limits on aggregate risk exposures and performs a variety of risk analyses. This includes monitoring VaR, stress testing and scenario analyses, routine reporting of risk exposures, and maintenance of the VaR and scenario analysis methodologies. The material risks identified by these processes are summarised and reported to senior management.

An IMA permission has been granted to MSIP on an individual basis and on the consolidated situation of MSI Group, in relation to exposures incurred by MSIP, MSESE and MSBAG.

IMA Models are applied consistently across all sub-portfolios; with the population in scope defined according to permission criteria. Models are independently reviewed on an annual basis by Model Risk Management, and changes to methodologies are approved by the Model Oversight Committee ("MOC"). The model validation process is independent of the internal models' development, implementation and operation. The validation process includes tests of the model's sensitivity to key inputs and assumptions and evaluation of conceptual soundness.

The market risk management policies and procedures for the MSI Group are consistent with those of the Morgan Stanley Group and include escalation to the MSI Group's Board of Directors and appropriate management personnel.

Risk Mitigation Policies

The MSI Group manages its trading positions by employing a variety of risk mitigation strategies. These strategies include diversification of risk exposures and hedging. Hedging activities consist of the purchase or sale of positions in related securities and financial instruments, including a variety of derivative products (e.g. futures, forwards, swaps and options). Hedging activities may not always provide effective mitigation against trading losses due to differences in the terms, specific characteristics or other basis risks that may exist between the hedge instrument and the risk exposure that is being hedged. The MSI Group manages and monitors its market risk exposures, including outright and basis risks, in such a way as to maintain a portfolio that the MSI Group believes is well-diversified in the aggregate with respect to market risk factors, and that reflects the MSI Group's aggregate risk tolerance as established by the MSI Group senior management. The effectiveness of hedges and mitigants is monitored using processes such as risk and limit reporting.

Data Quality

MRD has a data quality control process to monitor, validate, remediate, escalate and report data quality issues that impact market risk and capital reporting. The market risk middle office team is responsible for coordinating data quality control with the aim of providing MRD with high quality data that is accurate, complete and delivered in a timely manner. Threshold based checks are performed on input data for IMA models. Large moves are validated and data adjustments are made where necessary, along with the appropriate escalation to ensure ongoing remediation. Completeness, accuracy and timeliness Key Performance Indicators ("KPIs") for market risk metrics are reported to the Senior Management risk committees.

13.1 Value at Risk

The MSI Group uses the statistical technique known as VaR as one of the tools used to measure, monitor and review the market risk exposures of its trading portfolios. MRD calculates and distributes daily VaR-based risk measures to various levels of management.

VaR Methodology, Assumptions and Limitations

The MSI Group calculates VaR using a model based on historical simulation for general market risk factors and for name-specific risk in corporate shares and on Monte Carlo simulation for name-specific risk in bonds, loans and related derivatives. Market risk factors' daily moves are modelled either as absolute changes or relative changes, dependent on the most suitable stochastic process (normal or lognormal diffusion process) to describe the daily risk factor changes. The model constructs a distribution of hypothetical daily changes in the value of trading portfolios based on historical observation of daily changes in key market indices or other market risk factors, and information on the sensitivity of the portfolio values to these market risk factor changes.

The methodology for VaR at Morgan Stanley is 1-year historical simulation. The risk exposures used for the daily VaR calculation are based on greeks and full-revaluation grids, and simulations cover both systematic and specific risk components. The total simulated profit and loss of a given position for each simulation date in the historical window is calculated taking into account both systematic and specific risk components of the market factor moves. The final profit and loss distribution is a result of profit and losses of all risk factors and all positions being aggregated. The same valuation and aggregation approach is used for Stressed Value at Risk ("SVaR"). The time series data is updated on a weekly basis, with the exception of idiosyncratic risk factors which are updated quarterly.

A set of internal processes and controls ensure that all relevant trading positions booked by the MSI Group are included in VaR. The MSI Group's 99%/one-day VaR corresponds to the unrealised loss in portfolio value that, based on historically observed market risk factor movements, would have been exceeded with a frequency of 1%, or once every 100 trading days, if the portfolio were held constant for one day. The 99th percentile is computed and is scaled by the square root of 10 to arrive at a 10-day VaR for regulatory purposes. The 95th percentile 1-day VaR is used by MRD internally to manage risk and to base the legal entity VaR limits.

Table 37 provides an analysis of the 99% MSIP Regulatory VaR over the year to 31 December 2019.

Table 37: Daily average, maximum and minimum values for the 99% MSIP regulatory VaR

$MM	Period End VAR[1]	Average[2]	High[2]	Low[2]
Total	**27.8**	**31.0**	**53.6**	**22.0**
Of which:				
Interest rate	24.3	23.6	54.9	12.5
Credit spread	15.9	17.5	21.5	14.4
Equity	13.5	15.1	44.9	8.8
Foreign exchange	6.6	7.7	12.7	3.5
Commodity	0.1	0.0	0.3	0.0
Diversification[3]	(32.6)	-	-	-

1. This is the 1 Day 99% MSIP VaR for the year ending 31 December 2019. The 1 Day 99% MSEHSE VaR is immaterial.
2. Average / High / Low end-of-day 99% MSIP Regulatory VaR calculated over the one year period to 31 December 2019, based on end-of day positions for all trading days during the one year period.
3. The extent of diversification benefit depends on the correlation between the assets and risk factors in the portfolio at a point in time.

The MSI Group uses VaR as one of a range of risk management tools. Among their benefits, VaR models permit estimation of a portfolio's aggregate market risk exposure, incorporating a range of market risks and portfolio assets. One key element of the VaR model is that it reflects portfolio diversification or hedging activities. However, VaR has various limitations, which include, but are not limited to: use of historical changes in market risk factors, which may not be accurate predictors of future market conditions, and may not fully incorporate the risk of extreme market events that are outsized relative to observed historical market behaviour or reflect the historical distribution of results beyond the 99% confidence interval; and reporting of losses in a single day, which does not reflect the risk of positions that cannot be liquidated or hedged in one day. The modelling of the risk characteristics of some positions relies on approximations that, under certain circumstances, could produce significantly different results from those produced using more precise measures. VaR is most appropriate as a risk measure for trading positions in liquid financial markets and will understate the risk associated with severe events such as periods of extreme illiquidity. The MSI Group is aware of these and other limitations and therefore uses VaR as only one component in its risk management oversight process. This process also incorporates stress testing and scenario analyses and extensive risk monitoring, analysis, quantification of risk not captured in VaR, and control at the trading desk, division and the MSI Group levels.

The MSI Group is committed to continuous review and enhancement of VaR methodologies and assumptions in order to capture evolving risks associated with changes in market structure and dynamics. As part of regular process improvement, additional systematic and name-specific risk factors may be added to improve the VaR model's ability to more accurately estimate risks to specific asset classes or industry sectors.

Since the reported VaR statistics are estimates based on historical data, VaR should not be viewed as predictive of the MSI Group's future revenues or financial performance or of its ability to manage risk. There can be no assurance that the MSI Group's actual losses on a particular day will not exceed the VaR amounts indicated below or that such losses will not occur more than once in 100 trading days. VaR does not predict the magnitude of losses which, should they occur, may be significantly greater than the VaR amount.

VaR statistics are not readily comparable across firms because of differences in the firms' portfolios, modelling assumptions and methodologies. These differences can result in materially different VaR estimates across firms for similar portfolios. The impact of such differences varies depending on the factor history assumptions, the frequency with which the factor history is updated and the confidence level. As a result, VaR statistics are more useful when interpreted as indicators of trends in a firm's risk profile rather than as an absolute measure of risk to be compared across firms.

13.2 Market Risk Capital Requirements

The market risk capital requirements of the MSI Group comprises of capital which is calculated using IMA in accordance with regulatory approved models, and of capital which is calculated under the Standardised approach. Table 38 summarises the capital requirements under the respective approaches for the MSI Group. Testing to ensure that the capital assessment meets the required soundness standard is carried out on a quarterly basis with the results reported to the PRA.

Table 38: Market risk RWA summary

$MM MSI Group	RWAs Q4'19	RWAs Q3'19	MCR Q4'19
Standardised approach	14,073	12,570	1,126
Internal models approach	35,510	32,872	2,841
Total	**49,583**	**45,442**	**3,967**

Standardised Approach

Table 39 shows the market risk capital requirements for the MSI Group as at 31 December 2019, calculated in accordance with the standardised approach and categorised by component type.

Table 39: Market risk under the standardised approach (EU MR1)

$MM MSI Group	RWAs	MCR
Outright products		
Interest rate risk (general and specific)	3,362	269
Equity risk (general and specific)	7	1
Foreign exchange risk	4,259	341
Commodity risk	471	37
Securitisation (specific risk)[1]	4,626	370
Options		
Simplified approach	-	-
Delta-plus method	1,348	108
Scenario approach	-	-
Total	**14,073**	**1,126**

1. Of which subject to the revised Securitisation Framework RWAs $691MM, MCR $56MM.

Over the second half of 2019, Market Risk under the Standardised Approach increased, predominantly due to FX Risk.

IMA Approach

The VaR-based capital and the SVaR-based capital are determined by the higher of the 60-day average of the 10-day VaR / 10-day SVaR numbers, multiplied by the regulatory internal model multiplication factor as prescribed by the PRA, and the 10-day VaR/ 10-day SVaR for the relevant day. The Incremental Risk Charge ("IRC") and Comprehensive Risk Measure charges are determined by the higher of the average of the latest 12 weeks IRC/CRM and the IRC/CRM charge for the relevant day.

Table 40 shows the VaR and SVaR, as well as the IRC and CRM measures for the MSI Group, for the year ending 31 December 2019. The VaR, SVaR and IRC capital measures presented in Table 41 were based on the 60 day averages, as they were higher than the daily measures as at 31 December 2019.

Table 40: Market risk under internal models approach (EU MR2-A)			
$MM MSI Group		RWAs	MCR
VaR (higher of values a and b)		**4,370**	**350**
(a)	Previous day's VaR (Article 365(1) (VaRt-1))	1,121	90
(b)	Average of the daily VaR (Article 365(1)) of the CRR on each of the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with Article 366 of the CRR	4,370	350
SVaR (higher of values a and b)		**9,765**	**781**
(a)	Latest SVaR (Article 365(2) (sVaRt-1))	3,335	267
(b)	Average of the SVaR (Article 365(2) of the CRR) during the preceding 60 business days (SVaRavg) x multiplication factor (ms) (Article 366 of the CRR)	9,765	781
IRC (higher of values a and b)		**5,546**	**444**
(a)	Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 of the CRR)	5,546	444
(b)	Average of the IRC number over the preceding 12 weeks	4,746	380
Comprehensive risk measure (higher of values a, b and c)		**10**	**1**
(a)	Most recent risk number for the correlation trading portfolio (Article 377 of the CRR)	10	1
(b)	Average of the risk number for the correlation trading portfolio over the preceding 12 weeks	10	1
(c)	8% of the own funds requirement in the standardised approach on the most recent risk number for the correlation trading portfolio (Article 338(4) of the CRR)	0	0
Other		**15,819**	**1,265**
Total		**35,510**	**2,841**

Table 41 summarises the key drivers of RWAs MCR for MSI Groups and MSIP's market risk exposures under the Internal IMA Model.

Table 41: RWA flow statements of market risk exposures under the IMA (EU MR2-B)							
$MM MSI Group	VAR	Stressed VAR	IRC	Comprehensive risk measure	Other[4]	RWAs	MCR
RWAs at previous quarter end[1]	**3,632**	**7,252**	**4,067**	**0**	**17,921**	**32,872**	**2,630**
Regulatory adjustment[2]	(1,613)	(4,785)	-	-	(4,874)	(11,272)	(902)
RWAs at end of day previous quarter end	2,019	2,467	4,067	-	13,047	21,600	1,728
Movement in risk levels	(870)	822	1,554	10	(2,201)	(685)	(55)
Model updates/changes	(7)	10	-	-	-	3	-
Methodology and policy	-	-	-	-	-	-	-
Acquisitions and disposals	-	-	-	-	-	-	-
Foreign exchange movements	-	-	-	-	-	-	-
Other[3]	(21)	36	(75)	-	-	(60)	(5)
RWAs at end of day current quarter end	1,121	3,335	5,546	10	10,846	20,858	1,668
Regulatory adjustment[2]	3,249	6,430	-	-	4,973	14,652	1,173
RWAs at end of reporting period	**4,370**	**9,765**	**5,546**	**10**	**15,819**	**35,510**	**2,841**
MSIP							
RWAs at previous quarter end[1]	**3,626**	**7,224**	**4,067**	**0**	**17,772**	**32,689**	**2,615**
Regulatory adjustment[2]	(1,612)	(4,781)	-	-	(4,858)	(11,251)	(900)
RWAs at end of day previous quarter end	2,014	2,443	4,067	-	12,914	21,438	1,715
Movement in risk levels	(888)	780	1,549	10	(2,449)	(998)	(80)
Model updates/changes	(7)	10	-	-	-	3	-
Methodology and policy	-	-	-	-	-	-	-
Acquisitions and disposals	-	-	-	-	-	-	-
Foreign exchange movements	-	-	-	-	-	-	-
Other[3]	(21)	36	(75)	-	-	(60)	(5)
RWAs at end of day current quarter end	1,098	3,269	5,541	10	10,465	20,383	1,630
Regulatory adjustment[2]	3,215	6,310	-	-	4,546	14,071	1,126
RWAs at end of reporting period	**4,313**	**9,579**	**5,541**	**10**	**15,011**	**34,454**	**2,756**

1. Previous reporting period was Q3'19.
2. Regulatory adjustment accounts for the difference between the RWA calculated based on the end-of-day position, compared with the RWA calculated based on the 60-day average position in the case of VaR/SVaR, and 12-week average position in the case of IRC and CRM. The regulatory adjustments also account for the multiplication factors mc and ms, per Article 366 of the CRR, for the VaR, SVaR and Other respectively.
3. Other (flow driver) represents low impact data and implementation changes including time series updates and periodic parameter updates to the respective models.
4. Other (risk measure) represents Risks not in VaR ("RNIV").

Over the quarter to 31 December 2019, the primary driver has been changes in risk levels. This was predominantly attributable to VaR and RNIVs driven by decreased equity and inflation risks, partially offset by Stressed VaR due to higher interest risk, and IRC associated with increased high yield credit exposures.

Table 42 provides a summary of the maximum, minimum, average and period-end values over the six months to 31 December 2019, for the MSI Group, resulting from the different types of models approved to be used for computing the regulatory capital charge.

Table 42: IMA values for trading portfolios (EU MR3)

MSI Group	$MM
VaR (10 day 99%)	
Maximum value	165
Average value	102
Minimum value	69
Period end	90
SVaR (10 day 99%)	
Maximum value	330
Average value	211
Minimum value	117
Period end	267
IRC (99.9%)	
Maximum value	481
Average value	351
Minimum value	256
Period end	444
Comprehensive Risk capital charge (99.9%)	
Maximum value	1
Average value	0
Minimum value	0
Period end	1

Over the second half of 2019, VaR and SVaR were reduced, due to a decrease in risk levels in the Equities business. IRC trended higher mainly driven by increased high yield credit exposures from the derivatives portfolio.

13.3 Positions Included in the Trading Book

The MSI Group has a comprehensive framework of policies, controls and reporting to meet the requirements of the CRR for inclusion of positions in the Trading Book. The underlying policies, controls and reporting mechanisms cover a range of different aspects including Trading Intent, Valuation, Liquidity, Restrictions, Hedgeability, Active Management and transfers between the Trading and Non-Trading Books. Governance is provided by the Firm's Banking/Trading Committee whose role with respect to the banking/trading boundary is to oversee the determination of the banking / trading / covered position designation in accordance with regulatory requirements. The committee acts as the adjudication forum for any positions where the appropriate banking / trading / covered position designation is unclear. The Banking/Trading Committee reports to the firm's Basel Capital Steering Committee.

The Trading Book comprises financial instruments that are: held for trading intent or intent to hedge a trading position; free from restrictive covenants on tradability or for which the material risk elements can be hedged in a two-way market; frequently/accurately valued and actively managed on a trading desk. If a position fails to meet the Trading Book criteria, it will be classified as Non-Trading Book.

Trading Book positions are subject to market risk based rules, with market risk capital requirements calculated using regulatory approved internal models or a non-modelled standardised approach.

The Firm methodology for determining Non-Trading Book versus Trading Book classification is documented within the Firm's Trading Book, Banking Book and Covered Positions Boundary Policy. The policy outlines criteria for identifying and classifying trading book positions for the purpose of regulatory capital and market risk measurement and sets out associated roles and responsibilities across the business unit, finance and other stakeholder groups. This policy is subject to annual review and sign-off. The firm carries out a CRR self-assessment of the articles governing Trading Book/Non Trading Book classification.

A firm-wide framework establishes controls around initial Banking/Trading classification as well as ongoing monitoring to ensure the initial classification remains appropriate over time.

13.4 Backtesting

Morgan Stanley performs regulatory backtesting for MSIP on a daily basis at various levels of the business hierarchy to validate the accuracy of the VaR models.

Backtesting is performed on the firm's Regulatory Trading Book population and compares the profit and loss (for the MSIP Group) for trade date N against the 99%/one-day Regulatory Trading VaR for N-1. As per the requirements of the CRR rules, backtesting uses 'Actual' and 'Hypothetical' definitions of the profit and loss. Backtesting on Hypothetical changes in the portfolio's value refers to a comparison between the portfolio's end-of-day value and, assuming unchanged positions, its value at the end of the subsequent day. Backtesting on Actual changes in the portfolio's value refers to a comparison between the portfolio's end-of-day value and its actual value at the end of the subsequent day (i.e. inclusive of intra-day trading/new activity). Both measures of the backtesting profit and loss also exclude non risk based fees (i.e. service fees), commissions, and net interest income. For the purposes of the Regulatory backtest, Actual profit and loss incorporates liquidity and model-driven fair value adjustments whist Hypothetical profit and loss retains only the latter. The backtesting methodology is documented within the Firm's Backtesting Policy and Procedures. As of 31 December 2019, 72% of total MSIP Market Risk capital requirements are covered by the internal models. Backtesting is performed against the VaR model in accordance with requirements under the regulation. VaR represents a subset of total model based Market Risk capital requirements for MSIP.

Performance is measured across a (rolling) 250 business day period and is expressed by the number of MSIP-level exceptions (instances where MSIP Actual or Hypothetical profit and loss losses exceed 99% VaR) observed within the 250 business day period. Firms observing five or more exceptions within the measurement period are required to set aside additional Market Risk Capital based on a sliding scale.

On days where losses (on either an Actual and/or Hypothetical profit and loss basis) exceed the prior day's VaR, an exception is recorded and is reported by close of business N+2 to the PRA.

Any adverse results at the MSI Group or sub-portfolio level, that may point to weaknesses in model performance or data inaccuracies, are reported, analysed and discussed by the firm's MSI Group Market Risk Backtesting Review Forum. Findings or recommendations from this forum are escalated to UK firm management who are responsible for authorising any further model analysis or model remediation efforts.

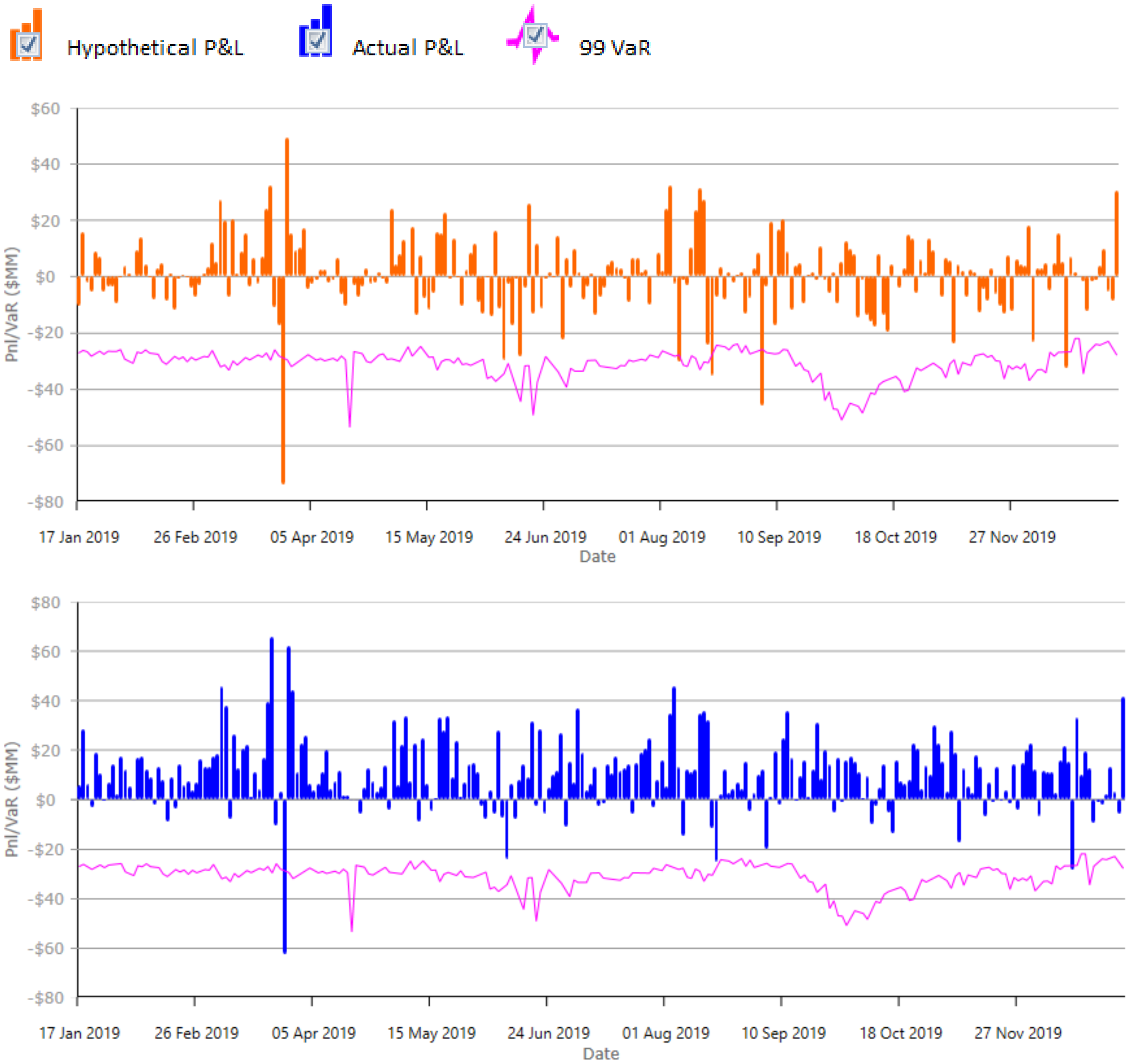
The results of backtesting and model performance monitoring are reported to the PRA on a periodic basis. For the measurement period ended 31 December 2019, five Hypothetical profit and loss exceptions and two Actual profit and loss exceptions were observed for MSIP. Exception counts of this order equate to the PRA Amber zone (greater than four exceptions). Regarding the five Hypothetical profit and loss exceptions, two occurred in August, and one exception was observed in each of the following months – March, September and December. Upon recording the fifth Hypothetical loss exception the Firm updated its capital multiplier in accordance with regulatory requirements.

The Firm's analysis of these exceptions concluded that they were largely driven by significant directional market moves in risk factors that were captured in the VaR model with sufficient granularity or from risks that were already covered via RNIV Buffers.

The plots of Actual and Hypothetical profit and loss covering a 250 business days of backtesting monitoring period to 31 December 2019 are displayed below.

Figure 5: Comparison of VaR Estimates with Gains/Losses (EU MR4)

The graphs below show the 1 day Regulatory Trading VaR against Actual and Hypothetical profit and loss for MSIP, values in millions of dollars:



13.5 Stressed VaR

SVaR uses the same underlying models as VaR to produce a 1-day 99% VaR constructed over a 1-year period of stress. SVaR uses historical simulations for the general market risk factors and for name-specific risk in corporate shares, and Monte Carlo simulation for name specific risk in bonds, loans and related derivatives. The SVaR model is agreed and approved by the PRA for use in regulatory calculations. Stressed 10-day VaR is constructed by scaling the Stressed 1-day VaR.

The SVaR window for regulatory calculations is periodically set as the 1-year Unadjusted VaR window since the start of 2 January 2006 that generates the largest financial stress to the Bank's portfolio as measured by the resulting VaR. Sub portfolios of MSIP are stressed using the same methodology as the MSI Group.

13.6 Incremental Risk Charge

The IRC covers losses arising from correlated credit rating migration events and potentially joint default events for credit products in Morgan Stanley's Trading Book portfolio. The model is applied to instruments with credit-like characteristics referencing corporate, sovereign, regional, supranational and agency obligors that are approved for specific risk treatment; this excludes securitisations and correlation trading products as these are capitalised differently. The model captures basis risks between credit derivatives and underlying reference instruments, maturity mismatches, regional and industry concentration risks, and simulates stochastic recovery rates.

The underlying model is based on a Merton style default modelling with a correlation structure between regions and industries that is calibrated to market implied default probabilities, and that uses through the cycle, historical transition matrices for rating migrations. The IRC model applies a constant level of risk with varying liquidity horizons of 3, 6 or 12 months reflective of underlying market liquidity and position concentrations in individual issuers. The weighted liquidity horizon for IRC is 4.91 months.

Morgan Stanley monitors various IRC model sensitivities and assumptions, including concentration sensitivities across industry, region, rating and security type, sensitivity to the "constant level of risk" assumption, and conservatism of stochastic loss given default.

Table 43: IRC liquidity horizon for material sub portfolios

MSI Group	Liquidity horizon (months)
Fixed income division	4.78
Institutional equity division	5.15
Bank resource management	5.90

13.7 Comprehensive Risk Measure

The CRM measures the profit and loss impact in the correlation trading portfolio ("CTP") of moves in credit spreads, base correlations, expected recovery, and basis risks including index versus single name, as well as defaults with stochastic recovery rates. The model is applied to correlation trading positions and their hedges, and assumes a constant level of risk and a fixed liquidity horizon of 6 months given underlying market liquidity and Morgan Stanley's inventory of CTP.

Comprehensive Risk Measure applies Monte Carlo simulations to a Merton style default modelling and separate but correlated multifactor processes for the modelled market risk factors. Market variables, including correlations, are calibrated to historical data, and parameters of the default process are the same as those used in the IRC model.

Morgan Stanley monitors the accuracy and consistency of the Comprehensive Risk Measure model via a review of the explanatory power and completeness of the core market risk factors set, and both supervisory and internally defined market stress scenarios.

13.8 Stress Testing

The MSI Group has a comprehensive and dynamic Stress testing framework incorporating deterministic group-wide Macroeconomic Stress tests, business area single and multi-factor scenarios, and reverse stress testing scenarios. Stress testing is one of the MSI Group's principal risk management tools used to identify and assess the impact of severe stresses on its portfolios. It complements other risk metrics by providing a flexible and easy to understand approach to understanding risk and assessing the MSI Group's resilience in the face of various scenarios over a range of severities. Stress testing methodologies are applied consistently across all sub-portfolios according to the UK Group Stress Testing Procedure, which applies to the MSI Group.

In addition to helping the MSI Group understand the risks it is exposed and/or vulnerable to under a range of scenarios, Stress testing is also used by the MSI Board to set the boundary for risk taking within the loss capacity of the MSI Group.

13.9 Interest Rate Risk in the Banking Book

Interest Rate Risk in the Banking Book ("IRRBB") is defined as the risk of losses arising from adverse changes in the interest rate curves within the defined Banking Book population. The MSI Group is exposed to interest rate risk primarily through the Trading Book which is captured within VaR. The MSI Group has IRRBB, primarily arising from MSI Group's funding and liquidity management. The interest rate risk is measured on a daily basis through firmwide risk systems, except for the risks on internal funding positions which are measured on a quarterly basis. IRRBB risk was $264k loss per basis point as of 31st December 2019, i.e. losses arising from increases in interest rate levels. Changes in the economic values of equity ("EVE") are evaluated using a 200BP parallel shift in interest rates. Impacts to Net Interest Income ("NII") are measured using a 100BP parallel shift in interest rates. There is a limit on the impact to NII and on the total IRRBB rates delta exposure. EVE and NII risk is mitigated by Treasury executing financial products to manage liquidity, funding and capital, including: cash, repo and reverse repo and interest rate derivatives.

Table 44: Interest rate risk in the banking book

$MM MSI Group[1]	Profit or loss of a +200BP parallel shift in interest rates	Profit or loss of a -200BP parallel shift in interest rates
USD	(57)	57
EUR	40	(40)
GBP	(44)	44
JPY	78	(78)
Other	(70)	70
Total	**(53)**	**53**

1. Changes in economic value of equity only.

14. Operational Risk

Risk Management and Control

Operational risk refers to the risk of loss, or of damage to the MSI Group's reputation, resulting from inadequate or failed processes, people and systems or from external events (e.g. fraud, theft, legal and compliance risks, cyber-attacks or damage to physical assets). Operational risk relates to the following risk event categories as defined by Basel Capital Standards: internal fraud; external fraud; employment practices and workplace safety; clients, products and business practices; business disruption and system failure; damage to physical assets; and execution, delivery and process management. The MSI Group may incur operational risk across the full scope of its business activities. Legal and compliance risk is included in the scope of operational risk and is discussed below under "Legal, regulatory and compliance risk".

The MSI Group has established an operational risk framework to identify, measure, monitor and control risk across the MSI Group. This framework is consistent with the framework established by the Morgan Stanley Group and includes escalation to the MSI Group's Board of directors and appropriate senior management personnel. Effective operational risk management is essential to reducing the impact of operational risk incidents and mitigating legal and reputational risks. The framework is continually evolving to reflect changes in the Group and to respond to the changing regulatory and business environment.

The MSI Group has implemented operational risk data and assessment systems to monitor and analyse internal and external operational risk events, to assess business environment and internal control factors and to perform scenario analysis. The collected data elements are incorporated in the operational risk capital model. The model encompasses both quantitative and qualitative elements. Internal loss data and scenario analysis results are direct inputs to the capital model, while external operational incidents, business environment and internal control factors are evaluated as part of the scenario analysis process. In addition, the MSI Group employs a variety of risk processes and mitigants to manage its operational risk exposures. These include a governance framework, a comprehensive risk management program and insurance.

The breadth and variety of operational risks are such that the types of mitigating activities are wide ranging. Examples of such activities include continuous enhancement of defences against cyberattacks; use of legal agreements and contracts to transfer and/or limit operational risk exposures; due diligence; implementation of enhanced policies and procedures; exception management processing controls; and segregation of duties.

Identification of Top Operational Risks ("TORs")

The MSI Group has a structured process in place to determine its TORs. The MSI Group's Operational Risk Department ("ORD") reviews Operational Risk data elements and forms an understanding of the risk issues within the business units and infrastructure areas. ORD proposes additions, edits and deletions of the MSI Group's TORs, supported by information and analytics performed. These proposals are presented to the governance committees to review, challenge and ultimately to recommend for adoption by the MSI Board.

The MSI Board approved TORs as at 31 December 2019 are as follows:

- Product Design, Due Diligence and Disclosure
- Market Conduct, Integrity and Client Suitability
- Financial Crime
- Reporting and Financial Reporting Errors
- Transaction Errors
- Errors in Valuation and Risk Models
- Unauthorised Trading
- Business Disruption and Continuity
- Cyber Attack
- Electronic Trading Errors
- Non-Cyber Theft and Fraud
- Third Party Risk

Management of Operational Risk

A variety of risk processes and mitigants are used to manage operational risk exposures. These include a strong governance framework, a comprehensive risk management program and insurance. Operational risks and associated risk exposures are assessed relative to the risk tolerance established by the MSI Board and are prioritised accordingly. The breadth and variety of operational risk are such that the types of mitigating activities are wide-ranging. Examples of such activities include enhancement of defences against cyber-attacks; use of legal agreements and contracts to transfer and/or limit operational risk exposures; due diligence; implementation of enhanced policies and procedures; exception management processing controls; and segregation of duties.

The ORD provides oversight of operational risk management and independently assesses, measures and monitors operational risk. The ORD works with the business units and control groups to help ensure a transparent, consistent and comprehensive framework for managing operational risk within each area and across the MSI Group. The ORD scope includes oversight of the technology and data risk management programs (e.g. cybersecurity), fraud risk management and prevention program and a third party risk management program.

Business Continuity Management is responsible for identifying key risks and threats to the MSI Group's resiliency and planning to ensure that a recovery strategy and required resources are in place for the resumption of critical business functions following a disaster or other business interruption. Disaster recovery plans are in place for critical facilities and resources on a Group-wide basis, and redundancies are built into the systems as deemed appropriate.

The MSI Group maintains a program that oversees our cyber and information security risks and is designed to address regulatory requirements. Cybersecurity and information security policies, procedures and technologies are designed to protect the MSI Group's information assets against unauthorised disclosure, modification or misuse. These policies cover a broad range of areas, including: identification of internal and external threats, access control, data security, protective controls, detection of malicious or unauthorised activity, incident response and recovery planning.

Exposures to services provided by third parties including external vendors are managed through a variety of means such as the performance of due diligence, consideration of operational risk, implementation of service level and other contractual agreements, and ongoing monitoring of third parties' performance. The MSI Group maintains a third party risk management program with policies, organisation, governance and supporting technology that aligns with our risk tolerance and is designed to meet regulatory requirements.

The management of conduct risk is set out in the Conduct Risk Management Policy. The policy sets out key roles and responsibilities and a framework identifying key functions and processes for the good management of conduct risk. The framework also sets out various key support and governance mechanisms, such as the production of key metrics and management information, and the establishment of a Conduct Risk Committee to oversee the management of conduct risk and the implementation of the framework.

The MSI Group, principally through the Morgan Stanley Group's Legal and Compliance Division, has established procedures based on legal and regulatory requirements on a worldwide basis that are designed to facilitate compliance with applicable statutory and regulatory requirements and to require that the MSI Group's policies relating to business conduct, ethics and practices are followed globally.

In addition, the MSI Group has established procedures to mitigate the risk that a counterparty's performance obligations will be unenforceable, including consideration of counterparty legal authority and capacity, adequacy of legal documentation, the permissibility of a transaction under applicable law and whether applicable bankruptcy or insolvency laws limit or alter contractual remedies.

Operational Risk Governance

The responsibilities of key individuals and committees for the governance of Operational Risk, up to and including the MSI Board, are clearly understood and followed throughout the MSI Group. The implementation and operation of the Operational Risk Framework is overseen by forums at different levels in the MSI Group's governance structure. Key forums are:

- Committees and governance forums that provide oversight of particular TORs, Risk Themes and the effectiveness of their respective management frameworks including the:
  - EMEA Outsourcing Governance Committee
  - EMEA Financial Crimes Governance Forum
  - EMEA Electronic Trading Governance Committee
- The EMEA Operational Risk Oversight Committee
- The EMEA Risk Committee
- The MSI Board Risk Committee

Operational Risk Framework

The MSI Groups Operational Risk Policy and Procedures are renewed at least annually to articulate clearly the current design and implementation of the Operational Risk Management Framework. In particular:

- The MSI Group-specific Operational Risk Management Policy.
- Key elements of the Framework covered by Policy include: Risk Appetite and Tolerance; Risk Assessment and Remediation; Scenario Analysis; Operational Risk Incident Management; Industry Incident Data; Operational Risk Metrics; Risk Measurement and Operational Risk Modelling; and Reporting and Escalation.
- Underlying Procedures set out in detail the key processes which underpin the framework. In particular: the EMEA Escalation & Notification procedures; the Risk Control Self-Assessment ("RCSAs"); identification of Horizon Risks and the Scenario Analysis workshops for TORs.

Operational Risk Reporting, Management Information and Escalation

Reporting and management information provide awareness of the state of Operational Risk throughout the governance chain, ensures targeted spend to address control environment concerns, and enables MSI Group's senior management and the MSI Board to take action if Operational Risk becomes elevated within risk tolerance levels. Key management information reports include:

- Escalated incidents on a weekly basis.
- Lessons learned for selected incidents including the actions planned or taken to mitigate the Operational Risk going forward.
- Overall incident trends, emerging risks and outsourcing.
- UK Operational Risk capital update.
- Operational Risk levels versus tolerance and key remedial actions and timelines.

Capital Assessment

Pillar 1: Capital requirements for Operational Risk are currently calculated under the Basic Indicator Approach ("BIA"). As of 31 December 2019, the MSI Group's Operational Risk Weighted Assets were $12,094MM.

Pillar 2: The MSI Group recognises that the BIA is not a risk-based measure and therefore uses an Operational Risk modelling approach to calculate internal Operational Risk capital requirements. The MSI Group holds sufficient capital to cover the incremental capital requirement over and above the Pillar 1 requirement.

15. Valuation Risk

Valuation risk represents the possibility that a valuation estimate of a position would differ from the price in an actual close out transaction due to uncertainty around the actual price that could be obtained.

15.1 Fair Valuation

Valuation Control ("VC") within the Financial Control Group ("FCG") is responsible for the MSI Group's fair value valuation policies, processes and procedures. VC implements valuation control processes designed to validate the fair value of the MSI Group's financial instruments measured at fair value including those derived from pricing models. There are three primary control processes that mitigate the risk of valuation errors:

- Model Certification Process: All models are certified before use and at least annually thereafter. New models (and enhancements to existing models) are developed by Strategists within the business units, who affirm they are appropriate for intended use. Senior Traders in the BUs sign off that they have been involved in the development of the model and understand the model's assumptions and limitations. The Model Risk Management group, within the Market Risk Department, must approve the model by performing an independent review of the model to assess its appropriateness. VC must also approve the model by performing an independent review to ensure the valuation methodology and valuation outputs produced by the model are consistent with accounting standards.

- Mark Review Process: VC performs a formal monthly mark review process which covers the entire financial instruments inventory held by the MSI Group. VC ensures the valuation generated by the BUs is in compliance with accounting standards. This is performed by reviewing the appropriateness of the prices or pricing inputs applied to valuation models compared to approved valuation methodologies and external pricing data. Adjustments are made to the books and records for resulting variances which are above tolerance limits. Limits are set by VC based on the subjectivity inherent in the external pricing data. An additional tolerance at the legal entity level is set by the EMEA Head of VC together with the EMEA Chief Financial Officer.

- Significant Transaction Analytical Review Process ("STAR"): This process reconfirms that valuation methodologies are adequate and modelling uncertainty is appropriately addressed in all trades with significant gross day 1 profit and loss as defined by the STAR policy. There are three components to the STAR process: pre-execution review; post-execution review; and trade unwind review. Reviews are documented and must be presented to, and approved by, relevant STAR Committees. Day 1 profit and loss on Fair Value Measurement Level 3 trades is not recognised until all significant inputs to the trade become observable, which is also subject to STAR Committee approval.

15.2 Prudent Valuation

VC calculates a Prudent Valuation Adjustment as required by the Commission Delegated Regulation (EU) 2016/101. VC has documented policies and procedures, and specific methodologies for each valuation exposure covered by the regulation. Prudent Valuation consists of a series of Additional Valuation Adjustments ("AVAs") required to mark the firm's fair valued inventory to a prudent valuation.

The AVAs represent the point within a range of plausible values at which the firm could exit a valuation exposure with 90% confidence or better. The AVAs reflect the valuation uncertainty associated with Market Price Uncertainty, Close-out Costs, Model Risk, Concentrated Positions, Unearned Credit Spreads, Investing and Funding Costs, Future Administrative Costs, Early Termination, and Operational Risk.

Prudent Valuation methodologies are aligned with the independent mark review process and use the same range of sources used in the mark review.

A CET1 capital deduction is taken where the prudent valuation of the instruments results in a more conservative measure than the accounting fair value. Otherwise no adjustment to CET1 is made.

16. Liquidity Coverage Ratio

16.1 LCR Disclosure Requirements

The MSI Group's LCR Disclosure is effective 31 December 2019 and is based on current understanding of the rules set out in the delegated act ("DA") adopted in October 2014 and related legislation. These may be subject to change as the MSI Group receives additional clarification and implementation guidance from regulators relating to the LCR DA and as the interpretation of the final rules evolves over time.

On 31 December 2019, the MSI Group was in excess of the fully phased-in LCR required minimum of 100% (Pillar I) as specified by the total net cash outflows amount included in Table 45.

16.2 Risk Management Objectives and Policies for Liquidity Risk

Liquidity Risk Profile

Liquidity risk refers to the risk that the MSI Group will be unable to finance its operations due to loss of access to the capital markets or difficulty in liquidating the Group's assets. Liquidity risk also encompasses the ability of MSI Group to meet its financial obligations without experiencing significant business disruption or reputational damage that may threaten the Group's viability as a going concern.

The core components of the Liquidity Risk Management Framework are the Required Liquidity Framework, Liquidity Stress Tests and the Global Liquidity Reserve ("GLR"), which support the target liquidity profile.

The Required Liquidity Framework reflects the amount of liquidity the MSI Group must hold in both normal and stressed environments to ensure that the Group's financial condition and overall soundness are not adversely affected by an inability (or perceived inability) to meet financial obligations in a timely manner. The Required Liquidity Framework considers the most constraining liquidity requirement to satisfy all regulatory and internal limits at a consolidated and legal entity level.

The Liquidity Stress Tests model external and intercompany liquidity flows across multiple scenarios and a range of time horizons. These scenarios contain various combinations of idiosyncratic and systemic stress events of different severity and duration. The methodology, implementation, production and analysis of the Liquidity Stress Tests are important components of the Required Liquidity Framework.

Sufficient liquidity reserves are maintained to cover daily funding needs and to meet strategic liquidity targets sized by the Required Liquidity Framework and Liquidity Stress Tests. The size of the GLR is actively managed considering the following components: balance sheet size and composition; funding needs in a stressed environment, inclusive of contingent cash outflows; collateral requirements and regulatory requirements.

MSI Group's liquidity and funding risk management policies and procedures are consistent with those of the Morgan Stanley Group. The MSI Board is ultimately responsible for establishing the liquidity risk tolerance and ensuring the MSI Group's liquidity risk is appropriately managed. In addition to the internal liquidity risk management framework, the MSI Group is locally subject to the liquidity regulations prescribed by the PRA. The Group has daily monitoring and reporting processes in place to ensure compliance with its regulatory requirements.

Liquidity Risk Management

The primary goal of the Liquidity Risk Management Framework is to ensure that the Group has access to sufficient liquid assets across a wide range of market conditions and time horizons. The framework is designed to allow the MSI Group to fulfil financial obligations and support the execution of the Group's business strategies. The following principles guide the Liquidity Risk Management Framework:

- Sufficient liquid assets should be maintained to cover maturing liabilities and other planned and contingent outflows;
- Maturity profile of assets and liabilities should be aligned, with limited reliance on short-term funding;
- Source, counterparty, currency, region and term of funding should be diversified; and
- Liquidity Stress Tests should anticipate, and account for, periods of limited access to funding.

Liquidity Risk Policies and Procedures

Senior management establishes and maintains liquidity policies. Through various risk and control committees, senior management reviews business performance relative to these policies, monitors the availability of alternative sources of financing, and oversees the liquidity, interest rate and currency sensitivity of asset and liability positions. Corporate Treasury, Liquidity Risk Department, EMEA Risk Committee, EMEA ALCO and other committees and control groups assist in evaluating, monitoring and controlling the impact that business activities have on the balance sheets, liquidity and capital structure. Liquidity matters are reported regularly to the MSI Board and the MSI Risk Committee.

Pillar II regime

The firm is subject to Pillar II requirements, assessed by the PRA, for risks not covered in the LCR (Pillar I). These risks are identified by the firm and documented in the Internal Liquidity Adequacy Assessment Process ("ILAAP") that is then reviewed and assessed by the PRA as part of the Liquidity Supervisory Review Process ("L-SREP"). As a result the firm is required to hold sufficient liquidity in the form of High Quality Liquid Assets ("HQLA") to meet both Pillar I and Pillar II requirements. Pillar II amounts are not disclosed in Table 45.

16.3 LCR Qualitative Disclosures

Main Drivers of the LCR

When discussing the main drivers of the LCR, the 12-month average values have been referred to. The most significant drivers of MSI Group's cash outflow amounts this quarter were secured wholesale funding and outflows related to derivative exposures and other collateral requirements. These outflows constituted more than 70 percent of the LCR cash outflow amount. Secured wholesale funding transactions include repurchase transactions, loans of collateral to customers to effect short positions, and other secured loans received by the Group. Asset exchanges transactions, where the counterparties have previously exchanged non-cash assets and have agreed to return such assets to each other at a later date, are also included in the secured wholesale funding line. Net derivative cash outflows include contractual payments and collateral that the Group will make or deliver to a counterparty within 30 calendar days under derivative transactions, taking into account any qualifying master netting agreement. Other outflow drivers are also noted in the "Total Weighted Value" column in Table 45.

These outflows reflect prescribed, industry-wide LCR rules related to liquidity risk in the Firm's business lines, activities and products, as measured for a projected 30-calendar day stress period.

The cash inflow amounts this quarter were principally driven by secured lending and asset exchange cash inflows, which constituted more than 70 percent of the LCR cash inflow amount. Secured lending transactions include reverse repurchase transactions and securities borrowed transactions. Other inflow drivers are noted in the "Total Weighted Value" column in Table 45.

Secured funding

A substantial portion of MSI Group's total assets consists of liquid marketable securities and short term receivables arising principally from its sales and trading activities. The liquid nature of these assets provides the Group with flexibility in funding these assets with secured financing. The Group's goal is to achieve an optimal mix of durable secured and unsecured financing. Secured financing investors principally focus on the quality of the eligible collateral posted. Accordingly, the Group actively manages its secured financing book based on the quality of the assets being funded.

The MSI Group utilises shorter-term secured financing for highly liquid assets and has established longer tenor limits for less liquid asset classes, for which funding may be at risk in the event of a market disruption. The Group defines highly liquid assets as those that are consistent with the standards of the Liquidity Reserve, and less liquid assets as those that do not meet these standards. To further minimise the refinancing risk of secured financing for less liquid assets, the Group has established concentration limits to diversify its investor base and reduce the amount of monthly maturities for secured financing of less liquid assets. Furthermore, the MSI Group obtains term secured funding liabilities in excess of less liquid inventory ("Spare Capacity"), as an additional risk mitigant to replace maturing trades in the event that secured financing markets or the MSI Group's ability to access them become limited. Finally, in addition to the above risk management framework, the MSI Group holds a portion of its Liquidity Reserve against the potential disruption to its secured financing capabilities.

Derivative Exposures and Potential Collateral Calls

MSI Group is a participant in global derivatives markets. In some cases, the derivative counterparties have contractual rights that require the MSI Group to post collateral to them in the event that credit rating agencies downgrade the Group's credit rating. In measuring collateral call risks, all amounts of collateral that could be required to post in accordance with the terms and conditions of the downgrade trigger clauses found in applicable legal agreements are considered.

The impact of potential collateral calls related to the derivatives exposures is inherently uncertain and would depend on a number of interrelated factors, including, among others, the magnitude of a downgrade, the rating relative to peers, the rating assigned by the relevant agency pre-downgrade, individual client behaviour and future mitigating actions that could be taken. The MSI Group manages the risk of potential collateral calls on the derivative positions by employing a variety of risk mitigation strategies, including modelling the impact of credit rating agency downgrades in the liquidity stress test program, monitoring historical changes in variation margin, diversifying risk exposures, hedging, managing counterparty and product risk limits and maintaining the GLR to enable the MSI Group to meet unexpected collateral calls or other potentially adverse developments.

Currency mismatch in the LCR

A portion of MSI Group's business is conducted in currencies other than the U.S. dollar, and changes in foreign exchange rates relative to the U.S. dollar, therefore, can affect the value of non-U.S. dollar net assets, revenues and expenses. Potential exposures as a result of these fluctuations in currencies are closely monitored, and strategies are adopted to reduce the impact of these fluctuations on financial performance. These strategies may include the financing of non-U.S. dollar assets with direct or swap-based borrowings in the same currency and the use of currency forward contracts or the spot market in various hedging transactions related to net assets, revenues, expenses or cash flows.

Concentration of funding sources

The MSI Group's funding is managed in a manner that reduces the risk of disruption to operations. Funding sources are diversified between secured and unsecured funding (by product and investor) and are designed to ensure that the tenor of the liabilities equals or exceeds the expected holding period of the assets being financed.

The balance sheet is funded on a global basis through diverse sources. These sources may include equity capital, unsecured borrowings, secured borrowings, securities lending, letters of credit and lines of credit. The MSI Group has active financing programs for both standard and structured products targeting global investors and currencies.

The secured funding program is managed in accordance with risk management principles that require a significant weighted average maturity, a maturity limit structure, an investor limit structure to ensure diversification of secured funding sources and an amount of Spare Capacity to offer protection against investors not rolling trades or asset appreciation. The unsecured funding is mainly with affiliates and diversified across currencies and tenors.

The Centralized Liquidity Management Function and its Interaction with other Functional Areas

In line with the "Three Lines of Defence" model, the liquidity risk management framework imposes specific responsibilities on the centralised liquidity management function, including with respect to its interaction with other functional areas within the Firm. Under this framework, the Firm's Corporate Treasury, Bank Resource Management, Cash Management and Finance functions, are the "first line of defence" with respect to liquidity risk management.

These functions are required to identify and assess the Firm's liquidity risks; incorporate identified liquidity risks into liquidity stress testing models and the risk management framework; conduct rigorous liquidity stress testing to measure liquidity risks over a range of scenarios and time horizons, enabling the Firm to determine liquidity and funding needs under adverse conditions; determine the size of the Firm's required liquidity in accordance with the Firm's liquidity risk tolerance and business needs; and dynamically manage the Firm's liquidity reserves, HQLA and sources of funding. This includes taking into account liquidity risk management limits and strategies, market conditions, client and counterparty behaviour, monetary policy, legal or regulatory requirements and developments, or other factors in the markets in which the MSI Group operates in.

The liquidity risk management framework adopted by the Board assigns "second line of defence" responsibilities to the Firm's Liquidity Risk Department and Model Risk Management function. Among other responsibilities, these functions are required to oversee the liquidity risk arising from business activities that are primarily managed by the first line of defence; review and approve all changes to liquidity stress test models, methodologies and assumptions; ensure the appropriateness and adequacy of liquidity stress test assumptions; and report the results of their independent identification, assessment and monitoring of liquidity risk and related limits across the Firm.

The Firm's Internal Audit function serves as the "third line of defence". Internal Audit's responsibilities with respect to liquidity risk management include auditing the Firm's compliance with internal guidelines set for liquidity risk management and liquidity risk monitoring; providing an independent assessment of liquidity and funding risks, controls and processes; and providing an independent assessment of whether the Firm's liquidity risk management function complies with applicable regulatory standards and supervisory expectations.

16.4 LCR Quantitative Disclosures

The LCR quantitative disclosures, shown in Table 45, reflect the monthly average value for the last 12-month period, for each quarter end period. The figures reported in the "Total Weighted Value" column reflect the prescribed, industry-wide rules and haircuts applicable to the LCR to determine the Firm's eligible HQLA and cash in/outflow amounts. The figures reported in the "Total Unweighted Value" columns reflect gross values that are not included in the calculation used to determine the Firm's compliance with LCR requirements.

Table 45: Liquidity Coverage Ratio

$MM	Total unweighted value				Total weighted value			
MSI Group[1,2]	31-Mar-2019	30-Jun-2019	30-Sep-2019	31-Dec-2019	31-Mar-2019	30-Jun-2019	30-Sep-2019	31-Dec-2019
Number of data points used in the calculation of averages	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**
High-Quality Liquid Assets								
Total high-quality liquid assets (HQLA)	-	-	-	-	45,280	46,846	48,298	48,541
Cash-Outflows								
Retail deposits and deposits from small business customers, of which:	-	-	-	-	-	-	-	-
Stable deposits	-	-	-	-	-	-	-	-
Less stable deposits	-	-	-	-	-	-	-	-
Unsecured wholesale funding	12,478	12,520	12,653	12,166	12,478	12,520	12,653	12,166
Operational deposits (all counterparties) and deposits in networks of cooperative banks	-	-	-	-	-	-	-	-
Non-operational deposits (all counterparties)	12,427	12,447	12,558	12,024	12,427	12,447	12,558	12,024
Unsecured debt	51	73	95	142	51	73	95	142
Secured wholesale funding					42,259	41,661	41,089	41,694
Additional requirements	19,503	19,550	20,185	20,622	14,350	14,379	14,835	14,853
Outflows related to derivative exposures and other collateral requirements	14,700	15,204	16,078	16,614	13,020	13,253	13,838	13,952
Outflows related to loss of funding on debt products	-	-	-	-	-	-	-	-
Credit and liquidity facilities	4,803	4,346	4,107	4,008	1,330	1,126	997	901
Other contractual funding obligations	53,968	53,630	55,446	55,868	1,320	1,310	1,359	1,271
Other contingent funding obligations	5,925	5,423	5,444	5,415	2,661	2,211	2,129	2,125
Total Cash Outflows					**73,068**	**72,081**	**72,065**	**72,109**
Cash Inflows								
Secured lending (e.g. reverse repos)	214,267	217,991	219,591	218,082	38,186	37,123	36,189	36,641
Inflows from fully performing exposures	12,607	12,426	12,117	11,727	11,396	11,275	10,991	10,578
Other cash inflows	4,628	4,523	4,493	4,360	4,628	4,523	4,493	4,360
(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)	-	-	-	-	782	788	755	646
(Excess inflows from a related specialised credit institution)	-	-	-	-	-	-	-	-
Total Cash Inflows	**231,502**	**234,940**	**236,201**	**234,169**	**53,428**	**52,133**	**50,918**	**50,933**
Fully exempt inflows	-	-	-	-	-	-	-	-
Inflows Subject to 90% Cap	-	-	-	-	-	-	-	-
Inflows Subject to 75% Cap	188,986	192,370	193,971	191,788	53,428	52,133	50,918	50,933
					Total Adjusted Value			
Liquidity Buffer	-	-	-	-	**45,280**	**46,846**	**48,298**	**48,541**
Total Net Cash Outflows	-	-	-	-	**19,949**	**20,173**	**21,147**	**21,177**
Liquidity Coverage Ratio (%)	-	-	-	-	**227%**	**232%**	**228%**	**229%**

1. All cash inflows and outflows shown are at the full unweighted/weighted value and do not reflect the phase in of LCR requirements.
2. As per the EBA guidance, Total HQLA amounts are before the application of the LCR HQLA caps (these are reflected in the Liquidity Buffer amounts, impacting Q1-Q2). Total Cash Inflows are prior to the application of the inflow cap that is reflected in the Total Net Cash Outflows balance.

17. Asset Encumbrance

The borrowing and lending of securities and hence the encumbrance of assets, is a fundamental part of Morgan Stanley's business within the MSI Group. The following details the MSI Group's encumbered and unencumbered assets, along with the matching liabilities. An asset is considered encumbered if it has been pledged or if it is subject to any form of arrangement to secure, collateralise or credit enhance any transaction from which it cannot be freely withdrawn. The key sources of encumbrance include secured funding repo, securities lending, as well as derivatives trading. A portion of the encumbered assets are intercompany transactions with other Morgan Stanley Group entities. MSI Group primarily uses Industry standard collateral agreements (mostly Credit Support Annexes and Global Master Repurchase Agreements).

The majority of the on-balance-sheet assets are not subject to any form of encumbrance, given they are mostly cash or receivable assets. The MSI Group also receives securities from the market, which are off-balance-sheet, reported as collateral received in Table 47 below. These may be pledged to the market and encumbered, or held as part of the MSI Group's unencumbered pool of assets. For on balance sheet assets, the level of encumbrance over 2019 has decreased slightly from 2018. Collateral received has increased year on year with the encumbrance level remaining materially in line with 2018. In compliance with PRA guidelines, amounts are presented as a median of the twelve month ends over 2019. Note the rows in the tables below are not additive, with the median calculated individually across all cells. The respective carrying amounts of notionally eligible EHQLA and HQLA comply with the exposure class-specific requirement (before the application of any haircuts) of liquid assets as specified in the delegated act.

Table 46 shows the MSI Group's encumbered and unencumbered on-balance sheet assets, presented as a median over 2019.

Table 46: Encumbered and unencumbered assets

	Carrying amount of encumbered assets		Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets	
$MM MSI Group[1,2]		of which notionally eligible EHQLA and HQLA		of which notionally eligible EHQLA and HQLA		of which EHQLA and HQLA		of which EHQLA and HQLA
Assets of the reporting institution	114,466	25,268	N/A	N/A	389,197	5,499	N/A	N/A
Equity instruments	44,927	9,205	44,927	9,205	20,249	3,270	20,249	3,270
Debt securities	23,147	16,367	23,147	16,367	6,918	2,082	6,918	2,082
of which: covered bonds	45	-	45	-	2	-	2	-
of which: asset-backed securities	604	-	604	-	128	-	128	-
of which: issued by general governments	15,510	14,329	15,510	14,329	3,260	1,907	3,260	1,907
of which: issued by financial corporations	2,394	-	2,394	-	762	-	762	-
of which: issued by non-financial corporations	4,743	2,165	4,743	2,165	2,700	183	2,700	183
Other assets[3,4]	46,620	-	N/A	N/A	363,136	-	N/A	N/A

1. A significant portion of MSI Group's business is conducted in currencies other than US Dollar.
2. Cells are marked N/A to indicate those components which are not reportable under EBA Guidelines.
3. Encumbered Other Assets includes on-balance sheet cash that has been segregated under CASS and cash collateral pledged against derivatives.
4. The majority of unencumbered other assets relate to derivative instruments.

Table 47 shows off-balance sheet collateral received broken out as encumbered and available for encumbrance, presented as a median over 2019.

Table 47: Collateral received

$MM MSI Group	Fair value of encumbered collateral received or own debt securities issued	of which notionally eligible EHQLA and HQLA	Unencumbered Fair value of collateral received or own debt securities issued available for encumbrance	of which notionally eligible EHQLA and HQLA
Collateral received by the reporting institution	279,824	212,634	39,822	30,409
Equity instruments	91,159	34,170	10,837	5,389
Debt securities	186,733	180,883	26,908	24,429
of which: covered bonds	646	-	1	-
of which: asset-backed securities	266	-	497	-
of which: issued by general governments	179,062	178,157	24,364	23,203
of which: issued by financial corporations	2,084	-	400	-
of which: issued by non-financial corporations	4,438	2,595	582	110
Loans and advances other than loans on demand	-	-	-	-
Other collateral received	821	-	-	-

Table 48 shows the total encumbered on-balance sheet assets and collateral received and the matching liabilities, presented as a median over 2019.

Table 48: Sources of encumbrance

$MM MSI Group	Matching liabilities, contingent liabilities or securities lent	Assets, collateral received and own debt securities other than covered bonds and ABS's encumbered
Carrying Amount of selected financial liabilities	97,888	100,007
Other sources of encumbrance	291,141	297,417

18. Appendix I: Board of Directors Knowledge, Skills and Expertise

Appointments to MSI Board

When identifying and recommending candidates to join the MSI Board, the MSI Nomination and Governance Committee will consider a broad range of qualities and characteristics, giving due regard to ensuring a broad range of knowledge, skills, diversity and experience is present on the Board and its Committees. It will also take into account regulatory requirements and relevant policies of the MSI Group. When identifying and selecting non-executive directors, the Nomination and Governance Committee may also consult with executive search firms. New directors go through tailored induction programmes and all directors are provided with ongoing training.

Diversity and the Composition of the MSI Board

The MSI Board recognises the importance and benefits of diversity both within business operations and at a board level. All appointments to the MSI Board are made on merit, in the context of the skills and experience that the MSI Board as a whole requires to be effective, with due regard given to the benefits of diversity. When assessing the composition of the MSI Board and recommending new directors; the MSI Nomination and Governance Committee considers the benefits of diversity, including gender diversity.

The MSI Board is aiming to reach a target of 33% female representation by the end of 2020; as at 31 December 2019 it had exceeded the target and there was 42% female representation. Selection of female candidates to join the MSI Board will be, in part, dependent on the pool of female candidates with the necessary skills, knowledge and experience. In order to promote the specific objective of gender diversity at Board level, the Nomination and Governance Committee expects short-lists of potential candidates prepared by external executive search firms to include at least one female candidate.

Non-Executive Directors

Jonathan Bloomer

Jonathan was appointed a non-executive director of the MSI Board in November 2016 and became Chairman of the MSI Board and MSI Nomination & Governance Committee with effect from 31 March 2018. He is also a member of the Audit, Risk and Remuneration Committees.

Jonathan has over 40 years' experience working in accounting and financial services firms. He was a Partner at Arthur Andersen from 1987 to 1994 before leaving to join the Prudential Group plc where he spent over 10 years including as Group Finance Director and Group CEO. Jonathan also spent six years at Cerberus Capital, a global private equity firm, as a European Partner and Senior Member of the Global Operations team.

Jonathan holds a number of non-executive directorships with other financial institutions.

He is a Chartered Accountant and holds a B.Sc. in Physics from Imperial College.

Simon Ball

Simon was appointed a non-executive director of the MSI Board in February 2019 and was appointed Chairman of the Audit Committee in January 2020. He is a member of the Risk and Nomination & Governance Committees.

Simon has over 35 years working in a broad range of sectors, with a particular focus on banking and financial services. He trained as an accountant at Price Waterhouse & Company before leaving to join Dresdner Kleinwort Benson where he spent over 10 years including as Chief Operating Officer and Group Finance Director. Simon left to become Group Financial Director of Robert Fleming Holdings Ltd. He has held a number of executive and non-executive directorships with other financial institutions, including as Group Finance Director and executive board director of 3i Group plc, and as Director General of Finance for HMG Department for Constitutional Affairs.

He is a Chartered Accountant and holds a B.Sc. in Economics from University College, London.

David Cannon

David was appointed a non-executive director of the MSI Board in June 2013. He was Chairman of the Audit Committee* and is a member of the Risk and Nomination & Governance Committees.

David has over thirty years' experience in the financial sector, with a particular focus on accounting and investment banking. He was a Partner at Ernst & Young from 1986 to 1995, leading the audit of a number of large financial services groups and being responsible for one of Ernst & Young's audit divisions before leaving in 1995 to become Chief Financial Officer of BZW/Barclays Capital. He returned to Ernst & Young in 1998 as Managing Partner of the London Financial Services Office. Between 2003 and 2012, David held a number of positions at Deutsche Bank including Deputy Group CFO and Chief Finance Officer for the Investment Bank.

From 2015 to 2019, David was a member of the Conduct Committee of the Financial Reporting Council and Chair of its Audit Quality Review Committee. He has an M.A. in PPE from the University of Oxford and is a qualified Chartered Accountant.

*David Cannon resigned and was replaced by Simon Ball as Chair of the MSI Audit Committee in January 2020.

Terri Duhon

Terri was appointed a non-executive director of the MSI Board in April 2016. She is Chair of the MSI Risk Committee and member of the Audit, Nomination & Governance and Remuneration Committees.

Terri has over twenty five years' risk and financial markets experience. She worked for JPMorgan as a derivatives trader for eight years and was Global Head of Structured Credit at ABN AMRO. In 2004 she founded an expert advisory company and has been retained as a financial risk expert for major regulators.

Terri has held a number of non-executive director appointments and is currently a director of Rathbone Brothers plc. She is an Associate Fellow at Oxford University Said Business School. She graduated from MIT in Mathematics in 1994.

Mary Phibbs

Mary was appointed a non-executive director of the MSI Board in May 2013. She Chairs the Remuneration Committee and is a member of the Audit, Risk and Nomination & Governance Committees.

Mary has over forty years' international experience in audit, advisory, banking (wholesale and retail), finance and insurance in the UK, Australia and Asia Pacific. During her career she has held roles with a number of retail and investment banks, insurance and financial companies including Standard Chartered Bank in the UK and National Australia Bank in Australia.

Mary is a director of the Canada Pension Plan Investment Board and Chair of Virgin Money Unit Trust Managers Ltd. She has a Bachelor of Science Honours degree from Surrey University and is a qualified Chartered Accountant and fellow of the Institute of Chartered Accountants in England and Wales and Chartered Accountants Australia and New Zealand.

Executive Directors

Lee Guy

Lee is EMEA Chief Risk Officer and an executive director of the MSI Board (appointed September 2014).

Lee joined Morgan Stanley in July 2014 from Barclays Investment Bank where he was Co-Chief Risk Officer from 2011. Prior to this Lee was Head of Operational Risk (2011) and Head of Market Risk (2004 to 2011) at Barclays Capital Inc. Lee has also held risk management roles at Dresdner Kleinwort Wasserstein (2001 to 2004) and Kleinwort Benson Limited (1994 to 1998). Prior to this (1986 to 1994) Lee held executive positions in trading and leverage finance.

Lee has a degree in Mathematics from Warwick University and is a CFA Charterholder.

Jakob Horder

Jakob is Global Head of Macro and an executive director of the MSI Board (appointed June 2016).

Previously he was Head of EMEA Fixed Income (2016 to 2019) and prior to that was Co-Head of Global Interest Rate Products and has held various senior positions in European Rates Sales and Trading. Prior to joining the Fixed Income Division in 2009, he was Head of Fixed Income Capital Markets Europe. Jakob joined Morgan Stanley in 2002 and prior to this was in Fixed Income Derivatives at Goldman Sachs.

Jakob holds a B.Sc, M.Sc and Ph.D in Economics all from the London School of Economics.

Arun Kohli

Arun is the Chief Operating Officer for Morgan Stanley EMEA and an executive director on the MSI Board (appointed August 2016).

Prior to this, he was the Chief Operating Officer for Morgan Stanley, Asia Pacific and a Managing Director in Morgan Stanley's Firm Strategy & Execution group in New York. Arun joined Morgan Stanley in 2007 from McKinsey's Financial Institutions group in New York. Prior to that Arun spent five years with CRISIL (the Indian subsidiary of S&P).

Arun attended the University of Delhi where he graduated with Honours in Engineering and received a Master of Business Administration with Honours from the Wharton School, graduating as a Palmer Scholar.

Kim Lazaroo

Kim is EMEA Chief Financial Officer and an executive director of the MSI Board (appointed February 2019). Prior to this she was EMEA Head of Global Corporate Controllers and Global Head of Legal Entity Controllers.

Kim joined Morgan Stanley in October 2015 from Goldman Sachs Group where she was Global Legal Entity Controller (2011 to 2015) and prior to this Kim held Financial and Legal Entity Controller roles. Kim joined Goldman Sachs in 1994 from Coopers & Lybrand where she worked for three years.

Kim has a Bachelor of Commerce in Accounting from the University of New South Wales and is a Member of the Institute of Chartered Accountants, Australia.

David Russell

David is Global Co-Head of Morgan Stanley's Institutional Equities Division and an executive director of the MSI Board (appointed May 2011). He joined Morgan Stanley in 1990 as a European Equity trader and has held a number of other roles including Head of Institutional Equities Division in Europe, Head of Trading for Europe and Head of Institutional Equities Division in Asia before taking up his current role.

David graduated from the University of London in 1987 with a degree in History.

Noreen Whyte

Noreen is an executive director on the MSI Board (appointed May 2018) and is Chief Executive Officer of Morgan Stanley Bank International Ltd (appointed March 2016) and Global Co-Head of the Loan Solutions & Securitisation Group within the Global Capital Markets Group. Noreen Co-Chairs the EMEA Diversity Action Counsel.

Noreen joined Morgan Stanley in 2005 from General Electric where she was Director of Originations at GE Home Lending. Noreen held operational and risk management roles in GE prior to joining the Structured product Group in Fixed Income at Morgan Stanley.

Noreen graduated from the University of Westminster in 1995 with a BA (Hons) in International Business Studies.

Clare Woodman

Clare Woodman is Head of EMEA and CEO of Morgan Stanley & Co. International Plc and an executive director of MSI (appointed September 2018). She is a member of Morgan Stanley's global operating and management committees. Clare was previously Global Chief Operating Officer for Morgan Stanley's Institutional Securities Group. She joined Morgan Stanley in 2002 from Clifford Chance.

Clare is a Trustee of the Morgan Stanley International Foundation and is an active sponsor of the firm's Women's Business Alliance.

Clare holds senior non-executive roles at The UK Finance Board and TheCityUK.

Clare studied at the London Business School where she obtained her MBA.

Figure 6: MSI Directors: Number of Directorships

	Number of directorship held as at 31 December 2019	Directorships adjusted for SYSC4.3A.7(2)
Jonathan Bloomer	7	4
David Cannon	6	1
Terri Duhon	6	2
Mary Phibbs	5	3
Lee Guy	6	1
Jakob Horder	2	1
Arun Kohli	6	2
Kim Lazaroo	4	1
David Russell	10	2
Noreen Whyte	6	1
Clare Woodman	9	2

19. Appendix II: MSI Group and MSIP Capital Instruments and Eligible Liabilities

Table 49: MSI Group and MSIP capital instruments and eligible liabilities

	Common Equity Tier 1		Additional Tier 1		Subordinated Debt			Senior Subordinated Debt	
MSI Group	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Issuer	Morgan Stanley International Limited								
Unique Identifier	N/A								
Governing law(s) of the instrument	Companies Act 2006		English Law						
Transitional CRR rules	CET1		AT1		Tier 2			Eligible Liability	
Post-transitional CRR rules	CET1		AT1		Tier 2			Eligible Liability	
Eligible at solo/(sub-) consolidated/solo&(sub-) consolidated	(Sub-) Consolidated								
Instrument type	Ordinary Shares		Perpetual Unsecured Fixed Rate Securities		Long-term subordinated multicurrency loan facility			Subordinated non-T2 Loan	
Amount recognised in regulatory capital $MM	USD 2,296MM	USD 0MM	USD 1,300MM	USD 2,200MM	USD 5,000MM	USD 51MM	USD 332MM	USD 5,000MM	USD 1,000MM
Currency of issuance and Nominal amount of instrument	USD 2,296MM	GBP 2	USD 1,300MM	USD 2,200MM	USD 5,000MM	USD 51MM	GBP 250MM	USD 5,000MM	USD 1,000MM
Reporting Currency and Nominal amount of instrument	USD 2,296MM	USD 3	USD 1,300MM	USD 2,200MM	USD 5,000MM	USD 51MM	USD 332MM	USD 5,000MM	USD 1,000MM
Issue Price	USD 2,314MM	GBP 2	USD 1,300MM	USD 2,200MM	USD 5,000MM	USD 51MM	GBP 250MM	USD 5,000MM	USD 1,000MM
Redemption Price	N/A		USD 1,300MM	USD 2,200MM	USD 5,000MM	USD 51MM	GBP 250MM	USD 5,000MM	USD 1,000MM
Accounting Classification	Shareholders' Equity				Liability - amortised cost				
Original date of issuance	13/11/98	18/06/98	15/12/14	23/08/18	08/02/17	21/12/15	21/12/15	19/12/18	27/11/18
Perpetual or dated	Perpetual				Dated				
Original maturity date	No Maturity				21/12/25	21/12/25	21/12/25	395 days from issuance	
Issuer call subject to prior supervisory approval	N/A		Yes		N/A				
Option call date, contingent call dates	N/A		15/12/19	30/11/23	N/A				
Redemption amount			100% plus tax and regulatory calls at 100%		N/A				
Subsequent call dates, if applicable	N/A		Daily thereafter		N/A				
Fixed or floating dividend / coupon	Floating		Fixed		Floating				
Coupon rate and any related index[4]	N/A		9.0%	7.5%	OBFR + 2.300%	OBFR + 2.086%	SONIA + 2.121%	Proxy	
Existence of a dividend stopper	No								
Fully discretionary, partially discretionary or mandatory (in terms of timing)	Fully Discretionary				Mandatory				
Fully discretionary, partially discretionary or mandatory (in terms of amount)	Fully Discretionary				Mandatory				
Existence of step up or other incentive to redeem	No								
Noncumulative or cumulative	Noncumulative				Cumulative				
Convertible or non-convertible	Non-convertible								
If convertible,									
conversion trigger(s)	N/A								
fully or partially	N/A								
conversion rate	N/A								
mandatory or optional conversion	N/A								
specify instrument type convertible into	N/A								
specify issuer of instrument it converts into	N/A								
Write-down features	No		Yes		No			Yes	
If write-down, write-down trigger(s)	N/A		Contractual write down if CET1 Capital Ratio of MSI Group falls below 7%. BoE as the UK Resolution Authority has the authority to trigger the write down of the instrument upon the exercise of statutory powers		BoE as the UK Resolution Authority has the authority to trigger the write down of the instrument upon the exercise of statutory powers			BoE as the UK Resolution Authority has the authority to trigger the write down of the instrument under the contractual terms if they deem the entity is failing or likely to fail, or if the MS resolution entity enters a resolution	
If write-down, full or partial	N/A		Full		N/A			Partial	
If write-down, permanent or temporary	N/A		Permanent		N/A			Permanent	
If temporary write-down, description of write-up mechanism	N/A								
Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Perpetual Unsecured Fixed Rate Securities [column C, D]		Long-term subordinated loan facility [columns E, F, G]		Senior Subordinated Facility [columns H and I]			Other Liabilities	
Non-compliant transitioned features	No								
If yes, specify non-compliant features	N/A								
TLAC Eligibility	Yes								

1. All capital instruments issued by the MSI Group are issued within Morgan Stanley and are not marketable instruments.
2. Interest rate at which Morgan Stanley is offering loans, in the relevant currency, to members of the Morgan Stanley Group on such day, which counterparties have acknowledged and agreed to apply to any loan, acting on an arm's length basis.
3. The repayment date can be extended by 395 days on each business day but no later than 49 years from utilisation date, and unless a term-out notice is sent.

<table>
<thead>
<tr><th>Description</th><th colspan="3">Common Equity Tier 1</th><th colspan="2">Additional Tier 1</th><th>Subordinated Debt</th></tr>
<tr><th>MSIP</th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th></tr>
</thead>
<tbody>
<tr><td>Issuer</td><td colspan="6">Morgan Stanley & Co. International plc</td></tr>
<tr><td>Unique Identifier</td><td colspan="6">N/A</td></tr>
<tr><td>Governing law(s) of the instrument</td><td colspan="3">Companies Act 2006</td><td colspan="3">English Law</td></tr>
<tr><td>Transitional CRR rules</td><td colspan="3">CET1</td><td colspan="2">AT1</td><td>Tier 2</td></tr>
<tr><td>Post-transitional CRR rules</td><td colspan="3">CET1</td><td colspan="2">AT1</td><td>Tier 2</td></tr>
<tr><td>Eligible at solo/(sub-) consolidated/solo&(sub-) consolidated</td><td colspan="6">Solo and (Sub-) Consolidated</td></tr>
<tr><td>Instrument type</td><td colspan="3">Ordinary Shares</td><td colspan="2">Perpetual Unsecured Fixed Rate Securities</td><td>Long-term subordinated multicurrency loan facility</td></tr>
<tr><td>Amount recognised in regulatory capital $MM</td><td>USD 10,935MM</td><td>USD 30MM</td><td>USD 1,500MM</td><td>USD 1,300MM</td><td>USD 2,200MM</td><td>USD 5,000MM</td></tr>
<tr><td>Currency of issuance and Nominal amount of instrument</td><td>USD 10,935MM</td><td>GBP 18MM</td><td>USD 1,500MM</td><td>USD 1,300MM</td><td>USD 2,200MM</td><td>USD 5,000MM</td></tr>
<tr><td>Reporting Currency and Nominal amount of instrument</td><td>USD 10,935MM</td><td>USD 29MM</td><td>USD 1,500MM</td><td>USD 1,300MM</td><td>USD 2,200MM</td><td>USD 5,000MM</td></tr>
<tr><td>Issue Price</td><td>USD 10,935MM</td><td>GBP 18MM</td><td>USD 1,500MM</td><td>USD 1,300MM</td><td>USD 2,200MM</td><td>USD 5,000MM</td></tr>
<tr><td>Redemption Price</td><td colspan="3">N/A</td><td>USD 1,300MM</td><td>USD 2,200MM</td><td>USD 5,000MM</td></tr>
<tr><td>Accounting Classification</td><td colspan="5">Shareholders' Equity</td><td>Liability - amortised cost</td></tr>
<tr><td>Original date of issuance</td><td>01/02/94</td><td>28/10/86</td><td>22/12/11</td><td>15/12/14</td><td>23/08/18</td><td>08/02/17</td></tr>
<tr><td>Perpetual or dated</td><td colspan="5">Perpetual</td><td>Dated</td></tr>
<tr><td>Original maturity date</td><td colspan="5">No maturity</td><td>21/12/25</td></tr>
<tr><td>Issuer call subject to prior supervisory approval</td><td colspan="3">N/A</td><td colspan="2">Yes</td><td>N/A</td></tr>
<tr><td>Option call date, contingent call dates</td><td colspan="3">N/A</td><td>15/12/19</td><td>30/11/23</td><td>N/A</td></tr>
<tr><td>Redemption amount</td><td colspan="3">N/A</td><td colspan="2">100% plus tax and regulatory calls at 100%</td><td>N/A</td></tr>
<tr><td>Subsequent call dates, if applicable</td><td colspan="3">N/A</td><td colspan="2">Daily thereafter</td><td>N/A</td></tr>
<tr><td>Fixed or floating dividend / coupon</td><td colspan="3">Floating</td><td colspan="2">Fixed</td><td>Floating</td></tr>
<tr><td>Coupon rate and any related index</td><td colspan="3">N/A</td><td>9.0%</td><td>7.5%</td><td>OBFR + 2.300%</td></tr>
<tr><td>Existence of a dividend stopper</td><td colspan="6">No</td></tr>
<tr><td>Fully discretionary, partially discretionary or mandatory (in terms of timing)</td><td colspan="5">Fully Discretionary</td><td>Mandatory</td></tr>
<tr><td>Fully discretionary, partially discretionary or mandatory (in terms of amount)</td><td colspan="5">Fully Discretionary</td><td>Mandatory</td></tr>
<tr><td>Existence of step up or other incentive to redeem</td><td colspan="6">No</td></tr>
<tr><td>Noncumulative or cumulative</td><td colspan="5">Noncumulative</td><td>Cumulative</td></tr>
<tr><td>Convertible or non-convertible</td><td colspan="6">Nonconvertible</td></tr>
<tr><td>If convertible</td><td colspan="6"></td></tr>
<tr><td>conversion trigger(s)</td><td colspan="6">N/A</td></tr>
<tr><td>fully or partially</td><td colspan="6">N/A</td></tr>
<tr><td>conversion rate</td><td colspan="6">N/A</td></tr>
<tr><td>mandatory or optional conversion</td><td colspan="6">N/A</td></tr>
<tr><td>specify instrument type convertible into</td><td colspan="6">N/A</td></tr>
<tr><td>specify issuer of instrument it converts into</td><td colspan="6">N/A</td></tr>
<tr><td>Write-down features</td><td colspan="3">No</td><td colspan="2">Yes</td><td>No</td></tr>
<tr><td>If write-down, write-down trigger(s)</td><td colspan="3">N/A</td><td colspan="2">Contractual write down if CET1 Capital Ratio of MSIP or MSI Group falls below 7%. BoE as the UK Resolution Authority has the authority to trigger the write down of the instrument upon the exercise of statutory powers</td><td>BoE as the UK Resolution Authority has the authority to trigger the write down of the instrument upon the exercise of statutory powers</td></tr>
<tr><td>If write-down, full or partial</td><td colspan="3">N/A</td><td colspan="2">Full</td><td>N/A</td></tr>
<tr><td>If write-down, permanent or temporary</td><td colspan="3">N/A</td><td colspan="2">Permanent</td><td>N/A</td></tr>
<tr><td>If temporary write-down, description of write-up mechanism</td><td colspan="6">N/A</td></tr>
<tr><td>Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)</td><td colspan="3">Perpetual Unsecured Fixed Rate Securities</td><td colspan="2">Long-term subordinated loan facility</td><td>Senior Subordinated Facility</td></tr>
<tr><td>Non-compliant transitioned features</td><td colspan="6">No</td></tr>
<tr><td>If yes, specify non-compliant features</td><td colspan="6">N/A</td></tr>
</tbody>
</table>

1. All capital instruments issued by the MSI Group are issued within Morgan Stanley and are not marketable instruments.
2. Interest rate at which Morgan Stanley is offering loans, in the relevant currency, to members of the Morgan Stanley Group on such day, which counterparties have acknowledged and agreed to apply to any loan, acting on an arm's length basis.
3. The repayment date can be extended by 395 days on each business day but no later than 49 years from utilisation date, and unless a term-out notice is sent.

20. Appendix III: MSI Group and MSIP Own Funds Disclosure Template

Table 50: MSI Group and MSIP own funds disclosure template

$MM	MSI Group[1]	MSIP
Capital instruments and the related share premium accounts	2,313	12,978
Paid up capital instruments	2,296	12,465
Of which: Ordinary shares	2,296	10,965
Of which: Class A Ordinary shares (non-voting)	-	1,500
Share premium	17	513
Retained earnings	12,571	2,380
Accumulated other comprehensive income (and other reserves, to include unrealised gains and losses under the applicable accounting standards)	6,709	1,214
Independently reviewed interim profits net of any foreseeable charge or dividend	341	265
Common Equity Tier 1 (CET1) capital before regulatory adjustments	**21,934**	**16,837**
Additional value adjustments (negative amount)	(1,381)	(1,337)
Intangible assets (net of related tax liability) (negative amount)	(678)	(2)
Negative amounts resulting from the calculation of expected loss amounts	(192)	(177)
Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	67	73
Defined-benefit pension fund assets (negative amount)	(16)	-
Total regulatory adjustments to Common equity Tier 1 (CET1)	**(2,200)**	**(1,443)**
Common Equity Tier 1 (CET1) capital	**19,734**	**15,394**
Capital instruments and the related share premium accounts	3,500	3,500
Of which: classified as equity under applicable accounting standards	3,500	3,500
Additional Tier 1 (AT1) capital	**3,500**	**3,500**
Tier 1 capital (T1 = CET1 + AT1)	**23,234**	**18,894**
Capital instruments and the related share premium accounts	5,383	5,000
Qualifying own funds instruments included in consolidated Tier 2 capital (including minority interests and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties	-	-
Of which: Instruments issued by subsidiaries subject to phase out	-	-
Tier 2 capital before regulatory adjustments	**5,383**	**5,000**
Tier 2 capital	**5,383**	**5,000**
Total capital (TC = T1 + T2)	**28,617**	**23,894**
Total risk weighted assets	**137,334**	**127,348**
Common Equity Tier 1 (as a percentage of risk exposure amount)	14.4%	12.1%
Tier 1 (as a percentage of risk exposure amount)	16.9%	14.8%
Total capital (as a percentage of risk exposure amount)	20.8%	18.8%
Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus the systemically important institution buffer (G-SII or O-SII buffer), expressed as a percentage of risk exposure amount)	7.36%	7.39%
Of which: Capital conservation buffer requirement	2.50%	2.50%
Of which: Countercyclical buffer requirement	0.36%	0.39%
Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	9.9%	7.6%
Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	910	912
Direct and indirect holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	-	103
Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability where the conditions in Article 38 (3) are met)	173	69

1. Under PRA supervision, the MSI Group is required to maintain a minimum ratio of Own Funds to RWAs. As at 31 December 2019, the MSI Group is in compliance with the PRA capital requirements as defined by the CRR.

21. Appendix IV: Countercyclical Capital Buffer (CCyB)

Table 51 shows the geographical distribution of credit exposures relevant for the calculation of CCyB as at 31 December 2019 for the MSI Group and MSIP.

Table 51: Geographical distribution of credit exposures for the CCyB

	General credit exposures		Trading book exposures		Securitisation exposures		Own funds requirements					
	Exposure value for SA	Exposure value for IRB	Sum of long and short positions of trading book exposures for SA	Value of trading book exposures for internal models	Exposure value for SA	Exposure value for IRB	Of which: General credit exposures	Of which: Trading book exposures	Of which: Securitisation exposures	Total	Own funds requirement weights	CCyB rate
MSI Group	$MM	$MM	$MM	$MM	$MM	$MM	$MM	$MM	$MM	$MM	%	%
United Kingdom	7,353	10,320	816	2,398	211	44	1,012	326	8	1,346	26.17%	1.00%
Hong Kong	89	1,080	598	65	-	-	50	-	-	50	2.57%	2.00%
Sweden	32	406	1	152	-	-	16	-	-	16	1.03%	2.50%
Norway	1	48	-	24	-	-	2	-	-	2	0.10%	2.50%
Iceland	-	64	-	3	-	-	14	-	-	14	0.64%	1.75%
Czech Republic	-	-	-	13	-	-	-	-	-	-	0.00%	1.50%
Slovakia	-	-	-	-	-	-	-	-	-	-	0.00%	1.50%
Bulgaria	-	-	-	-	-	-	-	-	-	-	0.00%	0.50%
Denmark	13	942	3	58	-	-	43	-	-	43	1.11%	1.00%
France	3,226	3,376	19	1,575	-	-	139	2	-	141	0.90%	0.25%
Ireland	30	4,857	-	80	-	1	151	-	1	152	3.90%	1.00%
Lithuania	-	-	-	-	-	-	-	-	-	-	0.00%	1.00%
Other	13,026	70,377	832	6,403	-	82	2,440	40	4	2,484	63.58%	0.00%
TOTAL	**23,770**	**91,470**	**2,269**	**10,771**	**211**	**127**	**3,867**	**368**	**13**	**4,248**	**100.00%**	
MSIP												
United Kingdom	5,569	13,833	725	2,398	211	44	1,000	315	8	1,323	28.41%	1.00%
Hong Kong	89	1,031	598	65	-	-	48	-	-	48	2.75%	2.00%
Sweden	6	380	-	152	-	-	13	-	-	13	0.92%	2.50%
Norway	1	47	-	24	-	-	2	-	-	2	0.11%	2.50%
Iceland	-	64	-	3	-	-	14	-	-	14	0.70%	1.75%
Czech Republic	-	-	-	13	-	-	-	-	-	-	0.00%	1.50%
Slovakia	-	-	-	-	-	-	-	-	-	-	0.00%	1.50%
Bulgaria	-	-	-	-	-	-	-	-	-	-	0.00%	0.50%
Denmark	12	818	-	58	-	-	36	-	-	36	1.01%	1.00%
France	3,121	4,223	1	1,575	-	-	141	-	-	141	1.00%	0.25%
Ireland	11	4,857	-	80	-	1	150	-	1	151	4.25%	1.00%
Lithuania	-	-	-	-	-	-	-	-	-	-	0.00%	1.00%
Other	11,562	63,136	439	6,403	-	82	2,115	-	4	2,119	60.85%	0.00%
TOTAL	**20,371**	**88,389**	**1,763**	**10,771**	**211**	**127**	**3,519**	**315**	**13**	**3,847**	**100.00%**	

Table 52: Amount of institution specific CCyB

$MM	MSI Group	MSIP
Total risk exposure amount	**137,333**	**127,347**
Institution specific countercyclical buffer rate	0.36%	0.39%
Institution specific countercyclical buffer requirement	500	497

22. Appendix V: Additional Credit and Counterparty Credit Risk Tables

Table 53 shows the total and average net amount of exposures as at 31 December 2019 for the MSI Group and MSIP.

Table 53: Total and average net amount of exposures (EU CRB-B)

$MM	MSI Group		MSIP	
	Net value of exposures at the end of the period	Average net exposures over the period	Net value of exposures at the end of the period	Average net exposures over the period
Central governments or central banks	16,231	20,007	11,743	14,940
Institutions	10,311	9,375	9,597	8,608
Corporates	6,922	6,274	5,198	4,819
Of Which: Specialised Lending	74	19	-	-
Equity	881	945	836	904
Total IRB approach	**34,345**	**36,601**	**27,374**	**29,271**
Central governments or central banks	458	432	435	407
Regional governments or local authorities	1	1	1	1
Public sector entities	-	-	-	-
Multilateral Development Banks	1	3	1	3
International Organisations	-	-	-	-
Institutions	1,247	1,040	1,373	1,125
Corporates	1,534	1,985	1,328	1,780
Retail	-	-	-	-
Secured by mortgages on immovable property	-	-	-	-
Exposures in default	-	-	-	-
Items associated with particularly high risk	-	-	-	-
Covered bonds	-	-	-	-
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-
Collective investments undertakings (CIU)	-	-	-	-
Equity exposures	-	-	-	-
Other exposures	1,639	1,482	111	62
Total standardised approach	**4,880**	**4,943**	**3,249**	**3,378**
Total	**39,225**	**41,544**	**30,623**	**32,649**

Over the course of 2019, net exposures have increased primarily within IRB exposures to Central Governments and Central Banks.

Table 54 shows the breakdown of exposures by geographical areas and exposure classes as at 31 December 2019 for the MSI Group and MSIP.

Table 54: Geographical breakdown of exposures (EU CRB-C)

$MM	EMEA							Asia					Americas			Other	Total
Country of Jurisdiction[1]	EMEA Total	France	United Kingdom	Germany	Italy	Switzerland	Other	Asia Total	Japan	Hong Kong	China	Other	Americas Total	United States	Other		
MSI Group																	
Central governments or central banks	16,002	8,321	4,258	3,030	112	207	74	227	-	-	177	50	-	-	-	-	**16,229**
Institutions	2,442	833	497	45	7	46	1,014	3,067	1,657	583	394	433	4,803	4,674	129	-	**10,312**
Corporates	6,233	3,573	175	280	552	255	1,398	321	-	-	-	321	369	306	63	-	**6,923**
Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Equity	321	35	69	42	5	10	160	38	7	13	10	8	521	477	44	1	**881**
Total IRB approach	**24,998**	**12,762**	**4,999**	**3,397**	**676**	**518**	**2,646**	**3,653**	**1,664**	**596**	**581**	**812**	**5,693**	**5,457**	**236**	**1**	**34,345**
Central governments or central banks	439	49	298	27	25	-	40	18	1	-	-	17	-	-	-	1	**458**
Regional governments or local authorities	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**1**
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Institutions	911	495	206	23	7	19	161	169	87	2	48	32	167	165	2	-	**1,247**
Corporates	981	43	855	4	1	-	78	456	17	86	7	346	97	24	73	-	**1,534**
Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Collective investments undertakings (CIU)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Other exposures	1,639	7	1,603	29	-	-	-	-	-	-	-	-	-	-	-	-	**1,639**
Total standardised approach	**3,971**	**594**	**2,962**	**83**	**33**	**19**	**280**	**643**	**105**	**88**	**55**	**395**	**264**	**189**	**75**	**2**	**4,880**
Total	**28,969**	**13,356**	**7,961**	**3,480**	**709**	**537**	**2,926**	**4,296**	**1,769**	**684**	**636**	**1,207**	**5,957**	**5,646**	**311**	**3**	**39,225**
MSIP																	
Central governments or central banks	11,743	7,484	4,259	-	-	-	-	-	-	-	-	-	-	-	-	-	**11,743**
Institutions	2,205	718	569	34	-	46	838	2,830	1,642	571	193	424	4,562	4,435	127	-	**9,597**
Corporates	4,739	2,926	209	281	221	238	864	124	-	-	-	124	335	273	62	-	**5,198**
Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Equity	310	35	62	42	5	10	156	39	7	13	11	8	487	443	44	-	**836**
Total IRB approach	**18,997**	**11,163**	**5,099**	**357**	**226**	**294**	**1,858**	**2,993**	**1,649**	**584**	**204**	**556**	**5,384**	**5,151**	**233**	**-**	**27,374**
Central governments or central banks	416	27	307	15	25	-	42	17	1	-	-	16	-	-	-	2	**435**
Regional governments or local authorities	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	**1**
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Institutions	1,036	493	332	25	6	19	161	169	87	2	48	32	168	166	2	-	**1,373**
Corporates	777	43	650	4	1	-	79	455	17	86	6	346	96	24	72	-	**1,328**
Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Collective investments undertakings (CIU)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Other exposures	111	-	111	-	-	-	-	-	-	-	-	-	-	-	-	-	**111**
Total standardised approach	**2,341**	**563**	**1,400**	**44**	**32**	**19**	**283**	**641**	**105**	**88**	**54**	**394**	**264**	**190**	**74**	**3**	**3,249**
Total	**21,338**	**11,726**	**6,499**	**401**	**258**	**313**	**2,141**	**3,634**	**1,754**	**672**	**258**	**950**	**5,648**	**5,341**	**307**	**3**	**30,623**

1. A threshold based on the Gross Carrying Value or credit risk exposure is applied to identify material geographical areas.

Over the course of 2019, IRB exposures to EMEA Central Government and Central Banks increased due to liquidity management and exposures to European corporates increased primarily driven by event lending.

Table 55 shows a breakdown of exposures by industry or counterparty types and exposure classes as at 31 December 2019 for the MSI Group and MSIP.

Table 55: Concentration of exposures by industry or counterparty type (EU CRB-D)

$MM

	Mining and quarrying	Manufacturing	Electricity, gas, steam and air conditioning supply	Transport and Storage	Information and Communication	Financial and insurance activities	Real estate activities	Professional, Scientific and technical	Public administration and defence	Other services	Other	Total
MSI Group												
Central governments or central banks	-	-	-	-	-	-	-	-	16,229	-	-	16,229
Institutions	-	-	-	-	-	10,295	-	-	-	-	17	10,312
Corporates	107	1,469	636	45	1,255	1,861	5	680	-	23	842	6,923
Retail	-	-	-	-	-	-	-	-	-	-	-	-
Equity	9	127	5	25	74	515	2	23	-	-	101	881
Total IRB approach	**116**	**1,596**	**641**	**70**	**1,329**	**12,671**	**7**	**703**	**16,229**	**23**	**960**	**34,345**
Central governments or central banks	-	-	-	70	-	-	-	-	185	-	203	458
Regional governments or local authorities	-	-	-	-	-	-	-	-	1	-	-	1
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-	-	1	-	-	1
International organisations	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	1,247	-	-	-	-	-	1,247
Corporates	7	73	12	301	70	405	8	8	5	-	645	1,534
Retail	-	-	-	-	-	-	-	-	-	-	-	-
Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-
Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-
Claims on institutions and corporates with a short term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-
Collective investments undertakings	-	-	-	-	-	-	-	-	-	-	-	-
Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-
Other exposures	-	-	-	-	-	87	-	-	35	-	1,517	1,639
Total standardised approach	**7**	**73**	**12**	**371**	**70**	**1,739**	**8**	**8**	**227**	**-**	**2,365**	**4,880**
Total	**123**	**1,669**	**653**	**441**	**1,399**	**14,410**	**15**	**711**	**16,456**	**23**	**3,325**	**39,225**
MSIP												
Central governments or central banks	-	-	-	-	-	-	-	-	11,743	-	-	11,743
Institutions	-	-	-	-	-	9,597	-	-	-	-	-	9,597
Corporates	45	1,217	335	109	1,073	1,354	-	680	-	11	374	5,198
Retail	-	-	-	-	-	-	-	-	-	-	-	-
Equity	9	127	5	5	74	471	2	23	-	-	120	836
Total IRB approach	**54**	**1,344**	**340**	**114**	**1,147**	**11,422**	**2**	**703**	**11,743**	**11**	**494**	**27,374**
Central governments or central banks	-	-	-	-	-	-	-	-	151	-	284	435
Regional governments or local authorities	-	-	-	-	-	-	-	-	1	-	-	1
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-	-	1	-	-	1
International organisations	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	-	-	-	-	-	1,373	-	-	-	-	-	1,373
Corporates	7	74	12	20	70	405	8	8	2	-	722	1,328
Retail	-	-	-	-	-	-	-	-	-	-	-	-
Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-
Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-
Claims on institutions and corporates with a short term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-
Collective investments undertakings	-	-	-	-	-	-	-	-	-	-	-	-
Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-
Other exposures	-	-	-	-	-	-	-	-	-	-	111	111
Total standardised approach	**7**	**74**	**12**	**20**	**70**	**1,778**	**8**	**8**	**155**	**-**	**1,117**	**3,249**
Total	**61**	**1,418**	**352**	**134**	**1,217**	**13,200**	**10**	**711**	**11,898**	**11**	**1,611**	**30,623**

Over the course of 2018, Exposures to Public Administration and Defence, Compulsory Social Security increased due to liquidity management and exposures to Manufacturing and Information and Communication industries increased primarily driven by event lending.

Table 56 shows a breakdown of net exposures by residual maturity and exposure classes as at 31 December 2019 for the MSI Group and MSIP.

Table 56: Maturity of Exposures (EU CRB-E)

$MM	On demand	<= 1 year	> 1 year <= 5 years	> 5 years	No stated maturity	Total
MSI Group						
Central governments or central banks	-	16,205	-	-	-	16,205
Institutions	-	8,608	162	40	-	8,810
Corporates	-	998	620	141	-	1,759
Retail	-	-	-	-	-	-
Equity	-	-	401	114	-	515
Total IRB approach	**-**	**25,811**	**1,183**	**295**	**-**	**27,289**
Central governments or central banks	-	-	305	-	153	458
Regional governments or local authorities	-	-	-	-	1	1
Public sector entities	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	1	1
International organisations	-	-	-	-	-	-
Institutions	-	272	20	-	573	865
Corporates	141	125	310	-	958	1,534
Retail	-	-	-	-	-	-
Secured by mortgages on immovable property	-	-	-	-	-	-
Exposures in default	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-
Collective investments undertakings (CIU)	-	-	-	-	-	-
Equity exposures	-	-	-	-	-	-
Other exposures	-	-	1,533	106	-	1,639
Total standardised approach	**141**	**397**	**2,168**	**106**	**1,686**	**4,498**
Total	**141**	**26,208**	**3,351**	**401**	**1,686**	**31,787**
MSIP						
Central governments or central banks	-	11,715	-	-	-	11,715
Institutions	-	7,994	173	63	-	8,230
Corporates	-	689	552	20	-	1,261
Retail	-	-	-	-	-	-
Equity	-	-	391	114	-	505
Total IRB approach	**-**	**20,398**	**1,116**	**197**	**-**	**21,711**
Central governments or central banks	-	-	282	-	153	435
Regional governments or local authorities	-	-	-	-	1	1
Public sector entities	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	1	1
International organisations	-	-	-	-	-	-
Institutions	-	392	20	6	574	992
Corporates	141	124	301	-	761	1,327
Retail	-	-	-	-	-	-
Secured by mortgages on immovable property	-	-	-	-	-	-
Exposures in default	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-
Claims on institutions and corporates with a short-term credit assessment	-	-	-	-	-	-
Collective investments undertakings (CIU)	-	-	-	-	-	-
Equity exposures	-	-	-	-	-	-
Other exposures	-	-	111	-	-	111
Total standardised approach	**141**	**516**	**714**	**6**	**1,490**	**2,867**
Total	**141**	**20,914**	**1,830**	**203**	**1,490**	**24,578**

Over the course of 2019, exposures have increased primarily on IRB exposures to Central Governments and Central Banks.

Table 57 shows the credit quality of exposures by exposure class and instruments as at 31 December 2019 for the MSI Group and MSIP.

Table 57: Credit quality of exposures by exposure class and instrument (EU CR1-A)

$MM	Gross carrying values of						
MSI Group	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges	Net values
Central governments or central banks	-	16,229	-	-	-	-	16,229
Institutions	-	10,312	-	-	-	-	10,312
Corporates	21	6,902	-	-	-	-	6,923
Of which: Specialised lending	-	74	-	-	-	-	74
Equity	-	881	-	-	-	-	881
Total IRB approach	**21**	**34,324**	**-**	**-**	**-**	**-**	**34,345**
Central governments or central banks	-	458	-	-	-	-	458
Regional governments or local authorities	-	1	-	-	-	-	1
Public sector entities	-	-	-	-	-	-	-
Multilateral development banks	-	1	-	-	-	-	1
International organisations	-	-	-	-	-	-	-
Institutions	6	1,247	6	-	-	2	1,247
Corporates	9	1,534	9	-	-	1	1,534
Secured by mortgages on immovable property	-	-	-	-	-	-	-
Exposures in default	-	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-
Claims on institutions and corporates with a short- term credit assessment	-	-	-	-	-	-	-
Collective investments undertakings (CIU)	-	-	-	-	-	-	-
Equity exposures	-	-	-	-	-	-	-
Other exposures	-	1,639	-	-	-	-	1,639
Total standardised approach	**15**	**4,880**	**15**	**-**	**-**	**3**	**4,880**
Total	**36**	**39,204**	**15**	**-**	**-**	**3**	**39,225**
Of which: Loans and advances	36	31,030	15	-	-	3	31,051
Of which: Off-balance sheet	-	7,075	-	-	-	-	7,075
Of which: Equity	-	881	-	-	-	-	881
Of which: Debt securities	-	218	-	-	-	-	218
MSIP							
Central governments or central banks	-	11,743	-	-	-	-	11,743
Institutions	-	9,597	-	-	-	-	9,597
Corporates	1	5,197	-	-	-	-	5,198
Of which: Specialised lending	-		-	-	-	-	-
Equity	-	836	-	-	-	-	836
Total IRB approach	**1**	**27,373**	**-**	**-**	**-**	**-**	**27,374**
Central governments or central banks	-	435	-	-	-	-	435
Regional governments or local authorities	-	1	-	-	-	-	1
Public sector entities	-	-	-	-	-	-	-
Multilateral development banks	-	1	-	-	-	-	1
International organisations	-	-	-	-	-	-	-
Institutions	6	1,373	6	-	-	2	1,373
Corporates	9	1,328	9	-	-	1	1,328
Secured by mortgages on immovable property	-	-	-	-	-	-	-
Exposures in default	-	-	-	-	-	-	-
Items associated with particularly high risk	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-
Claims on institutions and corporates with a short- term credit assessment	-	-	-	-	-	-	-
Collective investments undertakings (CIU)	-	-	-	-	-	-	-
Equity exposures	-	-	-	-	-	-	-
Other exposures	-	111	-	-	-	-	111
Total standardised approach	**15**	**3,249**	**15**	**-**	**-**	**3**	**3,249**
Total	**16**	**30,622**	**15**	**-**	**-**	**3**	**30,623**
Of which: Loans and advances	16	23,901	15	-	-	3	23,902
Of which: Off-balance sheet	-	5,712	-	-	-	-	5,712
Of which: Equity	-	836	-	-	-	-	836
Of which: Debt securities	-	173	-	-	-	-	173

Over the second half of 2019, MSI Group and MSIP IRB exposures to Central Government and Central Banks decreased due to liquidity management.

Table 58 shows the credit quality of on-balance-sheet and off-balance-sheet by industry as at 31 December 2019 for MSI Group and MSIP.

Table 58: Credit quality of exposures by industry or counterparty types (EU CR1-B)

$MM	Gross carrying values of						
MSI Group	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-Offs	Credit risk adjustment charge	Net values[1]
Mining and quarrying	-	123	-	-	-	-	123
Manufacturing	8	1,668	7	-	-	-	1,669
Electricity, gas, steam and air conditioning supply	-	653	-	-	-	-	653
Transport and storage	1	440	-	-	-	-	441
Information and communication	1	1,399	1	-	-	1	1,399
Financial and insurance activities	6	14,410	6	-	-	1	14,410
Real estate activities	5	10	-	-	-	-	15
Professional, Scientific and Technical	-	711	-	-	-	-	711
Public administration and defence, compulsory social security	-	16,456	-	-	-	-	16,456
Other services	-	23	-	-	-	-	23
Other	15	3,311	1	-	-	1	3,325
Total	**36**	**39,204**	**15**	**-**	**-**	**3**	**39,225**
MSIP							
Mining and quarrying	-	61	-	-	-	-	61
Manufacturing	8	1,418	8	-	-	-	1,418
Electricity, gas, steam and air conditioning supply	-	352	-	-	-	-	352
Transport and storage	1	133	-	-	-	-	134
Information and communication	1	1,217	1	-	-	1	1,217
Financial and insurance activities	6	13,200	6	-	-	2	13,200
Real estate activities	-	10	-	-	-	-	10
Professional, Scientific and Technical	-	711	-	-	-	-	711
Public administration and defence, compulsory social security	-	11,898	-	-	-	-	11,898
Other services	-	11	-	-	-	-	11
Other	-	1,611	-	-	-	-	1,611
Total	**16**	**30,622**	**15**	**-**	**-**	**3**	**30,623**

1. Net value is the total of defaulted, non defaulted exposures, less specific credit risk adjustments.

Over the second half of 2019, MSI Group and MSIP exposures to Public Administration and Defence, Compulsory Social Security decreased due to liquidity management, partially offset by increases in event lending exposures.

Table 59 shows the credit quality of on-balance-sheet and off-balance-sheet by geography as at 31 December 2019 for the MSI Group and MSIP.

Table 59: Credit quality of exposures by geography (EU CR1-C)

$MM	Gross carrying values of		Specific	General		Credit risk	
MSI Group[1]	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustment	General credit risk adjustment	Accumulated write-offs	Credit risk adjustment charges	Net values
EMEA	**34**	**28,948**	**13**	**-**	**-**	**3**	**28,969**
France	3	13,356	3	-	-	3	13,356
United Kingdom	3	7,961	3	-	-	-	7,961
Germany	4	3,480	4	-	-	-	3,480
Italy	14	695	-	-	-	-	709
Switzerland	-	537	-	-	-	-	537
Other countries	10	2,919	3	-	-	-	2,926
Asia	**1**	**4,296**	**1**	**-**	**-**	**-**	**4,296**
Japan	-	1,769	-	-	-	-	1,769
Hong Kong	-	684	-	-	-	-	684
China	1	636	1	-	-	-	636
Other Countries	-	1,207	-	-	-	-	1,207
Americas	**1**	**5,957**	**1**	**-**	**-**	**-**	**5,957**
United States	-	5,646	-	-	-	-	5,646
Other countries	1	311	1	-	-	-	311
Other geographical areas	**-**	**3**	**-**	**-**	**-**	**-**	**3**
Total	**36**	**39,204**	**15**	**-**	**-**	**3**	**39,225**
MSIP[1]							
EMEA	**14**	**21,337**	**13**	**-**	**-**	**4**	**21,338**
France	4	11,725	3	-	-	4	11,726
United Kingdom	3	6,499	3	-	-	-	6,499
Germany	4	401	4	-	-	-	401
Italy	-	258	-	-	-	-	258
Switzerland	-	313	-	-	-	-	313
Other countries	3	2,141	3	-	-	-	2,141
Asia	**-**	**3,634**	**-**	**-**	**-**	**-**	**3,634**
Japan	-	1,754	-	-	-	-	1,754
Hong Kong	-	672	-	-	-	-	672
China	-	258	-	-	-	-	258
Other Countries	-	950	-	-	-	-	950
Americas	**2**	**5,648**	**2**	**-**	**-**	**(1)**	**5,648**
United States	-	5,341	-	-	-	(1)	5,341
Other countries	2	307	2	-	-	-	307
Other geographical areas	**-**	**3**	**-**	**-**	**-**	**-**	**3**
Total	**16**	**30,622**	**15**	**-**	**-**	**3**	**30,623**

1. A threshold based on the Gross Carrying Value or credit risk exposure is applied to identify material geographical areas.

Over the second half of 2019, MSI Group and MSIP IRB exposures to Central Government and Central Banks decreased due to liquidity management.

Table 60 provides a breakdown of performing and non-performing exposures by portfolio, exposure class and days past due as at 31 December 2019 for the MSI Group and MSIP.

Table 60: Credit Quality of Performing and Non-Performing exposures by past due days

$MM	Gross carrying amount/nominal amount											
	Performing exposures			Non-performing exposures								
MSI Group[1,2]		Not past due or past due ≤ 30 days	Past due > 30 days ≤ 90 days		Unlikely to pay that are not past due or are past due ≤ 90 days	Past due > 90 days ≤ 180 days	Past due > 180 days ≤ 1 year	Past due > 1 year ≤ 2 years	Past due > 2years ≤ 5 years	Past due > 5 years ≤ 7 years	Past due > 7 years	Of which defaulted
Loans and advances	**104,731**	**104,533**	**198**	**54**	**2**	**33**	**5**	**-**	**5**	**9**	**-**	**54**
Central banks	16,499	16,499	-	-	-	-	-	-	-	-	-	-
General governments	2,371	2,371	-	-	-	-	-	-	-	-	-	-
Credit institutions	25,549	25,533	16	3	-	3	-	-	-	-	-	3
Other financial corporations	59,374	59,290	84	19	-	14	3	-	2	-	-	19
Non-financial corporations	938	840	98	32	2	16	2	-	3	9	-	32
Of which SMEs	-	-	-	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-	-	-	-
Debt securities	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Central banks	-	-	-	-	-	-	-	-	-	-	-	-
General governments	-	-	-	-	-	-	-	-	-	-	-	-
Credit institutions	-	-	-	-	-	-	-	-	-	-	-	-
Other financial corporations	-	-	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	-	-	-	-	-	-	-	-	-	-	-	-
Off-balance-sheet exposures	**3,412**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Central banks	-	-	-	-	-	-	-	-	-	-	-	-
General governments	-	-	-	-	-	-	-	-	-	-	-	-
Credit institutions	1	-	-	-	-	-	-	-	-	-	-	-
Other financial corporations	674	-	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	2,737	-	-	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-	-	-	-
Total	**108,143**	**104,533**	**198**	**54**	**2**	**33**	**5**	**-**	**5**	**9**	**-**	**54**
MSIP[1]												
Loans and advances	**97,041**	**96,876**	**165**	**52**	**2**	**31**	**5**	**-**	**5**	**9**	**-**	**52**
Central banks	12,138	12,138	-	-	-	-	-	-	-	-	-	-
General governments	2,023	2,023	-	-	-	-	-	-	-	-	-	-
Credit institutions	24,325	24,312	13	3	-	3	-	-	-	-	-	3
Other financial corporations	57,755	57,701	54	16	-	12	2	-	2	-	-	16
Non-financial corporations	800	702	98	33	2	16	3	-	3	9	-	33
Of which SMEs	-	-	-	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-	-	-	-
Debt securities	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Central banks	-	-	-	-	-	-	-	-	-	-	-	-
General governments	-	-	-	-	-	-	-	-	-	-	-	-
Credit institutions	-	-	-	-	-	-	-	-	-	-	-	-
Other financial corporations	-	-	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	-	-	-	-	-	-	-	-	-	-	-	-
Off-balance-sheet exposures	**2,520**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Central banks	-	-	-	-	-	-	-	-	-	-	-	-
General governments	-	-	-	-	-	-	-	-	-	-	-	-
Credit institutions	-	-	-	-	-	-	-	-	-	-	-	-
Other financial corporations	444	-	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	2,076	-	-	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-	-	-	-
Total	**99,561**	**96,876**	**165**	**52**	**2**	**31**	**5**	**-**	**5**	**9**	**-**	**52**

1. The Gross Non-Performing Loan ("NPL") ratio as of 31 December 2019 was 0.05%.
2. The MSI Group has no forborne exposures.

Over the second half of 2019, there have been no material movements.

Table 61 shows an overview of performing and non-performing exposures and the related provisions as at 31 December 2019 for the MSI Group and MSIP.

Table 61: Performing and Non-performing exposures and related provisions

$MM	Gross carrying amount/nominal amount						Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions						Accumulated partial write-off	Collateral and financial guarantees received	
	Performing exposures			Non-performing exposures			Performing exposures – accumulated impairment and provisions			Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions				On performing exposures	On non-performing exposures
MSI Group[1]		Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3		Of which stage 1	Of which stage 2		Of which stage 2	Of which stage 3			
Loans and advances	**104,731**	**62,629**	**42,102**	**54**	**28**	**26**	**(2)**	**-**	**(2)**	**(13)**	**-**	**(13)**	-	-	-
Central banks	16,499	16,077	422	-	-	-	-	-	-	-	-	-	-	-	-
General governments	2,371	18	2,353	-	-	-	-	-	-	-	-	-	-	-	-
Credit institutions	25,549	17,132	8,417	3	2	1	-	-	-	-	-	-	-	-	-
Other financial corporations	59,374	29,362	30,012	19	10	9	(1)	-	(1)	(5)	-	(5)	-	-	-
Non-financial corporations	938	40	898	32	16	16	(1)	-	(1)	(8)	-	(8)	-	-	-
Of which SMEs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt securities	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-	-
Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General governments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Credit institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other financial corporations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Off-balance-sheet exposures	**3,412**	**2,746**	**17**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-	-
Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General governments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Credit institutions	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Other financial corporations	674	662	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	2,737	2,083	17	-	-	-	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**108,143**	**65,375**	**42,119**	**54**	**28**	**26**	**(2)**	**-**	**(2)**	**(13)**	**-**	**(13)**	-	-	-
MSIP															
Loans and advances	**97,041**	**57,633**	**39,408**	**52**	**28**	**24**	**(2)**	**-**	**(2)**	**(13)**	**-**	**(13)**	-	-	-
Central banks	12,138	11,716	422	-	-	-	-	-	-	-	-	-	-	-	-
General governments	2,023	15	2,008	-	-	-	-	-	-	-	-	-	-	-	-
Credit institutions	24,325	16,576	7,749	3	2	1	-	-	-	-	-	-	-	-	-
Other financial corporations	57,755	29,304	28,451	16	10	6	(1)	-	(1)	(5)	-	(5)	-	-	-
Non-financial corporations	800	22	778	33	16	17	(1)	-	(1)	(8)	-	(8)	-	-	-
Of which SMEs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debt securities	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-	-
Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General governments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Credit institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other financial corporations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Off-balance-sheet exposures	**2,520**	**1,854**	**17**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	-	-	-
Central banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
General governments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Credit institutions	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other financial corporations	444	431	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	2,076	1,423	17	-	-	-	-	-	-	-	-	-	-	-	-
Households	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**99,561**	**59,487**	**39,425**	**52**	**28**	**24**	**(2)**	**-**	**(2)**	**(13)**	**-**	**(13)**	-	-	-

1. The MSI Group has no foreclosed assets obtained from non-performing exposures.

Over the second half of 2019, there have been no material movements.

Table 62 shows the changes in stock of general and specific credit risk adjustments held against loans and debt securities that are defaulted or impaired as at 31 December 2019 for the MSI Group and MSIP.

Table 62: Changes in stock of general and specific credit risk adjustments (EU CR2-A)

$MM	MSI Group		MSIP	
	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment
Opening balance	**37**	**-**	**42**	-
Increases due to amounts set aside for estimated loan losses during the period	19	-	8	-
Decreases due to amounts reversed for estimated loan losses during the period	(7)	-	(5)	-
Decreases due to amounts taken against accumulated credit risk adjustments	(1)	-	(1)	-
Transfers between credit risk adjustments	-	-	(2)	-
Impact of exchange rate differences	-	-	-	-
Business combinations, including acquisitions and disposals of subsidiaries	-	-	-	-
Other adjustments	(33)	-	(27)	-
Closing balance	**15**	**-**	**15**	-
Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	-	-	-	-
Specific credit risk adjustments recorded directly to the statement of profit or loss	-	-	-	-

Over the second half of 2019, there have been no material changes.

Table 63 shows the changes in stock of defaulted loans and debt securities as at 31 December 2019 for the MSI Group and MSIP.

Table 63: Changes in stock of defaulted and impaired loans and debt securities (EU CR2-B)

$MM	MSI Group	MSIP
	Gross carrying value defaulted exposures	Gross carrying value defaulted exposures
Opening balance	**103**	**100**
Loans and debt securities that have defaulted or impaired since the last reporting period	-	-
Returned to non-defaulted status	(18)	(18)
Amounts written off	(1)	(1)
Other changes	(30)	(29)
Closing balance	**54**	**52**

Over the second half of 2019, there have been no material changes.

Table 64 shows the extent of the use of CRM techniques as at 31 December 2019 for the MSI Group and MSIP.

Table 64: Credit risk mitigation techniques – overview (EU CR3)

$MM	Exposures unsecured: carrying amount	Exposures secured: carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
MSI Group					
Total loans	30,514	539	539	-	-
Total debt securities	218	-	-	-	-
Equity exposures	515	-	-	-	-
Total exposures	**31,247**	**539**	**539**	**-**	**-**
Of which defaulted	36	-	-	-	-
MSIP					
Total loans	23,362	540	540	-	-
Total debt securities	173	-	-	-	-
Equity exposures	505	-	-	-	-
Total exposures	**24,040**	**540**	**540**	**-**	**-**
Of which defaulted	16	-	-	-	-

Over the second half of 2019, MSI Group total loans decreased due to liquidity management.

Table 65 shows the effect of all CRM techniques as at 31 December 2019 for the MSI Group and MSIP.

Table 65: Standardised approach – Credit risk exposure and credit risk mitigation (CRM) effects (EU CR4)

	Exposures before CCF[1] and CRM		Exposures post CCF and CRM		RWAs and RWA density	
MSI Group	On-balance sheet amount $MM	Off-balance sheet amount $MM	On-balance sheet amount $MM	Off-balance sheet amount $MM	RWAs $MM	RWA density %
Central governments or central banks	458	-	458	-	99	22%
Regional government or local authorities	1	-	1	-	1	100%
Public sector entities	-	-	-	-	-	0%
Multilateral development banks	1	-	1	-	-	0%
International organisations	-	-	-	-	-	0%
Institutions	865	382	865	191	1,223	116%
Corporates	1,534	-	1,534	-	1,735	113%
Retail	-	-	-	-	-	0%
Secured by mortgages on immovable property	-	-	-	-	-	0%
Exposures in default	-	-	-	-	-	0%
Higher-risk categories	-	-	-	-	-	0%
Covered bonds	-	-	-	-	-	0%
Institutions and corporates with a short term credit assessment	-	-	-	-	-	0%
Collective investment undertakings	-	-	-	-	-	0%
Equity	-	-	-	-	-	0%
Other items	1,639	-	1,639	-	1,898	116%
Total	**4,498**	**382**	**4,498**	**191**	**4,956**	**106%**
MSIP						
Central governments or central banks	435	-	435	-	101	23%
Regional government or local authorities	1	-	1	-	1	100%
Public sector entities	-	-	-	-	-	0%
Multilateral development banks	1	-	1	-	-	0%
International organisations	-	-	-	-	-	0%
Institutions	992	191	992	191	1,234	104%
Corporates	1,328	-	1,328	-	1,521	115%
Retail	-	-	-	-	-	0%
Secured by mortgages on immovable property	-	-	-	-	-	0%
Exposures in default	-	-	-	-	-	0%
Higher-risk categories	-	-	-	-	-	0%
Covered bonds	-	-	-	-	-	0%
Institutions and corporates with a short term credit assessment	-	-	-	-	-	0%
Collective investment undertakings	-	-	-	-	-	0%
Equity	-	-	-	-	-	0%
Other items	111	-	111	-	216	195%
Total	**2,868**	**191**	**2,868**	**191**	**3,073**	**100%**

Over the second half of 2019, there have been no material changes.

Table 66 shows the breakdown of exposures under the standardised approach by asset class and risk weight as at 31 December 2019 for the MSI Group.

Table 66: Standardised approach (EU CR5)

$MM	Risk Weight																	
MSI Group	**0%**	**2%**	**4%**	**10%**	**20%**	**35%**	**50%**	**70%**	**75%**	**100%**	**150%**	**250%**	**370%**	**1250%**	**Others**	**Deducted**	**Total**	**Of which unrated**
Central governments or central banks	111	-	-	-	273	-	60	-	-	13	1	-	-	-	-	-	**458**	-
Regional government or local authorities	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**	-
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Multilateral development banks	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**	-
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Institutions	-	191	-	-	270	-	278	-	-	252	5	-	-	61	-	-	**1,057**	31
Corporates	2	-	-	-	16	-	51	-	-	1,347	100	-	-	17	-	-	**1,533**	44
Retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Exposures in default	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Higher-risk categories	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Institutions and corporates with a short term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Collective investment undertakings	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Equity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Other items	-	-	-	-	-	-	-	-	-	1,466	-	173	-	-	-	-	**1,639**	-
Total	**115**	**191**			**559**		**389**			**3,078**	**106**	**173**		**78**	**-**	**-**	**4,689**	**75**

Over the second half of 2019, there have been no material changes.

Table 67 shows the exposures for the MSI Group, calculated using the Standardised approach for each exposure class and broken down by CQS.

Table 67: Standardised approach EAD by credit quality step

$MM **MSI Group**[1]		**CQS1**	**CQS2**	**CQS3**	**CQS4**	**CQS5**	**CQS6**	**Other**[2]	**Unrated**	**Total**
Central Governments or Central Banks	GROSS EAD	22	3	3	-	1	-	-	455	**484**
	EAD	22	3	3	-	1	-	-	455	**484**
Corporates	GROSS EAD	-	220	299	1	3	-	-	1,806	**2,329**
	EAD	-	220	299	1	3	-	-	1,806	**2,329**
High risk	GROSS EAD	-	-	-	-	-	-	-	-	**-**
	EAD	-	-	-	-	-	-	-	-	**-**
Institutions	GROSS EAD	4,191	429	128	90	394	1	12,952	938	**19,123**
	EAD	4,039	429	128	90	394	1	11,319	938	**17,338**
Multilateral developments banks	GROSS EAD	-	-	-	-	-	-	-	1	**1**
	EAD	-	-	-	-	-	-	-	1	**1**
Public sector entities	GROSS EAD	-	-	-	-	-	-	-	-	**-**
	EAD	-	-	-	-	-	-	-	-	**-**
Regional governments or Local Authorities	GROSS EAD	-	-	-	-	-	-	-	2	**2**
	EAD	-	-	-	-	-	-	-	2	**2**
International Organisations	GROSS EAD	-	-	-	-	-	-	-	-	**-**
	EAD	-	-	-	-	-	-	-	-	**-**
Securitisation	GROSS EAD	199	3	5	4	-	-	-	-	**211**
	EAD	199	3	5	4	-	-	-	-	**211**
Other Items	GROSS EAD	62	-	-	-	-	-	-	1,577	**1,639**
	EAD	62	-	-	-	-	-	-	1,577	**1,639**
Total	**GROSS EAD**	**4,474**	**655**	**435**	**95**	**398**	**1**	**12,952**	**4,779**	**23,789**
	EAD	**4,322**	**655**	**435**	**95**	**398**	**1**	**11,319**	**4,779**	**22,004**

1. Under the Standardised Approach, risk weights are generally applied according to the relevant exposure class and the associated credit quality (CRR Article 113). Credit quality may be determined by reference to the credit assessments of an ECAI, which are then mapped to a CQS. The unrated segment represents exposure for which no ECAI credit assessment is available.
2. The OTHER segment represents exposures where alternative rules to the CQS treatment described in the note above apply. The majority of exposures in this segment are exposures to central counterparties to which a fixed risk weight is applied.

Table 68 shows the breakdown of exposures under the standardised approach by asset class and risk weight as at 31 December 2019 for the MSI Group and MSIP. Credit Derivatives are not used as a CRM technique for RWA benefits.

Table 68: IRB approach – Effect on the RWAs of credit derivatives used as CRM techniques (EU CR7)

$MM	MSI Group		MSIP	
	Pre-credit derivatives RWAs	Actual RWAs	Pre-credit derivatives RWAs	Actual RWAs
Exposures under Foundation IRB	**5,887**	**5,887**	**4,667**	**4,667**
Central governments and central banks	974	974	673	673
Institutions	2,020	2,020	1,800	1,800
Corporates – SME	-	-	-	-
Corporates - specialised lending	67	67	-	-
Corporates – other	2,826	2,826	2,194	2,194
Exposures under Advanced IRB	-	-	-	-
Total	**5,887**	**5,887**	**4,667**	**4,667**

Table 69 shows the parameters used for the calculation of capital requirements for IRB models as at 31 December 2019 for the MSI Group.

Table 69: IRB approach – Credit risk exposures by exposure class and PD range (EU CR6)

	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Average CCF	EAD post-CRM and post-CCF	Average PD	Number of obligors	Average LGD	Average maturity	RWAs	RWA density	EL	Value adjustments and provisions
MSI Group	$MM	$MM	%	$MM	%	#	%	Years	$MM	%	$MM	$MM
0.00 to <0.15	16,131	26	20.00%	16,136	0.02%	10	45%	1	936	6%	1	
0.15 to <0.25	-	-	0.00%	-	-	-	-	-	-	-	-	
0.25 to <0.50	74	-	0.00%	74	0.42%	2	45%	1	37	50%	-	
0.50 to <0.75	-	-	0.00%	-	-	-	-	-	-	-	-	
0.75 to <2.50	-	-	0.00%	-	-	-	-	-	-	-	-	
2.50 to <10.00	-	-	0.00%	-	-	-	-	-	-	-	-	
10.00 to <100.00	-	-	0.00%	-	-	-	-	-	-	-	-	
100.00 (Default)	-	-	0.00%	-	-	-	-	-	-	-	-	
Central governments or central banks	**16,205**	**26**	**20.00%**	**16,210**	**0.02%**	**12**	**45%**	**1**	**973**	**6%**	**1**	**-**
0.00 to <0.15	8,387	1,440	96.10%	9,453	0.06%	89	45%	1	1,601	17%	2	
0.15 to <0.25	238	-	0.00%	238	0.20%	14	45%	1	100	42%	-	
0.25 to <0.50	38	62	75.00%	84	0.41%	29	45%	3	83	99%	-	
0.50 to <0.75	4	-	0.00%	4	0.71%	4	45%	5	15	375%	-	
0.75 to <2.50	65	-	0.00%	65	1.18%	10	45%	1	69	106%	-	
2.50 to <10.00	78	-	75.00%	78	7.14%	54	45%	2	153	196%	2	
10.00 to <100.00	-	-	0.00%	-	-	-	-	-	-	-		
100.00 (Default)	-	-	0.00%	-	-	-	-	-	-	-		
Institutions	**8,810**	**1,502**	**95.60%**	**9,922**	**0.13%**	**200**	**45%**	**1**	**2,021**	**20%**	**4**	**-**
0.00 to <0.15	1,165	2,886	90.10%	3,765	0.08%	64	45%	2	1,173	31%	1	
0.15 to <0.25	58	1,390	68.40%	1,009	0.20%	33	45%	2	478	47%	1	
0.25 to <0.50	73	186	34.20%	136	0.39%	36	45%	3	101	74%	-	
0.50 to <0.75	6	9	20.00%	7	0.71%	4	45%	4	8	114%	-	
0.75 to <2.50	84	85	75.00%	147	1.28%	12	45%	4	188	128%	1	
2.50 to <10.00	188	609	19.90%	310	6.89%	121	45%	4	627	202%	10	
10.00 to <100.00	91	-	0.00%	91	27.91%	15	45%	4	252	277%	11	
100.00 (Default)	21	-	0.00%	21	100.00%	11	45%	5	-	-	9	
Corporates	**1,686**	**5,165**	**73.60%**	**5,486**	**1.37%**	**296**	**45%**	**2**	**2,827**	**52%**	**33**	**-**
Total	**26,701**	**6,693**	**78.30%**	**31,618**	**.29%**	**508**	**45%**	**1**	**5,821**	**18%**	**38**	**-**

Over the second half of 2019, the increase in exposures to Central Governments or Central Banks is due to liquidity management.

Table 70 provides details of backtesting data to validate PD calculations for the MSI Group as at 31 December 2019.

Table 70: IRB approach – Backtesting of PD per exposure class (EU CR9)

MSI Group	External rating equivalent Moody's	External rating equivalent S&P	External rating equivalent Fitch	Weighted average PD %	Arithmetic average PD by obligors %	Number of obligors: End of previous year #	Number of obligors: End of the year #	Defaulted obligors in the year #	Of which new obligors #	Average historic annual default rate %
0.0 to <0.15	Aa2	AAA to AA	AAA	0.00%	0.00%	7	10	-	-	0.00%
0.15 to <0.25				0.00%	0.00%	-	-	-	-	0.00%
0.25 to <0.50	Baa2	BBB	BBB	0.40%	0.40%	2	2	-	-	0.00%
0.50 to <0.75				0.00%	0.00%	-	-	-	-	0.00%
0.75 to <2.50				0.00%	0.00%	-	-	-	-	0.00%
2.50 to <10.00				0.00%	0.00%	-	-	-	-	0.00%
10.00 to<100.00				0.00%	0.00%	-	-	-	-	0.00%
100.00				0.00%	0.00%	-	-	-	-	0.00%
Central governments or central banks	**Aa2 to Baa2**	**AAA to BBB**	**AAA to BBB**	**0.00%**	**0.10%**	**9**	**12**	**-**	**-**	**0.00%**
0.0 to <0.15	Aa2	AA+ to BBB-	AA	0.10%	0.10%	64	64	-	-	0.00%
0.15 to <0.25	A2	BBB+ to BBB-	A	0.20%	0.20%	32	33	-	-	0.00%
0.25 to <0.50	Baa3	BBB to BB+	BBB	0.40%	0.30%	84	36	-	-	0.00%
0.50 to <0.75				0.70%	0.70%	6	4	-	-	0.00%
0.75 to <2.50	Ba2	BB		1.30%	1.40%	26	12	-	-	0.00%
2.50 to <10.00	B1	B+ to B-	BB-	6.90%	7.50%	64	121	-	-	0.00%
10.00 to <100.00	B3	A to CCC+	A+	27.90%	27.90%	9	15	-	-	0.00%
100.00				100.00%	100.00%	7	11	11	5	0.00%
Corporates	**Aa2 to B3**	**AA+ to CCC+**	**AA to BBB**	**1.40%**	**8.30%**	**292**	**296**	**11**	**5**	**0.00%**
0.0 to <0.15	Aa1	AA to BBB+	AA+	0.10%	0.10%	97	89	-	-	0.00%
0.15 to <0.25	A2	A- to BBB	A-	0.20%	0.20%	12	14	-	-	0.00%
0.25 to <0.50	Baa3	BBB- to BB-	BBB	0.40%	0.30%	31	29	-	-	0.00%
0.50 to <0.75				0.70%	0.70%	2	4	-	-	0.00%
0.75 to <2.50	Baa2		BBB	1.20%	1.20%	14	10	-	-	0.00%
2.50 to <10.00	B2			7.10%	8.00%	17	54	-	-	0.00%
10.00 to <100.00				0.00%	0.00%	-	-	-	-	0.00%
100.00				0.00%	0.00%	-	-	-	-	0.00%
Institutions	**Aa1 to B2**	**AA to BB-**	**AA+ to BBB**	**0.10%**	**2.30%**	**173**	**200**	**-**	**-**	**0.00%**

Over the course of 2019, the composition of corporate obligors changed, resulting in an increase in the credit quality of the population.

Table 71 shows the all relevant parameters used for the calculation of CCR capital requirements for IRB models as at 31 December 2019 for the MSI Group.

Table 71: Standardised approach – CCR exposures by regulatory portfolio and risk weight (EU CCR3)

$MM

MSI Group	Risk weight: 0%	2%	4%	10%	20%	50%	70%	75%	100%	150%	1250%	Others	Total	Of which unrated
Central governments or central banks	10	-	-	-	-	-	-	-	16	-	-	-	**26**	9
Regional governments or local authorities	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Public sector entities	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
International organisations	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Institutions	-	15,733	148	-	347	4	-	-	165	1	-	-	**16,398**	152
Corporates	-	-	-	-	104	154	-	-	534	4	-	-	**796**	530
Retail	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Other Items	-	-	-	-	-	-	-	-	-	-	-	-	**-**	-
Total standardised approach	**10**	**15,733**	**148**	**-**	**451**	**158**	**-**	**-**	**715**	**5**	**-**	**-**	**17,220**	**691**

Table 72 shows the all relevant parameters used for the calculation of CCR capital requirements for IRB models as at 31 December 2019 for the MSI Group.

Table 72: IRB approach – CCR exposures by portfolio and PD scale (EU CCR4)

MSI Group	EAD post-CRM $MM	Average PD %	Number of obligors #	Average LGD %	Average maturity Years	RWAs $MM	RWA density %
Central governments and central banks	**9,230**	**0.05%**	**154**	**45.00%**	**1**	**808**	**9%**
0.00 to <0.15	8,947	0.03%	128	45.00%	1	645	7%
0.15 to <0.25	246	0.20%	12	45.00%	2	116	47%
0.25 to <0.50	9	0.34%	6	45.00%	-	3	33%
0.50 to <0.75	-	-	-	-	-	-	-
0.75 to <2.50	1	1.18%	1	45.00%	1	1	100%
2.50 to <10.00	27	5.45%	7	45.00%	2	43	159%
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Corporates	**50,971**	**0.69%**	**10,130**	**46.14%**	**2**	**24,811**	**49%**
0.00 to <0.15	32,081	0.08%	4,710	45.70%	2	9,324	29%
0.15 to <0.25	5,371	0.20%	630	51.58%	2	3,098	58%
0.25 to <0.50	7,931	0.33%	2,344	45.01%	1	4,764	60%
0.50 to <0.75	2,290	0.71%	302	45.00%	2	2,115	92%
0.75 to <2.50	620	1.70%	182	45.00%	2	704	114%
2.50 to <10.00	2,134	5.25%	1,537	45.00%	2	3,428	161%
10.00 to <100.00	544	27.91%	424	45.00%	1	1,378	253%
100.00 (Default)	-	100.00%	1	45.00%	5	-	-
Institutions	**48,154**	**0.13%**	**576**	**45.49%**	**1**	**12,238**	**25%**
0.00 to <0.15	45,826	0.07%	248	45.38%	1	9,618	21%
0.15 to <0.25	964	0.20%	57	45.18%	3	698	72%
0.25 to <0.50	699	0.36%	102	45.54%	3	581	83%
0.50 to <0.75	103	0.71%	32	45.00%	1	92	89%
0.75 to <2.50	141	1.45%	51	45.00%	2	157	111%
2.50 to <10.00	421	5.20%	84	58.42%	3	1,091	259%
10.00 to <100.00	-	27.91%	2	45.00%	2	1	-
100.00 (Default	-	-	-	-	-	-	-
Total (all portfolios)	**108,355**	**0.39%**	**10,860**	**45.75%**	**1**	**37,857**	**35%**

Over the second half of 2019 there was an increase in SFT exposures where lending to Central Governments, institutions and corporates.

23. Appendix VI. Morgan Stanley Investment Management Group

The principal activity of MSIM Ltd is the provision of investment management services to clients. There have not been any significant changes in the Company's principal activity in the year under review. The provision of certain services is expected to be impacted by the United Kingdom ("UK")'s decision to leave the European Union ("EU"), however this is not expected to result in any significant change to the Company's principal activity. In relation to the Morgan Stanley Group's preparation for the UK withdrawal from the EU, on 1 January 2019 the Company transferred the operations of its Luxembourg branch, including property, plant and equipment, lease commitments and employee contracts to MSIM Fund Management (Ireland) Limited ("MSIM FM"), another Morgan Stanley Group undertaking. The Company has continued to operate branches in the Netherlands, Italy and Germany during the year, as well as a representative office in the Dubai International Financial Centre ("DIFC"). The Company is authorised and regulated by the Financial Conduct Authority ("FCA").

The principal activity of MSIM ACD is the provision of authorised corporate director services to United Kingdom ("UK") authorised open-ended investment companies ("OEICs"). From 1 January 2019 another Morgan Stanley Group undertaking, was appointed to the role of Undertakings for Collective Investments in Transferable Securities ("UCITS") management company by Morgan Stanley Investment Funds and Morgan Stanley Liquidity Funds, and to the role of Alternative Investment Fund Manager ("AIFM") by Galaxy Fund and Alpha Plus Funds plc. Following this appointment, the Company no longer acted as management company for these funds, but continues to provide authorised corporate director services to UK authorised OEICs, being the Morgan Stanley Funds (UK). The Company is authorised and regulated by the Financial Conduct Authority ("FCA").

Key Metrics

As an investment firm MSIM Group reports its total risk exposure amount as the higher of the sum of credit risk and market risk RWAs, or the fixed overhead requirement. The fixed overhead requirement is calculated using figures resulting from the applicable accounting framework of the preceding year.

Table 73: MSIM Group key metrics

$MM	Q4'19	Q4'18
Common Equity Tier 1 Capital	193	204
Additional Tier 1 Capital	-	-
Tier 1 Capital	**193**	**204**
Tier 2 Capital	**51**	**51**
Total Own Funds	**244**	**255**
Risk Weighted Assets	261	328
Fixed Overhead Requirement	902	765
Total Risk Exposure Amount	**902**	**765**
CET1 Ratio	21.4%	26.7%
Tier 1 Capital Ratio	21.4%	26.7%
Total Capital Ratio[1]	27.1%	33.3%

1. The MSIM Group is required to maintain a minimum ratio of Own Funds to RWAs. As at 31 December 2019, the MSIM Group is in compliance with the minimum capital requirements.

Capital Management

The MSIM Group views capital as an important source of financial strength. It manages and monitors its capital in line with established policies and procedures and in compliance with local regulatory requirements.

In line with the MSI Group's capital management policies, the MSIM Group manages its capital position based upon among other things, business opportunities, risks, capital availability and rates of return together with internal capital policies and regulatory requirements, and therefore, in the future may expand or contract its capital base to address the changing needs of its business.

The MSIM Group conducts an ICAAP at least annually in order to meet its obligations under CRD IV which the FCA reviews through its SREP.

MSIM Group capital is managed to ensure capital requirements assessed through the ICAAP and SREP are met. Internal capital ratio minima are set by the MSIM Board to ensure the MSIM Group has sufficient capital to meet its regulatory requirements at all times.

Capital Resources

Table 74 summarises the capital resources of the MSIM Group as at 31 December 2019.

Table 74: MSIM Group own funds

	$MM
Capital instruments eligible as CET1 capital	1
Retained earnings	195
Accumulated other comprehensive income	(3)
Other reserves	-
Adjustments to CET1 due to prudential filters	-
Other intangible assets	-
IRB shortfall of credit risk adjustments to expected losses	0
CET1 capital	**193**
Additional Tier 1 capital	-
Tier 1 capital	**193**
Capital instruments and subordinated loans eligible as Tier 2 capital	51
Instruments issued by subsidiaries that are given recognition in Tier 2 capital	-
Transitional adjustments due to additional recognition in Tier 2 capital of instruments issued by subsidiaries	-
Tier 2 capital	**51**
Total own funds	**244**

The capital resources of the MSIM Group are based on audited, consolidated non-statutory financial information. Table 75 provides a reconciliation of audited shareholders' equity to regulatory capital.

Table 75: MSIM Group reconciliation of balance sheet total equity to regulatory capital

$MM[1]		CET1 capital	AT1 capital	Tier 2 capital
Equity instruments	1	1	-	-
Share premium	-	-	-	-
Other reserves	-	-	-	-
Other comprehensive income	(3)	(3)	-	-
Retained earnings	359	359	-	-
Non-controlling interest	-	-	-	-
Balance sheet total equity	**357**	**357**	**-**	**-**
Add: Tier 2 instruments classified as debt and other borrowings	**51**	-	-	**51**
Less:				
Qualifying own funds subordinated debt instruments not included in consolidated Tier 2 capital	-	-	-	-
Part of interim or year-end profit not eligible	(164)	(164)	-	-
Non-controlling interest (amount not allowed in consolidated CET1)	-	-	-	-
Additional value adjustments (negative amount)	-	-	-	-
Negative amounts resulting from the calculation of expected loss amounts	-	-	-	-
Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	-	-	-	-
Intangible assets (net of related tax liability) (negative amount)	-	-	-	-
Total own funds (transitional rules and fully loaded position)	**244**	**193**	**-**	**51**

1. For further details, refer to Appendix VIII.

Table 76 shows the regulatory capital for the MSIM Group at both a transitional and fully loaded basis as at 31 December 2019.

Table 76: MSIM Group own funds disclosure template

	$MM[1]
Capital instruments and the related share premium accounts	1
Paid up capital instruments	1
Of which: Ordinary shares	1
Of which: Class A Ordinary shares (non-voting)	-
Share premium	-
Retained earnings	195
Accumulated other comprehensive income (and other reserves, to include unrealised gains and losses under the applicable accounting standards)	(3)
Independently reviewed interim profits net of any foreseeable charge or dividend	-
Common Equity Tier 1 (CET1) capital before regulatory adjustments	**193**
Additional value adjustments (negative amount)	-
Intangible assets (net of related tax liability) (negative amount)	-
Negative amounts resulting from the calculation of expected loss amounts	-
Gains or losses on liabilities valued at fair value resulting from changes in own credit standing	-
Total regulatory adjustments to Common equity Tier 1 (CET1)	**-**
Common Equity Tier 1 (CET1) capital	**193**
Capital instruments and the related share premium accounts	-
Of which: classified as equity under applicable accounting standards	-
Additional Tier 1 (AT1) capital	**-**
Tier 1 capital (T1 = CET1 + AT1)	**193**
Capital instruments and the related share premium accounts	51
Qualifying own funds instruments included in consolidated Tier 2 capital (including minority interests and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties	-
Of which: Instruments issued by subsidiaries subject to phase out	-
Tier 2 capital before regulatory adjustments	**51**
Tier 2 capital	**51**
Total capital (TC = T1 + T2)	**244**
Total risk weighted assets	**261**
Fixed Overhead Requirements	**902**
Total Risk Exposure Amount	**902**
Common Equity Tier 1 (as a percentage of risk exposure amount)	21.4%
Tier 1 (as a percentage of risk exposure amount)	21.4%
Total capital (as a percentage of risk exposure amount)	27.1%
Institution specific buffer requirement (CET1 requirement in accordance with article 92 (1) (a) plus capital conservation and countercyclical buffer requirements, plus systemic risk buffer, plus the systemically important institution buffer (G-SII or O-SII buffer), expressed as a percentage of risk exposure amount)	4.5%
Of which: Capital conservation buffer requirement	-
Of which: Countercyclical buffer requirement	-
Common Equity Tier 1 available to meet buffers (as a percentage of risk exposure amount)	16.9%
Direct and indirect holdings of the capital of financial sector entities where the institution does not have a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	-
Direct and indirect holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (amount below 10% threshold and net of eligible short positions)	-
Deferred tax assets arising from temporary differences (amount below 10% threshold, net of related tax liability where the conditions in Article 38 (3) are met)	1

1. As a limited licence firm under CRR Article 95, IFPRU 10 on capital buffers is not applicable. Therefore MSIM Group is exempt from both CCB and CCYB.

Capital Requirements

Table 77 summarises RWAs and MCR for MSIM Group by risk type, with MCR calculated as 8% of RWAs in accordance with CRD IV.

Table 77: MSIM Group overview of RWAs (EU OV1)

$MM	RWAs Q4'19	RWAs Q4'18	MCR Q4'19
Credit risk (excluding CCR)	**234**	**289**	**19**
Of which standardised approach	156	245	13
Of which foundation IRB (FIRB) approach	58	26	5
Of which advanced IRB (AIRB) approach	-	-	-
Of which equity IRB under the simple risk-weighted approach or the IMA	20	18	1
CCR	**-**	**-**	**-**
Of which mark- to-market	-	-	-
Of which original exposure	-	-	-
Of which standardised approach	-	-	-
Of which internal model method (“IMM”)	-	-	-
Of which financial collateral comprehensive method (for SFTs)	-	-	-
Of which risk exposure amount for contributions to the default fund of a CCP	-	-	-
Of which CVA	-	-	-
Settlement risk	**-**	**-**	**-**
Securitisation exposures in banking book (after cap)	**-**	**-**	**-**
Of which IRB	-	-	-
Of which IRB supervisory formula approach (SFA)	-	-	-
Of which internal assessment approach (IAA)	-	-	-
Of which standardised approach	-	-	-
Market risk	**27**	**39**	**2**
Of which standardised approach	27	39	2
Of which IMA	-	-	-
Large exposures	**-**	**-**	**-**
Operational risk	**-**	**-**	**-**
Of which basic indicator approach	-	-	-
Of which standardised approach	-	-	-
Of which advanced measurement approach	-	-	-
Amounts below the thresholds for deduction (subject to 250% risk weight)	**-**	**-**	**-**
Total credit risk and market risk	**261**	**328**	**21**
Fixed overhead requirement	**902**	**765**	**72**
Floor adjustment	**-**	**-**	**-**
Total risk exposure amount	**902**	**765**	**72**

Table 78 summarises the MSIM Groups credit risk exposures for both IRB and standardised approaches as at 31 December 2019.

Table 78: MSIM Group credit risk summary

$MM[1]	EAD	RWA	MCR
IRB			
Corporates	68	37	3
Equity	7	20	1
Institutions	144	21	2
Total (IRB)	**219**	**78**	**6**
Standardised			
Central governments or central banks	5	5	0
Corporates	19	19	2
Institutions	210	-	-
Other items	132	132	11
Total (standardised)	**366**	**156**	**13**
Total	**585**	**234**	**19**

1. Exposure classes where MSIM Group has no exposure are not shown in the table.

RWA flow statements

Table 79 summarises the key drivers of RWAs and MCR for the MSIM Groups’ credit risk exposures under the IRB approach.

Table 79: MSIM Group RWA flow statements of credit risk exposures under the IRB approach (EU CR8)

$MM	RWAs	MCR
RWAs at the end of the previous reporting period[1]	**26**	**2**
Asset size	36	3
Asset quality	(4)	0
Model updates	-	-
Methodology and policy	-	-
Acquisitions and disposals	-	-
Foreign exchange movements	-	-
Other	-	-
RWAs at the end of the reporting period	**58**	**5**

1. Previous reporting period was Q4’18.

Over the course of 2019, MSIM Group asset size increased due to intercompany receivables.

Table 80 shows the MSIM Group’s equity exposures using the simple risk-weighted approach.

Table 80: MSIM Group IRB (specialised lending and equities) (EU CR10)

	Equities under the simple risk-weight approach					
Categories[1]	On-balance sheet amount $MM	Off-balance sheet amount $MM	Risk weight %	Exposure amount $MM	RWAs $MM	Capital requirements $MM
Private equity exposures	-	-	190%	-	-	-
Exchange-traded equity exposures	-	7	290%	7	20	1
Other equity exposures	-	-	370%	-	-	-
Total	**-**	**7**	**-**	**7**	**20**	**1**

1. There is no specialised lending on the MSIM Group.

Over the course of 2019, there have been no material changes.

Table 81: MSIM Group Capital instruments template

Reported in USD unless otherwise stated			
Description	**Common Equity Tier 1**		**Subordinated Debt**
MSIM Group	**A**	**B**	**C**
Issuer	Morgan Stanley Investment Management Limited		
Unique Identifier	N/A		
Governing law(s) of the instrument	Companies Act 2006		English Law
Transitional CRR rules	CET1		Tier 2
Post-transitional CRR rules	CET1		Tier 2
Eligible at solo/(sub-) consolidated/solo&(sub-) consolidated	Solo and (Sub-) Consolidated		
Instrument type	Ordinary Shares		Long-term subordinated multicurrency loan facility
Amount recognised in regulatory capital ($MM)	USD 1MM	USD 0MM	USD 51MM
Currency of issuance and nominal amount of instrument	USD 1MM	GBP 2	USD 51MM
Reporting currency and nominal amount of instrument	USD 1MM	USD 3	USD 51MM
Issue Price	USD 1MM	GBP 2	USD 51MM
Redemption Price	N/A		USD 51MM
Accounting Classification	Shareholders' Equity		Liability – amortised cost
Original date of issuance	04/02/2016	22/01/1986	21/12/2015
Perpetual or dated	Perpetual		Dated
Original maturity date	No maturity		21/12/2025
Issuer call subject to prior supervisory approval	N/A		
Option call date, contingent call dates	N/A		
Redemption amount	N/A		
Subsequent call dates, if applicable	N/A		
Fixed or floating dividend / coupon	Floating		
Coupon rate and any related index	N/A	N/A	OBFR +2.086%
Existence of a dividend stopper	No		
Fully discretionary, partially discretionary or mandatory (in terms of timing)	Fully Discretionary		Mandatory
Fully discretionary, partially discretionary or mandatory (in terms of amount)	Fully Discretionary		Mandatory
Existence of step up or other incentive to redeem	No		
Noncumulative or cumulative	Noncumulative		Cumulative
Convertible or non-convertible	Nonconvertible		
If convertible,			
conversion trigger(s)	N/A		
fully or partially	N/A		
conversion rate	N/A		
mandatory or optional conversion	N/A		
specify instrument type convertible into	N/A		
specify issuer of instrument it converts into	N/A		
Write-down features	No		
If write-down, write-down trigger(s)	N/A		
If write-down, full or partial	N/A		
If write-down, permanent or temporary	N/A		
If temporary write-down, description of write-up mechanism	N/A		
Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument)	Long-term subordinated loan facility (column C)		Other Liabilities
Non-compliant transitioned features	No		
If yes, specify non-compliant features	N/A		

1. All Capital instruments issued by the MSIM Group are issued within Morgan Stanley and are not marketable instruments.

24. Appendix VII: MSI Group Non-Statutory Financial Information

MORGAN STANLEY INTERNATIONAL LIMITED

Consolidated non-statutory financial information

31 December 2019

MORGAN STANLEY INTERNATIONAL LIMITED

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MORGAN STANLEY INTERNATIONAL LIMITED

DIRECTORS' RESPONSIBILITIES STATEMENT

The Directors, the names of whom are set out below, confirm that to the best of their knowledge:

i) the accounting policies are appropriate to the circumstances of the Morgan Stanley International Group which comprises Morgan Stanley International Limited ("the Company") and its subsidiaries (together "the Group") and the policies have been consistently applied and adequately disclosed;
ii) significant accounting estimates applied are reasonable; and
iii) the consolidated non-statutory financial information is free from material misstatement.

Approved by the Board and signed on its behalf by:

DocuSigned by:
kim Lazaroo
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K Lazaroo
Director
22 April 2020

Board of Directors:

S Ball	(appointed 28 February 2019)
J Bloomer	(Chairman)
D O Cannon	
C Castello	(resigned 31 January 2019)
T Duhon	
L Guy	
J Horder	
A Kohli	
K Lazaroo	(appointed 22 February 2019)
M C Phibbs	
D A Russell	
N P Whyte	
C Woodman	

INDEPENDENT AUDITOR'S REPORT TO THE DIRECTORS OF MORGAN STANLEY INTERNATIONAL LIMITED

Report on the audit of the consolidated non-statutory financial information

Opinion

In our opinion the consolidated non-statutory financial information for the year ended 31 December 2019 have been properly prepared in accordance with the basis of preparation and accounting policies stated in notes 1 and 2.

We have audited the consolidated non-statutory financial information of Morgan Stanley International Limited (the 'company') which comprise:

- the consolidated income statement;
- the consolidated statement of comprehensive income;
- the consolidated statement of changes in equity;
- the consolidated statement of financial position; and
- the related notes 1 and 2.

The financial reporting framework that has been applied in their preparation is the accounting policies stated in notes 1 and 2.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the auditor's responsibilities for the audit of the non-statutory financial information section of our report.

We are independent of the company in accordance with the ethical requirements that are relevant to our audit of the non-statutory financial information in the UK, including the Financial Reporting Council's (the 'FRC's') Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

We are required by ISAs (UK) to report in respect of the following matters where:

- the directors' use of the going concern basis of accounting in preparation of the consolidated non-statutory financial information is not appropriate; or
- the directors have not disclosed in the consolidated non-statutory financial information any identified material uncertainties that may cast significant doubt about the company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the consolidated non-statutory financial information are authorised for issue.

We have nothing to report in respect of these matters.

Responsibilities of directors

As explained more fully in the directors' responsibilities statement, the directors are responsible for the preparation of the consolidated non-statutory financial information in accordance with the financial reporting provisions laid out in Notes 1 and 2 to the financial information, and for such internal control as the directors determine is necessary to enable the preparation of consolidated non-statutory financial information that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated non-statutory financial information, the directors are responsible for assessing the company'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 directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

INDEPENDENT AUDITOR'S REPORT TO THE DIRECTORS OF MORGAN STANLEY INTERNATIONAL LIMITED (CONTINUED)

Auditor's responsibilities for the audit of the non-statutory financial information

Our objectives are to obtain reasonable assurance about whether the consolidated non-statutory financial information as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) 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 non-statutory financial information.

A further description of our responsibilities for the audit of the consolidated non-statutory financial information is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Use of our report

This report is made solely to the company's directors, as a body, in accordance with our engagement letter dated 21 February 2020 and solely for the purpose of providing an opinion over the consolidated non-statutory financial information contained within this document titled 'consolidated non-statutory financial information'. Our audit work has been undertaken so that we might state to the company's directors those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company, for our audit work, for this report, or for the opinions we have formed.

.

Deloitte LLP
London

22 April 2020

MORGAN STANLEY INTERNATIONAL LIMITED

CONSOLIDATED INCOME STATEMENT
Year ended 31 December 2019

in $ millions	**2019**	**2018 (restated)**
Net trading income	5,412	4,886
Net income/ (expense) from other financial instruments held at fair value	(534)	332
Fee and commission income	4,374	4,346
Other revenue	17	59
Interest income	2,021	1,222
Interest expense	(3,604)	(3,065)
Net interest expense	(1,583)	(1,843)
Net revenues	7,686	7,780
Non-interest expenses:		
Operating expense	(6,645)	(6,424)
Net impairment (loss)/gain on financial assets	(1)	(2)
PROFIT BEFORE TAX	1,040	1,354
Income tax expense	(237)	(349)
PROFIT FOR THE YEAR	803	1,005
Attributable to:		
Owners of the Company	801	1,004
Non-controlling interest	2	1
PROFIT FOR THE YEAR	803	1,005

The notes on pages 7 to 25 form an integral part of the consolidated non-statutory financial information.

MORGAN STANLEY INTERNATIONAL LIMITED

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
Year ended 31 December 2019

in $ millions	2019	2018 (restated)
PROFIT FOR THE YEAR	803	1,005
OTHER COMPREHENSIVE INCOME, NET OF TAX		
Items that will not be reclassified subsequently to profit or loss:		
Remeasurement of net defined benefit liability	(1)	14
Changes in fair value attributable to own credit risk on financial liabilities designated at fair value	(198)	171
Items that may be reclassified subsequently to profit or loss:		
Currency translation reserve:		
Foreign currency translation differences arising on foreign operations	(26)	(121)
OTHER COMPREHENSIVE INCOME, NET OF TAX	(225)	64
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	578	1,069
Attributable to:		
Owners of the Company	578	1,072
Non-controlling interest	-	(3)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	578	1,069

The notes on pages 7 to 25 form an integral part of the consolidated non-statutory financial information.

MORGAN STANLEY INTERNATIONAL LIMITED

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
Year ended 31 December 2019

in $ millions	Equity instruments	Share Premium	Pension reserve	Currency translation reserve	Available-for-sale reserve	Capital contribution reserve	Capital redemption reserve	Debt valuation adjustment reserve	Retained earnings	Attributable to owners of the parent	Non-controlling interests	Total equity
Balance at 1 January 2018	**2,915**	**-**	**(115)**	**(368)**	**98**	**6,061**	**1,400**	**(118)**	**11,879**	**21,752**	**107**	**21,859**
Impact of change in accounting policy for fair value gains and losses on inception)	-	-	-	-	-	-	-	-	37	37	-	37
Impact of adoption of new accounting standards	-	-	-	-	(98)	-	-	-	98	-	-	-
Profit for the year	-	-	-	-	-	-	-	-	972	972	1	973
Prior period impact of IAS 12 amendment	-	-	-	-	-	-	-	-	32	32	-	32
Other comprehensive income for the period:												
Remeasurement of defined benefit liability	-	-	14	-	-	-	-	-	-	14	-	14
Changes in fair value attributable to own credit risk on financial liabilities designated at fair value	-	-	-	-	-	-	-	171	-	171	-	171
Foreign currency translation differences arising on foreign operations	-	-	-	(117)	-	-	-	-	-	(117)	(4)	(121)
Total comprehensive income/(loss)	**-**	**-**	**14**	**(117)**	**-**	**-**	**-**	**171**	**1,004**	**1,072**	**(3)**	**1,069**
Transactions with owners:												
Issue of Additional Tier 1 capital	2,200	-	-	-	-	-	-	-	-	2,200	-	2,200
Issue of ordinary share capital	1	-	-	-	-	-	-	-	-	1	-	1
Dividends	-	-	-	-	-	-	-	-	(86)	(86)	-	(86)
Prior period impact of IAS 12 amendment	-	-	-	-	-	-	-	-	(32)	(32)	-	(32)
Balance at 31 December 2018	**5,116**	**-**	**(101)**	**(485)**	**-**	**6,061**	**1,400**	**53**	**12,900**	**24,944**	**104**	**25,048**
Profit for the year	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**801**	**801**	**2**	**803**
Other comprehensive income for the period:												
Remeasurement of defined benefit liability	-	-	(1)	-	-	-	-	-	-	(1)	-	(1)
Changes in fair value attributable to own credit risk on financial liabilities designated at fair value	-	-	-	-	-	-	-	(198)	-	(198)	-	(198)
Realised debt valuation losses	-	-	-	-	-	-	-	4	(4)	-	-	-
Foreign currency translation differences arising during the year	-	-	-	(24)	-	-	-	-	-	(24)	(2)	(26)
Total comprehensive income/(loss)	**-**	**-**	**(1)**	**(24)**	**-**	**-**	**-**	**(194)**	**797**	**578**	**-**	**578**
Transactions with owners:												
Issue of ordinary share capital	680	17	-	-	-	-	-	-	-	697	-	697
Transfer of business to Morgan Stanley S.V. S.A.U	-	-	-	-	-	-	-	-	3	3	-	3
Dividends	-	-	-	-	-	-	-	-	(328)	(328)	-	(328)
Balance at 31 December 2019	**5,796**	**17**	**(102)**	**(509)**	**-**	**6,061**	**1,400**	**(141)**	**13,372**	**25,894**	**104**	**25,998**

The notes on pages 7 to 25 form an integral part of the consolidated non-statutory financial information.

MORGAN STANLEY INTERNATIONAL LIMITED

CONSOLIDATED STATEMENT OF FINANCIAL POSITION
As at 31 December 2019

in $ millions	**2019**	**2018**
ASSETS		
Cash and short term deposits	34,341	32,817
Trading financial assets (of which $49,108 million (2018: $39,706 million) were pledged to various parties)	322,309	260,831
Secured financing	82,690	90,448
Loans and advances	289	183
Investment securities	141	132
Trade and other receivables	72,005	66,286
Current tax assets	305	258
Deferred tax assets	173	64
Other assets	219	213
Property, plant and equipment	1,247	499
Intangible assets	678	619
TOTAL ASSETS	514,397	452,350
LIABILITIES AND EQUITY		
Bank loans and overdrafts	124	20
Trading financial liabilities	266,673	220,808
Secured borrowing	75,908	73,435
Trade and other payables	90,856	92,249
Debt and other borrowings	53,675	39,762
Provisions	93	119
Current tax liabilities	59	56
Deferred tax liabilities	-	-
Accruals and deferred income	940	843
Post employment benefit obligations	71	10
TOTAL LIABILITIES	488,399	427,302
EQUITY		
Share capital	5,796	5,116
Share premium	17	-
Currency translation reserve	(509)	(485)
Capital contribution reserve	6,061	6,061
Capital redemption reserve	1,400	1,400
Pension reserve	(102)	(101)
Debt valuation reserve	(141)	53
Retained earnings	13,372	12,900
Equity attributable to the owners of the Company	25,894	24,944
Non-controlling interests	104	104
TOTAL EQUITY	25,998	25,048
TOTAL LIABILITIES AND EQUITY	514,397	452,350

The consolidated non-statutory financial information was approved by the Board and authorised for issue on 20 April 2020.

Signed on behalf of the Board

DocuSigned by:
kim Lazaroo
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K Lazaroo
Director

The notes on pages 7 to 25 form an integral part of the consolidated non-statutory financial information.

MORGAN STANLEY INTERNATIONAL LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

1. BASIS OF PREPARATION

a. Statement of compliance

The Company has prepared consolidated non-statutory financial information comprising information about the Company and its subsidiaries (together "the Group") as at 31 December 2019. The Company confirms in accordance with section 435 of the Companies Act 2006 that:

i) the consolidated non- statutory financial information does not constitute its statutory accounts;
ii) a copy of the Company's statutory accounts for the year ended 31 December 2019 will be filed with the Registrar of Companies for England and Wales, Companies House, Cardiff CF14 3UZ; and
iii) the Company's independent auditor has issued an unqualified report on the Company's statutory accounts for the year ended 31 December 2019.

The Group has prepared the consolidated non-statutory financial information in accordance with the recognition and measurement principles of IFRS issued by the International Accounting Standards Board as adopted by the European Union plus the basis of consolidation set out below. A summary of significant accounting policies applied to the Group is detailed in note 2.

b. Basis of consolidation

The consolidated non-statutory financial information of the Group comprises information about the Company and its subsidiaries as at 31 December 2019. Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The information for the subsidiaries is prepared for the same reporting year as the Group, using consistent accounting policies. The financial information of subsidiaries which have a non-US dollar reporting currency is translated into US dollars as described in note 2(b). Subsidiaries are consolidated from the date that the Group gains control until the date that control ceases.

In certain cases, the Group may exercise control over another entity on behalf of investors or other parties. In such cases it is necessary, as part of the assessment of whether it should consolidate the entity, for the Group to determine whether it exercises such control primarily as an agent for the other investors or whether it does so primarily as principal on its own behalf. In making such a determination, management of the Group will consider all relevant factors, including in particular:

- the scope of the Group's decision-making authority over the investee;
- the rights, including removal rights, held by other parties;
- the remuneration to which the Group is entitled; and
- the significance of the Group's exposure to variability of returns from its interests in the entity.

Intra-group balances, transactions, income and expenses and profits and losses resulting from intra-group transactions are eliminated in preparing the consolidated non-statutory financial information.

Non-controlling interests represent the portion of profit or loss and total equity not owned, directly or indirectly, by the Group and are presented separately in the consolidated income statement, consolidated statement of comprehensive income and within equity in the consolidated statement of financial position, separately from equity attributable to owners of the parent. The amount of non-controlling interest is measured at the non-controlling interest's proportionate share of the identifiable net assets.

MORGAN STANLEY INTERNATIONAL LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

1. BASIS OF PREPARATION (CONTINUED)

c. New standards and interpretations adopted during the year

The following standards, amendments to standards and interpretation relevant to the Group's operations were adopted during the year. Except where otherwise stated, these standards, amendments to standards and interpretations did not have a material impact on the Group's consolidated non-statutory financial information.

IFRS 16 'Leases' was issued by the IASB in January 2016. The standard was endorsed by the EU in November 2017. This accounting update requires lessees to recognise in the consolidated statement of financial position all leases with terms exceeding one year, and results in the recognition of a right of use ("ROU") asset and corresponding lease liability for all such leases, including those previously classified as operating leases.

The Group adopted this standard using the modified retrospective method of adoption, which resulted in the recognition of additional ROU assets and lease liabilities for leases existing at, or entered into after, 1 January 2019. As a result of the transition to IFRS 16, ROU asset of $685 million and lease liabilities of $807 million were recognised as at 1 January 2019. There was no impact to net assets or retained earnings as a result of the implementation of IFRS 16 at the date of initial application. Comparative amounts have not been restated and comparative amounts in relation to leasing activity reflect those determined and disclosed in accordance with International Accounting Standard 17 *'Leases'*. There was no resultant cumulative effect adjustment arising on adoption of the standard.

Adoption of the standard required the Group to make certain judgments and elect certain other practical expedients. The Group applied the following practical expedients when applying IFRS 16 on the transition date:

- application of IFRS 16 only to contracts that were previously identified as leases. Contracts that were not previously identified as leases were not reassessed for the existence of a lease;
- the opening ROU asset was reduced by the carrying amount of the IAS 37 onerous lease provision that had existed before the date of initial application and was not subject to an impairment review at the time of adoption;

When measuring the lease liabilities, the Group discounted lease payments using its incremental borrowing rate determined as at 1 January 2019. The weighted average rate applied as of this date is 3.3748%.

The lease payments include:

- fixed payments (including in-substance fixed payments) less any lease incentives receivable;
- variable lease payments that depend on an index or a rate;
- amounts expected to be paid under residual value guarantees;
- the exercise price of a purchase option reasonably certain to be exercised by the Group; and
- payments of penalties for terminating a lease, if the lease term reflects the Group's exercising the option to terminate.

Variable lease payments that reflect changes in market rental rates are initially measured using the market rental rates as at the commencement date. Variable lease payments that do not depend on an index or a rate are not included in the measurement of lease liabilities and right-of-use assets, and are recognised as expense in the period on which the event or condition that triggers the payment occurs.

As a result of the implementation of IFRS 16, ROU assets of $740 million and lease liabilities of $911 million are recognised as at 31 December 2019. There is no impact to net assets or retained earnings as a result of the implementation of IFRS 16.

MORGAN STANLEY INTERNATIONAL LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

1. BASIS OF PREPARATION (CONTINUED)

c. New standards and interpretations adopted during the year (continued)

An amendment to IAS 19 *'Plan Amendment, Curtailment or Settlement'* was issued by the IASB in February 2018, for retrospective application to plan amendments, curtailments or settlements occurring on or after 1 January 2019. The amendment was endorsed by the EU in March 2019.

An amendment to IAS 28 '*Long-term Interests in Associates and Joint Ventures'* was issued by the IASB in October 2017, for retrospective application in accounting periods beginning on or after 1 January 2019. The amendment was endorsed by the EU in February 2019.

As part of the 2015-2017 Annual Improvements Cycle published in December 2017, the IASB made amendments to the following standards that are relevant to the Group's operations: IAS 12 *'Income Taxes'* and IAS 23 *'Borrowing Costs'*, for application in accounting periods beginning on or after 1 January 2019. The amendment to IAS 12 has changed the presentation of the tax benefit relating to coupon payments on the Additional Tier 1 capital instruments, which are now presented within 'Income tax expense' in the consolidated income statement rather than in the consolidated statement of changes in equity. The amendments were endorsed by the EU in March 2019. Refer to note 1(f) for further detail.

IFRIC 23 '*Uncertainty over Income Tax Treatments*' was issued by the IASB in June 2017 for application in accounting periods beginning on or after 1 January 2019. The interpretation was endorsed by the EU in October 2018. Implementation of the interpretation had no impact on the results of the Group.

There were no other standards, amendments to standards or interpretations relevant to the Group's operations which were adopted during the year.

d. New standards and interpretations not yet adopted

At the date of authorisation of these consolidated non-statutory financial information, the following amendments to standards and interpretations relevant to the Group's operations were issued by the IASB but not mandatory for accounting periods beginning 1 January 2019. The Group does not expect that the adoption of the following standards, amendments to standards and interpretations will have a material impact on the Group's consolidated non-statutory financial information.

Amendments to IAS 1 *'Presentation of Financial Statements'* and IAS 8 *'Accounting Policies, Changes in Accounting Estimates and Errors'* were issued by the IASB in October 2018, for application in accounting periods beginning on or after 1 January 2020. The amendments were endorsed by the EU in December 2019.

An amendment to IFRS 3 '*Business Combinations'* was issued by the IASB in October 2018, for application in accounting periods beginning on or after 1 January 2020.

e. Basis of measurement

The consolidated non-statutory financial information of the Group is prepared under the historical cost basis, except for certain financial instruments that have been measured at fair value as explained in the accounting policies.

MORGAN STANLEY INTERNATIONAL LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

1. BASIS OF PREPARATION (CONTINUED)

f. Change in accounting policy arising from IAS 12 amendment

As noted in note 1(c), an amendment to IAS 12 for application in accounting periods beginning on or after 1 January 2019 has been adopted by the Group and affects the presentation of the tax benefit relating to dividend payments on the Additional Tier 1 capital instruments. Previously the Group recognised the tax benefit of such coupon payments directly in 'Retained earnings'. Following adoption of the amendment, this benefit is reflected within 'Income tax expense' in the consolidated income statement.

As required by the IAS 12 amendment, the income tax consequences of dividends recognised on or after this beginning of the earliest comparative period have been presented in 'Income tax expense', rather than directly in 'Retained earnings' and comparatives have been restated accordingly. This had no net impact on 'Retained earnings' for the year ended 31 December 2018.

g. The going concern assumption

The Group has considered its business activities, together with the factors likely to affect its future development, performance and position, such as the Group's objectives, policies and processes for managing its capital; its financial risk management objectives; and its exposures to credit risk and liquidity risk. Retaining sufficient liquidity and capital to withstand market pressures remains central to the Morgan Stanley Group's and the Group's strategy.

Specifically, the existing and potential effects of COVID-19 (coronavirus) on the operational capacity of the business, access to liquidity and capital, contractual obligations, asset valuations and other critical accounting judgements and key sources of estimation uncertainty have been considered. Additionally, the specific impact of Brexit on the business of the Group has been considered.

Taking the above factors into consideration, the Directors believe it is reasonable to assume that the Group will have access to adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the annual report and financial statements.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

a. Functional currency

Items included within the consolidated non-statutory financial information are measured and presented in US dollars, the currency of the primary economic environment in which the Group operates.

All currency amounts in the consolidated non-statutory financial information are rounded to the nearest million US dollars.

b. Foreign currencies

All monetary assets and liabilities denominated in currencies other than US dollars are translated into US dollars at the rates ruling at the reporting date. Transactions and non-monetary assets and liabilities denominated in currencies other than US dollars are recorded at the rates prevailing at the dates of the transactions. Assets and liabilities of foreign operations are translated into US dollars using the closing rate method. Translation differences arising from the net investment(s) in the foreign operations are taken to the 'Currency translation reserve'.

The amount of change in the fair value of financial liabilities designated at fair value through profit and loss ("FVPL") that is attributable to changes in the credit risk of these liabilities ("DVA") includes foreign exchange differences thereon. All other translation differences are taken through the consolidated income statement. Exchange differences recognised in the consolidated income statement are presented in 'Other income' or 'Operating expense', except where noted in 2(c) below.

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NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

b. Foreign currencies (continued)

On disposal of a foreign operation, the related cumulative gain or loss in the 'Currency translation reserve' attributable to the owners of the parent is reclassified to the consolidated income statement and recorded within 'Net loss on investments in subsidiaries, associates and joint ventures'.

c. Financial instruments

i) Financial instruments mandatorily at fair value through profit and loss

Trading financial instruments

Trading financial instruments include government debt securities, corporate and other debt, traded loans, and corporate equities where the Group acquires the financial asset or financial liability for the purpose of selling or repurchasing in the near term or is part of a portfolio for which there is evidence of short term profit taking, and all derivative contracts.

Purchases and sales of non-derivative financial instruments classified as trading are initially recognised on settlement date at fair value, including regular way securities transactions. For purchases of non-derivative financial instruments classified as trading, from the date that the terms are agreed (trade date) until the settlement date, the Group recognises any unrealised fair value in the consolidated statement of financial position as 'Trading financial instruments' with corresponding profit or loss recognised within the consolidated income statement in 'Net trading income'. For sales of non-derivative financial instruments unrealised fair value changes are no longer recognised in the consolidated income statement from trade date. Upon settlement date the resulting financial instrument is recognised or de-recognised from the consolidated statement of financial position.

Derivatives, are initially recorded on trade date at fair value (see note 2(d) below). All subsequent changes in fair value are reflected in the consolidated income statement in 'Net trading income'.

All changes in fair value, foreign exchange differences, interest and dividends are reflected in the consolidated income statement in 'Net trading income'. When interest is included as a component of an instrument's fair value, interest is also reflected in the consolidated income statement in 'Net trading income', otherwise, it is included within 'Interest income' or 'Interest expense'.

Transaction costs are incremental costs that are directly attributable to the acquisition, issue or disposal of a financial instrument. For all trading financial instruments, transaction costs are excluded from the initial fair value measurement of the financial instrument. These costs are recognised in the consolidated income statement in 'Operating expense'.

Non-trading financial assets at fair value through profit or loss

Non-trading financial assets at FVPL include:

- secured financing transactions such as cash collateral on securities borrowed and securities purchased under agreements to resell,
- prepaid OTC contracts and financial assets arising upon consolidation of certain special purpose entities, and
- certain investment securities (unlisted equities).

Non-trading financial assets at FVPL are principally financial assets where the Group make decisions based upon the assets' fair values. These are generally recognised on settlement date at fair value (see note 2(d) below), since they are neither regular way nor are they derivatives. From the date the terms are agreed (trade date), until the financial asset is funded (settlement date), the Group recognises any unrealised fair value changes in the financial asset as non-trading financial assets at FVPL. On settlement date, the fair value of consideration given is recognised as a non-trading financial asset at FVPL.

MORGAN STANLEY INTERNATIONAL LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION

Year ended 31 December 2019

i) Financial instruments mandatorily at fair value through profit and loss (continued)

Non-trading financial assets at fair value through profit or loss (continued)

All subsequent changes in fair value, foreign exchange differences and unrealised interest are reflected in the consolidated income statement in ‘Net income from other financial instruments held at fair value’. Realised interest is included within ‘Interest income’ or ‘Interest expense’. All subsequent changes in fair value and foreign exchange differences are reflected in the consolidated income statement in ‘Net income from other financial instruments held at fair value’. When interest in included as a component of an instrument’s fair value, interest is also reflected in the consolidated income statement in ‘Net income from other financial instruments held at fair value’, otherwise it is included within ‘Interest income’ or ‘Interest expense’.

Transaction costs are excluded from the initial fair value measurement of the financial assets and are recognised in the consolidated income statement in ‘Operating expense’.

ii) Financial instruments designated at fair value through profit or loss

The Group has designated certain financial instruments at FVPL when the designation at fair value eliminates or significantly reduces an accounting mismatch which would otherwise arise. The Group has also designated certain financial liabilities at FVPL where:

- the financial liability forms part of a group of financial assets or financial liabilities or both which are managed, evaluated and reported internally on a fair value basis; or
- the financial liability contains an embedded derivative that significantly modifies the cash flows that would otherwise be required under the contract.

From the date the transaction in a financial instrument designated at FVPL is entered into (trade date) until settlement date, the Group recognises any unrealised fair value changes in the contract as financial instruments designated at FVPL in the consolidated statement of financial position. On settlement date, the fair value of consideration given or received is recognised as a financial instrument designated at FVPL (see note 2(d) below).

All subsequent changes in fair value, foreign exchange differences, and dividends are reflected in the consolidated income statement in ‘Net income from other financial instruments held at fair value’ other than DVA on financial liabilities designated at FVPL which is recognised in the ‘Debt valuation adjustment’ reserve where those changes do not create or enlarge an accounting mismatch. When interest is included as a component of an instrument’s fair value, interest is also reflected in the consolidated income statement in ‘Net income from other financial instruments held at fair value’, otherwise it is included within ‘Interest income’ or ‘Interest expense’. DVA presented within other comprehensive income is subsequently reclassified to the consolidated income statement, but is transferred to ‘Retained earnings’ when realised.

Transaction costs are excluded from the initial fair value measurement of the financial instrument. These costs are recognised as incurred in the consolidated income statement in ‘Operating expense’.

iii) Financial assets and financial liabilities at amortised cost

Financial assets at amortised cost include cash and short-term deposits, certain trade and other receivables and certain loans and advances.

Financial assets are recognised at amortised cost when the Group’s business model objective is to collect the contractual cash flows of the assets and where these cash flows are Solely Payments of Principal and Interest (“SPPI”) on the principal amount outstanding until maturity. Such assets are recognised when the Group becomes a party to the contractual provisions of the instrument. The instruments are initially measured at fair value (see note 2(d) below) and subsequently measured at amortised cost less ECL allowance. Interest is recognised in the consolidated income statement in ‘Interest income’, using the EIR method as described below. Transaction costs that are directly attributable to the acquisition of the financial asset are added to the fair value on initial recognition. ECL and reversals thereof are recognised in the consolidated income statement in ‘Net impairment gain/(loss) on financial instruments’.

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NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

c. Financial instruments (continued)

iii) Financial assets and financial liabilities at amortised cost (continued)

Financial liabilities classified at amortised cost include bank loans and overdrafts, certain secured borrowings, certain trade and other payables, and certain debt and other borrowings.

Financial liabilities are classified as being subsequently measured at amortised cost, except where they are held for trading or are designated as measured at FVPL. They are recognised when the Group becomes a party to the contractual provisions of the instrument and are initially measured at fair value (see note 2(d) below) and subsequently measured at amortised cost. Interest is recognised in the consolidated income statement in 'Interest expense' using the EIR method as described below. Transaction costs that are directly attributable to the issue of a financial liability are deducted from the fair value on initial recognition.

The EIR method is a method of calculating the amortised cost of a financial instrument (or a group of financial instruments) and of allocating the interest income or interest expense over the expected life of the financial instrument. The EIR is the rate that exactly discounts the estimated future cash payments and receipts through the expected life of the financial instrument (or, where appropriate a shorter period) to the carrying amount of the financial instrument. The EIR is established on initial recognition of the financial instrument. The calculation of the EIR includes all fees and commissions paid or received, transaction costs, and discounts or premiums that are an integral part of the EIR.

iv) Secured financing and secured borrowings

In the course of financing its business and part of its trading activities, the Group enters into arrangements which involve the sale of securities with agreements to repurchase, the purchase of securities with resale agreements, the lending of securities with collateral received and the borrowing of securities with collateral given.

Securities received by the Group under resale arrangements and securities borrowing arrangements are generally not recognised on the consolidated statement of financial position, and securities pledged or sold by the Group under sale and repurchase agreements and securities lending arrangements are generally not derecognised from the consolidated statement of financial position.

d. Fair value

Fair value measurement

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (i.e. the "exit price") in an orderly transaction between market participants at the measurement date.

Fair value is a market-based measure considered from the perspective of a market participant rather than an entity-specific measure. Therefore, even when market assumptions are not readily available, assumptions are set to reflect those that the Group believes market participants would use in pricing the asset or liability at the measurement date.

Where the Group manages a group of financial assets and financial liabilities on the basis of its net exposure to either market risks or credit risk, the Group measures the fair value of that group of financial instruments consistently with how market participants would price the net risk exposure at the measurement date.

In determining fair value, the Group uses various valuation approaches and establishes a hierarchy for inputs used in measuring fair value that requires the most observable inputs be used when available. Observable inputs are inputs that market participants would use in pricing the asset or liability that were developed based on market data obtained from sources independent of the Group. Unobservable inputs are inputs that reflect assumptions the Group believes other market participants would use in pricing the asset or liability, that are developed based on the best information available in the circumstances.

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NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
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2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

c. Financial instruments (continued)

Fair value measurement (continued)

The fair value hierarchy is broken down into three levels based on the observability of inputs as follows, with Level 1 being the highest and Level 3 being the lowest level:

- Level 1 - Quoted prices (unadjusted) in an active market for identical assets or liabilities

  Valuations based on quoted prices in active markets that the Morgan Stanley Group has the ability to access for identical assets or liabilities. Valuation adjustments and block discounts are not applied to Level 1 instruments. Since valuations are based on quoted prices that are readily and regularly available in an active market, valuation of these products does not entail a significant degree of judgement.

- Level 2 - Valuation techniques using observable inputs

  Valuations based on one or more quoted prices in markets that are not active or for which all significant inputs are observable, either directly or indirectly.

- Level 3 - Valuation techniques with significant unobservable inputs

  Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

The availability of observable inputs can vary from product to product and is affected by a wide variety of factors, including, for example, the type of product, whether the product is new and not yet established in the marketplace, the liquidity of markets and other characteristics particular to the product. To the extent that valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgement. Accordingly, the degree of judgement exercised by the Group in determining fair value is greatest for instruments categorised in Level 3 of the fair value hierarchy.

The Group considers prices and inputs that are current as of the measurement date, including during periods of market dislocation. In periods of market dislocation, the observability of prices and inputs may be reduced for many instruments. This condition could cause an instrument to be reclassified to a lower Level of the fair value hierarchy.

In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, the total fair value amount is disclosed in the level appropriate for the lowest level input that is significant to the total fair value of the asset or liability.

The Group incorporates Funding Valuation Adjustment (“FVA”) into the fair value measurements of over-the-counter (“OTC”) uncollateralised or partially collateralised derivatives and in collateralised derivatives where the terms of the agreement do not permit the re-use of the collateral received. In general, the FVA reflects a market funding risk premium inherent in the noted derivative instruments. The methodology for measuring FVA leverages the Group’s existing credit-related valuation adjustment calculation methodologies, which apply to both assets and liabilities.

For assets and liabilities that are transferred between levels in the fair value hierarchy during the period, fair values are ascribed as if the assets or liabilities had been transferred as of the beginning of the period.

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NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

d. Fair Value (continued)

Valuation techniques

Many cash instruments and OTC derivative contracts have bid and ask prices that can be observed in the marketplace. Bid prices reflect the highest price that a party is willing to pay for an asset. Ask prices represent the lowest price that a party is willing to accept for an asset. The Group carries positions at the point within the bid-ask range that meets its best estimate of fair value. For offsetting positions in the same financial instrument, the same price within the bid-ask spread is used to measure both the long and short positions.

Fair value for many cash instruments and OTC derivative contracts is derived using pricing models. Pricing models take into account the contract terms, as well as multiple inputs including, where applicable, commodity prices, equity prices, interest rate yield curves, credit curves, correlation, creditworthiness of the counterparty, creditworthiness of the Group, option volatility and currency rates.

Where appropriate, valuation adjustments are made to account for various factors such as liquidity risk (bid-ask adjustments), credit quality, model uncertainty and concentration risk.

Adjustments for liquidity risk adjust model-derived mid-market levels of Level 2 and Level 3 financial instruments for the bid-mid or mid-ask spread required to properly reflect the exit price of a risk position. Bid-mid and mid-ask spreads are marked to levels observed in trade activity, broker quotes or other external third-party data. Where these spreads are unobservable for the particular position in question, spreads are derived from observable levels of similar positions.

The Group applies credit-related valuation adjustments (“CVA”) to its Borrowings (primarily structured notes) which are designated at FVPL and to OTC derivatives. The Group considers the impact of changes in own credit spreads based upon observations of the secondary bond market spreads when measuring the fair value for Borrowings. For OTC derivatives, the impact of changes in both the Group’s and the counterparty’s credit rating is considered when measuring fair value. In determining the expected exposure the Group simulates the distribution of the future exposure to a counterparty, then applies market-based default probabilities to the future exposure, leveraging external third-party credit default swap (“CDS”) spread data. Where CDS spread data are unavailable for a specific counterparty, bond market spreads, CDS spread data based on the counterparty’s credit rating or CDS spread data that reference a comparable counterparty may be utilised. The Group also considers collateral held and legally enforceable master netting agreements that mitigate exposure to each counterparty.

Adjustments for model uncertainty are taken for positions whose underlying models are reliant on significant inputs that are neither directly nor indirectly observable, hence requiring reliance on established theoretical concepts in their derivation. These adjustments are derived by making assessments of the possible degree of variability using statistical approaches and market-based information where possible.

The Group may apply a concentration adjustment to certain of its OTC derivatives portfolios to reflect the additional cost of closing out a particularly large risk exposure. Where possible, these adjustments are based on observable market information but in many instances significant judgement is required to estimate the costs of closing out concentrated risk exposures due to the lack of liquidity in the marketplace.

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2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

d. Fair Value (continued)

Valuation process

Valuation Control ("VC") within the Financial Control Group ("FCG") is responsible for the Group's fair value valuation policies, processes and procedures. VC is independent of the business units and reports to the Chief Financial Officer of the Morgan Stanley Group ("CFO"), who has final authority over the valuation of the Group's financial instruments. VC implements valuation control processes designed to validate the fair value of the Group's financial instruments measured at fair value including those derived from pricing models.

- *Model Review.* VC, in conjunction with the Model Risk Management Department ("MRM"), which reports to the Chief Risk Officer of the Morgan Stanley Group ("CRO"), independently reviews valuation models' theoretical soundness, the appropriateness of the valuation methodology and calibration techniques developed by the business units using observable inputs. Where inputs are not observable, VC reviews the appropriateness of the proposed valuation methodology to determine that it is consistent with how a market participant would arrive at the unobservable input. The valuation methodologies utilised in the absence of observable inputs may include extrapolation techniques and the use of comparable observable inputs. As part of the review, VC develops a methodology to independently verify the fair value generated by the business unit's valuation models. The Group generally subjects valuations and models to a review process initially and on a periodic basis thereafter.

- *Independent Price Verification.* The business units are responsible for determining the fair value of financial instruments using approved valuation models and valuation methodologies. Generally on a monthly basis, VC independently validates the fair values of financial instruments determined using valuation models by determining the appropriateness of the inputs used by the business units and by testing compliance with the documented valuation methodologies approved in the model review process described above.

  The results of this independent price verification and any adjustments made by VC to the fair value generated by the business units are presented to management of the MSI Group's business segments (i.e. Institutional Securities and Investment Management), the CFO and the CRO on a regular basis.

  VC uses recently executed transactions, other observable market data such as exchange data, broker/ dealer quotes, third-party pricing vendors and aggregation services for validating the fair values of financial instruments generated using valuation models. VC assesses the external sources and their valuation methodologies to determine if the external providers meet the minimum standards expected of a third-party pricing source. Pricing data provided by approved external sources are evaluated using a number of approaches; for example, by corroborating the external sources' prices to executed trades, by analysing the methodology and assumptions used by the external source to generate a price and/ or by evaluating how active the third-party pricing source (or originating sources used by the third-party pricing source) is in the market. Based on this analysis, VC generates a ranking of the observable market data designed to ensure that the highest-ranked market data source is used to validate the business unit's fair value of financial instruments.

  VC reviews the models and valuation methodology used to price new material Level 2 and Level 3 transactions and both FCG and MRM must approve the fair value of the trade that is initially recognised.

- *Level 3 Transactions.* VC reviews the business unit's valuation techniques to assess whether these are consistent with market participant assumptions.

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2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

d. Fair value (continued)

Gains and losses on inception

In the normal course of business, the fair value of a financial instrument on initial recognition is the transaction price (i.e. the fair value of the consideration given or received). In certain circumstances, however, the fair value will be based on other observable current market transactions in the same instrument, without modification or repackaging, or on a valuation technique whose variables include only data from observable markets. When such evidence exists, the Group recognises a gain or loss on inception of the transaction.

When the use of unobservable market data has a significant impact on determining fair value at the inception of the transaction, the entire initial gain or loss indicated by the valuation technique as at the transaction date is not recognised immediately in the consolidated income statement, but is deferred and recognised over the life of the instrument or is recognised instead when the market data becomes observable or on maturity or disposal of the instrument.

Assets and liabilities measured at fair value on a non-recurring basis

Certain of the Group’s assets and liabilities are measured at fair value on a non-recurring basis. The Group incurs losses or gains for any adjustments of these assets or liabilities to fair value.

For assets and liabilities measured at fair value on a non-recurring basis, fair value is determined by using various valuation approaches. The same hierarchy for inputs as described above, which requires that the observable inputs be used when available, is used in measuring fair value for these items.

e. Derecognition of financial assets and liabilities

The Group derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risk and rewards of ownership of the asset.

If the asset has been transferred, and the Group neither transfers nor retains substantially all of the risks and rewards of the asset, then the Group determines whether it has retained control of the asset.

If the Group has retained control of the asset, it continues to recognise the financial asset to the extent of its continuing involvement in the financial asset. If the Group has not retained control of the asset, it derecognises the asset and separately recognises any rights or obligation created or retained in the transfer.

Upon derecognition of a financial asset, the difference between the previous carrying amount and the sum of any consideration received, together with the transfer of any cumulative gain/ loss previously recognised in equity, are recognised in the consolidated income statement within ‘Net gains/ (losses) on derecognition of financial assets measured at amortised cost and FVOCI’.

The Group derecognises financial liabilities when the Group’s obligations are discharged or cancelled or when they expire.

f. Impairment of financial instruments

The Group recognises ECL for the following financial instruments that are not measured at FVPL:

- financial assets measured at amortised cost;
- loan commitments, except those that can be net settled in cash or with another financial instrument; and
- financial guarantees.

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NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

f. Impairment of financial instruments (continued)

Measurement of ECL

For financial assets, ECLs are the present value of cash shortfalls (i.e. the difference between contractual and expected cash flows) over the expected life of the financial instrument, discounted at the asset's EIR.

Where a financial asset is credit-impaired at the reporting date, the ECL is measured as the difference between the asset's gross carrying amount and the present value of future cash flows, discounted at the original EIR.

For in-scope loan commitments, ECLs are the present value of the cash shortfalls (i.e. the difference between contractual and expected cash flows), assuming that the loan is drawn down.

For a financial guarantee contract, the ECLs are the present value of the cash shortfalls based on the expected payments to reimburse the holder for a credit loss that it may incur when a debtor fails to make payment when due.

The Group applies a three stage approach to measuring ECL based on the change in credit risk since initial recognition:

- Stage 1: if the credit risk of the financial instrument at the reporting date has not increased significantly since initial recognition, then the loss allowance is calculated as the lifetime cash shortfalls that will result if a default occurs in the next 12 months, weighted by the probability of that default occurring.
- Stage 2: if there has been a SICR since initial recognition, the loss allowance is calculated as the ECL over the remaining life of the financial instrument. If it is subsequently determined that there has no longer been a SICR since initial recognition, then the loss allowance reverts to reflecting 12 month expected losses.
- Stage 3: if there has been a SICR since initial recognition and the financial instrument is deemed credit-impaired (see below for definition of credit-impaired), the loss allowance is calculated as the ECL over the remaining life of the financial instrument. If it is subsequently determined that there has no longer been a SICR since initial recognition, then the loss allowance reverts to reflecting 12 month expected losses.

Notwithstanding the above, for trade receivables, a lifetime ECL is always calculated, without considering whether a SICR has occurred.

Assessment of SICR

When assessing SICR, the Group considers both quantitative and qualitative information and analysis based on the Group's historical experience and expert credit risk assessment, including forward-looking information.

The probability of default ("PD") is derived from internal credit rating grades (based on available information about the borrower) and multiple forward-looking macroeconomic scenarios which are probability weighted. Credit risk is considered to have increased significantly if the PD has significantly increased at the reporting date relative to the PD of the facility, at the date of initial recognition. The assessment of whether a change in PD is "significant" is based both on a consideration of the relative change in PD and on qualitative indicators of the credit risk of the facility, which indicate whether a loan is performing or in difficulty. In addition, as a backstop, the Group considers that SICR has occurred in all cases when an asset is more than 30 days past due.

The Group does not use the 'low' credit risk practical expedient. As a result, the Group monitors all financial instruments subject to impairment for SICR, except for unrated 'Trade and other receivables' for which a lifetime ECL is always calculated without considering whether SICR has occurred.

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NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

f. Impairment of financial instruments (continued)

Assessment of SICR (continued)

In general, ECLs are measured so that they reflect:

- A probability-weighted range of possible outcomes;
- The time value of money; and
- Relevant information relating to past, current and future economic conditions.

Calculation of ECL

ECL is calculated using three main components:

- PD: for accounting purposes, the 12 month and lifetime PD represent the expected point-in-time probability of a default over the next 12 months and over the remaining lifetime of the financial instrument respectively, based on conditions existing at the balance sheet date and future economic conditions.
- LGD: the LGD represents expected loss conditional on default, taking into account the mitigating effect of collateral, including the expected value of the collateral when realised and the time value of money.
- EAD: this represents the expected EAD, taking into account the expected repayment of principal and interest from the balance sheet date to the date of default event together with any expected drawdowns of the facility over that period.

These parameters are generally derived from internally developed statistical models, incorporating historical, current and forward-looking macro-economic data and country risk expect judgement. The macro-economic scenarios are reviewed quarterly.

The 12 month ECL is equal to the sum over the next 12 months of quarterly PD multiplied by LGD and EAD, with such expected losses being discounted at the effective interest rate. Lifetime ECL is calculated using the discounted present value of total quarterly PDs multiplied by LGD and EAD, over the full remaining life of the facility.

When measuring ECLs, the Group considers multiple scenarios, except where practical expedients are used to determine ECL. Practical expedients are used where they are consistent with the principles described above. ECL on certain trade receivables are calculated using a ‘matrix’ approach which reflects the previous history of credit losses on these financial assets, applying different provision levels based on the age of the receivable. Alternatively where there is a history of no credit losses, and where this is expected to persist into the future for structural or other reasons, such as collateral or other credit enhancement, in may be determined that the ECL for a financial instrument is *de minimis* (highly immaterial) and it may not be necessary to recognise the ECL.

The Group measures ECL on an individual asset basis and has no purchased or originated credit-impaired financial assets.

Presentation of ECL

ECL is recognised in the consolidated income statement within Net impairment (loss)/gain on financial instruments’. ECL on financial assets measured at amortised cost and lease receivables are presented as an ECL allowance. The allowance reduces the net carrying amount on the face of the consolidated statement of financial position. ECLs on loan commitments and financial guarantee contracts are presented as a provision in the consolidated statement of financial position, i.e. as a liability.

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Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

f. Impairment of financial instruments (continued)

Credit-impaired financial instruments

In assessing the impairment of financial instruments under the ECL model, the Group defines credit-impaired financial instruments in accordance with Credit Risk Management Department's policies and procedures. A financial instrument is credit-impaired when, based on current information and events, it is probable that the Group will be unable to collect all scheduled payments of principal or interest when due according to the contractual terms of the agreement.

Definition of Default

In assessing the impairment of financial instruments under the ECL model, the Group defines default in accordance with Credit Risk Management Department's policies and procedures. This considers whether the borrower is unlikely to pay its credit obligations to the Group in full and takes into account qualitative indicators, such as breaches of covenants. The definition of default also includes a presumption that a financial asset which is more than 90 days past due has defaulted.

Write-offs

Loans and debt securities are written off (either partially or in full) when they are deemed uncollectible which generally occurs when all commercially-reasonable means of recovering the loan balance have been exhausted. Such determination is based on an indication that the borrower can no longer pay the obligation, or that the proceeds from collateral will not be sufficient to pay the loan. Partial write-offs are made when a portion of the loan is uncollectable. Financial assets that are written off could still be subject to enforcement activities for recoveries of amounts due. If the amount to be written off is greater than the accumulated loss allowance, the difference is reflected directly in the consolidated income statement within 'Net impairment (loss)/reversal on financial instruments' and is not recognised in the loss allowance account. Any subsequent recoveries are credited to 'Net impairment (loss)/gain on financial instruments' within the consolidated income statement.

g. Revenue recognition and contract assets and liabilities

Revenues are recognised when the promised goods or services are delivered to the Group's customers, in an amount that is based on the consideration the Group expects to receive in exchange for those goods or services when such amounts are not probable of significant reversal.

Investment banking

Revenue from investment banking activities consists of revenues earned from underwriting primarily equity and fixed income securities and advisory fees for mergers, acquisitions, restructuring and advisory assignments.

Underwriting revenues are generally recognised on trade date, if there is no uncertainty or contingency related to the amount to be paid. Underwriting costs are deferred and recognised when the related underwriting revenues are recorded.

Advisory fees are recognised over time based on the estimated progress of work as advice is provided to the client and is not probable of a significant reversal. Advisory expenses are recognised as incurred, including when reimbursed.

Fee and commission income

Fee and commission income results from transaction-based arrangements in which the client is charged a fee for the execution of transactions. Such revenues primarily arise from transactions in equity securities; services related to sales and trading activities; futures, insurance products and options. Fee and commission income is recognised on trade date when the performance obligation is satisfied.

MORGAN STANLEY INTERNATIONAL LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)
g. Revenue recognition and contract assets and liabilities (continued)

Fee and commission income (continued)

Fee and commission income in the consolidated income statement includes investment management fees, sales commissions, placement fees, advisory fees and syndication fees.

h. Fees and commission expense

Fees and commission expense in the consolidated income statement includes transaction and service fees. Amounts are recognised as the related services are received.

i. Property, plant and equipment

Property, plant and equipment are stated at cost net of depreciation and any provision for impairment in value (see note 2(k) below), which are included within 'Operating expense' in the consolidated income statement.

For premises held under operating leases (see note 2(k) below), a reinstatement provision is recognised for the estimated cost to reinstate the premises at the end of the lease period. When the reinstatement provision is established and included within 'Provisions' in the consolidated statement of financial position, an equivalent asset is recognised and included in the cost of leasehold improvements at the initial present value of the reinstatement obligations. The discount effect included in the reinstatement provision is reversed over time using a constant effective yield method and included within 'Interest expense' in the consolidated income statement. The reinstatement asset is depreciated over the useful economic life of the relevant leasehold improvement asset and the depreciation charge is included within 'Other expense' in the consolidated income statement.

Depreciation is provided on property, plant and equipment at rates calculated to write off the cost of the assets on a straight line basis over their expected useful lives as follows:

Leasehold improvements, including reinstatement assets	- shorter of remaining lease term and 25 years
Fixtures, fittings and equipment	- 1 to 8 years

j. Combination of businesses under common control

Business combinations involving entities under common control, where all combining entities are ultimately controlled by the same entity before and after the business combination, are accounted for using the predecessor values method of accounting. This involves recognising assets and liabilities of the acquired business at the predecessors' book value, without any change to reflect fair value of those assets and liabilities. Any difference between the cost of acquisition and the aggregate book value of the assets and liabilities as of the date of the transfer of the acquired entity is recorded as an adjustment to equity within 'Retained earnings'. No additional goodwill is created by the business combination.

Post-acquisition, income received and expenses incurred by the entity or entities acquired are included in the consolidated income statement.

A non-controlling interest is recognised by the Group in respect of any portion of the total assets less total liabilities of an acquired entity or entities that is not owned by the Group.

When subsidiaries are sold or transferred to another entity under common control, any difference between the consideration received and the aggregate book value of the assets and liabilities of the disposed of business is recorded as an adjustment to equity within 'Retained earnings'. Where the consideration for the transfer is received in the form of shares, these are recorded at the aggregate book value of the assets and liabilities disposed of.

MORGAN STANLEY INTERNATIONAL LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Where the disposal or loss of control over an entity includes a foreign operation, all foreign exchange differences accumulated in the 'Currency translation reserve' attributable to the equity holders of the Company are reclassified to the consolidated income statement within 'Net gains/(losses) on subsidiaries'.

k. Impairment of non-financial assets

Non-financial assets that are subject to depreciation or amortisation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and its value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows ("CGU"). Such impairment losses are recognised in the consolidated income statement within 'Other expense' and are recognised against the carrying amount of the impaired asset on the consolidated statement of financial position. Non-financial assets, other than goodwill, that have suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

l. Cash and short term deposits

Cash and short term deposits comprise cash and demand deposits with banks, net of outstanding bank overdrafts, along with highly liquid investments, with original maturities of three months or less, that are readily convertible to known amounts of cash and subject to insignificant risk of change in value. This may include segregated client money, held in accordance with the FCA's Client Money Rules or is not available for use by the Group.

m. Income tax

The tax expense represents the sum of the tax currently payable and deferred tax.

The tax currently payable is calculated based on taxable profit for the year. Taxable profit may differ from profit/ (loss) before income tax as reported in the consolidated income statement because it excludes items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the reporting date. Current tax is charged or credited in the consolidated income statement, except when it relates to items charged or credited directly to other comprehensive income or equity, in which case the current tax is also recorded within other comprehensive income or equity respectively.

Deferred tax is the tax expected to be payable or recoverable on differences between the carrying amounts of assets and liabilities in the consolidated non-statutory financial information and the corresponding tax bases used in the computation of taxable profit, and is accounted for using the balance sheet liability method. Deferred tax liabilities are generally recognised for all taxable temporary differences and deferred tax assets are recognised to the extent that it is probable that taxable profits will be available against which deductible temporary differences can be utilised.

Deferred tax liabilities are recognised for taxable temporary differences arising on investments in subsidiaries and associates, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at each reporting date and limited to the extent that it is probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

Deferred tax is calculated at the tax rates that are expected to apply in the period when the liability is settled or the asset is realised. Deferred tax is charged or credited in the consolidated income statement, except

MORGAN STANLEY INTERNATIONAL LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

m. Income tax (continued)

when it relates to items charged or credited directly to other comprehensive income or equity, in which case the deferred tax is reflected within other comprehensive income or equity, respectively.

Current tax assets are offset against current tax liabilities when there is a legally enforceable right to set off current tax assets against current tax liabilities and the Group intends to settle its current tax assets and current tax liabilities on a net basis or to realise the asset and settle the liability simultaneously. Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities and when they relate to income taxes levied by the same taxation authority and the Group intends to settle its current tax assets and current tax liabilities on a net basis.

n. Leases

Applicable from 1 January2019

For leases whose original lease term exceeds one year, ROU assets and lease liabilities are initially recognised based on the present value of the future minimum lease payments over the lease term. The discount rate used in determining the present value is the Group's borrowing rate. The ROU asset also includes any prepaid lease payments and initial direct costs incurred and is reduced to reflect lease incentives received. The lease liabilities are subsequently accounted for at amortised cost, using the effective interest rate method. The liability is remeasured when there is a change in future lease payments arising from a change in an index or rate or from a market rent review. Additionally, the lease liability is remeasured if the Group changes its assessment of whether it will exercise an extension or termination option or undertakes certain modifications of the lease. The ROU asset is depreciated on a straight line basis from the lease commencement date to the earlier of the end of its useful life or the end of the lease term. Depreciation of ROU assets is presented within 'Other expenses'. In addition, the ROU asset is tested for impairment losses where there is an impairment event.

The Group evaluates contracts greater than one year to determine whether they contain lease components at inception. Where contracts contain both lease and non-lease components, they are accounted for as a single lease.

The Group presents ROU assets within the 'Property, plant and equipment' line and lease liabilities within the 'Trade and other payables' line of the statement of financial position.

Applicable until 31 December 2018

Rentals payable under operating leases are charged to 'Other expense' in the consolidated income statement on a straight line basis over the lease term. Lease incentives are allocated on a straight line basis over the lease term as a reduction to rental expense.

o. Provisions and commitments

Provisions are recognised when the Group has a present obligation as a result of a past event, when it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and when a reliable estimate can be made of the amount of the obligation.

The amount recognised as a provision is the best estimate of the consideration required to settle the present obligation at the year end date, taking into account the risks and uncertainties surrounding the obligation.

Where a provision is measured using the cash flows estimated to settle the present obligation, its carrying amount is the present value of those cash flows.

A commitment is any legal obligation to potentially make or receive cash payments or transfer cash.

MORGAN STANLEY INTERNATIONAL LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

p. Employee compensation plans

Morgan Stanley maintains various equity-settled share-based and cash-based deferred compensation plans for the benefit of employees.

i) Equity-settled share-based compensation plans

Morgan Stanley issues awards in the form of restricted stock units ("RSUs") to employees of the Morgan Stanley Group for services rendered to the Group. Awards are equity-settled and the cost of the equity-based transactions with employees is measured based on the fair value of the equity instruments at grant date. The fair value of RSUs is based on the market price of Morgan Stanley common stock on the date the award is granted, measured as the volume-weighted average price on the date of grant ("VWAP"). The fair value of RSUs not entitled to dividends until conversion is measured at VWAP reduced by the present value of dividends expected to be paid on the underlying shares prior to scheduled conversion date.

Awards generally contain clawback and cancellation provisions. Certain awards provide Morgan Stanley the discretion to cancel all or a portion of the award under specified circumstances. Compensation expense for these awards is adjusted for changes in the fair value of the Morgan Stanley's common stock until conversion.

The Group recognises compensation cost over the relevant vesting period for each separately vesting portion of the award. An estimation of awards that will be forfeited prior to vesting due to the failure to satisfy service conditions is considered in calculating the total compensation cost to be amortised over the relevant vesting period.

Under Group chargeback arrangements, the Group pays Morgan Stanley for the procurement of shares. The Group pays Morgan Stanley the grant date fair value and any subsequent movement in fair value up to the time of delivery to the employees.

Share based compensation expense is recorded within 'Operating expense' in the consolidated income statement.

ii) Deferred cash-based compensation plans

Morgan Stanley awards deferred cash-based compensation on behalf of the Group for the benefit of employees, providing a return to the participating employees based upon the performance of various referenced investments. Compensation expense for deferred cash-based compensation awards is calculated based on the notional value of the award granted, adjusted for changes in the fair value of the referenced investments that employees select.

The Group recognises compensation cost over the relevant vesting period for each separately vesting portion of the award. Forfeitures due to failure to satisfy service conditions are accounted for as occur.

Deferred cash-based compensation expense is recorded within 'Operating expense' in the income statement. The liability for the awards is measured at fair value and is included within 'Accruals and deferred income' in the statement of financial position.

The Group enters into derivative contracts with other Morgan Stanley Group undertakings to economically hedge the exposure created by these deferred compensation plans. The derivatives are recognised within 'Trading financial instruments' in the statement of financial position and the related gains and losses are recorded within 'Net trading income' in the income statement.

Although changes in compensation expense resulting from changes in the fair value of the referenced investments will generally be offset by changes in the fair value of derivative transactions entered into by the Group, there is typically a timing difference between the immediate recognition of gains and losses on the derivatives and the deferred recognition of the related compensation expense over the vesting period.

MORGAN STANLEY INTERNATIONAL LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

q. Post-employment benefits

The Group operates defined contribution and defined benefit post-employment plans.

Contributions due in relation to the Group's defined contribution post-employment plan are recognised in 'Operating expense' in the income statement as the related employee service is rendered.

For the Group defined benefit post-employment plans, the plan obligations are measured on an actuarial basis in accordance with the advice of an independent qualified actuary using the projected unit credit method and discounted at a rate that reflects the current rate of return on a high quality corporate bond of equivalent term and currency to the plan liabilities. Plan assets are measured at their fair value at the reporting date. A surplus or deficit of plan assets over liabilities is recognised in the statement of financial position as an asset or a liability respectively. If the fair value of the plan assets is higher than the present value of the defined benefit obligation, the measurement of the resulting defined benefit asset is limited to the present value of economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan.

The current service costs and any past service costs together with the net interest on the net defined benefit obligation/ asset is charged to 'Staff costs' within 'Operating expense' in the income statement. Remeasurements that arise in calculating the Group's obligation in respect of a plan are recognised in other comprehensive income, in the period in which they occur.

The Group participates in a defined benefit plan operated by another Morgan Stanley affiliate. The Group recognises recharges for the net defined benefit cost of the plan as a whole under inter-affiliate contractual agreements.

r. Offsetting of financial assets and financial liabilities

Where there is a currently legally enforceable right to set off the recognised amounts and an intention to either settle on a net basis or to realise the asset and the liability simultaneously, financial assets and financial liabilities are offset and the net amount is presented on the consolidated statement of financial position. In the absence of such conditions, financial assets and financial liabilities are presented on a gross basis.

25. Appendix VIII: MSIM Group Non-Statutory Financial Information

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

Consolidated non-statutory financial information

31 December 2019

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MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

DIRECTORS' RESPONSIBILITIES STATEMENT

The Directors, the names of whom are set out below, confirm that to the best of their knowledge:

i) The accounting policies are appropriate to the circumstances of the Morgan Stanley Investment Management Group which comprises of Morgan Stanley Investment Management Limited ("the Company") and its subsidiary (together "the Group") and the policies have been consistently applied and adequately disclosed;

ii) Significant accounting estimates applied are reasonable; and

iii) The consolidated non-statutory financial information is free from material misstatement.

Approved by the Board and signed on its behalf by:

DocuSigned by:
Ruairi O'Healai
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R O'Healai

Director

22 April 2020

Board of Directors:

T L Duhon (Chairman)
D J Hosie (appointed 30 October 2019)
F C Kelly
R A Lockwood
R O'Healai
D P Price (resigned 9 December 2019)

INDEPENDENT AUDITOR'S REPORT TO THE DIRECTORS OF MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

REPORT ON THE AUDIT OF THE CONSOLIDATED NON-STATUTORY FINANCIAL STATEMENTS

Opinion

In our opinion the non-statutory financial statements of Morgan Stanley Investment Management Group (the "Group") for the year ended 31 December 2019 have been properly prepared in accordance with the accounting policies stated in note 1 and 2.

We have audited the non-statutory financial statements which comprise:

- the consolidated income statement;
- the consolidated statement of comprehensive income;
- the consolidated statement of financial position;
- the statement of changes in equity; and
- the related notes 1 to 2.

The financial reporting framework that has been applied in their preparation is the accounting policies stated in note 1 and 2.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)"), including ISA (UK) 800. Our responsibilities under those standards are further described in the auditor's responsibilities for the audit of the non-statutory financial statements section of our report.

We are independent of the Group in accordance with the ethical requirements that are relevant to our audit of the non-statutory financial statements in the UK, including the Financial Reporting Council's (the 'FRC's') Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of matter – basis of accounting

We draw attention to Note 1 and 2 to the non-statutory financial statements, which describes the basis of accounting. The financial statements are prepared to assist the company in complying with the financial reporting provisions of the Financial Conduct Authority ("FCA"). As a result, the non-statutory financial statements may not be suitable for another purpose. Our opinion is not modified in respect of this matter.

Conclusions relating to going concern

We are required by ISAs (UK) to report in respect of the following matters where:

- the directors' use of the going concern basis of accounting in preparation of the non-statutory financial statements is not appropriate; or
- the directors have not disclosed in the non-statutory financial statements any identified material uncertainties that may cast significant doubt about the company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the non-statutory financial statements are authorised for issue.

We have nothing to report in respect of these matters.

INDEPENDENT AUDITOR'S REPORT TO THE DIRECTORS OF MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

Other information

The directors are responsible for the other information. The other information comprises the information included in the Director's Responsibility Statement, other than the non-statutory financial statements and our auditor's report thereon. Our opinion on the non-statutory 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 non-statutory financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the non-statutory financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the non-statutory financial statements or a material misstatement of the other information. 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 respect of these matters.

Responsibilities of directors

As explained more fully in the directors' responsibilities statement, the directors are responsible for the preparation of the non-statutory financial statements in accordance with the financial reporting provisions of laid out in notes 1 and 2 to financial statements, and for such internal control as the directors determine is necessary to enable the preparation of non-statutory financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the non-statutory financial statements, the directors are responsible for assessing the company'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 directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the non-statutory financial statements

Our objectives are to obtain reasonable assurance about whether the non-statutory financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) 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 non-statutory financial statements.

A further description of our responsibilities for the audit of the non-statutory financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Report on other legal and regulatory requirements

Matters on which we are required to report by exception

Under ISA (UK) we are required to report in respect of the following matters if, in our opinion:

- adequate accounting records have not been kept; or
- we have not received all the information and explanations we require for our audit.

We have nothing to report in respect of these matters.

INDEPENDENT AUDITOR'S REPORT TO THE DIRECTORS OF MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

Use of our report

This report is made solely for the exclusive use of the directors and solely for the purpose of reporting to the FCA. Our report is not to be used for any other purpose, recited or referred to in any document, copied or made available (in whole or in part) to any other person without prior written express consent. We accept no duty, responsibility or liability to any other party in connection with the report or this engagement.

The engagement partner on the audit resulting in this independent auditor's report is Andrew Partridge.

Deloitte LLP

Glasgow, United Kingdom

22 April 2020

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

CONSOLIDATED INCOME STATEMENT
Year ended 31 December 2019

	2019 $'000	2018 $'000
Fee and commission income	897,998	976,664
Other revenue	560	-
Total non-interest revenues	898,558	976,664
Interest income	10,926	12,577
Interest expense	(4,623)	(4,069)
Net interest income	6,303	8,508
Net revenues	904,861	985,172
Non-interest expense:		
Other expense	(752,896)	(852,907)
PROFIT BEFORE TAXATION	151,965	132,265
Income tax credit (expense)	11,890	(23,400)
PROFIT FOR THE YEAR	163,855	108,865

The notes on pages 9 to 20 form an integral part of the consolidated non-statutory financial information.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

CONSOLIDATED INCOME STATEMENT
Year ended 31 December 2019

	2019 $'000	2018 $'000
PROFIT FOR THE YEAR	163,855	108,865
Items that will not be reclassified subsequently to profit or loss:		
Remeasurement of net defined benefit liability	(151)	-
Items that may be reclassified subsequently to profit or loss:		
Currency translation reserve:		
Foreign currency translation differences arising on foreign operations	(208)	(1,117)
OTHER COMPREHENSIVE INCOME AFTER INCOME TAX	(359)	(1,117)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR ATTRIBUTABLE TO OWNERS OF THE GROUP	163,496	107,748

The notes on pages 9 to 20 form an integral part of the consolidated non-statutory financial information.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY
Year ended 31 December 2019

	Share capital $'000	Currency translation reserve $'000	Pension reserve $'000	Retained earnings $'000	Total equity $'000
Balance at 1 January 2019	1,000	(2,387)	(3)	314,736	313,346
Profit for the year	-	-	-	163,855	163,855
Other comprehensive income for the year:					
Remeasurement of net defined benefit liabilities	-	-	(151)	-	(151)
Currency translation reserve:					
Foreign currency translation differences arising on foreign operations	-	(208)	-	-	(208)
Total comprehensive income for the year	-	(208)	(151)	163,855	163,496
Transactions with owners:					
Dividends	-	-	-	(120,000)	(120,000)
Balance at 31 December 2019	1,000	(2,595)	(154)	358,591	356,842

	Share capital $'000	Currency translation reserve $'000	Pension reserve $'000	Available-for-sale reserve $'000	Retained earnings $'000	Total equity $'000
Balance at 1 January 2018	1,000	(1,270)	(3)	3	352,295	352,025
Impact of adoption of new accounting standard	-	-	-	(3)	(1,424)	(1,427)
Profit for the year	-	-	-	-	108,865	108,865
Other comprehensive income for the year:						
Currency translation reserve:						
Foreign currency translation differences arising on foreign operations	-	(1,117)	-	-	-	(1,117)
Total comprehensive income for the year	-	(1,117)	-	-	108,865	107,748
Transactions with owners:						
Dividends	-	-	-	-	(145,000)	(145,000)
Balance at 31 December 2018	1,000	(2,387)	(3)	-	314,736	313,346

The notes on pages 9 to 20 form an integral part of the consolidated non-statutory financial information.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

CONSOLIDATED STATEMENT OF FINANCIAL POSITION
As at 31 December 2019

	2019 $'000	2018 $'000
ASSETS		
Cash and short-term deposits	131,989	135,526
Loans and advances	207,239	239,977
Investment securities	4	4
Trade and other receivables	105,448	138,126
Current tax assets	-	538
Deferred tax assets	1,269	1,238
Other assets	130,909	125,435
Property, plant and equipment	1,323	240
TOTAL ASSETS	578,181	641,084
LIABILITIES AND EQUITY		
Trade and other payables	64,085	134,172
Debt and other borrowings	51,002	65,961
Provisions	156	190
Current tax liabilities	9,106	42,119
Other liabilities	96,288	85,017
Post-employment benefit obligations	702	279
TOTAL LIABILITIES	221,339	327,738
Share capital	1,000	1,000
Currency translation reserve	(2,595)	(2,387)
Pension reserve	(154)	(3)
Retained earnings	358,591	314,736
TOTAL EQUITY	356,842	313,346
TOTAL LIABILITIES AND EQUITY	578,181	641,084

The consolidated non-statutory financial information was approved by the Board and authorised for issue on 22 April 2020.

Signed on behalf of the Board

DocuSigned by:
Ruairi O'Healai
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R O'Healai

Director

The notes on pages 9 to 20 form an integral part of the consolidated non-statutory financial information.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

1. BASIS OF PREPARATION

The Group has prepared consolidated non-statutory financial information comprising of information about the Company and its subsidiary as at 31 December 2019. The Group confirms in accordance with section 435 of the Companies Act 2006 that:

iv) the consolidated non-statutory financial information does not constitute its statutory accounts;

v) a copy of the Company's statutory accounts for the year ended 31 December 2019 will be filed with the Registrar of Companies for England and Wales, Companies House, Cardiff CF14 3UZ; and

vi) the Company's independent auditor has issued an unqualified report on the Company's statutory accounts for the year ended 31 December 2019.

The Group has prepared the consolidated non-statutory financial information in accordance with the basis of preparation detailed in the Company's statutory accounts plus the basis of consolidation set out below. A summary of significant accounting policies applied to the Group are detailed in note 2 below.

Basis of consolidation

The consolidated non-statutory financial information of the Group comprises information about the Company and its subsidiary as at 31 December 2019. Subsidiaries are all entities over which the Company has control. The Company controls an entity when the Company is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The information for the subsidiary is prepared for the same reporting year as the Company, using consistent accounting policies. Subsidiaries are consolidated from the date that the Company gains control until the date that control ceases.

In certain cases, the Company may exercise control over another entity on behalf of investors or other parties. In such cases it is necessary, as part of the assessment of whether it should consolidate the entity, for the Company to determine whether it exercises such control primarily as an agent for the other investors or whether it does so primarily as principal on its own behalf. In making such a determination, management of the Company will consider all relevant factors, including in particular:

- the scope of the Company's decision-making authority over the investee;
- the rights, including removal rights, held by other parties;
- the remuneration to which the Company is entitled; and
- the significance of the Company's exposure to variability of returns from its interests in the entity.

Intra-group balances, transactions, income and expenses and profits and losses resulting from intra-group transactions are eliminated in preparing the consolidated non-statutory financial information.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

1. BASIS OF PREPARATION (CONTINUED)

New standards and interpretations adopted during the year

The following standards, amendments to standards and interpretations relevant to the Group's operations were adopted during the year. Except where otherwise stated, these standards and amendments to standards did not have a material impact on the Group's financial statements.

IFRS 16 'Leases' was issued by the IASB in January 2016. The standard was endorsed by the EU in November 2017. This accounting update requires lessees to recognise in the consolidated statement of financial position all leases with terms exceeding one year, and results in the recognition of a right of use ("ROU") asset and corresponding lease liability for all such leases, including those previously classified as operating leases.

The Group adopted this standard using the modified retrospective method of adoption, which resulted in the recognition of additional ROU assets and lease liabilities for leases existing at, or entered into after, January 1, 2019. Comparative amounts have not been restated and comparative amounts in relation to leasing activity reflect those determined and disclosed in accordance with International Accounting Standard 17 'Leases' ("IAS 17"). There was no resultant cumulative effect adjustment arising on adoption of the standard.

An amendment to IAS 19 'Plan Amendment, Curtailment or Settlement' was issued by the IASB in February 2018, for retrospective application to plan amendments, curtailments or settlements occurring on or after 1 January 2019. The amendment was endorsed by the EU in March 2019.

As part of the 2015-2017 Annual Improvements Cycle published in December 2017, the IASB made amendments to the following standards that are relevant to the Group's operations: IAS 12 'Income Taxes' and IAS 23 'Borrowing Costs', for application in accounting periods beginning on or after 1 January 2019. The amendments were endorsed by the EU in March 2019.

IFRIC 23 'Uncertainty over Income Tax Treatments' was issued by the IASB in June 2017 for application in accounting periods beginning on or after 1 January 2019. The interpretation was endorsed by the EU in October 2018.

There were no other standards, amendments to standards or interpretations relevant to the Group's operations which were adopted during the year.

The going concern assumption

The Group has considered its business activities, together with the factors likely to affect its future development, performance and position, such as the Group's objectives, policies and processes for managing its capital; its financial risk management objectives; and its exposures to credit risk and liquidity risk. Retaining sufficient liquidity and capital to withstand market pressures remains central to the Morgan Stanley Group's and the Group's strategy.

Specifically, the existing and potential effects of COVID-19 (coronavirus) on the operational capacity of the business, access to liquidity and capital, contractual obligations, asset valuations and other critical accounting judgements and key sources of estimation uncertainty have been considered. Additionally, the specific impact of Brexit on the business of the Group has been considered.

Taking the above factors into consideration, the Directors believe it is reasonable to assume that the Group will have access to adequate resources to continue in operational existence for the foreseeable future. Accordingly, they continue to adopt the going concern basis in preparing the annual report and financial statements.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

a. Functional currency

Items included in the financial statements are measured and presented in US dollars, the currency of the primary economic environment in which the Group operates.

All currency amounts in the financial statements and Strategic and Directors' reports are rounded to the nearest thousand US dollars.

b. Foreign currencies

All monetary assets and liabilities denominated in currencies other than US dollars are translated into US dollars at the rates ruling at the reporting date. Transactions and non-monetary assets and liabilities denominated in currencies other than US dollars are recorded at the rates prevailing at the dates of the transactions.

Assets and liabilities of foreign operations are translated into US dollars using the closing rate method. Translation differences arising from the net investments in the foreign operations are taken to the 'Currency translation reserve'. All other translation differences are taken through the consolidated income statement. Exchange differences recognised in the consolidated income statement are presented in 'Other revenue' or 'Other expense', except where noted in 2(c) below.

On disposal of a foreign operation, the related cumulative gain or loss in the 'Currency translation reserve' attributable to the owners of the Group is reclassified to the consolidated income statement and recorded within 'Gain/ (loss) on disposal of branch'.

c. Financial instruments

i) Financial instruments mandatorily at fair value through profit and loss

Non-trading financial assets at fair value through profit or loss

Non-trading financial assets at FVPL include certain investment securities (unlisted equities).

Non-trading financial assets at FVPL are principally financial assets where the Group makes decisions based upon the assets' fair values and are generally recognised on settlement date at fair value (see note 2(d) below), since they are neither regular way nor are they derivatives. From the date the terms are agreed (trade date), until the financial asset is funded (settlement date), the Group recognises any unrealised fair value changes in the financial asset as non-trading financial assets at FVPL. On settlement date, the fair value of consideration given is recognised as a non-trading financial asset at FVPL. All subsequent changes in fair value, foreign exchange differences and unrealised interest are reflected in the consolidated income statement in 'Net income from other financial instruments held at fair value'.

For all non-trading financial assets at FVPL, transaction costs are excluded from the initial fair value measurement of the financial assets. These costs are recognised in the consolidated income statement in 'Other expense'.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

c. Financial instruments (continued)

ii) Financial assets and financial liabilities at amortised cost

Financial assets are recognised at amortised cost when the Group's business model objective is to collect the contractual cash flows of the assets and where these cash flows are solely payments of principal and interest ("SPPI") on the principal amount outstanding until maturity. Such assets are recognised when the Group becomes a party to the contractual provisions of the instrument. The instruments are initially measured at fair value (see note 2(d) below) and subsequently measured at amortised cost less ECL allowance. Interest is recognised in the consolidated income statement in 'Interest income', using the effective interest rate ("EIR") method as described below. Transaction costs are incremental costs that are directly attributable to the acquisition, issue or disposal of a financial instrument. Transaction costs that are directly attributable to the acquisition of the financial asset are added to the fair value on initial recognition. ECL and reversals thereof are recognised in the consolidated income statement in 'Net impairment loss on financial instruments'.

Financial assets at amortised cost include cash and short-term deposits, trade and other receivables and loans and advances.

Financial liabilities are recognised when the Group becomes a party to the contractual provisions of the instrument and are initially measured at fair value (see note 2(d) below) and subsequently measured at amortised cost. Interest is recognised in the consolidated income statement in 'Interest expense' using the EIR method as described below. Transaction costs that are directly attributable to the issue of a financial liability are deducted from the fair value on initial recognition.

The EIR method is a method of calculating the amortised cost of a financial instrument (or a group of financial instruments) and of allocating the interest income or interest expense over the expected life of the financial instrument. The EIR is the rate that exactly discounts the estimated future cash payments and receipts through the expected life of the financial instrument (or, where appropriate a shorter period) to the carrying amount of the financial instrument. The EIR is established on initial recognition of the financial instrument. The calculation of the EIR includes all fees and commissions paid or received, transaction costs, and discounts or premiums that are an integral part of the EIR.

Financial liabilities classified at amortised cost include trade and other payables and debt and other borrowings.

d. Fair value

Fair value measurement

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (i.e. the "exit price") in an orderly transaction between market participants at the measurement date.

Fair value is a market-based measure considered from the perspective of a market participant rather than an entity-specific measure. Therefore, even when market assumptions are not readily available, assumptions are set to reflect those that the Group believes market participants would use in pricing the asset or liability at the measurement date.

In determining fair value, the Group uses various valuation approaches and establishes a hierarchy for inputs used in measuring fair value that requires the most observable inputs be used when available. Observable inputs are inputs that market participants would use in pricing the asset or liability that were developed based on market data obtained from sources independent of the Group. Unobservable inputs are inputs that reflect assumptions the Group believes other market participants would use in pricing the asset or liability, that are developed based on the best information available in the circumstances.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

d. Fair value (continued)

Fair value measurement (continued)

The fair value hierarchy is broken down into three levels based on the observability of inputs as follows, with Level 1 being the highest and Level 3 being the lowest level:

- ***Level 1:*** Quoted prices (unadjusted) in an active market for identical assets or liabilities

  Valuations based on quoted prices in active markets that the Morgan Stanley Group has the ability to access for identical assets or liabilities. Valuation adjustments and block discounts are not applied to Level 1 instruments. Since valuations are based on quoted prices that are readily and regularly available in an active market, valuation of these products does not entail a significant degree of judgement.

- ***Level 2:*** Valuation techniques using observable inputs

  Valuations based on one or more quoted prices in markets that are not active or for which all significant inputs are observable, either directly or indirectly.

- ***Level 3:*** Valuation techniques with significant unobservable inputs

  Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

Valuation process

Valuation Control (“VC”) within Finance is responsible for the Group’s fair value valuation policies, processes and procedures. VC is independent of the business units and reports to the Chief Financial Officer of the Morgan Stanley Group (“CFO”), who has final authority over the valuation of the Group’s financial instruments. VC implements valuation control processes designed to validate the fair value of the Group’s financial instruments measured at fair value including those derived from pricing models.

e. Derecognition of financial assets and liabilities

The Group derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risk and rewards of ownership of the asset.
If the asset has been transferred, and the Group neither transfers nor retains substantially all of the risks and rewards of the asset, then the Group determines whether it has retained control of the asset.
If the Group has retained control of the asset, it shall continue to recognise the financial asset to the extent of its continuing involvement in the financial asset. If the Group has not retained control of the asset, it derecognises the asset and separately recognises any rights or obligation created or retained in the transfer.
Upon derecognition of a financial asset, the difference between the previous carrying amount and the sum of any consideration received is recognised in the consolidated income statement within ‘Net gains/ (losses) on derecognition of financial assets measured at amortised cost’.
The Group derecognises financial liabilities when the Group’s obligations are discharged or cancelled or when they expire.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

f. Impairment of financial instruments

The Group recognises loss allowances for ECL for financial assets measured at amortised cost.

Measurement of ECL

For financial assets, ECL are the present value of cash shortfalls (i.e. the difference between contractual and expected cash flows) over the expected life of the financial instrument, discounted at the asset's EIR.

The Group applies a three stage approach to measuring ECL based on the change in credit risk since initial recognition:

- Stage 1: if the credit risk of the financial instrument at the reporting date has not increased significantly since initial recognition then the loss allowance is calculated as the lifetime cash shortfalls that will result if a default occurs in the next 12 months, weighted by the probability of that default occurring.
- Stage 2: if there has been a significant increase in credit risk ("SICR") since initial recognition, the loss allowance is calculated as the ECL over the remaining life of the financial instrument. If it is subsequently determined that there has no longer been a SICR since initial recognition, then the loss allowance reverts to reflecting 12 month expected losses.
- Stage 3: if there has been a SICR since initial recognition and the financial instrument is deemed credit-impaired (see below for definition of credit-impaired), the loss allowance is calculated as the ECL over the remaining life of the financial instrument. If it is subsequently determined that there has no longer been a SICR since initial recognition, then the loss allowance reverts to reflecting 12 month expected losses.

Assessment of significant increase in credit risk

When assessing SICR, the Group considers both quantitative and qualitative information and analysis based on the Group's historical experience and expert credit risk assessment, including forward-looking information.

The probability of default ("PD") is derived from internal credit rating grades (based on available information about the borrower) and multiple forward-looking macroeconomic scenarios which are probability weighted. Credit risk is considered to have increased significantly if the PD has significantly increased at the reporting date relative to the PD of the facility, at the date of initial recognition. The assessment of whether a change in PD is "significant" is based both on a consideration of the relative change in PD and on qualitative indicators of the credit risk of the facility, which indicate whether a loan is performing or in difficulty.

The Group's accounting policy is to not use the 'low' credit risk practical expedient. As a result, the Group monitors all financial instruments which do not have a significant financing component that are subject to impairment for SICR, with the exception of trade receivables and contract assets arising from transactions within the scope of IFRS 15 which do not have a significant financing component, for which a lifetime ECL is always calculated.

Where there is a history of no credit losses, and where this is expected to persist into the future for structural or other reasons, such as credit enhancements, it may be determined that the ECL for a financial instrument is de minimis (highly immaterial) and recognition of the ECL may not be necessary.

The Group measures ECL on an individual asset basis and has no purchased or originated credit-impaired financial assets.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

f. Impairment of financial instruments (continued)

Presentation of ECL

ECL is recognised in the consolidated income statement within 'Net impairment loss on financial instruments'. ECL on financial assets measured at amortised cost are presented as an ECL allowance reducing the net carrying amount on the face of the consolidated statement of financial position.

Impairment losses on investments in subsidiaries are measured as the difference between cost and the current estimated recoverable amount. When the recoverable amount is less than the cost, an impairment is recognised within the income statement in 'Net gains/ (losses) on investments in subsidiaries' and is reflected against the carrying amount of the impaired asset on the statement of financial position.

g. Revenue recognition and contract assets and liabilities

Fees and commissions classified within 'Fee and commission income' in the consolidated income statement include investment management, distribution, administration, performance and sub-advisory fees. These are generally recognised when services are performed and the fees become known, except for performance fees as noted below.

- Investment management fees are primarily based on pre-determined percentages of the market value of AUM.
- Distribution fees are received on certain funds managed by the Group and are primarily priced at pre-determined percentages, dependent on share class.
- Administration fees are received on certain funds managed by the Group to reimburse any costs, charges, fees and expenses incurred in relation to the administration of the funds. These are primarily priced at pre-determined fixed percentages.
- Performance fees are received from certain investment products. These are earned upon exceeding specified relative and/ or absolute investment return thresholds. Performance fees are recognised only when the performance obligation is satisfied, upon completion of the measurement period, which varies by product or account, and could be monthly, quarterly, annually or longer.
- Sub-advisory revenues in respect of investment management services are received from other Morgan Stanley Group undertakings and represent various fee types where another Morgan Stanley Group undertaking is designated as the initial contracted entity but the Group is the sub-contracted entity. The Group receives a portion of the revenue on an arm's length basis.

Other items

Receivables from contracts with customers are recognised within 'Trade and other receivables' in the consolidated statement of financial position when the underlying performance obligations have been satisfied and the Group has the right per the contract to bill the customer. Contract assets are recognised when the Group has satisfied its performance obligations and customer payment is conditional, and are presented within 'Others assets'. Contract liabilities are recognised when the Group has collected payment from a customer based on the terms of the contract, but the underlying performance obligations are not yet satisfied, and are presented within 'Other liabilities'.

Incremental costs to obtain the contract are expensed as incurred if the contract duration is one year or less. Revenues are not discounted when payment is expected within one year.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

h. Fee and commission expense

Fees and commissions classified within 'Other expense' in the consolidated income statement include fee sharing and distribution expenses.

- Fee sharing expenses are primarily based on specified percentages of the management fees received, dependent on share class, and are recognised as the services are performed.
- Distribution expenses are based on the distribution fees received and are recognised either as the services are performed or across a number of years, dependent on fee type.

i. Property, plant and equipment

Property, plant and equipment are stated at cost net of depreciation and any provision for impairment in value (see note 2(j) below) which are included within 'Other expense' in the consolidated income statement.

For premises held under operating leases, a reinstatement provision is recognised for the estimated cost to reinstate the premises at the end of the lease period. When the reinstatement provision is established and included within 'Provisions' in the consolidated statement of financial position, an equivalent asset is recognised and included in the cost of leasehold improvements at the initial present value of the reinstatement obligations. The discount effect included in the reinstatement provision is reversed over time using a constant effective yield method and included within 'Interest expense' in the consolidated income statement. The reinstatement asset is depreciated over the useful economic life of the relevant leasehold improvement asset and the depreciation charge is included within 'Other expense' in the consolidated income statement.

Depreciation is provided on property, plant and equipment at rates calculated to write off the cost of the assets on a straight line basis over their expected useful lives as follows:

Leasehold improvements, including reinstatement assets	- over the remaining lease term
Fixtures, fittings and equipment	- 3 to 8 years

The carrying amount of an item of property, plant and equipment shall be derecognised on disposal or when no further economic benefits are expected from its use or disposal.

j. Impairment of non-financial assets

Non-financial assets that are subject to depreciation or amortisation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and its value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units "CGU"). Such impairment losses are recognised in the consolidated income statement within 'Other expense' and are recognised against the carrying amount of the impaired asset on the consolidated statement of financial position. Non-financial assets, other than goodwill, that have suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

k. Cash and cash equivalents

Cash and cash equivalents comprise cash and demand deposits with banks, net of outstanding bank overdrafts, along with highly liquid investments, with original maturities of three months or less, that are readily convertible to known amounts of cash and subject to insignificant risk of change in value.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

l. Income tax expense

The tax expense represents the sum of the tax currently payable and deferred tax.

The tax currently payable is calculated based on taxable profit for the year. Taxable profit may differ from profit before taxation as reported in the consolidated income statement because it excludes items of income or expense that are taxable or deductible in other years and it further excludes items that are never taxable or deductible. The Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the reporting date. Current tax is charged or credited in the consolidated income statement, except when it relates to items charged or credited directly to other comprehensive income or equity, in which case the current tax is also recorded within other comprehensive income or equity respectively.

Deferred tax is the tax expected to be payable or recoverable on differences between the carrying amounts of assets and liabilities in the financial statements and the corresponding tax bases used in the computation of taxable profit, and is accounted for using the balance sheet liability method. Deferred tax liabilities are generally recognised for all taxable temporary differences and deferred tax assets are recognised to the extent that it is probable that taxable profits will be available against which deductible temporary differences can be utilised.

Deferred tax liabilities are recognised for taxable temporary differences arising on investments in subsidiaries and associates, except where the Group is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at each reporting date and limited to the extent that it is probable that sufficient taxable profits will be available to allow all or part of the asset to be recovered.

Deferred tax is calculated at the tax rates that are expected to apply in the period when the liability is settled or the asset is realised. Deferred tax is charged or credited in the consolidated income statement, except when it relates to items charged or credited directly to other comprehensive income or equity, in which case the deferred tax is reflected within other comprehensive income or equity, respectively.

Current tax assets are offset against current tax liabilities when there is a legally enforceable right to set off current tax assets against current tax liabilities and the Group intends to settle its current tax assets and current tax liabilities on a net basis or to realise the asset and settle the liability simultaneously. Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities and when they relate to income taxes levied by the same taxation authority and the Group intends to settle its current tax assets and current tax liabilities on a net basis.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

m. Leases

Applicable from 1 January 2019

For leases whose original lease term exceeds one year, ROU assets and lease liabilities are initially recognised based on the present value of the lease payments over the lease term. The discount rate used in determining the present value is the Group's incremental borrowing rate. The ROU asset also includes any prepaid lease payments and initial direct costs incurred and is reduced to reflect lease incentives received. The interest on lease liabilities are accrued at a constant periodic rate of interest on the remaining balance of the lease liability. The liability is remeasured when there is a change in future lease payments arising from a change in an index or rate or from a market rent review. Additionally, the lease liability is remeasured if the Group changes its assessment of whether it will exercise an extension or termination option or undertakes certain modifications of the lease. The ROU asset is depreciated on a straight line basis from the lease commencement date to the earlier of the end of its useful life or the end of the lease term. Depreciation of ROU assets is presented within 'Other expenses'. In addition, the ROU asset is tested for impairment losses where there is an impairment event.

The Group evaluates contracts greater than one year to determine whether they contain lease components at inception. Where contracts contain both lease and non-lease components, they are accounted for as a single lease.

The Group presents ROU assets within the 'Property, plant and equipment' line and lease liabilities within the 'Trade and other payables' line of the consolidated statement of financial position.

Applicable until 31 December 2018

Rentals payable under operating leases are charged to 'Other expense' in the consolidated income statement on a straight line basis over the lease term. Lease incentives are allocated on a straight line basis over the lease term as a reduction to rental expense.

n. Provisions

Provisions are recognised when the Group has a present obligation as a result of a past event, when it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and when a reliable estimate can be made of the amount of the obligation.

The amount recognised as a provision is the best estimate of the consideration required to settle the present obligation at the year end date, taking into account the risks and uncertainties surrounding the obligation.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

o. Employee compensation plans

i) Equity-settled share-based compensation plans

Morgan Stanley issues awards in the form of restricted stock units ("RSUs") to employees of the Morgan Stanley Group for services rendered to the Group. Awards are equity-settled and the cost of the equity-based transactions with employees is measured based on the fair value of the equity instruments at grant date. The fair value of RSUs is based on the market price of Morgan Stanley common stock on the date the award is granted, measured as the volume-weighted average price on the date of grant ("VWAP") The fair value of RSUs not entitled to dividends until conversion is measured at VWAP reduced by the present value of dividends expected to be paid on the underlying shares prior to scheduled conversion date.

Awards generally contain clawback and cancellation provisions. Certain awards provide Morgan Stanley the discretion to cancel all or a portion of the award under specified circumstances. Compensation expense for these awards is adjusted for changes in the fair value of the Morgan Stanley's common stock until conversion.

The Group recognises compensation cost over the relevant vesting period for each separately vesting portion of the award. An estimation of awards that will be forfeited prior to vesting due to the failure to satisfy service conditions is considered in calculating the total compensation cost to be amortised over the relevant vesting period.

Under Group chargeback agreements, the Group pays Morgan Stanley for the procurement of shares. The Group pays Morgan Stanley the grant date fair value and any subsequent movement in fair value up to the time of delivery to the employees.

Share based compensation expense is recorded within 'Other expense' in the consolidated income statement.

ii) Deferred cash-based compensation plans

Morgan Stanley awards deferred cash-based compensation on behalf of the Group for the benefit of employees, providing a return to the participating employees based upon the performance of various referenced investments. Compensation expense for deferred cash-based compensation awards is calculated based on the notional value of the award granted, adjusted for changes in the fair value of the referenced investments that employees select.

The Group recognises compensation cost over the relevant vesting period for each separately vesting portion of the award. Forfeitures due to failure to satisfy service conditions are accounted for as they occur.

Deferred cash-based compensation expense is recorded within 'Other expense' in the consolidated income statement. The liability for the awards is measured at fair value and is included within 'Other liabilities' in the consolidated statement of financial position.

Although changes in compensation expense resulting from changes in the fair value of the referenced investments will generally be offset by changes in the fair value of derivative transactions entered into by the Group, there is typically a timing difference between the immediate recognition of gains and losses on the derivatives and the deferred recognition of the related compensation expense over the vesting period.

MORGAN STANLEY INVESTMENT MANAGEMENT LIMITED

NOTES TO THE CONSOLIDATED NON-STATUTORY FINANCIAL INFORMATION
Year ended 31 December 2019

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

p. Post-employment benefits

The Group operates defined contribution and defined benefit post-employment plans.

Contributions due in relation to the Group's defined contribution post-employment plan are recognised in 'Other expense' in the consolidated income statement when payable.

For the Group's defined benefit post-employment plan, the plan obligations are measured on an actuarial basis in accordance with the advice of an independent qualified actuary using the projected unit credit method and discounted at a rate that reflects the current rate of return on a high quality corporate bond of equivalent term and currency to the plan liabilities. Plan assets are measured at their fair value at the reporting date. A surplus or deficit of plan assets over liabilities is recognised in the consolidated statement of financial position as an asset or a liability respectively. If the fair value of the plan assets is higher than the present value of the defined benefit obligation, the measurement of the resulting defined benefit asset is limited to the present value of economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan.

The current service cost and any past service costs together with the net interest on the net defined benefit obligation/ asset is charged to 'Staff costs' within 'Other expense' in the consolidated income statement.

Remeasurements that arise in calculating the Group's obligation in respect of a plan are recognised in other comprehensive income, in the period in which they occur.

q. Deferred commission asset

The Group pays up-front costs to third party distributors on certain classes of fund units on which it may earn fees (such as management fees) from the underlying fund whilst its fund units remain in issuance. Additionally, the Group earns a contingent deferred sales charge ("CDSC") on such units if the fund unitholders redeem before a specified time. CDSC income is reported in 'Investment management fees' within 'Fee and commission income' on the consolidated income statement. Accordingly such upfront distribution costs are deferred and amortised over the expected life of the contract where the contract duration exceeds one year and costs are expected to be recovered. The deferred costs are reported in the 'Deferred commission asset' within 'Other assets' in the consolidated statement of financial position.

The deferred commission asset is assessed for impairment at each reporting date. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds the future revenues expected to be earned from the relevant fund units, less the future costs that relate directly to providing the related services. Such impairment losses are recognised in the consolidated income statement within 'Other expense' and are recognised against the carrying amount of the impaired asset on the consolidated statement of financial position. Deferred commission assets that have suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

26. Appendix IX: CRR Reference Mapping

CRR Ref	High Level Summary	Compliance Reference
Article 431 Scope of disclosure requirements		
431 (1)	Requirement to publish Pillar 3 disclosures.	The MSI Group publishes Pillar 3 disclosures on a quarterly basis.
431 (2)	Firms with permission to use specific operational risk methodologies must disclose operational risk information.	Section 14 provides a description of the Operational Risk framework.
431 (3)	Institution must have a policy covering frequency of disclosures. Their verification, comprehensiveness and appropriateness.	The MSI Group has a dedicated Pillar 3 policy, reviewed on an annual basis.
431 (4)	Explanation of ratings decision upon request.	Not Applicable
Article 432 Non-Material, proprietary or confidential information		
432 (1)	Institutions may omit information that is not material if certain conditions are met.	Compliance with this provision is covered by the MSI Group's policy.
432 (2)	Institutions may omit information that is proprietary or confidential if certain conditions are met.	Compliance with this provision is covered by the MSI Group's policy.
432 (3)	Where 432 (1) and (2) apply this must be stated in the disclosures, and more general information must be disclosed.	Not applicable
432 (4)	Use of 432 (1) or (2) is without prejudice to scope of liability for failure to disclose material information.	Not Applicable
Article 433: Frequency of disclosure		
433	Disclosures must be published at least on an annual basis and more frequently as necessary.	The MSI Group publishes Pillar 3 disclosures on a quarterly basis.
Article 434: Means of disclosure		
434 (1)	All disclosures shall be provided in one medium, or provide clear cross references.	The disclosures are published to the Morgan Stanley Investor Relations website. Signposting within the disclosure directs the reader to other publications as relevant.
434 (2)	Disclosures made under other requirements (e.g. accounting) can be used to satisfy Pillar 3 if appropriate.	Signposting within the disclosure directs the reader to other publications as relevant.
Article 435: Risk Management Objectives and Policies		
435 (1)	Disclose information on:	
435 (1) (a)	The strategies and processes to manage risks.	Section 3: Risk Management "Risk Policies and Processes" "Stress Testing" "Risk Strategy and Appetite"
435 (1) (b)	The structure and organisation of the risk management function.	Section 3: Risk Management "Control Framework" "Risk Governance"
435 (1) (c)	The scope and nature of risk reporting and measurement systems.	Section 3: Risk Management "Risk Strategy and Appetite" "Risk Reporting and Measurement"
435 (1) (d)	The policies for hedging and mitigating risk	Section 3: Risk Management "Risk Policies and Processes" "Risk Governance"
435 (1) (e)	Declaration approved by the management body on the adequacy of risk management arrangements.	Section 3: Risk Management - "Adequacy of Risk Management Arrangements"
435 (1) (f)	Concise risk statement approved by the management body.	Section 3: Risk Management - "Risk Strategy and Appetite"
435 (2) (a)	Number of directorships held by members of the management body.	Appendix I: Board of Directors Knowledge, Skill and Expertise - "Figure 6: MSI Directors: Number of Directorships"
435 (2) (b)	Recruitment policy for members of the management body, along with their knowledge, skills and expertise.	Appendix I: Board of Directors Knowledge, Skill and Expertise - "Appointments to MSI Board"
435 (2) (c)	Policy on diversity of the management body and results against targets.	Appendix I: Board of Directors Knowledge, Skill and Expertise - "Diversity and Composition of MSI Board"
435 (2) (d)	Disclosure of whether there is a separate Risk Committee and the number of times the committee has met during the year.	Section 3: Risk Management - "MSI Board Committees"
435 (2) (e)	Description of the information flow to the management body.	Section 3: Risk Management - "Risk Governance"

Article 436: Scope of Application		
436 (a)	Name of institution.	Section 1: Overview and Key Metrics
436 (b)	Difference in the basis of consolidation for accounting and prudential purposes, with a brief description of the entities, explaining whether:	Section 4: Basis of Preparation and Linkage to Financial Accounts Pages
436(b) (i)	Fully consolidated.	
436(b) (ii)	Proportionally consolidated.	
436(b) (iii)	Deducted from Own Funds.	
436(b) (iv)	Neither consolidated nor deducted.	
436 (c)	Impediments to transfer of own funds or repayment of liabilities between parent and subsidiaries.	Section 5: Capital Management
436 (d)	Capital shortfalls in any subsidiaries not included in the consolidation.	Not Applicable
436 (e)	If applicable, making use of the provisions laid out in Article 7 (waiving solo requirements) & Article 9 (solo consolidation).	Not Applicable
Article 437: Own Funds		
437 (1)(a)	Full reconciliation of CET1, AT1, Tier 2.	Section 6: Capital Resources - Table 6: Reconciliation of balance sheet total equity to regulatory capital Appendix VI: Morgan Stanley Investment Management Group - Table 75: MSIM Group reconciliation of balance sheet total equity to regulatory capital
437 (1)(b)	Description of the main features of CET1, AT1, Tier 2.	Appendix II: Table 49 - MSI Group and MSIP capital instruments and eligible liabilities Appendix VI: Table 81 MSIM Group capital instruments template
437 (1)(c)	Full terms of all CET1, AT1, Tier 2 instruments.	
437 (1)(d)(i)	Each prudential filter applied pursuant to Articles 32 to 35.	Section 6: Capital Resources - Table 6: Reconciliation of balance sheet total equity to regulatory capital Appendix VI: Morgan Stanley Investment Management Group - Table 75: MSIM Group reconciliation of balance sheet total equity to regulatory capital
437(1)(d)(ii)	Each deduction applied pursuant to Articles 36, 56 and 66.	
437(1)(d)(iii)	Items not deducted in accordance with Articles 47, 48, 56, 66, 79.	
437 (1)(e)	A description of all restrictions applied to the calculation of own funds.	Not Applicable
437 (1)(f)	Where institutions disclose capital ratios calculated using elements of own funds determined on a different basis.	
Article 437a: Disclosure of Own Funds and Eligible Liabilities (CRR II)		
437a	omposition of own funds and eligible liabilities and anking in the creditor hierarchy	Section 7: Total Loss-Absorbing Capacity
Article 438: Capital Requirements		
438 (a)	Summary of institution's approach to assessing capital adequacy.	Section 5: Capital Management Appendix VI: Morgan Stanley Investment Management Group
438 (b)	Result of ICAAP on demand from authorities.	Not Applicable
438 (c)	Capital requirement amounts for credit risk for each Standardised Approach exposure class.	Section 9: Capital Requirements and RWAs - Table 13: Overview of RWAs – MSI Group (EU-OV1) Section 10: Credit Risk - Table 15: Credit and counterparty credit risk summary Appendix VI: Morgan Stanley Investment Management Group - Table 78: MSIM Group credit risk summary
438 (d)	Capital requirement amounts for credit risk for each Internal Ratings Based Approach exposure class.	
438 (d) (i)		
438 (d) (ii)		
438 (d)(iii)		
438 (d)(iv)		
438 (e)	Capital requirement amounts for Market Risk or Settlement Risk, or Large Exposures where they exceed limits.	Section 9: Capital Requirements and RWAs - Table 13: Overview of RWAs – MSI Group (EU-OV1) Section 13: Market Risk – Table 38: Market Risk RWA summary Appendix VI: Morgan Stanley Investment Management Group - Table 77: Overview of RWAs (EU-OV1)

438 (f)	Capital requirement amounts for Operational Risk, separately for the Basic Indicator Approach, Standardised Approach and Advanced Measurement Approach, as applicable.	Section 9: Capital Requirements and RWAs Table 13: Overview of RWAs – MSI Group (EU-OV1) Section 14: Operational Risk
438	Requirement to disclose specialised lending exposures and equity exposures in the banking book, falling under the simple risk weight approach.	Section 10: Credit Risk - Table 19: IRB (specialised lending and equities) (EU CR10) Appendix VI: Morgan Stanley Investment Management Group – Table 80: IRB (specialised lending and equities) (EU CR10)
Article 439: Exposure to Counterparty Credit Risk (CCR)		
439 (a)	Discussion of the methodology used to assign internal capital and credit limits for CCR.	Section 10: Credit Risk - "Credit Risk Limits" and "Credit Evaluation"
439 (b)	Discussion of policies for securing collateral and establishing credit reserves.	Section 10: Credit Risk - "Credit Risk Mitigation" Section 11: Counterparty Credit Risk "Counterparty Credit Exposure" and "Derivatives and SFTs Credit Exposure"
439 (c)	Discussion of policies with respect to wrong-way risk exposures.	Section 11: Counterparty Credit Risk - "Wrong Way Risk"
439 (d)	Discussion of the impact of the amount of collateral to be provided in the event of a ratings downgrade.	Section 10: Credit Risk - "Credit Risk Mitigation" Section 11: Counterparty Credit Risk - "Collateral Impact of a Downgrade"
439 (e)	Derivation of net derivative credit exposure.	Section 11: Counterparty Credit Risk - Table 28: Impact of netting and collateral held on exposure values (EU CCR5-A)
439 (f)	Exposure values for mark-to-market, standardised and internal model methods.	Section 11: Counterparty Credit Risk - Table 25: Analysis of the CCR exposure by approach (EU CCR1)
439 (g)	Notional value of credit derivative hedges and distribution of current credit exposure by type of exposure.	Section 11: Counterparty Credit Risk - Table 25: Analysis of the CCR exposure by approach (EU CCR1), Table 29: Composition of collateral for exposures to CCR (EU CCR5-B) Table 31: Credit derivatives exposure (EU CCR6)
439 (h)	Notional amounts of credit derivative transactions for own credit, intermediation, bought and sold, by product type.	
439 (i)	Estimate of alpha, if applicable.	Not Applicable
Article 440: Capital Buffers		
440 (1) (a)	The geographical distribution of its credit exposures relevant for the calculation of its countercyclical capital buffer.	Section 5: Capital Management Appendix IV: Countercyclical Capital Buffer
440 (1) (b)	The amount of its institution specific countercyclical capital buffer.	
Article 441: Indicators of Global Systemic Importance		
441 (1)	Disclosure of the indicators of global systemic importance.	Not Applicable
Article 442: Credit Risk Adjustments		
442 (a)	Definitions for accounting purposes of "past due" and "impaired".	Section 10: Credit Risk - Table 25: Impaired and past due exposures, credit risk adjustments by industry type
442 (b)	Description of the approaches and methods adopted for determining specific and general credit risk adjustments.	Section 10: Credit Risk - 10.4 Credit Risk Adjustments Table 22: IRB credit risk adjustments, expected loss and charge to the profit and loss Appendix V: Additional Credit and Counterparty Credit Risk Tables - Table 62: Changes in stock of general and specific credit risk adjustments (EU CR2-A)
442 (c)	Disclosure of pre credit risk mitigation by exposure class.	Appendix V: Additional Credit and Counterparty Credit Risk Tables - Table 53: Total and average net amount of exposures (EU CRB-B) Table 57: Credit quality of exposures by exposure class and instrument (EU CR1-A)
442 (d)	Geographic distribution of the exposures broken down by exposure classes.	Appendix V: Additional Credit and Counterparty Credit Risk Tables - Table 54: Geographical breakdown of exposures (EU CRB-C)
442 (e)	Distribution of exposures by industry or counterparty type, broken down by exposure classes.	Appendix V: Additional Credit and Counterparty Credit Risk Tables - Table 55: Concentration of exposures by industry or counterparty type (EU CRB-D)

442 (f)	Residual maturity breakdown of all the exposures, broken down by exposure classes.	Appendix V: Additional Credit and Counterparty Credit Risk Tables - Table 56: Maturity of exposures (EU CRB-E)
442 (g) (i)	By significant industry or counterparty type the amount of: Impaired exposures and past due exposures, provided separately.	Section 10: Credit Risk - Table 23: Impaired and past due exposures, credit risk adjustments by industry type
442(g) (ii)	By significant industry or counterparty type the amount of: Specific and general credit risk adjustments.	Appendix V: Additional Credit and Counterparty Credit Risk Tables – Table 57: Credit quality of exposures by exposure class and instrument (EU CR1-A) Table 58: Credit quality of exposures by industry or counterparty types (EU CR1-B) Table 60: Credit Quality of Performing and Non-Performing exposures by past due days Table 61: Performing and Non-performing exposures and related provisions
442(g) (iii)	By significant industry or counterparty type the amount of: Charges for specific and general credit risk adjustments during the reporting period.	
442 (h)	Amount of the impaired exposures and past due exposures, broken down by significant geographical areas and the amounts of specific and general impairment for each geography.	Section 10: Credit Risk - Table 24: Impaired and past due exposures, credit risk adjustments by geographic region Appendix V: Additional Credit and Counterparty Credit Risk Tables - Table 59: Credit quality of exposures by geography (EU CR1-C)
442 (i)	Reconciliation of changes in the specific and general credit risk adjustments for impaired exposures.	Appendix V: Additional Credit and Counterparty Credit Risk Tables - Table 62: Changes in stock of general and specific credit risk adjustments (EU CR2-A) Table 63: Changes in stock of defaulted and impaired loans and debt securities (EU CR2-B)
442(i) (i)	A description of the type of specific and general credit risk adjustments.	
442(i) (ii)	The opening balances.	
442(i) (iii)	The amounts taken against the credit risk adjustments during the reporting period.	
442(i) (iv)	The amounts set aside for estimated probable losses on exposures	
442(i) (v)	The closing balances.	
Article 443: Unencumbered Assets		
443	Disclosures on Unencumbered Assets.	Section 17: Asset Encumbrance
Article 444: Use of ECAIs		
444 (a)	Names of the nominated ECAIs used in the calculation of Standardised Approach RWAs and the reasons for any change.	Section 10: Credit Risk - “10.2 Counterparty and Credit Risk Capital Requirements”
444 (b)	Exposure class for which each ECAI is used.	
444 (c)	Description of the process used to transfer the issuer and issue credit assessments onto items not included in the Trading Book.	Section 10: Credit Risk “10.2 Counterparty and Credit Risk Capital Requirements”
444 (d)	Mapping of the external rating of each ECAI to credit quality steps.	Section 10: Credit Risk - Table 17: External Credit Assessment Institutions (“ECAI”)
444 (e)	Exposure value post-credit risk mitigation associated with each credit quality step.	Appendix V: Additional Credit and Counterparty Credit Risk Tables - Table 66: Standardised Approach (EU CR5) Table 71: Standardised Approach – CCR Exposures by Regulatory Portfolio and Risk Weight (EU CCR3)
Article 445: Exposure to Market Risk		
445	Disclosure of position risk, large exposures exceeding limits, FX, settlement and commodities risk.	Section 13: Market Risk - “13.2 Market Risk Capital Requirements” Table 39: Market risk under the standardised approach (EU MR1)
Article 446: Operational Risk		
446	Disclosure of scope of approaches used to calculate operational risk, discussion of the advanced methodology approach and the relevant internal and external factors considered in the firms measurement approach.	Section 14: Operational Risk
Article 447: Exposures in Equities not included in the Trading Book		
447 (a)	Differentiation between exposures based on their objectives.	Section 10: Credit Risk - “10.3 Internal Ratings Based Approach”

447 (b)	Balance sheet value, the fair value and actual prices of exchange traded equity where it differs from the fair value.	Section 10: Credit Risk - Table 19: IRB (specialised lending and equities) (EU CR10)
447 (c)	Types, nature and amounts of the relevant classes of equity exposures.	
447 (d)	Cumulative realised gains and losses arising from sales over the period.	Section 10: Credit Risk - Table 20: Non-trading book equity gains and losses
447 (e)	Total unrealised gains or losses, the total latent revaluation gains and losses and amounts included in CET1 capital.	
447h: Disclosure of Key Metrics (CRR II)		
447h	Disclose key metrics – own funds and eligible liability ratios and their components, numerator and denominator	Section 7: Total Loss-Absorbing Capacity
Article 448: Exposure to Interest Rate Risk on positions not included in the Trading Book		
448 (a)	Nature of the interest rate risk and key assumptions.	Section 13: Market Risk - "13.9 Interest Rate Risk in the Non-Trading Book" Table 44: Interest rate risk in non-trading book
448 (b)	Variation in earnings or economic value, or other methods used by the firm for upward and downward rate shocks to interest rates, by currency.	
Article 449: Exposure to Securitisation Positions		
449 (a)	Objectives in relation to securitisation activity.	Section 12: Securitisation - "12.1 Securitisation Activities"
449 (b)	Nature of other risks including liquidity risk inherent in securitised assets.	Section 12: Securitisation - "12.6 Risk Monitoring"
449 (c)	Risks in terms of seniority of underlying securitisation positions and underlying assets.	Section 12: Securitisation - Table 36: Standardised securitisation exposures and capital requirements by CQS
449 (d)	Different roles played by the institution in the securitisation process.	Section 12: Securitisation - "12.1 Securitisation Activities"
449 (e)	Indication of the extent in the firms involvement in the roles referred to in point (d).	Section 12: Securitisation - "12.1 Securitisation Activities"
449 (f)	Process in place to monitor changes in the credit and market risk of securitisation exposures and how the processes differ for re-securitisation exposures.	Section 12: Securitisation - "12.6 Risk Monitoring"
449 (g)	Description of the firms policy governing the use of hedging and unfunded protection to mitigate the risk of retained securitisation and re-securitisation exposures, including identification of material hedge counterparties.	Not Applicable
449 (h)	Approaches to calculating RWA for securitisation mapped to types of exposures.	Section 12: Securitisation - "12.2 Regulatory Capital Treatment"
449 (i)	Types of SSPE the firm, as sponsor, uses to securitise third party exposures, and list of SSPE's.	Not Applicable: The MSI Group did not originate or sponsor any securitisations.
449 (j)	Summary of firms accounting policies for securitisation activities.	Section 12: Securitisation - "12.4 Accounting"
449 (j) (i)	Whether transactions are treated as sales or financings.	
449 (j) (ii)	The recognition of gains on sales.	
449 (j) (iii)	Approach to valuing securitisation positions.	Section 12: Securitisation - "12.5 Valuation"
449 (j) (iv)	Treatment of synthetic securitisations.	Not Applicable
449 (j) (v)	Valuation of assets awaiting securitisations.	Section 12: Securitisation - "12.5 Valuation"
449 (j) (vi)	Recognition of arrangements that could require the bank to provide support to securitised assets.	Not Applicable
449 (k)	Names of ECAIs used for securitisations.	Section 12: Securitisation - "12.2 Regulatory Capital Treatment"
449 (l)	Full description of Internal Assessment Approach.	Not Applicable
449 (m)	Explanation of changes in quantitative disclosures.	Section 12: Securitisation - "12.1 Securitisation Activities"
449 (n) (i)	Amount of outstanding exposures securitised.	Section 12: Securitisation - Table 32: Securitisation exposures
449 (n) (ii)	On balance sheet securitisation retained or purchased, and off-balance sheet exposures;	Section 12: Securitisation - Table 33: Trading book securitisation exposures by exposure type Table 34: Non-trading book securitisation exposures by exposure type

449 (n) (iii)	Amount of assets awaiting securitisation.	Not Applicable
449 (n) (iv)	Early amortisation treatment; aggregate drawn exposures capital requirements.	Not Applicable
449 (n) (v)	Deducted or 1250% risk weighted securitisation positions.	Section 12: Securitisation - Table 35: IRB securitisation exposures and capital requirements by CQS Table 36: Standardised securitisation exposures and capital requirements by CQS
449 (n) (vi)	Amount of exposures securitised and recognised gains or losses on sales.	
449 (o) (i)	Retained and purchased exposure and associated capital requirements, broken down by risk-weight bands.	
449 (o) (ii)	Retained and purchased re-securitisation exposures before and after hedging and insurance; exposure to financial guarantors broken down by guarantor credit worthiness.	Not Applicable
449 (p)	Impaired assets and recognised losses related to banking book securitisations, by exposure type.	Not Applicable
449 (q)	Exposure and capital requirements for Trading Book securitisations, separately into traditional and by exposure type.	Section 11: Securitisation - Table 33: Trading book securitisation exposures by exposure type
449 (r)	Whether the institution has provided financial support to securitisation vehicles.	Not Applicable
Article 450: Remuneration Disclosures		
450	Remuneration Disclosure.	Remuneration Policy is disclosed separately
Article 451: Leverage		
451 (1) (a)	The leverage ratio and how the institution applies Article 499(2) and (3).	Section 8: Leverage - Table 11: Leverage ratio common disclosure
451 (1) (b)	A breakdown of the total exposure measure as well as a reconciliation of the total exposure measure with the relevant information disclosed in published financial statements.	Section 7: Leverage - Table 10: Reconciliation of accounting assets and leverage ratio exposures Table 12: Split of on-balance sheet exposures
451 (1) (c)	Where applicable, the amount of derecognised fiduciary items in accordance with Article 429(11).	Not Applicable
451 (1) (d)	A description of the processes used to manage the risk of excessive leverage.	Section 8: Leverage
451 (1) (e)	A description of the factors that had an impact on the leverage ratio during the period to which the disclosed leverage ratio refers.	Section 8: Leverage
Article 452: Use of the IRB Approach to Credit Risk		
452 (a)	Permission for the use of the IRB approach from the competent authority.	Section 10: Credit Risk - "10.3 Internal Ratings Based Approach"
452 (b)(i)	The structure of internal rating systems and relation between internal and external ratings.	Section 10: Credit Risk "10.3 Internal Ratings Based Approach" "Control Mechanisms for the Rating System"
452 (b)(ii)	The use of internal estimates other than for the purposes of calculating capital requirements under the IRB approach.	
452(b)(iii)	The process for managing and recognising credit risk mitigation.	
452(b)(iv)	The control mechanisms for rating systems including a description of independence, accountability, and rating systems review.	
452 (c)(i)	Description of the internal ratings process: for central governments and central banks.	Section 10: Credit Risk - "10.3 Internal Ratings Based Approach" "Rating Process" "Rating Philosophy and PD Estimation"
452 (c)(ii)	Description of the internal ratings process: for institutions.	
452(c)(iii)	Description of the internal ratings process: for corporates, including SMEs, specialised lending and purchased corporate receivables.	
452(c)(iv)	Description of the internal ratings process: for retail, for each of the categories of exposures to which the different correlations in Article 154(1) to (4) correspond.	
452 (c)(v)	Description of the internal ratings process: for equities.	

452 (d)	The exposure values for each IRB exposure class. Exposures to central governments and central banks, institutions and corporates where institutions use own estimates of LGDs or conversion factors for the calculation of risk-weighted exposure amounts, shall be disclosed separately from exposures for which the institutions do not use such estimates.	Section 10: Credit Risk: Table 15: Credit and Counterparty Credit Risk Summary Appendix V: Additional Credit and Counterparty Credit Risk Tables Table 69: IRB – Credit Risk Exposures by Exposure Class and PD Range (EU CR6) Table 72: IRB – CCR Exposures by Portfolio and PD Scale (EU CCR4)
452 (e)(i)	For wholesale exposure classes, disclosed separately by obligor grade: Total exposure, separating loans and undrawn exposures where applicable.	
452(e)(ii)	For wholesale exposure classes, disclosed separately by obligor grade: Exposure-weighted average risk weight.	
452(e)(iii)	For wholesale exposure classes, disclosed separately by obligor grade: Undrawn commitments and average exposure values by asset class.	
452 (f)	For retail exposure classes, same disclosures as under 452 (e), by risk grade or EL grade.	Not Applicable
452 (g)	Actual specific risk adjustments for the period and explanation of changes.	Section 10: Credit Risk - Table 22: IRB Credit Risk adjustments, expected loss and charge to the profit and loss
452 (h)	Commentary on drivers of losses in preceding period.	Section 10: Credit Risk - "Estimates Versus Actual Probability of Default": Table 21: Estimated versus actual PD by exposure class Table 22: IRB credit risk adjustments, expected loss and charge to the profit and loss
452 (i)	Disclosure of predicted against actual losses for sufficient period, and historical analysis to help assess the performance of the rating system over a sufficient period.	Appendix V: Additional Credit and Counterparty Credit Risk Tables - Table 70: IRB approach – Backtesting of PD per exposure class (EU CR9)
452 (j) (i)	Where applicable, PD and LGD by each country where the firm operates	Section 10: Credit Risk -Table 18: IRB geographical breakdown of exposure weighted average PD
452 (j) (ii)		
Article 453: Use of Credit Risk Mitigation Techniques		
453 (a)	The policies and processes for, and an indication of the extent to which the entity makes use of, on- and off-balance sheet netting.	Section 10: Credit Risk - "10.5 Credit Risk Mitigation"
453 (b)	The policies and processes for collateral valuation and management.	Section 10: Credit Risk - "10.5 Credit Risk Mitigation" "Collateral"
453 (c)	A description of the main types of collateral taken by the institution.	
453 (d)	The main types of guarantor and credit derivative counterparty and their creditworthiness.	Section 11: Counterparty Credit Risk - "11.3 Derivatives and SFTs Credit Exposure"
453 (e)	Information about market or credit risk concentrations within the credit mitigation taken.	Section 10: Credit Risk - "10.5 Credit Risk Mitigation"
453 (f)	Standardised or IRB approach, exposure value covered by eligible collateral.	Appendix V: Additional Credit and Counterparty Credit Risk Tables - Table 64: Credit risk mitigation techniques – overview (EU CR3) Table 65: Standardised Approach –Credit risk exposure and credit risk mitigation (CRM) Effects (EU CR4) Table 68: IRB Approach – Effect on the RWAs of credit derivatives used as CRM techniques (EU CR7)
453 (g)	Exposures covered by guarantees or credit derivatives.	
Article 454: Use of the Advanced Measurement Approach to Operational Risk		
454	For institutions using the Advanced Measurement Approaches set out in Articles 321 to 324 for calculating operational risk capital requirements, a description of the use of insurances and other risk transfer mechanisms to mitigate operational risk.	Not Applicable

Article 455: Use of Internal Market Risk Models		
455(a)(i)	Disclosure of the characteristics of the market risk models.	Section 13: Market Risk - "13.1 VaR Methodology, Assumptions and Limitations"
455(a)(ii)	Disclosure of the methodologies used to measure incremental default and migration risk.	Section 13: Market Risk - "13.6 Incremental Risk Charge" "13.7 Comprehensive Risk Measure"
455(a)(iii)	Descriptions of stress tests applied to the portfolios.	Section 13: Market Risk - "13.8 Stress Testing"
455(a)(iv)	Methodology for backtesting and validating the models.	Section 13: Market Risk - "13.4 Backtesting" "Incremental Risk Charge""13.7 Comprehensive Risk Measure"
455(b)	Scope of permission for use of the models.	Section 13: Market Risk
455(c)	Policies and processes to determine which exposures are to be included in the Trading Book, and to comply with prudential valuation requirements.	Section 13: Market Risk - "13.3 Positions included in the Trading Book" Section 15: Valuation Risk
455(d)(i)	The highest, the lowest and the mean of: The daily value-at-risk measures over the reporting period and as per the period end.	Section 13: Market Risk - Table 42: IMA values for trading portfolios (EU MR3)
455(d)(ii)	The highest, the lowest and the mean of: The stressed value-at-risk measures over the reporting period and as per the period end.	
455(d)(iii)	The highest, the lowest and the mean of: The risk numbers for incremental default and migration risk and for the specific risk of the correlation trading portfolio over the reporting period and as per the period-end.	
455(e)	The elements of the own funds requirement.	Section 13: Market Risk - "13.2 Market Risk Capital Requirements" Table 40: Market risk under the internal models approach (EU MR2-A)
455(f)	Weighted average liquidity horizons of portfolios covered by models.	Section 13: Market Risk - "13.6 Incremental Risk Charge" Table 43: IRC liquidity horizon for material sub portfolios
455(g)	Comparison of end-of-day VaR measures compared with one-day changes in portfolio's value.	Section 13: Market Risk - Figure5: Comparison of VaR estimates with gains/losses

27. Appendix X: Abbreviations

Term	Definition
AIFM	Alternative Investment Fund Manager
AT1	Additional Tier 1 Capital
AVAs	Additional Valuation Adjustments
BCBS	Basel Committee on Banking Supervision
BIA	Basic Indicator Approach
BRRD	Bank Recovery and Resolution Directive
CASS	Client Assets Sourcebook
CCB	Capital Conservation Buffer
CCF	Credit Conversion Factor
CCP	Central Counterparty
CCR	Counterparty Credit Risk
CCyB	Countercyclical Capital Buffer
CET1	Common Equity Tier 1 Capital
CLF	Credit Limits Framework
CQS	Credit Quality Step
CRD	Capital Requirements Directive
CRD IV	Capital Requirements Directive — EU implementation of Basel III
CRM	Credit Risk Mitigation
CRR	Capital Requirements Regulation
CTP	Correlation Trading Portfolio
CVA	Credit Valuation Adjustment
DA	Delegated Act
EAD	Exposure at Default
EBA	European Banking Authority
ECAI	External Credit Assessment Institutions
ECL	Expected Credit Losses
EEA	European Economic Area
EHQLA	Extremely High Quality Liquid Assets
EMEA	Europe, the Middle East and Africa
EMEA ALCO	EMEA Asset and Liability Committee
ERC	EMEA Risk Committee
EU	European Union
EU IHC	EU Parent Intermediate Holding Companies
EVE	Economic Values of Equity
FCA	Financial Conduct Authority
FCG	Financial Control Group
FIRB	Foundation Internal Ratings Based
FPC	Financial Policy Committee
FRS	Financial Reporting Standards
FRTB	Fundamental Review of the Trading Book
G-SIIs	Global Systematically Important Institutions
GLR	Global Liquidity Reserve
HQLA	High Quality Liquid Assets
IAD	Internal Audit Department
ICAAP	Internal Capital Adequacy Assessment Process
IFD	Investment Firm Directive
IFR	Investment Firm Regulation
IFRS	International Financial Reporting Standards
ILAAP	Internal Liquidity Adequacy Assessment Process
IPU	Intermediate Parent Undertaking
IRB	Internal Ratings Based
IRC	Incremental Risk Charge
IRRBB	Interest Rate Risk in the Banking Book
IMA	Internal Modelling Approach
IMM	Internal Models Method
ITS	Implementing Technical Standards
LCR	Liquidity Coverage Ratio
LDP	Low Default Portfolio
LGD	Loss-Given Default
MCR	Minimum Capital Requirements
MM	Millions
MOC	Model Oversight Committee
MRD	Market Risk Department
MSBAG	Morgan Stanley Bank AG
MSBIL	Morgan Stanley Bank International Limited
MSEHSE	Morgan Stanley Europe Holding SE
MSESE	Morgan Stanley Europe S.E

Term	Definition
MSI	Morgan Stanley International Limited
MSI Group	Morgan Stanley International Limited (and its subsidiaries)
MSIM	Morgan Stanley Investment Management Limited
MSIM ACD	Morgan Stanley Investment Management (ACD) Limited
MSIM FM	MSIM Fund Management (Ireland) Limited
MSIM Group	MSIM sub-consolidated Group
MSIP	Morgan Stanley & Co. International plc
MSIP Group	Morgan Stanley & Co. International plc and its subsidiaries
MTMM	Mark-to-Market Method
NII	Net Interest Income
NPL	Non-Performing Loan
NSFR	Net Stable Funding Ratio
NPA	New Product Approval
OEICs	Open Ended Investment Company
ORD	Operational Risk Department
O-SII	Other Systemic Important Institutions
OTC	Over-the-counter
PD	Probability of Default
QCCP	Qualifying Central Counterparty
PRA	Prudential Regulation Authority
RCSA	Risk Control Self-Assessment
RNIV	Risks Not In VaR
RTS	Regulatory Technical Standards
RWAs	Risk Weighted Assets
SA	Standardised Approach
SFTs	Securities Financing Transactions
SA-CCR	Standardised Approach to Counterparty Credit Risk
SPOE	Single Point of Entry
SPV	Special Purpose Vehicles
SREP	Supervisory Review and Evaluation Process
S&P	Standard and Poor's
STAR	Significant Transaction Analytical Review
SVaR	Stressed Value at Risk
T1	Tier 1
TCR	Total Capital Requirement
TLAC	Total Loss-Absorbing Capacity
TORs	Top Operational Risks
UCITs	Undertakings for Collective Investments in Transferable Securities
UK	United Kingdom
VaR	Value at Risk
VC	Valuation Control