

## **Financial risk management**

### **Risk management framework**

All of the Branch's activities involve, to varying degrees, the analysis, evaluation, acceptance and management of risks or combinations of risks. An established risk governance framework and ownership structure ensures oversight of and accountability for the effective management of risk at Group, regional and global business levels. It also provides for the compliance with the Banking Act No 30 of 1988 as amended by the Banking Amendment Act No 33 of 1995, Directions, Determinations, and Circulars issued to Licensed Commercial Banks by the Central Bank of Sri Lanka. The Branch's Risk Function consists of Wholesale Credit & Market Risk, Wealth & Private Banking (WPB) Risk, Information Security Risk, Operational Risk, CRO & Administration which encapsulate Risk and Strategy, Enterprise Wide Stress Testing and Operational Risk. The HSBC Group provides overall written policies and procedures on risk management covering specific areas such as credit risk, liquidity risk, market risk and operational risks. The local management through Executive Committee and Risk Management Committee monitor the execution of risk management policies and procedures.

### **Risk appetite and tolerance limits for key types of risks**

Bank's risk appetite defines its desired forward-looking risk profile, and informs the strategic and financial planning process. Furthermore, it is integrated with other key risk management tools, such as stress testing and our top and emerging risk reports, to help ensure consistency in risk management practices. The bank sets out the aggregated level and risk types it accepts in order to achieve its business objectives in a risk appetite statement ('RAS'). This is reviewed on an ongoing basis, and formally approved by Risk Management Committee every six months and regional Risk Appetite and Governance team provides oversight. The bank's actual performance is reported monthly against the approved RAS to the Risk Management Meeting ('RMM'), enabling senior management to monitor the risk profile and guide business activity to balance risk and return. This reporting allows risks to be promptly identified, mitigated and drive a strong risk culture. Risk Appetite and tolerance thresholds are decided by respective risk stewards in collaboration with respective business lines.

### **Stress testing**

Enterprise Wide Stress Testing ("EWST") evaluates the potential vulnerabilities in the Bank's overall profitability, asset portfolio, liquidity, operations and capital strength under remote, yet plausible, stressed environments by assessing a variety of risks that the Bank is exposed to. Equally, it assists in the formulation of possible mitigating actions that could be considered in such circumstances.

The EWST is one of the requested stress tests in guideline for commercial banks. The EWST is carried out on the basis of local regulatory reporting requirements. Local capital rules, provision rules, and financial reporting rules are followed and it is an integral part of the bank's annual ICAAP submission.

## **Financial risk management (contd)**

### **Risk management framework (contd)**

Stress tests that can be applied to a bank are broadly in two categories: sensitivity tests and scenario tests. HSBC Sri Lanka follows scenario based methodologies to assess the impact of various risks on bank's capital. Scenario tests include simultaneous moves in a number of variables based on a single event experienced in the past or a plausible market event that has not yet happened and the assessment of their impact on the bank's financial position.

HSBC Sri Lanka perform EWST under three stress scenarios with ascending levels of severity, i.e minor, medium and major, with reference to the normal situation. Accordingly we have used Global economy slow-down (assuming synchronized global shocks that result in a global recession) into three scenarios (severe crisis, moderate and mild scenarios) which are developed by applying shocks of varying severity.

The EWST exercise covers Wholesale Credit Risk (including concentration risk), Retail Credit Risk, Traded Credit Risk & Market Risk and Funding Risk (including IRRBB) and Operational Risk.

Stress test results are reviewed by both local and regional subject matter experts before presenting for "Design Authority (DA)" for approval. DA consists of CFO, CRO & Regional Head of Stress Testing. As the final step, Sri Lanka HSBC EWST gross results are shared with local Risk Management Committee.

Internal stress tests are used in our enterprise-wide risk management and capital management frameworks. Risks to our capital plan are assessed through a range of scenarios which explore risks that management needs to consider under stress. They include potential adverse macroeconomic, geopolitical and operational risk events, and potential events that are specific to HSBC. Stress testing analysis helps management understand the nature and extent of any vulnerability. Using this information, management decides whether risks can or should be mitigated through management actions or, if they were to crystallise, should be absorbed through capital. This in turn informs decisions about preferred capital levels.

### **Credit risk**

Credit risk is defined as the risk of financial loss if a customer or counterparty fails to meet an obligation under a contract. Credit risk arises principally from cash and cash equivalents, direct lending, trade finance and also from certain other products such as derivative instruments and off balance sheet transactions such as letters of credit and guarantees.

Credit risk:

- Is measured as the amount which could be lost if a customer or counterparty fails to make repayments. In the case of derivatives, the measurement of exposure takes into account the current mark to market value to the Branch of the contract and the expected potential change in that value over time caused by movements in market rates;
- Is monitored within limits, approved by individuals within a framework of delegated authorities. These limits represent the peak exposure or loss to which the Branch could be subjected should the customer or counterparty fail to perform its contractual obligations;
- Is managed through a robust risk control framework which outlines clear and consistent policies, principles and guidance for risk managers.

## **Financial risk management (contd)**

### **Credit risk (contd)**

#### **Credit risk management**

The role of the independent credit control unit is fulfilled by the local Risk team which is a part of the Asia Pacific Risk function. Credit approval authorities are delegated by Regional Office (ASP) to Chief Executive Officer (CEO) or Head of RBWM Risk for Retail Banking and CEO for Corporate banking who in turn delegates limit to local risk executives.

The principle objectives of our credit risk management are;

- To maintain across the Branch a strong culture of responsible lending and a robust risk policy and control framework.
- To both partner and challenge Branch's businesses in defining, implementing and continually re-evaluating our risk appetite under actual and scenario conditions; and
- To ensure there is independent, expert scrutiny of credit risks, their costs and their mitigation.

#### **Credit quality of financial instruments**

Branch's credit risk rating systems and processes are designed to differentiate exposures in order to highlight those with greater risk factors and higher potential severity of loss. In the case of individually significant accounts that are predominantly within the wholesale businesses, the risk ratings are reviewed regularly and any amendments are implemented promptly. Within Branch's retail businesses, risk is assessed and managed using a wide range of risk models to maintain risk reward balance.

Branch's risk rating system facilitates the internal ratings-based ('IRB') approach under Basel III adopted by the HSBC Group to support calculation of our minimum credit regulatory capital requirement. Credit quality of customers are assessed taking into account their financial position, past experience and other factors. Special attention is paid to problem exposures in order to accelerate remedial action.

HSBC Group and regional credit review and risk identification teams regularly review exposures and processes in order to provide an independent, rigorous assessment of credit risk across the Group, reinforce secondary risk management controls and share best practice. Internal audit, as a tertiary control function, focuses on risks with a global perspective and on the design and effectiveness of primary and secondary controls, carrying out oversight audits via the sampling of global/regional control frameworks, themed audits of key or emerging risks and project audits to assess major change initiatives.

#### **Impairment assessment**

The Branch computes Expected Credit Losses (ECLs) appropriately.

## **Financial risk management (contd)**

### **Credit risk (contd)**

#### **Credit risk management (contd)**

#### **Credit impaired loans**

HSBC determines that a financial instrument is credit impaired and in stage 3 by considering relevant objective evidence, primarily whether:

- contractual payments of either principal or interest are past due for more than 90 days;
- there are other indications that the borrower is unlikely to pay, such as when a concession has been granted to the borrower for economic or legal reasons relating to the borrower's financial condition; and
- the loan is otherwise considered to be in default. If such unlikeliness to pay is not identified at an earlier stage, it is deemed to occur when an exposure is 90 days past due. Therefore, the definitions of credit impaired and default are aligned as far as possible so that stage 3 represents all loans that are considered defaulted or otherwise credit impaired.

#### **Impairment and credit risk mitigation**

The existence of collateral has an impact when calculating ECLs on stage 3 assets. (credit impaired assets) When an account is classified as default or when the Branch no longer expect to recover the principal or interest due on a loan in full or in accordance with the original terms and conditions, it is assessed for ECLs individually, where recovery is projected for each loan using a discounted cash flow method. If exposures are secured, the current net realizable value of the collateral will be taken into account when assessing the need for individually assessed ECLs.

Personal lending portfolios are generally assessed for impairment on a collective basis as the portfolios typically consist of large groups of homogeneous loans.

## **Financial risk management (contd)**

### **Credit risk (contd)**

#### **Credit risk management (contd)**

#### **Impairment and credit risk mitigation (contd)**

The impairment requirements under IFRS 9 are based on an Expected Credit Losses ('ECL') concept that requires the recognition of ECL in a timely and forward-looking manner.

The assessment of credit risk, and the estimation of ECL, are unbiased and probability-weighted, and incorporate all available information which is relevant to the assessment including information about past events, current conditions and reasonable and supportable forecasts of future events and economic conditions at the reporting date. In addition, the estimation of ECL should take into account the time value of money.

In general, HSBC calculates ECL using three main components: a probability of default, a loss given default ('LGD') and the exposure at default ('EAD').

The 12-month ECL is calculated by multiplying the 12-month PD, LGD and EAD. Lifetime ECL is calculated using the lifetime PD instead.

The 12-month and lifetime PDs represent the probability of default occurring over the next 12 months and the remaining maturity of the instrument respectively.

ECLs are calculated for all Retail products and will be done on product level. The determination of ECL is based on the concept of 'staging' which reflects the general classification of credit deterioration of an asset which is primarily on delinquency days. Assets must be allocated into appropriate credit deterioration stages (Stage 1, Stage 2 and Stage 3) before ECL calculations can be performed. The stages drive the recognition of ECLs.

ECL is determined via a two-step approach, where the financial instruments are first assessed for their relative credit deterioration, followed by the measurement of the ECL (which depends on the credit deterioration categories).

Financial instruments that are performing are considered to be 'Stage 1'. Financial instruments which are considered to have experienced a significant increase in credit risk are in 'Stage 2'. Financial instruments for which there is objective evidence of impairment so are considered to be in default or otherwise credit impaired are in 'Stage 3'.

## **Financial risk management (contd)**

### **Credit risk (contd)**

#### **Credit risk management (contd)**

#### **Impairment and credit risk mitigation (contd)**

An assessment of whether credit risk has increased significantly since initial recognition is performed at each reporting period by considering the change in the risk of default occurring over the remaining life of the financial instrument. The assessment explicitly or implicitly compares the risk of default occurring at the reporting date compared with that at initial recognition, taking into account reasonable and supportable information, including information about past events, current conditions and future economic conditions. The assessment is unbiased, probability-weighted, and to the extent relevant, uses forward-looking information consistent with that used in the measurement of ECL. The analysis of credit risk is multifactor. The determination of whether a specific factor is relevant and its weight compared with other factors depends on the type of product, the characteristics of the financial instrument and the borrower. Therefore, it is not possible to provide a single set of criteria that will determine what is considered to be a significant increase in credit risk, and these criteria will differ for different types of lending, particularly between retail and wholesale. However, unless identified at an earlier stage, all financial assets are deemed to have suffered a significant increase in credit risk when 30 days past due. In addition, wholesale loans that are individually assessed, typically corporate and commercial customers, and included on a watch or worry list, are included in stage 2.

In the absence of a significant increase in credit risk, 12-month ECL should be recognized from initial recognition (except POCI). Financial instruments that are credit-impaired upon initial recognition are POCI (Purchase or originated credit impaired). Therefore, performing financial instruments in Stage 1 will recognize 12-month ECL. The underlying principle of the ECL model is that lifetime ECL is recognized when there has been a significant increase in credit risk since initial recognition..

The transfers between the stages are symmetrical, ie a financial instrument could deteriorate from Stage 1 to 2 or 3, but it can also recover from stage 3 to 2 or 1. The only exception being POCI financial assets, where it will always remain in this category until de recognition.

#### **Write off of loans and receivables**

Loans (and the related impairment allowance accounts) are normally written off, either partially or in full, when there is no realistic prospect of recovery. Where loans are secured, this is generally after receipt of any proceeds from the realization of security. In circumstances where the net realizable value of any collateral has been determined and there is no reasonable expectation of further recovery, write-off may be earlier.

### **Financial risk management (contd)**

#### **Credit risk (contd)**

#### **Credit risk management (contd)**

#### **Write off of loans and receivables (contd)**

Credit cards, personal loans and auto loans are generally written off at 180 days. It is done on the billing date of the month, the account reaches 180 days and non performing home loans are written off once it's in non-performing loan status for 60 months. The process is done manually and any exception is tracked completed the next day. However early write off could be triggered by the circumstance of the account for example on death, bankruptcy, early settlement etc.

Usually Collections/Recovery activities may continue after charge off and Legal action would be taken if the parties are unable to reach an amicable settlement.

Contractual amount outstanding of financial assets written off during the reporting period that are still subject to enforcement activity are as follows;

### **Collateral management and valuation**

It is the Branch's practice to lend on the basis of the customer's ability to meet their obligations out of cash flow resources rather than rely on the value of collateral which is an important credit risk mitigation mechanism. Depending on the customer's standing and the type of product, facilities may be provided unsecured. However, for other lending a charge over collateral is obtained and considered in determining the credit decision and pricing. In the event of default, the Branch may utilize the collateral as a source of repayment. Some of the collateral types that are used in order to mitigate credit risk of the Wholesale segment includes deposits under lien, property mortgages, machinery mortgages and Corporate and Bank guarantees. The main types of guarantees are the parental corporate guarantees issued by a parent company on behalf of a subsidiary, where the creditworthiness of the corporate guarantee is assessed based on the financial strength of the parent company. Guarantees issued by a third party to secure borrowings of a company is also accepted, however is not common and will be accommodated only on an exceptional basis post establishing the financial strength of the guarantor. Valuation of tangible collateral is periodically done according to bank's collateral policy.

The secured facilities extended to retail customers consist of Home Loans, Vehicle Loans (at present both of these products are limited only to Bank's staff), facilities against shares and cash back facilities. Accordingly the nature of collateral relating to Retail facilities consist of property, vehicles, shares (Colombo Stock Exchange) and cash for respective facilities.

Depending on its form, collateral can have a significant financial effect in mitigating our exposure to credit risk.

## **Financial risk management (contd)**

### **Liquidity risk**

Liquidity and funding risk is the risk that the Branch does not have sufficient financial resources to meet its obligations as they fall due or that it can only do so at excessive cost. Liquidity risk arises from mismatches in the timing of cash flows. Funding risk arises when the liquidity needed to fund illiquid asset positions cannot be obtained at the expected terms and when required.

Liquidity and funding risk is:

- **Measured** using the European Banking Authority - Delegated Act - Liquidity Coverage Ratio (EBA DA LCR) and Net Stable Funding Ratio (NSFR)
- **Monitored** against the Group's liquidity and funding risk framework and overseen by Regional and local Asset and Liability Management Committees ('ALCO's); and
- **Managed** on a stand-alone basis with no reliance on any related party (unless pre-committed) or the Central Bank of Sri Lanka, unless this represents routine established business as usual market practice.

### **Management of liquidity and funding risk**

The Branch uses the HSBC's liquidity and funding risk management framework ('LFRF') that employs two key measures to define, monitor and control the liquidity and funding risk of each of its operating entities. The **Net Stable Funding Ratio ("NSFR")** is used to monitor the structural long-term funding position, and the **Liquidity Coverage Ratio ("LCR")** is used to monitor the resilience to severe liquidity stresses. The NSFR and LCR are monitored on a daily basis by the local management team, with monthly monitoring carried out by the Regional Office.



## **Financial risk management (contd)**

### **Liquidity risk (contd)**

#### **Management of liquidity and funding risk (contd)**

##### **NSFR**

This ratio monitors if the bank has sufficient stable funding to its illiquid assets. The equity and liability side of the balance sheet is considered to “provide” stable funding while on and off balance sheet assets are considered to be “requiring” stable funding. Proportion of stable funding provided/required by each balance sheet item is predetermined based on EBA regulations.

##### **LCR**

This ratio monitors the ability of the bank to withstand a severe liquidity stress. To ensure resilience under a liquidity stress, the bank is expected to maintain a sufficient stock of High Quality Liquid Assets (“HQLA”) which will allow the bank to honour the net cash outflow due within the next 30 days from the start of the stress period. Outflows are assumed to originate from the liabilities of the bank while inflows within the next 30 days are assumed to originate from the assets held by the bank. The outflow and inflow rates are determined based on EBA regulations.

## **Financial risk management (contd)**

### **Market risk**

The risk that movements in market factors, including foreign exchange rates, interest rates, credit spreads and equity prices, which will reduce the income or the value of Branch's portfolio is considered as market risk.

Exposure to market risk is separated into two portfolios:

- Trading portfolios comprise positions arising from market-making and warehousing of customer derived positions.
- Non-trading portfolios comprise positions that primarily arise from the interest rate management of our retail and commercial banking assets and liabilities, financial investments designated as available for sale.

### **Monitoring and limiting market risk exposures**

Branch's objective is to manage and control market risk exposures while maintaining the exposures within our risk appetite.

Branch uses a range of tools to monitor and limit market risk exposures, including:

- Sensitivity analysis, the sensitivities of the net present values of assets and expected liability cash flows, in total and by currency, to a one basis point parallel shift in the discount curves used to calculate the net present values.
- Sensitivity limits are set for portfolios, products and risk types, with the depth of the market being one of the principal factors in determining the level of limits set.
- For foreign exchange risk, the total net short foreign exchange position and the net foreign exchange positions by currency.
- Value at risk ('VAR') which is a technique that estimates the potential losses that could occur on risk positions as a result of movements in market rates over a specified time horizon and to a given level of confidence.
- In recognition of VAR's limitations the Branch augment VAR with stress testing to evaluate the potential impact on portfolio values of more extreme, though plausible, events or movements in a set of financial variables.

### **Risk management**

Limits are set for portfolios, products and risk types, with market liquidity being a primary factor in determining the level of limits set. Group Risk, an independent unit within HSBC Group Head Office, is responsible for our market risk management policies and measurement techniques. Each of major operating entity has an independent market risk management and control function which is responsible for measuring market risk exposures in accordance with the policies defined by Group Risk, and monitoring and reporting these exposures against the prescribed limits on a daily basis.

## **Financial risk management (contd)**

### **Market risk (contd)**

#### **Risk management (contd)**

Both the VAR and Stressed VAR models the Branch uses are based predominantly on historical simulation. These models derive plausible future scenarios from past series of recorded market rates and prices, taking into account interrelationships between different markets and rates such as interest rates and foreign exchange rates.

## **Financial risk management (contd)**

### **Market risk (contd)**

### **Risk management (contd)**

#### **Interest Rate risk in the Banking Book (IRRBB)**

HSBC Sri Lanka has a robust mechanism to monitor and control the IRRBB , the structural interest rate risk is transferred to the Balance Sheet Management division who are the subject matter experts in managing same. This is done through the Interest Rate Risk Behavioralization Policy and the Interest Rate risk Transfer pricing policy. These policies are reviewed and approved by the Asset Liability Committee ( ALCO ) of the Bank on an annual basis. A monthly monitoring tool is available to monitor the net interest margins of customer lending and deposit products across the different business lines, and forms part of the monthly ALCO packs. Furthermore basis risk of the lending portfolio is monitored and reported to the ALCO on a quarterly basis , same is monitored against a ALCO set limit. Overall ALCO oversight on these aspects ensure that there is sufficient senior management oversight in evaluating the IRRBB of the bank.

## **Financial risk management (contd)**

### **Operational risk**

The objective of our operational risk management is to manage and control operational risk in a cost effective manner within targeted levels of operational risk consistent with our risk appetite.

A formal governance structure provides oversight over the management of operational risk. A country level Risk Management Meeting (RMM) is held on a monthly basis to discuss key risk issues and review the effective implementation of our operational risk management framework.

Business managers are responsible for maintaining an acceptable level of internal control, commensurate with the scale and nature of operations. They are responsible for identifying and assessing risks, designing controls and monitoring the effectiveness of these controls. The operational risk management framework helps managers to fulfil these responsibilities by defining a standard risk assessment methodology and providing a tool for the systematic reporting of operational loss data.

Some of the key action taken to mitigate operational risk include the following:

Risk and Control Assessment process is in place that facilitates the assessment of risk and the associated control environment for all operational risks faced by the bank

Classification of all information based on the potential risk to the Branch, its customers and related parties. This classification is used to invoke policies and procedures to protect the confidentiality and integrity of information.

Vendor management process is in place where due diligence performed by business departments forms part of the risk assessment process. Selecting a financially viable and Non sanctioned vendor with appropriate capability, skills and experience is essential part of the HSBC vendor due diligence process in managing risk .

The Branch has also undertaken steps to mitigate the risk of continuation of business through comprehensive Business Continuity Planning, taking into account the risks to the business, impact analysis, resource requirements etc. The Business Continuity Plans are updated regularly, tested and approved. The plans describe how normal business can be resumed following an adverse event or business interruption ensuring minimum impact to the business and customers.

With regard to outsourcing of activities, HSBC Group policy is to outsource activities either internally to Global Service Centre's (GSCs) and Affiliates or externally, to suppliers, where this enables the work to be performed more efficiently gaining economies of scale within the business, to leverage on the specialist knowledge or to counter resource constraints. Guidance on the outsourcing of work is contained in the Group policies & procedures and the outsource direction issued by Central Bank of Sri Lanka and Hong Kong Regulators (CBSL & HKMA).

Group Insurable Risk (IR) is mandated by the Group Management Board (GMB) to arrange global insurance policies covering: Crime, Civil & Cyber Liability (CCC), Directors' & Officers' Liability including Outside Directors' & Officers' (D&O/ODL), Pension Trustees Liability (PTL). Collectively the three policies are the "Financial Lines Insurance Programmes/Policies". Cover is provided for HSBC Holdings plc and all wholly and majority owned subsidiaries. Policies are placed with insurers in the UK, US, Bermuda and other international markets by the Group's global insurance broker (Aon ).

The Branch is investing in digital technology to improve the service it provides to customers and stay competitive. The mobile apps are one of the ways the Branch helps customers to manage their money more quickly, conveniently and safely.

## **Financial risk management (contd)**

### **Operational risk (contd)**

Cybersecurity continues to be a focus area and is routinely reported at the Board level to ensure appropriate visibility, governance and executive support for the ongoing cybersecurity activities. The branch continues to strengthen and invest significantly in both business and technical controls in order to prevent, detect and respond to an increasingly hostile cyber threat environment. These include enhancing controls to protect against advanced malware, data leakage, infiltration of payments systems and denial of service attacks.

The Branch has given priority for the Baseline Security Standards introduced by Central Bank of Sri Lanka and compliant with relevant requirements to assure the level of security to customers and regulator .

The Branch continues to monitor and improve service resilience across its technology infrastructure, enhancing problem diagnosis/resolution and change execution capabilities to reduce service disruption to the customers .

A centralized database is used to record the results of the operational risk management process. Operational risk self-assessments are input and maintained by business units. To ensure that operational risk losses are consistently reported and monitored at HSBC Group level, all branches are required to report individual losses in excess of a particular threshold.

## **Financial risk management (contd)**

### **Capital management**

#### **Qualitative disclosures**

Capital adequacy ratio (CAR) is calculated based on the Central Bank of Sri Lanka (CBSL) directions stemming from Basel III accord. These guidelines require the Bank to maintain a CAR not less than 8.5% with minimum Tier 1 capital with buffers in relation to total risk weighted assets and a minimum total CAR with buffers of 12.5% in relation to total risk weighted assets.

#### **Tier 1 Capital – Core Capital**

This includes assigned capital, statutory reserve fund, published retained profits, accumulated other comprehensive income, general and other reserves. The assigned capital is the amount provided by HSBC Asia Pacific to conduct its operation in Sri Lanka. In order to avoid stress on capital and in line with the guidance given by the Basel Committee on Banking Supervision, licensed banks can stagger audited additional credit loss provisions arising from SLFRS 09 when compared with credit loss provisions under LKAS 39 as at first day of adoption of SLFRS 9, net of any other adjustment on first day impact to retained earnings and net of tax effects, throughout a transitional period of four years for the purpose of calculating CAR under Banking Act Directions No. 01 of 2016 on Capital Requirements under Basel III.

#### **Tier 2 Capital – Supplementary capital**

Revaluation gains and general provision are the only constituents of supplementary capital for the Branch. As per the CBSL regulations a prudential revaluation is done reflecting the full possibility of price fluctuations and forced sale, with prior approval from CBSL, which is then subject to a discount of 50%. According to explanatory note no. 03 of 2019 on interpretations of Banking Act Directions no.01 on capital requirements under Basel III for licensed commercial banks and licensed specialized banks; general provisions consist of impaired assets from stage 1 and 2 on the proportion of 100% and 50% respectively. This is subject to 1.25% of risk weighted assets on credit risk under the standardized approach shall be applicable for Tier 2 capital.

**Fair value of financial assets and liabilities (contd)****Fair value of financial instruments carried at fair value****Fair value hierarchy**

Fair values of financial assets and liabilities are determined according to the following hierarchy:

- Level 1 – valuation technique using quoted market price: financial instruments with quoted prices for identical instruments in active markets that the Branch can access at the measurement date.
- Level 2 – valuation technique using observable inputs: financial instruments with quoted prices for similar instruments in active markets or quoted prices for identical or valued using models where all significant inputs are observable. Similar instruments in inactive markets and financial instruments.
- Level 3 – valuation technique with significant unobservable inputs: financial instruments valued using valuation.



### **Fair value of financial assets and liabilities (contd)**

### **Fair value of financial instruments carried at fair value (contd)**

### **Fair value hierarchy (contd)**

### **Valuation of financial instruments**

The best evidence of fair value is a quoted price in an actively traded principal market. The fair values of financial instruments that are quoted in active markets are based on bid prices for assets held and offer prices for liabilities issued. Where a financial instrument has a quoted price in an active market, the fair value of the total holding of the financial instrument is calculated as the product of the number of units and quoted price. The judgment as to whether a market is active may include, but is not restricted to, the consideration of factors such as the magnitude and frequency of trading activity, the availability of prices and the size of bid/offer spreads. The bid/offer spread represents the difference in prices at which a market participant would be willing to buy compared with the price at which they would be willing to sell. Valuation techniques may incorporate assumptions about factors that other market participants would use in their valuations, including:

- the likelihood and expected timing of future cash flows on the instrument. Judgement may be required to assess the counterparty's ability to service the instrument in accordance with its contractual terms. Future cash flows may be sensitive to changes in market rates;
- selecting an appropriate discount rate for the instrument. Judgement is required to assess what a market participant would regard as the appropriate spread of the rate for an instrument over the appropriate risk-free rate;

## **Fair value of financial assets and liabilities (contd)**

### **Fair value of financial instruments carried at fair value (contd)**

#### **Valuation of financial instruments (contd)**

• judgement to determine what model to use to calculate fair value in areas where the choice of valuation model is particularly subjective, for example, when valuing complex derivative products. A range of valuation techniques is employed, dependent on the instrument type and available market data. Most valuation techniques are based upon discounted cash flow analyses, in which expected future cash flows are calculated and discounted to present value using a discounting curve. Prior to considering credit risk, the expected future cash flows may be known, as would be the case for the fixed leg of an interest rate swap, or may be uncertain and require projection, as would be the case for the floating leg of an interest rate swap.

The majority of valuation techniques employ only observable market data. However, certain financial instruments are valued on the basis of valuation techniques that feature one or more significant market inputs that are unobservable, and for them the measurement of fair value is more judgemental. In developing unobservable inputs, the reporting entity need not undertake all possible efforts to obtain information about market participant assumptions. However, the reporting entity shall not ignore information about market participant assumptions that is reasonably available without undue cost and effort. Therefore, the reporting entity's own data used to develop unobservable inputs shall be adjusted if information is reasonably available without undue cost and effort that indicates that market participants would use different assumptions.

#### **Control framework**

Fair values are subject to a control framework designed to ensure that they are either determined or validated by a function independent of the risk-taker.

For all financial instruments where fair values are determined by reference to externally quoted prices or observable pricing inputs to models, independent price determination or validation is utilised. In inactive markets branch will source alternative market information to validate the financial instrument's fair value, with greater weight given to information that is considered to be more relevant and reliable. The factors that are considered in this regard are, inter alia:

- the extent to which prices may be expected to represent genuine traded or tradable prices;
- the degree of similarity between financial instruments;
- the degree of consistency between different sources;
- the process followed by the pricing provider to derive the data;
- the elapsed time between the date to which the market data relates and the balance sheet date;
- the manner in which the data was sourced.

#### **Fair value adjustments**

Fair value adjustments are adopted when HSBC considers that there are additional factors that would be considered by a market participant which are not incorporated within the valuation model. HSBC classifies fair value adjustments as either 'risk-related' or 'model-related'. Movements in the level of fair value adjustments do not necessarily result in the recognition of profits or losses within the income statement. For example, as models are enhanced, fair value adjustments may no longer be required. Similarly, fair value adjustments will decrease when the related positions are unwound, but this may not result in profit or loss.