

# INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

# **Global Debt Issuance Facility**

No. 100338

UYU 426,000,000 Notes linked to the Morgan Stanley Developed Market Equity Driven FX Investment Index due March 16, 2028 (payable in United States dollars)

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The date of this Final Terms is March 13, 2018

# http://www.oblible.com

This document sets out the Final Terms (the "Final Terms") of the International Bank for Reconstruction and Development ("Issuer" or "IBRD") UYU 426,000,000 Notes linked to the Morgan Stanley Developed Market Equity Driven FX Investment Index due March 16, 2028 (payable in United States dollars) (the "Notes"). Prospective investors should read this document together with the Issuer's Prospectus dated May 28, 2008 (the "Prospectus"), in order to obtain a full understanding of the specific terms and conditions of the Notes (such terms and conditions as completed by the Final Terms, the "Conditions of the Notes").

The Final Terms of the Notes are set out on pages 15 to 30. Capitalized terms used herein are defined in this document or in the Prospectus.

Investing in the Notes involves risks. See "Additional risk factors" beginning on page 8 of this document, and "Risk Factors" beginning on page 17 of the Prospectus.

The return on, and the value of, the Notes is based on the performance of the Index (as defined below) and on the exchange rate of UYU to USD.

Investors should note that the Conditions of the Notes are separate to, and do not incorporate by reference, the Index Methodology (as defined below). The Index Methodology can be modified from time to time without requiring an amendment of the Conditions of the Notes. The Issuer has derived all information contained in the Final Terms regarding the Index from documents provided to the Issuer by the Index Sponsor (as defined below), and the Issuer has not participated in the preparation of, or verified, such documents. None of the Issuer, the Dealer or the Global Agent will have any responsibility for the content of such documents or the information regarding the Index contained in the Final Terms, including the accuracy or completeness of such information.

Although the return on the Notes is based on the performance of the Index, a Note will not represent a claim against the Index Sponsor or the Index Calculation Agent (as defined below) and a Noteholder will not have recourse under the terms of the Notes to any asset comprising the Index. The exposure to the Index is notional and an investment in the Notes is not an investment in the Index or any asset comprising the Index from time to time.

In Uruguay the Notes are being placed relying on a private placement exemption ("oferta privada") pursuant to Section 2 of Law N° 18,627. The Notes are not and will not be registered with the Financial Service Superintendent of the Central Bank of Uruguay to be publicly offered in Uruguay.

# TABLE OF CONTENTS

Executive Summary	
Additional Risk Factors	
Final Terms	
Schedule I	

# **EXECUTIVE SUMMARY**

The following is an executive summary of the provisions of the Notes only and is qualified in its entirety by reference to the more detailed information contained elsewhere in this document and Prospectus. Capitalized terms used in this summary have the meanings set forth elsewhere in this document.

Issuer:	International Bank for Reconstruction and Development
Securities:	UYU 426,000,000 Notes linked to the Morgan Stanley Developed Market Equity Driven FX Investment Index due March 16, 2028 (payable in United States dollars) (the "Notes"). Issued under the Issuer's Global Debt Issuance Facility.
Credit Rating:	The Notes are expected to be rated AAA by Standard and Poor's, a division of the McGraw-Hill Companies, Inc., upon issuance.
Aggregate Nominal Amount:	UYU 426,000,000
Issue Price:	100% of the Aggregate Nominal Amount payable in USD (being USD 15,000,000 which is equal to the Aggregate Nominal Amount divided by the Initial USD/UYU FX Rate)
Initial USD/UYU FX Rate:	28.40 being the USD/UYU FX Rate on the Trade Date
<b>Specified Denomination:</b>	UYU 5,000,000 and integral multiples of UYU 100,000 in excess thereof
<b>Calculation Amount</b>	UYU 100,000
Issue Date:	March 16, 2018, being ten (10) Business Days following the Trade Date
Trade Date:	March 2, 2018
Scheduled Maturity Date:	March 16, 2028
Maturity Date:	The Scheduled Maturity Date, subject to postponement if either the Scheduled UYU Valuation Date is postponed pursuant to (i) Term 18 of the Final Terms ( <i>UYU Related FX Disruption and Disruption Fallbacks</i> ) and/or (ii) the Index Valuation Date is postponed pursuant to Term 20 of the Final Terms ( <i>Postponement due to Index Disruption Events</i> )
Interest Basis:	The Notes do not bear or pay any interest.
Business Day:	London, New York and Montevideo
Participation Rate:	295%
Final Redemption Amount:	If no Amendment Event has occurred prior to the Maturity Date, the Final Redemption Amount, calculated per Calculation Amount, payable on the Maturity Date will be an amount in USD equal to the sum of (i) the USD Principal Amount and (ii) the Note Return Amount, as set forth under Term 17 of the Final Terms (Final Redemption Amount of each Note

	(Condition 6)).
	If an Amendment Event has occurred prior to the Maturity Date, the Final Redemption Amount, calculated per Calculation Amount, payable on the Maturity Date will be an amount in USD equal to the USD Principal Amount.
USD Principal Amount:	An amount in USD equal to the Calculation Amount divided by the Final USD/UYU FX Rate as determined by the Calculation Agent
Final USD/UYU FX Rate:	The USD/UYU FX Rate on the UYU Valuation Date
UYU Valuation Date:	The Business Day falling 10 Business Days prior to the Scheduled Maturity Date, expected to be March 16, 2028 (the "Scheduled UYU Valuation Date"), subject to postponement in accordance with the provisions set forth in Term 18 of the Final Terms (UYU Related FX Disruption and Disruption Fallbacks) if an FX Disruption or an Unscheduled Holiday occurs on such date
USD/UYU FX Rate:	The USD/UYU fixing rate, expressed as the amount of UYU per one USD as determined by the Calculation Agent on the Trade Date or the UYU Valuation Date, as applicable
FX Disruption:	In the determination of the Calculation Agent, any action, event or circumstance whatsoever which, from a legal or practical perspective, makes it impossible for the Calculation Agent to obtain the USD/UYU FX Rate on the UYU Valuation Date
Note Return Amount:	An amount in USD, calculated per Calculation Amount, equal to the product of (a) the USD Calculation Amount, (b) the greater of {(x) the Index Return and (y) zero} and (c) the Participation Rate
USD Calculation Amount:	An amount in USD equal to the Calculation Amount divided by the Initial USD/UYU FX Rate
Amendment Event:	In the event of the occurrence of the events described in Term 22 of the Final Terms ( <i>Amendment Event</i> ), the Calculation Agent or the Issuer, as the case may be, will give notice to investors of the occurrence of the Amendment Event and the Issuer shall be required to pay an amount (which may be zero) as soon as practicable after the Mandatory Amendment Date (as defined in Term 22 of the Final Terms ( <i>Amendment Event</i> )), calculated per Calculation Amount, equal to the Amendment Amount (as defined in Term 22 of the Final Terms ( <i>Amendment Event</i> )) calculated as of the Accelerated Final Index Determination Date.
	In the event of the occurrence of an Amendment Event, in addition to any Amendment Amount, the Issuer shall pay the USD Principal Amount (i) at the time the Amendment Amount is paid or (ii) on the Maturity Date, whichever is later.  An Amendment Event includes an Index Cancellation, an

Index Return:	Index Modification, a Successor Index Event, an Index Disruption Event continuing for a certain number of days, or termination of the Associated Swap Transaction by the Swap Counterparty (including as a result of an Additional Disruption Event) or the Issuer, each as described in Term 22 of the Final Terms ( <i>Amendment Event</i> ).  The performance of the Index from the Initial Index Level to
Index Returns	the Final Index Level expressed as a percentage and calculated as follows:  (Final Index Level – Initial Index Level) / Initial Index Level
Index:	Morgan Stanley Developed Market Equity Driven FX Investment Index (Bloomberg Ticker Symbol: MSQTDMED <index>)</index>
Index Sponsor:	Morgan Stanley & Co. International plc or any successor sponsor of the Index
Index Calculation Agent:	Morgan Stanley India Financial Services Pvt. Ltd. or any successor or assign
Initial Index Level:	176.407 (being the Index's published Index Level for March 1, 2018).
Final Index Level:	The Index Level (as defined in Term 21 of the Final Terms (Additional Definitions with regard to the Index)) for the Index Valuation Date, as determined by the Calculation Agent.
	In the event that the Index Level on the Index Valuation Date is corrected by the Index Calculation Agent on or prior to the date falling three Business Days after the Index Valuation Date, such corrected value will be the Final Index Level.
Index Valuation Date:	The day that is falling ten (10) Business Days prior to the Scheduled Maturity Date, expected to be March 2, 2028 (the "Scheduled Index Valuation Date"), subject to postponement pursuant to the provisions set forth under Term 20 of the Final Terms (Postponement due to Index Disruption Events)
Index Disruption Event:	If the Index Valuation Date occurs on a day in respect of which the Calculation Agent determines that an Index Disruption Event has occurred or is continuing, the Calculation Agent will delay calculating the Final Index Level as set forth in Term 20 of the Final Terms ( <i>Postponement due to Index Disruption Events</i> ).
	An Index Disruption Event means the Index Calculation Agent fails to calculate and announce the Index on the Index Valuation Date, as described in Term 21 of the Final Terms (Additional Definitions with regard to the Index).
Dealer:	Morgan Stanley & Co. LLC
Calculation Agent:	Morgan Stanley Capital Services LLC or any successor or assign appointed by Morgan Stanley Capital Services LLC

Clearing Systems:	Euroclear					
Rank:	The Notes constitute direct, unsecured obligations of the Issuer ranking <i>pari passu</i> , without any preference among themselves, with all its other obligations that are unsecured and unsubordinated. The Notes are not obligations of any government.					
Applicable law:	New York law					
Risk factors:	Noteholders should consider carefully the factors set out under "Additional Risk Factors" in this document and under "Risk Factors" in the Prospectus before reaching a decision to buy the Notes.					

### ADDITIONAL RISK FACTORS

An investment in the Notes is subject to the risks described below, as well as the risks described under "Risk Factors" in the Prospectus. The Notes are a riskier investment than ordinary fixed rate notes or floating rate notes. Prospective investors should carefully consider whether the Notes are suited to their particular circumstances. Accordingly, prospective investors should consult their financial and legal advisers as to the risks entailed by an investment in the Notes and the suitability of the Notes in light of their particular circumstances.

Terms used in this section and not otherwise defined shall have the meanings set forth elsewhere in this document.

The following list of risk factors does not purport to be a complete enumeration or explanation of all the risks associated with the Notes, the Index and/or the constituents of the Index.

#### **GENERAL RISKS**

# The Issuer will not pay any tax gross-ups

Repayment of all or any part of the Notes and payment at maturity of any additional amount due under the terms of the Notes will be made subject to applicable withholding taxes (if any). Consequently, the Issuer will not be required to pay any further amounts in respect of the Notes in the event that any taxes are levied on such repayment or payment.

# UYU related FX Disruption Events, the occurrence of Unscheduled Holidays and Index Disruption Events may operate to postpone Maturity Date

In the event that the UYU Valuation Date is postponed beyond the Scheduled UYU Valuation Date or that the Index Valuation Date is postponed beyond the Scheduled Index Valuation Date as set forth in the Final Terms, the Maturity Date of the Notes will be postponed by one Business Day for each Business Day that the UYU Valuation Date is postponed beyond the Scheduled UYU Valuation Date or that the Index Valuation Date is postponed beyond the Scheduled Index Valuation Date, and therefore may be postponed by a number of Business Days up to the number of Business Days occurring during the period of 30 calendar days after the Scheduled UYU Valuation Date (in respect of an FX Disruption or the occurrence of Unscheduled Holidays) or ten Business Days after the Scheduled Index Valuation Date (in respect of an Index Disruption Event). No interest or other payment will be payable because of any such postponement of the Maturity Date.

# In the event of an Amendment Event, Noteholders will not benefit from any appreciation in the Index as of the Accelerated Final Index Determination Date

As set out in Term 22 of the Final Terms (*Amendment Event*), in the event of the occurrence of the events described in Term 22 of the Final Terms, the Issuer will be required to make a payment (which may be zero) as soon as practicable after the Mandatory Amendment Date. In respect of each Calculation Amount, such payment will be equal to the Amendment Amount as of the Accelerated Final Index Determination Date. As a result, the Noteholders will not benefit from any appreciation in the Index as of the Accelerated Final Index Determination Date.

An Amendment Event includes an Index Cancellation, an Index Modification, a Successor Index Event, an Index Disruption Event that continues for a certain number of days and an event which results in early termination of the Associated Swap Transaction by the Swap Counterparty (including as a result of an Additional Disruption Event) or the Issuer. An Index Cancellation, an Index Modification, a Successor Index Event or a continuing Index Disruption Event may occur due to a broad range of events beyond the control of the Issuer, including by decision of the Index Calculation Agent or the Index Sponsor. An Additional Disruption Event, following which the Associated Swap

Transaction may be terminated by the Swap Counterparty, consists of a Change in Law, a Hedging Disruption or an Increased Cost of Hedging. A Change in Law could occur in response to the enactment of new laws or the implementation of existing laws (including, without limitation, any tax law). A Hedging Disruption could occur if the Swap Counterparty was unable, after using commercially reasonable efforts, to (i) acquire, establish, re-establish, substitute, maintain, unwind or dispose of any transactions or assets that it deems necessary to hedge the price risk of entering into and performing its obligations with respect to the Associated Swap Transaction or (ii) realize, recover or remit the proceeds of any such transactions or assets. An Increased Cost of Hedging could occur if the Swap Counterparty would incur a materially increased amount of taxes or costs in dealing in any transactions it deems necessary to hedge the price risk of performing its obligations under the Associated Swap Transaction. These could occur due to changes in legal or tax regimes.

### Noteholders are exposed to changes in the exchange rate of Uruguayan pesos to U.S. dollars

Payment of principal upon maturity will be in USD and will be based on the exchange rate of UYU to USD. Changes in the exchange rate of UYU to USD may result in a decrease in the effective yield of the Notes. For example, if, on the UYU Valuation Date, UYU has appreciated in value against USD, the payment in USD will be higher. Conversely, a depreciation in value of UYU against USD will have the opposite impact, and an investor could lose a substantial amount of its investment in the Notes. Furthermore, since the Noteholders will receive payments on the Notes only on the Maturity Date (other than the possible payment of an Amendment Amount prior to the Maturity Date), the Noteholders will not benefit from favorable changes in exchange rates at any other time during the term of the Notes before the UYU Valuation Date. Currency exchange rates may be volatile and are the result of numerous factors. A Noteholder's net exposure will depend on the extent to which the payment currency (USD) strengthens or weakens against the denominated currency (UYU).

However, for the same reasons, the Notes can be considered to be principal protected when expressed in UYU, because the UYU value of the USD Principal Amount to be paid by IBRD under the Notes upon maturity will always be equal to the UYU value of the USD amount of the Issue Price of the Notes upon issuance. Nevertheless, the purchase price of the Notes is payable in USD, and amounts received upon maturity will be payable in USD, and therefore the USD amount payable on the Notes may be less than the USD purchase amount for the Notes if the value of the UYU were to decline in USD terms between the Trade Date and the UYU Valuation Date.

In addition, the Noteholders whose financial activities are denominated principally in a currency (the "Investor's Currency") other than any of the Specified Currencies will also be exposed to currency exchange rate risks that are not associated with a similar investment in a security denominated or paid in that Investor's Currency. For more information, please see "Risk Factors—Notes are subject to exchange rate and exchange control risks if the investor's currency is different from the Specified Currency" in the Prospectus.

### Payment at maturity depends on interplay of the USD/UYU FX Rate and the performance of the Index

The payment that the Noteholder will receive at maturity will depend on both the change in the rate of exchange between UYU and USD and the Index Return. The interplay of these two factors means that the Notes are a more complex investment than an instrument linked to a single underlying factor. It is not possible to predict how the two factors to which the Note's performance payout is tied may perform. A relatively positive Index Return may be offset by a decline in the value of UYU in USD terms. UYU may appreciate relative to USD without any appreciation in the Index. There can be no assurance that either factor's performance will correlate with the other's performance.

#### The Notes are subject to market risks

The price at which Noteholders will be able to sell their Notes prior to maturity may be at a substantial discount from the principal amount of the Notes, even in cases where the level of the Index has increased since the Trade Date. Embedded costs, including expected profit and costs of hedging, in the original Issue Price will likely be reflected in a diminution in the market price of the Notes relative to their original Issue Price. Assuming no change in market conditions or any other relevant factors, the market price of the Notes will likely be lower than the original Issue Price, because the original Issue Price included the cost of hedging the Swap Counterparty's obligations, which includes an estimated profit component. IBRD's Swap Counterparty is Morgan Stanley Bank International Limited.

Prior to maturity, the value of the Notes will be affected by a number of economic and market factors that may either offset or magnify each other. It is expected that, generally, the level of the Index on any day will affect the value of the Notes more than any other single factor. Other relevant factors include: the expected volatility of the Index; the time to maturity of the Notes; the interest and yield rates in the market; the economic, financial, political, regulatory or judicial events that affect the various components represented by the Index from time to time, as well as stock, bond, foreign exchange, commodity, exchange traded fund and futures markets generally and which may affect the Index Level for the Index Valuation Date; and the creditworthiness of the Issuer. The USD/UYU fixing rate as well as the illiquidity of the instruments used to hedge the Issuer into USD will also have an effect on secondary market valuations.

The Notes are intended to be a hold-to-maturity instrument. Noteholders will receive at least 100% of the nominal amount of the Notes, expressed in UYU (but not as expressed in any other currency, including USD), if they hold their Notes to maturity (though, as discussed above, if the value of the UYU were to decline in USD terms between the Trade Date and the UYU Valuation Date, the USD amount payable at maturity may be less than the USD purchase price and therefore a Noteholder may lose a substantial amount of its USD investment). If Noteholders sell their Notes prior to maturity, however, they will not receive principal protection or any minimum total return on the portion of their Notes sold (even as expressed in UYU). Noteholders should be willing to hold their Notes until maturity.

The future performance of the Index cannot be predicted based on the historical performance of the Index. Past performance is not an indication of future results.

### The Notes are not liquid instruments and you may not be able to sell your Notes prior to maturity

The Notes will not be actively traded in any financial market and there may be little or no secondary market for the Notes, resulting in low or non-existent volumes of trading in the Notes. Therefore, an investment in the Notes will be characterized by a lack of price volatility and liquidity. Accordingly, an investor must be prepared to hold the Notes until maturity.

### Potential conflicts of interest

Various potential and actual conflicts of interest may arise from the overall investment activity of the Calculation Agent for the Notes, Morgan Stanley Bank International Limited as calculation agent for the Associated Swap Transaction (the "Swap Calculation Agent") and their respective affiliates. The Calculation Agent for the Notes, the Swap Calculation Agent and their respective affiliates and/or their directors, officers and employees may each have, or may each have had, interests or positions, or may buy, sell or otherwise trade positions, in or relating to the Index and/or constituents of the Index, or may have invested, or may engage in transactions relating to any constituent, either for its own account or the account of others, may publish research reports or otherwise express views with respect to such transactions or regarding expected movements in price or volatility of the constituents. The Calculation Agent for the Notes, the Swap Calculation Agent and their respective affiliates may act with respect to

such transactions in the same manner as if the Index did not exist and without regard to whether any such action might have an adverse effect on the Index. Such activity may, or may not, affect the value of the constituents, but those considering taking any economic exposure by reference to the Index should be aware that a conflict may arise.

Investors should note that, although certain amounts under the Conditions of the Notes are determined by reference to the value of certain components of the Associated Swap Transaction, the Notes do not represent a claim against the Swap Counterparty and investors will have no recourse to the Swap Counterparty under the Associated Swap Transaction. However, a termination of the Associated Swap Transaction (including by reason of the occurrence of an Event of Default (as defined in the ISDA Master Agreement) by the Swap Counterparty) will result in an Amendment Event and investors are therefore exposed to the credit of the Swap Counterparty (as defined in Term 22 of the Final Terms (*Amendment Event*)).

#### RISKS RELATING TO THE INDEX

A description of the Index is set forth in Schedule I hereto. Such description is for information purposes only and should not be relied upon by prospective purchasers of the Notes. All disclosure contained in this Final Terms regarding the Index, including, without limitation, its make-up, method of calculation and changes in its components, is derived from, and based solely upon, documents provided to the Issuer by the Index Sponsor, and the Issuer has not participated in the preparation of, or verified, such documents. None of the Issuer, the Dealer or the Global Agent will have any responsibility for the content of such documents or the information regarding the Index contained in this Final Terms, including the accuracy or completeness of such information. In addition, neither the Issuer nor the Dealer accepts responsibility for the calculation or other maintenance of, or any adjustments to, the Index. The Index Sponsor is under no obligation to continue to publish the Index and may discontinue publication of the Index at any time.

The full methodology of the Index (the "Index Methodology") is set forth in a confidential and proprietary document entitled Index Description and dated August 24, 2017.

THE INDEX METHODOLOGY AND OTHER INFORMATION CONTAINED IN SUCH PROPRIETARY DOCUMENTS ARE NOT INCORPORATED BY REFERENCE IN, AND SHOULD NOT BE CONSIDERED A PART OF, THIS FINAL TERMS. THE INDEX METHODOLOGY CAN BE MODIFIED FROM TIME TO TIME WITHOUT REQUIRING AN AMENDMENT OF THE CONDITIONS OF THE NOTES.

See also Schedule I hereto under the caption "Index Disclaimer". Further information regarding the Index is provided in Schedule I hereto.

The below risk factors in respect of the Index are not intended to be exhaustive. All persons should seek such advice as they consider necessary from their professional advisors, investment, legal, tax or otherwise, without reliance on the Index Sponsor, the Index Calculation Agent, any of their respective Affiliates or any of their respective directors, officers, employees, representatives, delegates and agents.

### No assurance can be provided regarding the performance of the Index

The Index is a quantitative, rules-based index and may not yield positive performance in future. The methodology is designed to invest in foreign exchange forward contracts based on weights calculated on a monthly basis. There can be no assurances that the methodology can yield positive performance in all economic conditions and past performance of the Index (actual or simulated) is not an indication of future performance. Any investment linked or related to the Index may not necessarily be the same as

an investment in the constituents of the Index at the time and may not reflect the return that could have been achieved by an investor who actually entered into the hypothetical long and short positions.

When considering any investment, the return on which is linked to the performance of the Index, prospective investors should be aware that the level of that Index Level can go down as well as up and that the performance of the Index in any future period may not mirror its past performance. Any investment linked or related to the Index may not necessarily be the same as an investment in the constituents of that Index at that time and may not reflect the return that could have been realized by an investor who entered into the hypothetical long and short FX forward rate positions.

### Investments in financial instruments linked to the Index involve foreign exchange risk

Investments in financial instruments linked to the Index involve foreign exchange risk. Foreign exchange spot and forward rates are determined by factors of supply and demand in the international markets which are influenced by factors such as macro-economic, governmental speculative, market sentiment factors or other political factors. Such fluctuations may have an impact on the value of the Index at any time prior to valuation of the financial instruments linked to the Index. These foreign exchange risks are separate from those described above under "Additional Risk Factors—General Risks—Noteholders are exposed to changes in the exchange rate of Uruguayan pesos to U.S. dollars".

# The leveraged nature of the Index will magnify the impact of certain adverse events on the Index Level

The Index reflects the performance of leveraged hypothetical long and short positions in FX forward rates. The leveraged nature of the Index will magnify the adverse impact of adverse performance in these hypothetical positions in FX forward rates.

# The Index is not actively managed, which may negatively impact the performance of the Index

The Index is quantitative and not actively managed by Morgan Stanley & Co International plc or its affiliates ("Morgan Stanley") or any third party. Morgan Stanley is not acting as a fiduciary for, or an advisor to, any investor in respect of the Index.

# The Index Sponsor may remove a currency from the Currency Portfolio (as described in Schedule I hereto), which may negatively impact the performance of the Index

If the Index Sponsor determines that a currency should be removed from the Currency Portfolio, the Index will not benefit from any future performance of the FX forward rate in respect of that currency. The Index Sponsor may replace a currency that has ceased to exist for any reason with its legal successor. The Index Sponsor may adjust the Index Methodology or components to take account of the removal of a currency without requiring an amendment of the Conditions of the Notes. See the information under the heading "Index Disruption Provisions" in Schedule I hereto for further explanation.

# The Index Calculation Agent and its affiliates rely on information from various sources without independent verification

Calculations related to the Index are based on information obtained from various sources. When using such information, Morgan Stanley and its affiliates have relied on, and will rely on, these sources and have not independently verified, and will not independently verify, the information extracted from these sources.

The WM/Reuters Closing Spot and Forward Rates (the "Rates") are provided by The World Markets Company plc ("WM") in conjunction with Reuters. WM shall not be liable for any errors in or delays in providing or making available the data contained within this service or for any actions taken in reliance on the same, except to the extent that the same is directly caused by its or its employees'

negligence. Distribution, redistribution or licensing of the Rates or any part thereof is prohibited without the express permission of WM.

# The Index Sponsor may adjust the Index Methodology from time to time, which may negatively impact the performance of the Index

The Index Sponsor may from time to time adjust the methodology for calculating rates, discount factors, and various other parameters based on changes in market conditions, market practices and financial modelling without requiring an amendment of the Conditions of the Notes. Any such changes may be affected without prior notice and may affect the Index Level.

# The Index Sponsor has a number of discretions in relation to the Index and the exercise of these discretions may have an adverse impact on the level of the Index and the value of the Notes

The application of the Index Methodology by the Index Sponsor shall be conclusive and binding. However, the Index Sponsor may supplement, amend (in whole or in part), revise or withdraw these rules at any time. Such a supplement, amendment, revision or withdrawal may lead to a change in the way the Index is calculated or constructed and may affect the Index in other ways. Without prejudice to the generality of the foregoing, the Index Sponsor may determine that a change to the rules is required or desirable in order to update the rules or to address an error, ambiguity or omission. The rules may change without prior notice. All of the above may affect the value of the Index Level and the value of the Notes.

The Index Sponsor shall have the right, in its sole discretion, to cease compiling, calculating and publishing value of the Index if at any time the Index Sponsor determines that the Index no longer meets or will not be capable of meeting the criteria established by the Index Sponsor or otherwise determines that the Index shall no longer be calculated.

# The Calculation Agent's calculations and determinations in relation to the Index shall be binding on all parties in the absence of manifest error

No party (whether the holder of any product linked to the Index or otherwise) will be entitled to proceed (and agrees to waive proceedings) against the Calculation Agent in connection with any such calculations or determinations or any failure to make any calculations or determinations in relation to the Index. For so long as the Calculation Agent calculates the Index, calculations and determinations by the Calculation Agent in connection with the Index will be made in reliance upon the information of various publicly available sources that the Calculation Agent has not independently verified. The Calculation Agent does not accept any liability for loss or damage of any kind arising from the use of such information in any such calculation or determination.

The provisions in the Index Methodology described under the caption "Index Disruption Provisions" in Schedule I hereto are intended to deal with situations in which it would become difficult or even impossible for the Index Calculation Agent to calculate the Index or for a financial product issuer to carry out hedging arrangements in relation to any financial product linked to the Index. Potential investors in the Index should ensure they review these provisions carefully before making any investment decision (see the information under the heading "Index Disruption Provisions" in Schedule I hereto).

# The Index Level incorporates costs and fees that will reduce the performance of the Index

Transaction costs of entering FX spot positions and an index fee are incorporated in the Index Level calculation. Such costs and fees will reduce the performance of the Index.

# Rebalancing of Non Deliverable Forward Currencies may negatively impact the performance of the Index

On each monthly Rebalance Date (as defined in Schedule I hereto) the Index enters new position in FX forwards for all the currencies and exits the positions in the FX forwards entered on preceding Rebalance Date. For the Non Deliverable Forward ("NDF") Currencies (as defined in Schedule I hereto) within the portfolio the entry and exit occur at different times of the day, due to the fact that the positions are exited at the NDF spot fixing time and the new FX forward positions are entered at 4 p.m. London time. If the NDF fixing is earlier than 4 p.m. London time then the Index will have no position in an NDF currency for a period of time on a Rebalance Date. If the NDF fixing is after 4 p.m. London time then the Index will have concurrent positions in the NDF currency for a period of time on a Rebalance Date. The timing difference may have a positive or negative impact on the Index Level.

# Activities carried out by the Index Sponsor and its affiliates may present conflicts of interest and may negatively affect the performance of the Index

Morgan Stanley may from time to time engage in transactions involving the underlying components of the Index for their respective proprietary accounts and/or for accounts of their clients, and/or may act as market-maker in such underlying components. Such activities may not be for the benefit of the Noteholders and may have a positive or negative effect on the value of the Index and consequently on the value of the Notes. In addition, Morgan Stanley has multiple roles in relation to the Index - such as the Calculation Agent, the Index Calculation Agent or the Index Sponsor. Morgan Stanley may also issue derivative instruments in respect of the underlying components of the Index and the use of such derivatives may affect the value of the underlying components or the Index.

The Index reflects the performance of hypothetical FX forward rates in relation to the currency pairs that comprise the Rebalance Portfolio but there is no requirement that the Index Sponsor enters into FX forward rate contracts in order to calculate the Index. However, in its role in relation to the Notes, Morgan Stanley may enter into hedging transactions in respect of the hypothetical FX forward rates or other related transactions which may or may not affect the value of the underlying components and/or the Index. In addition, the unwinding of such hedging transactions may also affect the value of such underlying components, which may in turn affect the value of the Index Level and the Notes.

These and other activities carried out by Morgan Stanley may present conflicts of interest and may affect the level of the Index in ways detrimental to the Noteholders.

#### Final Terms dated March 13, 2018

# International Bank for Reconstruction and Development Issue of UYU 426,000,000 Notes linked to the Morgan Stanley Developed Market Equity Driven FX Investment Index due March 16, 2028 (payable in United States dollars)

under the

# **Global Debt Issuance Facility**

Terms used herein shall be deemed to be defined as such for the purposes of the terms and conditions (the "Conditions") set forth in the Prospectus dated May 28, 2008. This document constitutes the Final Terms of the Notes described herein and must be read in conjunction with such Prospectus. Certain additional investment considerations are set forth under "Additional Risk Factors" above.

# SUMMARY OF THE NOTES

1. Issuer: International Bank for Reconstruction and Development

("IBRD")

2. (i) Series Number: 100338

(ii) Tranche Number: 1

3. Specified Currency or Uruguayan Peso ("UYU") provided that all payments in

Currencies (Condition 1(d)): respect of the Notes will be made in United States Dollars

("USD")

4. Aggregate Nominal Amount:

(i) Series: UYU 426,000,000

(ii) Tranche: UYU 426,000,000

5. (i) Issue Price: 100 per cent. of the Aggregate Nominal Amount payable in

USD as set out in Term 5(ii) below

(ii) Net Proceeds: USD 15,000,000 (being equal to the Aggregate Nominal

Amount divided by the Initial USD/UYU FX Rate, as defined in Term 19 (Additional Definitions with regard to the

*USD/UYU FX Rate*))

6. (i) Specified Denominations

(Condition 1(b)):

UYU 5,000,000 and integral multiples of UYU 100,000 in

excess thereof

If after the Trade Date and on or before the Maturity Date, Uruguay has lawfully eliminated, converted, redenominated or exchanged its currency in effect on the Trade Date (the "Original Currency"), then for purposes of the Calculation Amount set forth herein, such Original Currency amounts will be converted to the successor currency (the "Successor Currency") by the Calculation Agent by multiplying the amount of the Original Currency by a ratio of the Successor Currency to the Original Currency, which ratio will be calculated on the basis of the exchange rate set forth by Uruguay for converting the Original Currency into the Successor Currency on the date on which the elimination, conversion, redenomination or exchange took place (the "Conversion Rate"). If there is more than one such date, the

date closest to the Maturity Date will be selected by the Calculation Agent for the purposes of determining the Conversion Rate.

"Trade Date" means March 2, 2018

(ii) Calculation Amount (Condition 5(j)):

UYU 100,000

7. Issue Date:

March 16, 2018

8. Maturity Date (Condition 6(a)):

March 16, 2028 (the "Scheduled Maturity Date"), unless the UYU Valuation Date is postponed beyond the Scheduled UYU Valuation Date pursuant to Term 18 (*UYU Related FX Disruption and Disruption Fallbacks*) and/or the Index Valuation Date is postponed beyond the Scheduled Index Valuation Date pursuant to Term 20 (*Postponement due to Index Disruption Events*), in which case the Maturity Date shall be postponed as described herein.

For the avoidance of doubt, no additional amounts shall be payable by IBRD in the event that the Scheduled Maturity Date is postponed due to postponement of the UYU Valuation Date beyond the Scheduled UYU Valuation Date due to the operation of Term 18 (UYU Related FX Disruption and Disruption Fallbacks) or the postponement of the Index Valuation Date beyond the Scheduled Index Valuation Date due to the operation of Term 20 (Postponement due to Index Disruption Events)

9. Interest Basis (Condition 5):

Zero Coupon. The Notes do not bear or pay any interest.

10. Redemption/Payment Basis (Condition 6):

Currency-linked redemption and Index-linked redemption as set out in Term 17 (*Final Redemption Amount of each Note (Condition 6)*)

11. Change of Interest or Redemption/Payment Basis:

Change of Redemption/Payment Basis: Upon the occurrence of an Amendment Event, as set out in Term 22 (Amendment Event)

12. Call/Put Options (Condition 6):

Not Applicable

13. Status of the Notes (Condition 3):

Unsecured and unsubordinated

14. Listing: Luxembourg Stock Exchange

15. Method of distribution: Non-syndicated

# PROVISIONS RELATING TO INTEREST (IF ANY) PAYABLE

16. Zero Coupon Note Provisions (Condition 5(c)):

Applicable for the purposes of Condition 5(c) only, provided that the Early Redemption Amount shall be determined in accordance with Term 24 (*Early Redemption Amount* (*Condition* 6(c))

(i) Amortization Yield (Condition 6(c)(ii)):

Solely for the purposes of calculating the Rate of Interest for any overdue principal for the purposes of Condition 5(c), the

Amortization Yield shall be 0.98 per cent. per annum

(ii) Day Count Fraction (Condition 5(1)):

Solely for the purposes of calculating the Rate of Interest for any overdue principal for the purposes of Condition 5(c), the Day Count Fraction will be 30/360

(iii) Any other formula / basis of determining amount payable: Not Applicable

### PROVISIONS RELATING TO REDEMPTION

17. Final Redemption Amount of each Note (Condition 6):

If no Amendment Event has occurred, the Final Redemption Amount, calculated per Calculation Amount, payable on the Maturity Date shall be an amount in USD calculated by the Calculation Agent in accordance with the following:

# USD Principal Amount + Note Return Amount

If an Amendment Event has occurred, the Final Redemption Amount, calculated per Calculation Amount, payable on the Maturity Date shall be an amount in USD equal to the USD Principal Amount.

Whereby:

"Amendment Event" has the meaning given to it in Term 22 (Amendment Event);

"Index" means the Morgan Stanley Developed Market Equity Driven FX Investment Index (Bloomberg Ticker Symbol: MSQTDMED <Index>). See also Schedule I hereto;

"Index Return" means the performance of the Index from the Initial Index Level to the Final Index Level expressed as a percentage and calculated as follows:

(Final Index Level – Initial Index Level) / Initial Index Level;

"Participation Rate" means 295%;

"Note Return Amount" means an amount in USD, calculated per Calculation Amount, equal to the product of (a) the USD Calculation Amount, (b) the greater of {(x) the Index Return and (y) zero} and (c) the Participation Rate;

"USD Calculation Amount" means an amount in USD equal to the Calculation Amount divided by the Initial USD/UYU FX Rate; and

"USD Principal Amount" means an amount in USD equal to the Calculation Amount divided by the Final USD/UYU FX Rate as determined by the Calculation Agent.

See Terms 19 (Additional Definitions with regard to the USD/UYU FX Rate) and 21 (Additional Definitions with regard to the Index) for additional definitions

18. UYU Related FX Disruption and Disruption Fallbacks:

In the event of the occurrence of an FX Disruption or an Unscheduled Holiday on the Scheduled UYU Valuation Date, the Calculation Agent shall apply each of the following paragraphs (each a "**Disruption Fallback**") for the determination of the USD/UYU FX Rate for the UYU Valuation Date, in the order set out below, until the USD/UYU FX Rate for the UYU Valuation Date can be determined in accordance with this Term 18.

- (1) Valuation Postponement: the UYU Valuation Date shall be postponed beyond the Scheduled UYU Valuation Date (a) following the occurrence of an FX Disruption, to the Business Day which is not an Unscheduled Holiday first following the day on which the FX Disruption ceases to exist or (b) following the occurrence of an Unscheduled Holiday where no FX Disruption has occurred, to the Business Day which is not an Unscheduled Holiday first following the Scheduled UYU Valuation Date, as applicable, and such day shall be the UYU Valuation Date. If the UYU Valuation Date has not occurred on or before the 30<sup>th</sup> consecutive calendar day after the Scheduled UYU Valuation Date (such period being the "Deferral Period"), the UYU Valuation Date shall be the next day after the Deferral Period that is a Business Day or would have been a Business Day but for the occurrence of an Unscheduled Holiday (the "Postponed UYU Valuation Date") and the USD/UYU FX Rate for the UYU Valuation Date will be determined on such Postponed UYU Valuation Date in accordance with the next applicable Disruption Fallback.
- (2) Fallback Reference Price: Electronic Stock Exchange Corporation (BEVSA)
  - If the USD/UYU FX Rate for the UYU Valuation Date cannot be determined by reference to Electronic Stock Exchange Corporation (BEVSA), then the USD/UYU FX Rate for the UYU Valuation Date will be determined in accordance with the next applicable Disruption Fallback.
- (3) Calculation Agent Determination: the USD/UYU FX Rate for the UYU Valuation Date (or a method for determining such USD/UYU FX Rate) will be determined by the Calculation Agent on the Postponed UYU Valuation Date taking into consideration all available information that it deems relevant.

The Calculation Agent shall notify the Issuer as soon as reasonably practicable if the USD/UYU FX Rate for the UYU Valuation Date is to be determined as specified in this Term 18.

In the event that the UYU Valuation Date is postponed beyond the Scheduled UYU Valuation Date as set forth above, the Maturity Date shall be postponed by one Business Day for each Business Day that the UYU Valuation Date is postponed, provided that (i) any such postponement will be concurrent with any postponement of the Maturity Date caused by operation of Term 20 (*Postponement due to Index Disruption Events*) and (ii) and (for the avoidance of doubt) the Maturity Date shall be the later of such dates as postponed by operation of Term 20 (*Postponement due to Index Disruption Events*) and this Term 18.

For the avoidance of doubt, no additional amounts shall be payable by IBRD in the event that the Maturity Date is postponed due to postponement of the UYU Valuation Date beyond the Scheduled UYU Valuation Date due to the operation of this Term 18.

"Final USD/UYU FX Rate" means the USD/UYU FX Rate in respect of the UYU Valuation Date.

"UYU Valuation Date" means the Business Day falling 10 Business Days prior to the Scheduled Maturity Date, expected to be March 2, 2028 (the "Scheduled UYU Valuation Date"), subject to postponement in accordance with the provisions set forth in Term 18 (UYU Related FX Disruption and Disruption Fallbacks) if an FX Disruption or an Unscheduled Holiday occurs on such date.

"FX Disruption" means, in the determination of the Calculation Agent, any action, event or circumstance whatsoever which, from a legal or practical perspective makes it impossible for the Calculation Agent to obtain the USD/UYU FX Rate on the UYU Valuation Date.

"Initial USD/UYU FX Rate" means 28.40.

"Montevideo Business Day" means a day (other than a Saturday or a Sunday) on which commercial banks and foreign exchange markets settle payments and are open for general business (including dealings in foreign exchange and foreign currency deposits) in Montevideo.

"Unscheduled Holiday" means a day that is not a Business Day and the market was not aware of such fact (by means of a public announcement or by reference to other publicly available information) until a time later than 9:00 a.m. Montevideo time two Montevideo Business Days prior to any Scheduled UYU Valuation Date.

"USD/UYU FX Rate" means, in respect of the UYU Valuation Date, the Uruguayan Peso/U.S. Dollar "fondo" rate, expressed as the amount of Uruguayan Pesos per one U.S.

19. Additional Definitions with regard to the USD/UYU FX Rate:

Dollar, for settlement in one Business Day reported by the Banco Central de Uruguay (www.bcu.gub.uy) as the "Dólares USA Fondo BCU" rate by not later than 4:30 p.m., Montevideo time, on the first Business Day following the UYU Valuation Date.

"Electronic Stock Exchange Corporation (BEVSA)" means the "Cierre BCU Fondo (Promedio BEVSA)" published by BEVSA (www.bevsa.com.uy) at 16:00 Montevideo time on the UYU Valuation Date.

20. Postponement due to Index Disruption Events:

If the Scheduled Index Valuation Date occurs on a day in respect of which the Calculation Agent has determined that an Index Disruption Event (as defined in Term 21 below (Additional Definitions with regard to the Index)) has occurred or is continuing, then the Index Valuation Date will be postponed until the next succeeding Index Calculation Day in respect of which the Calculation Agent determines that an Index Disruption Event has neither occurred nor is continuing; provided that if the Index Valuation Date has not occurred on or before the tenth Business Day following the Scheduled Index Valuation Date (the "Valuation Cut-off Date"), an Amendment Event shall be deemed to have occurred and the provisions set out in Term 22 (Amendment Event) below shall apply.

In the event that the Index Valuation Date is postponed beyond the Scheduled Index Valuation Date as set forth above, the Maturity Date shall be postponed by one Business Day for each Business Day that the Index Valuation Date is postponed, provided that (i) any such postponement will be concurrent with any postponement of the Maturity Date caused by operation of Term 18 (*UYU Related FX Disruption and Disruption Fallbacks*) above and (ii) (for the avoidance of doubt) the Maturity Date shall be the later of such dates as postponed by operation of Term 18 (*UYU Related FX Disruption and Disruption Fallbacks*) and this Term 20.

For the avoidance of doubt, no additional amounts shall be payable by IBRD in the event that the Maturity Date is postponed due to the postponement of the Index Valuation Date beyond the Scheduled Index Valuation Date due to the operation of this Term 20.

21. Additional Definitions with regard to the Index:

"Index Calculation Day" is a day (other than a Saturday or Sunday) which is an Index Business Day and additionally, is not the 24<sup>th</sup> or 31<sup>st</sup> of December.

"Index Business Day" means a day on which commercial bank and foreign exchange markets settle payments and are open for general business (including dealings in foreign exchange and foreign currency deposits) in London and New York and is also a day on which the Trans-European

Automated Real-time Gross Settlement Transfer System is open.

"Index Disruption Event" means the Index Calculation Agent fails to calculate or announce the Index on the Index Valuation Date.

"Final Index Level" means the Index Level in respect of the Index Valuation Date as determined by the Calculation Agent.

In the event that the Index Level for the Index Valuation Date is corrected by the Index Calculation Agent on or prior to the date falling three Business Days after the Index Valuation Date, such corrected value will be the Final Index Level.

"Index Valuation Date" means the day falling 10 Business Days prior to the Scheduled Maturity Date (the "Scheduled Index Valuation Date"), subject to postponement pursuant to the provisions set forth under Term 20 (Postponement due to Index Disruption Events).

"Index Calculation Agent" means Morgan Stanley India Financial Services Pvt. Ltd. or any successor or assign.

"Index Level" on any Index Calculation Day will equal the official level of the Index published by the Index Calculation Agent in respect of that Index Calculation Day on Bloomberg Page: MSQTDMED <Index>.

"Index Sponsor" means Morgan Stanley & Co. International plc or any successor sponsor of the Index.

"Initial Index Level" means 176.407.

"Index Methodology" means the full methodology of the Index as set forth in a confidential and proprietary document entitled Index Description and dated August 24, 2017. Further information regarding the Index is provided in Schedule I hereto. The Conditions of the Notes are separate to, and do not incorporate by reference, the Index Methodology, and such information in the Index Methodology can be modified from time to time without requiring an amendment of the Conditions of the Notes.

In the event of the occurrence of an Amendment Event, the Issuer shall pay an amount (which may be zero) as soon as practicable after the Mandatory Amendment Date, calculated per Calculation Amount, equal to the Amendment Amount calculated as of the Accelerated Final Index Determination Date.

In the event of the occurrence of an Amendment Event, the Issuer shall pay the USD Principal Amount (i) at the time the Amendment Amount is paid or (ii) on the Maturity Date, whichever is later.

22. Amendment Event:

The term "Amendment Event" means the occurrence of any of the following events on or before the Scheduled Index Valuation Date:

- (i) an Index Cancellation;
- (ii) an Index Modification;
- (iii) a Successor Index Event;
- (iv) the occurrence or continuance of an Index Disruption Event, by reason of which the Index Valuation Date has not occurred on or before the Valuation Cut-off Date pursuant to the provisions of Term 20 (Postponement due to Index Disruption Events) above;
- (v) the Associated Swap Transaction is terminated under the terms of the ISDA Master Agreement pursuant to which such Associated Swap Transaction was entered into as the result of the occurrence of an "Event of Default" or "Credit Event Upon Merger" or "Additional Termination Event" thereunder with respect to which the Swap Counterparty is the sole "Defaulting Party" or "Affected Party", as applicable;
- (vi) the Associated Swap Transaction is terminated by the Swap Counterparty as a result of an Additional Disruption Event; or
- (vii) the Associated Swap Transaction is terminated under the terms of the ISDA Master Agreement pursuant to which such Associated Swap Transaction was entered into, other than under the circumstances set forth in paragraphs (v) or (vi) above.

Upon the occurrence of an Amendment Event:

- (i) in the event that the relevant Amendment Event is an event described in paragraphs (i), (ii), (iii), (iv), (vi) or (vii) above, the Calculation Agent; or
- (ii) in the event that the Amendment Event is an event described in paragraph (v) above, the Issuer,

shall forthwith give a notice (the "Mandatory Amendment Notice") to the Issuer (where applicable), the Global Agent and the Noteholders of the occurrence of an Amendment Event and the Amendment Amount shall be determined as set out below.

The "Amendment Amount" per Calculation Amount shall be an amount in USD, equal to the greater of (i) the value of the equity option embedded in each Note (the "Equity Component") per Calculation Amount of the Notes expressed in USD, as determined by the Determining Person,

and (ii) zero. For the calculation of the value of the Equity Component, the Determining Person: (i) will take into account (a) the observed Index Level as of the Accelerated Final Index Determination Date or, if such day is not an Index Calculation Day or if an Index Disruption Event occurs on such day, the most recent Index Calculation Day preceding such date (on which an Index Disruption Event has not occurred), (b) the Initial Index Level, and (c) an implied volatility of 5.0%, an implied dividend yield of 0.55% and other inputs as determined by the Calculation Agent in a commercially reasonable manner at the time of making such calculation; and (ii) may take into account prevailing market prices and/or proprietary pricing models (including the cost to the Issuer of unwinding any hedging arrangements related to such embedded equity option, as determined by the Determining Person in its sole and absolute discretion) as of the Accelerated Final Index Determination Date, or where these pricing models may not yield a commercially reasonable result, such estimates as at which it may arrive in a commercially reasonable manner and the Associated Costs as of the Accelerated Final Index Determination Date.

The Determining Person will make the determinations set forth in the previous paragraphs in good faith and in a commercially reasonable manner.

In addition, the following terms shall have the following meanings:

"Additional Disruption Event" means each of a Change in Law, a Hedging Disruption or an Increased Cost of Hedging.

- "Accelerated Final Index Determination Date" means in the event that the relevant Amendment Event consists of an event set forth in:
- (A) paragraphs (i), (ii), (iii) and (iv) of the definition of Amendment Event, the date on which such Amendment Event occurred, as determined by the Determining Person;
- (B) paragraphs (vi) and (vii) of the definition of Amendment Event, the date on which such Amendment Event is effective; and
- (C) paragraph (v) of the definition of Amendment Event, the last Business Day of the month that precedes the month in which such Amendment Event occurs.

"Associated Cost" means an amount determined by the Calculation Agent in its reasonable discretion equal to the sum of (without duplication) all costs (including, without limitation, cost of funding), losses, expenses, tax and duties incurred by the Issuer in connection with the termination and liquidation of any hedging arrangements related to the Equity Component.

"Associated Swap Transaction" means the swap transaction entered into in connection with the issue of the Notes between the Issuer and the Swap Counterparty and documented under the ISDA Master Agreement dated as of November 3, 2016 (as amended from time to time) between Morgan Stanley Bank International Limited. and the Issuer (the "ISDA Master Agreement").

"Change in Law" means that, the Calculation Agent determines that on or after the Trade Date (A) due to the adoption of or any change in any applicable law or regulation (including, without limitation, any tax law), or (B) due to the promulgation of or any change in the interpretation by any court, tribunal or regulatory authority with competent jurisdiction of any applicable law or regulation (including any action taken by a taxing authority), it has become illegal for the Swap Counterparty or any affiliate thereof to hold, acquire or dispose of any relevant asset it deems necessary to hedge the price risk associated with the Associated Swap Transaction (in whole or in part).

The term "**Determining Person**" means (x) in respect of an Amendment Event that consists of a termination of the Associated Swap Transaction set forth in paragraph (v) of the definition of Amendment Event, the Issuer, and (y) in respect of any other Amendment Event, the Calculation Agent.

"Hedging Disruption" means that the Calculation Agent determines that the Swap Counterparty or any affiliate thereof is unable, after using commercially reasonable efforts to (i) acquire, establish, re-establish, substitute, maintain, unwind or dispose of any transaction(s) or asset(s) that it deems necessary to hedge the price risk of entering into and performing its obligations with respect to the Associated Swap Transaction; or (ii) realize, recover or remit the proceeds of any such transaction(s) or asset(s).

"Index Cancellation" means the Index Sponsor permanently cancels the Index.

"Increased Cost of Hedging" means that the Calculation Agent determines that the Swap Counterparty or any affiliate thereof would incur a materially increased (as compared with circumstances existing on the Trade Date) amount of tax, duty, expense or fee (other than brokerage commissions) to (A) acquire, establish, re-establish, substitute, maintain, unwind or dispose of any transaction(s) or asset(s) it deems necessary to hedge the price risk of entering into and performing its obligations with respect to the Associated Swap Transaction, or (B) realize, recover or remit the proceeds of any such transaction(s) or asset(s), provided that any such materially increased amount that is incurred solely due to the deterioration of the creditworthiness of the Swap Counterparty or such affiliate shall not be deemed an Increased Cost of Hedging.

"Index Modification" means the Index Sponsor announces that it will make a change in the formula for or the method of calculating the Index which the Calculation Agent determines is material or, in the determination of the Calculation Agent, in any other way materially modifies the Index (other than a modification prescribed in that formula or method to maintain the Index in the event of changes in its constituents and other routine events).

"Mandatory Amendment Date" means the 5th Business Day after the date on which the Mandatory Amendment Notice (as defined above) is received or deemed received by the Issuer and Global Agent (whatever date is later).

"Successor Index Event" means the Index is replaced by a successor index.

"Swap Counterparty" means Morgan Stanley Bank International Limited.

"Business Day" means a day (other than a Saturday or a Sunday) on which commercial banks and foreign exchange markets settle payments and are open for general business (including dealings in foreign exchange and foreign currency deposits) in London, New York and Montevideo.

"Calculation Agent" means Morgan Stanley Capital Services LLC or any successor or assign appointed by Morgan Stanley Capital Services LLC.

The Early Redemption Amount payable in respect of each Note, upon it becoming due and payable as provided in Condition 9, shall be determined by the Calculation Agent taking into account the value of the USD Principal Amount component thereof and (except where the Notes are redeemed early as provided in Condition 9 after the occurrence of an Amendment Event) the value of the Equity Component thereof. The value of the USD Principal Amount component of the Notes shall be the USD Calculation Amount discounted at a rate per annum equal to the Amortization Yield as specified under Term 16(i) (Amortization Yield). The value of

23. Additional Definitions - General:

24. Early Redemption Amount (Condition 6(c)):

the Equity Component of the Notes will be determined based on the methodology specified under the definition of "Amendment Amount" in Term 22 (*Amendment Event*) except that the residual value of the Equity Component shall be based on relevant prevailing rates as of the last Business Day of the month that precedes the month in which the relevant default occurs.

### GENERAL PROVISIONS APPLICABLE TO THE NOTES

25. Form of Notes Registered Notes: (Condition 1(a)):

Global Registered Certificate available on Issue Date

26. New Global Note: No

27. Financial Centre(s) or other special provisions relating to payment dates (Condition 7(h)):

London, New York and Montevideo

28. Governing law (Condition 14):

New York

29. Other final terms: Disclaimer of Liabilities and Representations by Prospective Investors of the Notes: Determinations:

The Issuer and the Calculation Agent shall make determinations in respect of the Notes in good faith and in a commercially reasonable manner.

#### Disclaimers:

All disclosure contained in this Final Terms regarding the Index, including, without limitation, its make-up, method of calculation and changes in its components, is derived from, and based solely upon, documents provided to the Issuer by the Index Sponsor, and the Issuer has not participated in the preparation of, or verified, such documents. None of the Issuer, the Dealer or the Global Agent will have any responsibility for the content of such documents or the information regarding the Index contained in this Final Terms, including the accuracy or completeness of such information. In addition, neither the Issuer nor the Dealer accepts responsibility for the calculation or other maintenance of, or any adjustments to, the Index. The Index Sponsor is under no obligation to continue to publish the Index and may discontinue publication of the Index at any time.

See also Schedule I hereto under the caption "Index Disclaimer". Further information regarding the Index is provided in Schedule I hereto.

Representations by Prospective Investors of the Notes

By investing in the Notes each investor of the Notes represents that:

(i) it has made its own independent decision to invest in

the Notes based upon its own judgment and upon advice from such advisers as it has deemed necessary. It is not relying on any communication (written or oral) of the Issuer, the Index Sponsor, the Calculation Agent, or the Dealer as investment advice or as a recommendation to invest in the Notes, it being understood that information and explanations related to the Conditions of the Notes shall not be considered to be investment advice or a recommendation to invest in the Notes. No communication (written or oral) received from the Issuer, the Calculation Agent, the Index Sponsor or the Dealer shall be deemed to be an assurance or guarantee as to the expected results of the investment in the Notes;

- (ii) it is capable of assessing the merits of and understanding (on its own behalf or through independent professional advice), and understands and accepts the terms and conditions and the risks of the investment in the Notes, including but not limited to the risks set out in this Final Terms (which are not, and do not intend to be, exhaustive). It is also capable of assuming, and assumes, the risks of the investment in the Notes;
- (iii) it has fully considered the market risk associated with an investment linked to the Index. Each Noteholder understands that none of the Issuer, the Calculation Agent, the Dealer, the Index Sponsor or the Index Calculation Agent purports to be a source of information on market risks with respect to the Index; and
- (iv) it understands that (A) the Conditions of the Notes are separate to, and do not incorporate by reference, the Index Methodology, and (B) such information in the Index Methodology can be modified from time to time without requiring an amendment of the Conditions of the Notes.

#### **DISTRIBUTION**

30. (i) If syndicated, names of Managers and underwriting

Not Applicable

commitments:

(ii) Stabilizing Manager(s)

Not Applicable

(if any):

31. If non-syndicated, name of

Morgan Stanley & Co. LLC

Dealer:

32. Total commission and

Not Applicable

concession:

# OPERATIONAL INFORMATION

33. ISIN Code: XS1788848833

34. Common Code: 178884883

35. Any clearing system(s) other

Not Applicable

than Euroclear Bank S.A./N.V., Clearstream Banking, *société* anonyme and The Depository Trust Company and the relevant

identification number(s):

36. Delivery: Delivery against payment

37. Registrar and Transfer Agent (if

Citibank, N.A., London Branch

any):

38. Additional Paying Agent(s) (if

any):

Not Applicable

39. Intended to be held in a manner which would allow Eurosystem eligibility:

No

# GENERAL INFORMATION

IBRD's most recent Information Statement was issued on September 19, 2017.

# SUPPLEMENTAL PROSPECTUS INFORMATION

Dealers are represented by Sullivan & Cromwell LLP. From time to time Sullivan & Cromwell LLP performs legal services for IBRD.

# **USE OF PROCEEDS**

# Supporting sustainable development in IBRD's member countries.

The net proceeds from the sale of the Notes will be used by IBRD to finance sustainable development projects and programs in IBRD's member countries (without being committed or earmarked for lending to, or financing of, any particular projects or programs). IBRD's financing is made available solely to middle-income and creditworthy lower-income member countries who are working in partnership with IBRD to eliminate extreme poverty and boost shared prosperity, so that they can achieve equitable and sustainable economic growth in their national economies and find sustainable

solutions to pressing regional and global economic and environmental problems. Projects and programs supported by IBRD are designed to achieve a positive social impact and undergo a rigorous review and internal approval process aimed at safeguarding equitable and sustainable economic growth.

IBRD integrates five cross cutting themes into its lending activities helping its borrowing members create sustainable development solutions: climate change; gender; jobs; public-private partnerships; and fragility, conflict and violence.

IBRD's administrative and operating expenses are covered entirely by IBRD's various sources of revenue (net income) consisting primarily of interest margin, equity contribution and investment income (as more fully described in the Information Statement).

### **CONFLICT OF INTEREST**

Morgan Stanley Capital Services LLC or any successor or assign appointed by Morgan Stanley Capital Services LLC will be Calculation Agent under the Notes, and Morgan Stanley Bank International Limited, an affiliate of Morgan Stanley Capital Services LLC, will be IBRD's counterparty in a related swap transaction entered into by IBRD in order to hedge its obligations under the Notes. The existence of such multiple roles and responsibilities for Morgan Stanley Capital Services LLC and its affiliates creates possible conflicts of interest. For example, the amounts payable by Morgan Stanley Bank International Limited to IBRD under the related swap transaction are expected, as of the Issue Date, to be calculated on the same basis as the amounts payable by IBRD under the Notes. As a result, the determinations made by Morgan Stanley Capital Services LLC in its discretion as Calculation Agent for the Notes may affect the amounts payable by its affiliate Morgan Stanley Bank International Limited under the related swap transaction, and, in making such determinations, Morgan Stanley Capital Services LLC may have economic interests adverse to those of the Noteholders. The Noteholders shall be deemed to acknowledge that although IBRD will enter into the related swap transaction with Morgan Stanley Bank International Limited as swap counterparty in order to hedge its obligations under the Notes, IBRD's rights and obligations under the related swap transaction will be independent of its rights and obligations under the Notes, and Noteholders will have no interest in the related swap transaction or any payment to which IBRD may be entitled thereunder.

### LISTING APPLICATION

This Final Terms comprises the final terms required for the admission to the Official List of the Luxembourg Stock Exchange and to trading on the Luxembourg Stock Exchange's regulated market of the Notes described herein issued pursuant to the Global Debt Issuance Facility of International Bank for Reconstruction and Development.

# RESPONSIBILITY

IBRD	accepts	responsi	bility fo	r the	inform	ation	containe	ed in	this	Final	Terms.

Signed of	on behalf of IBRD:
By:	
·	
	Name:
	Title:
	Duly authorized

#### **SCHEDULE I**

# INDEX DISCLAIMER

The Notes are not sponsored, endorsed, sold or promoted by the Index Sponsor or any of its affiliates (collectively, "Morgan Stanley"). Morgan Stanley makes no representation or warranty, express or implied, to the owners of the Notes or any member of the public regarding the advisability of investing in securities generally or in the Notes particularly or the ability of the Index to track general market performance. The Index is determined, composed and calculated by Morgan Stanley without regard to the Issuer and the Dealer or the Notes. Morgan Stanley have no obligation to take the needs of the Issuer or the Dealer or the owners of the Notes into consideration in determining, composing or calculating the Index. Morgan Stanley are not responsible for and have not participated in the determination of the prices, and amount of the Notes or the timing of the issuance or sale of the Notes or in the determination or calculation of the equation by which the Notes is to be converted into cash, surrendered or redeemed, as the case may be. Morgan Stanley have no obligation or liability in connection with the administration or trading of the Notes. There is no assurance that investment products based on the Index will accurately track index performance or provide positive investment returns. The Index Sponsor is not an investment advisor. Inclusion of a security within an index is not a recommendation by Morgan Stanley to buy, sell, or hold such security, nor is it considered to be investment advice.

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# MORGAN STANLEY DEVELOPED MARKET EQUITY DRIVEN FX INVESTMENT INDEX

### **Summary**

The Morgan Stanley Developed Market Equity Driven FX Investment Index (the "**Index**") is an excess return index.

The equity market is used as a fundamental indicator for identifying performance of a country's economy to take positions in the relevant currencies. Equity indices can reflect domestic and global factors including GDP, inflation, business cycles, productivity and monetary and fiscal policies among others. The theme observes the equity markets performance and takes position in the relevant currencies.

DM Equity Signal Index

 Calculates allocation to EUR, JPY, GBP, CHF, AUD, CAD, NZD, SEK, NOK currencies versus USD based on recent performance of the main equity benchmark indices of the relevant countries

# **Key Features**

The following section refers to a number of key features of the Index. There are aspects of the Index to which this section does not refer. Investors should ensure they review this Schedule I in full.

- The Index is intended to reflect the performance of the portfolio of currencies (refer to section 'Currency Portfolio' for the currencies in the portfolio). The portfolio of currencies changes once every month on a Rebalance Date ('Rebalance Portfolio').
- On each Rebalance Date the weights for the currencies for the Index are calculated (refer to 'Effective Weights' in section 'Monthly Review' for details) to determine the composition for the Rebalance Portfolio.
- On each Rebalance Date, the existing positions in the Index are closed out and replaced by the new positions calculated for the Index (calculated as mentioned above) in approximately 1 month FX forward rate contracts in each currency.
- This cycle repeats every month.
- The Index Sponsor is not obliged to enter into currency forward contracts in respect of the currencies that comprise the Index in order to calculate the Index.

### Index Performance

- On each Index Calculation Day, the change in Index Level of the Index since the preceding Rebalance Date reflects the difference between the market value of the Rebalance Portfolio on that day and the market value of the Rebalance Portfolio on the preceding Rebalance Date.
- The Rebalance Portfolio of the Index will have changes in its market value due to movements in FX forward rates. The Rebalance Portfolio comprises multiple currencies versus USD and replicates positions with different weightings in respect of each currency versus USD. The aggregate of the gains and losses from the positions in respect of the currencies versus USD will determine whether the Index Level increases or decreases.
- A transactional cost for the Index is debited from the Index Level that will reduce the performance of the Index.
- In general, the position in a currency will contribute positively to the Index Level of the Index since the preceding Rebalance Date if:
  - The currency has a long position versus USD in the Rebalance Portfolio and the FX forward rate for the currency versus USD on the relevant Index Calculation Day appreciates by more than the FX forward rate implied on the preceding Rebalance Date.
  - The currency has a short position versus USD in the Rebalance Portfolio and the FX forward rate for the currency versus USD on the relevant Index Calculation Day depreciates by more than the FX forward rate implied on the preceding Rebalance Date.
- The position in a currency will contribute negatively to the Index Level of the Index since the preceding Rebalance Date if:

- 1. The currency has a long position versus USD in the Rebalance Portfolio and the FX forward rate for the currency versus USD on Index Calculation Day depreciates by more than the FX forward rate implied on preceding Rebalance Date.
- 2. The currency has a short position versus USD in the Rebalance Portfolio and the FX forward rate for the currency versus USD on Index Calculation Day appreciates by more than the FX forward rate implied on preceding Rebalance Date.
- The Index Level will show an increase from preceding Rebalance Date if the sum of the
  contribution from all currency positions since preceding Rebalance Date is greater than the fee
  accrued by the Index from preceding Rebalance Date
- The Index Level will show a decrease from preceding Rebalance Date if the sum of the
  contribution from all currency positions since preceding Rebalance Date is less than the fee
  accrued by the Index from preceding Rebalance Date

# **General Information**

The Index Level for the Index is calculated once on any given Index Calculation Day and that Index Level is applicable for that Index Calculation Day. The Index Level will be published on Bloomberg.

The Index has been developed by Sales & Trading Personnel within the Fixed Income Divisions at Morgan Stanley & Co. International plc (the "Index Sponsor") and are calculated by Morgan Stanley India Financial Services Pvt. Ltd. (acting in such capacity as the "Index Calculation Agent").

Unless otherwise stated, all determinations of the Index Sponsor and Index Calculation Agent shall be made according to the terms set out herein and save for manifest error, all such determinations shall be final and conclusive.

### **Important Information**

#### **Index Calculation Agent**

Morgan Stanley India Financial Services Pvt. Ltd. is the "Index Calculation Agent". From November 7, 2012 (the "**Index Live Date**") until 29 April 2014 the Index Calculation Agent was the Research Group of Morgan Stanley & Co. International plc.

The Index Calculation Agent is responsible for compiling and calculating the Index pursuant to and on the basis of these rules. The Index Calculation Agent is appointed as calculation agent by the Index Sponsor, which appointment may be terminated at any time by the Index Sponsor. The Index Sponsor retains the discretion to appoint an alternative calculation agent in lieu of the Index Calculation Agent. The Index Calculation Agent expressly disclaims all liability for any inaccuracy in calculations and the publication of the Index, the information used for making adjustments to the Index and the actual adjustments.

The Index Calculation Agent makes no representation (implied or otherwise) as to the performance of any constituent of the Index and/or the Index.

### **Index Sponsor**

Morgan Stanley & Co. International plc as Index Sponsor retains the final discretion as to the manner in which the Index is calculated and constructed. Furthermore, Morgan Stanley & Co. International plc as Index Sponsor is the final authority on the Index and the interpretation and application of these rules.

The Index Sponsor may supplement, amend (in whole or in part), revise or withdraw these rules at any time. Such a supplement, amendment, revision or withdrawal may lead to a change in the way the Index is calculated or constructed and may affect the Index in other ways. Without prejudice to the generality to the foregoing, the Index Sponsor may determine that a change to the rules is required or desirable in order to update the rules or to address an error, ambiguity or omission. The rules may change without prior notice. All of the above may affect the value of the Index Level.

The Index Sponsor may also adjust, supplement or amend the methodology used in the Effective Weight calculation as well as the methodology used for calculating rates, discount factors, and various other parameters based on changes in market conditions, market practices and financial modelling.

Notwithstanding anything to the contrary herein, the Index Sponsor shall have the right, in its sole discretion, to cease compiling, calculating and publishing values of the Index if at any time the Index Sponsor determines that the Index no longer meets or will not be capable of meeting the criteria established by the Index Sponsor or the Index Sponsor otherwise determines that the Index shall no longer be calculated.

# Index Performance Data - Retrospective Calculation

The Index has been calculated by the Calculation Agent since November 7, 2012 (the "**Index Live Date**") on a live basis.

The Index performance for the period from the Index Base Date to the Index Live Date has been simulated. Index has been calculated retrospectively by the Calculation Agent on a hypothetical basis with the Index having an Index Level of 100 as of the Index Base Date. In case of lack of availability of data on a given date, data may have been carried over from a previous date and/or data may have been used from other sources, including Morgan Stanley data.

All prospective investors should be aware that a retrospective calculation of the Index means that no actual investment which allowed a tracking of the performance of the Index existed at any time during

the period of the retrospective calculation and that as a result the comparison is purely hypothetical. Further, there was no opportunity for the Calculation Agent to make any changes to the methodology during this period. Past performance (actual or simulated) is not a guide to future performance.

The methodology and the strategy used for the calculation and retrospective calculation of the Index have been developed with the advantage of hindsight. In reality it is not possible to invest with the advantage of hindsight and therefore this performance comparison is purely theoretical.

# **Currency Portfolio**

The Index is intended to reflect the performance of a portfolio of currencies consisting of Euro ("EUR"), Japanese Yen ("JPY"), British Pound Sterling ("GBP"), Swiss Franc ("CHF"), Australian Dollar ("AUD"), Canadian Dollar ("CAD"), New Zealand Dollar ("NZD"), Swedish Krona ("SEK") and Norwegian Krone ("NOK" and, collectively, the "Developed Market Currencies").

# **Index Calculation Days and Rebalancing**

### **Index Calculation Days**

The initial Index Level of the Index was set at 100 on April 11, 2001 (the "**Index Base Date**"). Following the Index Base Date, the Index Level is calculated on each Index Calculation Day.

"Index Calculation Day" is a day (other than a Saturday or Sunday) which is an Index Business Day and additionally, is not the 24th or 31st of December. "Index Business Day" is a day on which commercial bank and foreign exchange markets settle payments and are open for general business (including dealings in foreign exchange and foreign currency deposits) in London and New York and is also a day on which the Trans-European Automated Real-time Gross Settlement Transfer System is open.

## Rebalancing

The Index rebalances once every month (the "Rebalance Date"). On every Rebalance Date:

- The new positions (calculation of positions described in 'Effective Weights' in Section 'Monthly Review') to be entered for each currency will be calculated. These new positions will remain effective till the next Rebalance Date
- The Index enters FX forwards for each currency (refer to 'Index Settlement Date' in same Section) that are considered for the Index
- This portfolio of weighted positions in FX forwards in each currency, entered on Rebalance Date is referred to as the 'Rebalance Portfolio'
- The Index unwinds the positions in FX forwards entered on preceding Rebalance Date

# Rebalance Date

The Index rebalances typically on the 14th calendar day of each month ("**Rebalance Date**"). If the 14th calendar day of a month is not an Index Calculation Day:

- As a first step, the Index looks for the Index Calculation Day i.e. from the 9th to the 13th calendar day of the month nearest to the 14th calendar day of the month
- If an Index Calculation Day is not identified, then the first Index Calculation Day following the 14th calendar day of the month will be the Rebalance Date.

# **Index Settlement Date**

On each Rebalance Date the Index enters the FX forward for each currency  $(fx_i)$  in the Currency Portfolio which can be exited at spot FX on the next Rebalance Date. The Index Settlement Date for each currency (SD(i)) is the date on which an FX spot transaction traded on the next Rebalance Date would be settled.

The number of days for the settlement of a currency from spot is different for each currency. As such the Index Settlement Date is different for each currency. SD(i) for each currency is calculated as  $n_i$  business days after the next Rebalance Date using the relevant local calendar for currency  $fx_i$ . Should this day not be a valid New York Business Day then the next day that is a valid business day in both New York and the relevant local calendar will be used. For each currency, following the standard market convention, value of  $n_i$  is:

 $n_i = \begin{cases} 1 \text{ for CAD, PHP, RUB and TRY curriencies versus USD} \\ 2 \text{ for all other currencies in Currency Portfolio versus USD} \end{cases}$ 

## **Index Level Calculation**

#### Index Level

The Index Level on an Index Calculation Day represents the value of the Rebalance Portfolio entered on preceding Rebalance Date as calculated on current Index Calculation Day added to the Index Level from the preceding Rebalance Date and deducting the Index Fee. The value of the Rebalance Portfolio is the sum of weighted returns of each currency since preceding Rebalance Date. For any Index Calculation Day, the Index Level is calculated as:

- The Index Level on the preceding Rebalance Date
- multiplied by 1 plus the mark to market value of the Rebalance Portfolio entered on preceding Rebalance Date
- minus the Index Fee calculated for the period from the preceding Rebalance Date

#### As a formula:

 $IndexLevel^t = IndexLevel^{PRD} * (1+PortfolioValue^t) - IF^t$ 

## Where:

*PortfolioValue*<sup>t</sup> means, for any Index Calculation Day, the mark to market value of the Rebalance Portfolio entered on the preceding Rebalance Date

IndexLevel<sup>PRD</sup> means the level of the Index on the preceding Rebalance Date

IFt is the Index Fee calculated for the period from the preceding Rebalance Date

## Portfolio Value

*PortfolioValue*<sup>t</sup> means, for any Index Calculation Day, the current value of the Rebalance Portfolio entered on the preceding Rebalance Date. As a formula it is expressed as:

$$PortfolioValue^t = \sum\nolimits_{i=1}^{n} mtm_i^t$$

where:

 $mtm_i^t$  means, for any Index Calculation Day, the mark to market value of the FX forward position entered on the preceding Rebalance Date for each currency in the Currency Portfolio (refer to 'Mark to Market Calculation' in Section 'Daily Review')

n is equal to 19, the number of currencies in the Currency Portfolio

# Index Fee

An Index Fee is deducted from the Index Level on a daily basis for all the indices. The value *ifee* is the annual fee which is charged as a percentage of the specified Index Level on any Index Calculation Day, which, expressed in bps/annum, is 55.  $IF^t$ , the Index Fee that has accrued since the preceding Rebalance Date, is the aggregate of the Index Fee calculated for each Index Calendar Day in the period since the preceding Rebalance Date as:

- The annual Index Fee ifee
- multiplied by the number of calendar days accrued since the preceding Index Calculation Day divided by 365
- multiplied by the Index Level on the preceding Index Calculation Day

• *plus* the Index Fee at the previous Index Calculation Day, if the previous Index Calculation Day was not a Rebalance Day, and 0 otherwise

As a formula:

$$IF^{t} = \begin{cases} ifee* \frac{N \ days(t-1,t)}{365} * IndexLevel^{t-1} & if \ t-1 = Rebalance \ Date \ and \ otherwise, \\ if ee* \frac{N days(t-1,t)}{365} * IndexLevel^{t-1} + IF^{t-1} \end{cases}$$

Where:

 $Ndays(t_1,t_2)$  is the number of calendar days between  $t_1$  and  $t_2$ 

Index Level Calculation Time and Precision

The Index Level is typically published by the Index Calculation Agent on the next Index Calculation Day. The published Index Levels are rounded to 3 decimal places.

## **Daily Review**

This section presents:

- The generic methodology used for calculating the mark to market of the Rebalance Portfolio on each Index Calculation Day that is used for calculating the Index Level for the Index
- The inputs required for the calculation of the mark to market of the Rebalance Portfolio on each Index Calculation Day
- The source for all the data used as inputs for calculation of the mark to market of the Rebalance Portfolio

## Mark to Market Calculation Overview

The Index enters FX forwards for each currency in the Currency Portfolio on the Rebalance Date (Rebalance Portfolio). The value of the Rebalance Portfolio (*PortfolioValue¹*) is calculated on each Index Calculation Day to determine the Index Level. *PortfolioValue¹* represents the sum of mark to market of the positions entered for each currency  $fx_i$  in the active Rebalance Portfolio. As such, it is necessary to compute the mark to market for the FX Forward positions entered on the preceding Rebalance Date i.e., for any Index Calculation Date, the mark to market for each FX forward is the present value of the forward position taken in the relevant currency versus USD on the preceding Rebalance Date. The calculation of mark to market considers:

- Whether the position taken in a currency as calculated on the preceding Rebalance Date (refer
  to "Effective Weight" in Section 'Monthly Review') is long/short such currency versus USD.
  This is denoted in the formula below as "Weight"
- The strike at which the positions are entered considering the transaction costs (refer to 'Position Entry" in Section 'Monthly Review'). This is denoted in the formula below as "Strike"
- 3. The outright FX Forward for settlement on SD(i) for each currency as observed on Index Calculation Day for the Index (refer to 'FX Forward Rate Inputs Calculation' in same Section). This is denoted in the formula below as "CurrentFX forward"
- 4. The standard market convention for quoting the currency as either local currency per USD or USD per local currency (*CurrencyConvention<sub>i</sub>*)

5. The discount factor in USD from Index Calculation Day to Index Settlement Date  $(SD_i)$ . This is denoted in the formula below as "discf"

The general formula of the mark to market of the position is calculated as:

$$mark\ to\ market = \begin{cases} Weight\ *\left(\frac{Current\ FX\ forward}{Strike} - 1\right)*\ discf & if\ CurrencyConvention_i = +1\\ Weight\ *\left(\frac{Strike}{Current\ FX\ forward} - 1\right)*\ discf & if\ CurrencyConvention_i = -1 \end{cases}$$

The details of the mark to market calculation covering the specific details of currency conventions and availability of data from relevant data sources is given below.

#### Mark to Market Calculation

 $mtm_i^t$  for each Index Calculation Day is the mark to market of the position in the FX forward entered on the preceding Rebalance Date for currency  $fx_i$ . The below methodology lays out the procedure for calculation of the mark to market for each currency  $(mtm_i^t)$ . The  $mtm_i^t$  calculation for each currency adjusts for

- Effective Weight; in currency  $fx_i$  determined on the preceding Rebalance Date
  - (a) Effective Weight; greater than 0 indicates going long the local currency versus USD
  - (b) EffectiveWeight; less than 0 indicates going short the local currency versus USD
- Strike for the position entered in each currency on Rebalance Date (refer to 'Position Entry' in Section 'Monthly Review')

Appropriate bid/offer quote for each currency for the position in FX forward taken on the preceding Rebalance Date, on Index Calculation Day t.

For all currencies on Index Calculation Days that are not Rebalance Dates, mtm; is calculated as:

If the EffectiveWeight; calculated on preceding Rebalance Date is greater than 0 (long position)

$$mtm_{i}^{t} = \begin{cases} EffectiveWeight_{i}^{PRD}*\left(\frac{fx_{i}Fwd_{b}^{t,SD(i)}}{fx_{i}Fwdentry^{PRD}}-1\right)_{*} df_{i}^{SpotSD(i),SD(i)} if \ CurrencyConvention_{i} = +1 \\ EffectiveWeight_{i}^{PRD}*\left(\frac{fx_{i}Fwdentry^{PRD}}{Fx_{i}Fwd^{t,SD(i)}}-1\right)_{*} df_{i}^{SpotSD(i),SD(i)} if \ CurrencyConvention_{i} = -1 \end{cases}$$

If the *EffectiveWeight*<sub>i</sub> calculated on preceding Rebalance Date is less than 0 (short position)

$$mtm_{i}^{t} = \begin{cases} EffectiveWeight_{i}^{PRD} * \left(\frac{fx_{i}Fwd_{a}^{t,SD(i)}}{fx_{i}Fwdentry^{PRD}} - 1\right)_{*} df_{i}^{SpotSD(i),SD(i)} if CurrencyConvention_{i} = +1 \\ EffectiveWeight_{i}^{PRD} * \left(\frac{fx_{i}Fwdentry^{PRD}}{Fx_{i}Fwd_{a}^{t,SD(i)}} - 1\right)_{*} df_{i}^{SpotSD(i),SD(i)} if CurrencyConvention_{i} = -1 \end{cases}$$

**On Rebalance Date** the positions in FX forwards entered on the preceding Rebalance Date are closed out. All currencies positions are settled at their spot FX rates on the Rebalance Date.

(i) Currencies that are not NDF Currencies in the active Rebalance Portfolio are closed out at the FX Spot Rate (refer to 'FX Spot Rate Inputs' in the same Section).  $mtm_i^t$  is calculated as

$$mtm_{i}^{t} = \begin{cases} EffectiveWeight_{i}^{PRD} * \left(\frac{fx_{i}Spot_{m}^{t}}{fx_{i}Fwdentry^{PRD}} - 1\right) * df_{i}^{SpotSD(i),SD(i)} if CurrencyConvention_{i} = +1 \\ EffectiveWeight_{i}^{PRD} * \left(\frac{fx_{i}Fwdentry^{PRD}}{fx_{i}Spot_{m}^{t}} - 1\right) * df_{i}^{SpotSD(i),SD(i)} if CurrencyConvention_{i} = -1 \end{cases}$$

(ii) NDF Currencies in the active Rebalance Portfolio are closed out at the outright mid NDF FX Spot Rate (refer to 'FX Spot Rate Inputs' in the same Section).  $mtm_i^t$  is calculated as

$$mtm_i^t = EffectiveWeight_i^{PRD} * \left(\frac{fx_iFwdentry^{PRD}}{fx_iNDFfix_m^t} - 1\right)$$

Where:

EffectiveWeight<sub>i</sub><sup>PRD</sup> is the EffectiveWeight<sub>i</sub> for currency  $fx_i$  calculated on the preceding Rebalance Date (refer to 'Effective Weight' in Section 'Monthly Review')

 $fx_iFwdentry^{PRD}$  is the strike for new positions entered on the preceding Rebalance Date for currency  $fx_i$  (refer to 'Position Entry' in Section 'Monthly Review')

 $fx_i Spot_m^t$  the outright mid spot rate for  $fx_i$  (refer to 'FX Spot Rates Inputs' in the same Section)

 $fx_i Fwd_a^{t,SD(i)}$  is the outright ask forward rate input for currency  $fx_i$  for settlement on SD(i) as observed on Index Calculation Day (refer to 'FX Forward Rate Inputs Calculation' in same Section)

 $fx_i Fwd_b^{t,SD(i)}$  is the outright bid forward rate input for currency  $fx_i$  for settlement on SD(i) as observed on Index Calculation Day (refer to 'FX Forward Rate Inputs Calculation' in same Section)

SD(i) is the settlement date of the FX forward entered on preceding Rebalance Date for currency  $fx_i$  (Refer to 'Index Settlement Date' in Section 'Index Calculation Days and Rebalancing')

 $fx_iNDF_m^t$  is the outright mid spot NDF fixing for currency  $fx_i$  (refer to 'NDF Spot Fixing' in same Section)

 $df_i^{SpotSD(i),SD(i)}$  is the discount factor in USD from dates SpotSD(i) to SD(i) (refer to 'Discount Factor' in same Section)

SpotSD(i) is the settlement date of spot fx for currency  $fx_i$ . Following the standard market convention, this date is  $n_i$  business days after the Index Calculation Day using the relevant local calendar for currency.

SpotSD(i) is the settlement date of spot fx for currency  $fx_i$ . Following the standard market convention, this date is  $n_i$  business days after the Index Calculation Day using the relevant local calendar for currency.

Should this day not be a valid New York Business Day, then the next day that is a valid business day both in New York and the local calendar will be used (refer to "Index Settlement Date" in Section "Index Calculation Days and Rebalancing" for  $n_i$ ).

## FX Spot Rate Inputs

This section describes the conventions, primary source of data and time of fixing of the FX spot rates for all currencies in the portfolio.

 $fx_iSpot_m^t$  is the outright mid spot rate for  $fx_i$  observed on Index Calculation Day t. The outright mid spot rates are calculated from relevant outright bid and ask spot rate quotes. As a formula:

$$fx_iSpot_m^t = 0.5 * (fx_iSpot_a^t + fx_iSpot_b^t)$$

Where:

 $fx_iSpot_a^t$  is the outright ask spot rate for  $fx_i$  sourced from WM/Reuters Closing Spot Rates for date t at 4pm London time.

 $fx_iSpot_b^t$  is the outright bid spot rate for  $fx_i$  sourced from WM/Reuters Closing Spot Rates for date t at 4pm London time.

The data source and time of observation for  $fx_iSpot_a^t$  and  $fx_iSpot_b^t$  are:

Currency	Source	<b>Bloomberg Ticker</b>	Time
EUR	WM/Reuters	EUR WMCO Curncy	4pm London
GBP	WM/Reuters	GBP WMCO Curncy	4pm London
CHF	WM/Reuters	CHF WMCO Curncy	4pm London
JPY	WM/Reuters	JPY WMCO Curncy	4pm London
CAD	WM/Reuters	CAD WMCO Curncy	4pm London
AUD	WM/Reuters	AUD WMCO Curncy	4pm London
NZD	WM/Reuters	NZD WMCO Curncy	4pm London
SEK	WM/Reuters	SEK WMCO Curncy	4pm London
NOK	WM/Reuters	NOK WMCO Curncy	4pm London
INR	WM/Reuters	INR WMCO Curncy	4pm London
IDR	WM/Reuters	IDR WMCO Curncy	4pm London
KRW	WM/Reuters	KRW WMCO Curncy	4pm London
PHP	WM/Reuters	PHP WMCO Curncy	4pm London
BRL	WM/Reuters	BRL WMCO Curncy	4pm London
HUF	WM/Reuters	HUF WMCO Curncy	4pm London
MXN	WM/Reuters	MXN WMCO Curncy	4pm London
RUB	WM/Reuters	RUB WMCO Curncy	4pm London
ZAR	WM/Reuters	ZAR WMCO Curncy	4pm London
TRY	WM/Reuters	TRY WMCO Curncy	4pm London

Historical data source and time of fixing for Index Level retrospective calculation:

The following table contains the period and source of data used for  $fx_iSpot_a^t$  and  $fx_iSpot_b^t$  for the retrospective calculation of the Index Level (see "Additional Risk Factors—Risk Relating to the Index— The Index Calculation Agent and its affiliates rely on information from various sources without independent verification").

Currency	From	To	Source	Time
EUR	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
GBP	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
CHF	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
JPY	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
CAD	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
AUD	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
NZD	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
SEK	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
NOK	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
INR	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
IDR	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
KRW	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
PHP	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
BRL	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
HUF	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
MXN	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
RUB	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
ZAR	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
TRY	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London

NDF Spot Fixing

This section lays out the conventions, primary source of data and time of fixing of the NDF FX Spot rates for all NDF Currencies in the portfolio.

 $fx_iNDFfix_m^t$  is the outright mid spot NDF fixing sourced for currency fxi from Bloomberg on Index Calculation Day t.

The data source and time of observation for  $fx_iNDFfix_m^t$  for all NDF Currencies other than BRL are:

Currency	Source	Bloomberg Ticker	Time	
INR	Bloomberg	INRRATE Index	12:00pm Mumbai	
IDR	Bloomberg	JISDOR Index	10:00am Jakarta	
KRW	Bloomberg	KOBRUSD Index	3:00pm Seoul	
PHP	Bloomberg	PHFRRATE Index	2:30pm Manila	
RUB	Bloomberg	RUB MCDF Curncy	11:00am Moscow	
Note: Prior to August 12th, 2016 for RUB the mid spot NDF fixing source was EMRUEMRU Index.				

For BRL, the outright mid spot NDF fixing rates are calculated from relevant outright bid and ask spot

rate quotes. As a formula:

$$fx_i NDF fix_m^t = 0.5 * (fx_i NDF fix_a^t + fx_i NDF fix_b^t)$$

Where:

 $fx_iNDFfix_a^t$  is the outright ask spot NDF fixing for currency  $fx_i$  sourced from Bloomberg on Index Calculation Day t.

 $fx_iNDFfix_b^t$  is the outright bid spot NDF fixing for currency  $fx_i$  sourced from Bloomberg on Index Calculation Day t.

The data source and time of observation for  $fx_iNDFfix_a^t$  and  $fx_iNDFfix_b^t$  for BRL are:

Currency	Source	Bloomberg Ticker	Time
BRL	Bloomberg	BZFXPINT Index	4:30pm Brasilia

Historical data source and time of fixing for Index Level retrospective calculation:

The following table contains the period and source of data used for  $fx_iNDFfix_a^t$  and  $fx_iNDFfix_b^t$  for the retrospective calculation of the Index Level (see "Additional Risk Factors—Risk Relating to the Index— The Index Calculation Agent and its affiliates rely on information from various sources without independent verification").

Currency	From	To	Source	Time of fixing
INR	14-Jan-11	Index Live Date	WM/Reuters and Morgan Stanley	12:00pm Mumbai
IDR	14-Jan-11	Index Live Date	WM/Reuters and Morgan Stanley	10:30am Jakarta
KRW	14-Jan-11	Index Live Date	WM/Reuters and Morgan Stanley	3:00pm Seoul
PHP	14-Jan-11	Index Live Date	WM/Reuters and Morgan Stanley	2:30pm Manila
BRL	14-Jan-11	Index Live Date	WM/Reuters and Morgan Stanley	4:30pm Brasilia
RUB	14-Jan-11	Index Live Date	WM/Reuters and Morgan Stanley	11:00am Moscow

For the period from Index Base Date to 14-Jan-11,  $fx_iNDFfix_m^t$  is set equal to  $fx_iSpot_m^t$  due to lack of availability of NDF fixings for the period.

## FX Forward Rates Inputs

This section presents the calculation of the outright bid and ask forward rate input for each currency  $fx_i$  used for the mark to market calculation. The FX Forward Rate Input calculation is the FX forward rate for delivery on the Index Settlement Day for each currency as observed on any Index Calculation Day. (For calculation of the FX forward for entry of a currency on a Rebalance Date, refer to 'Position Entry' in Section 'Monthly Review'.)

## FX Forward Rate Input Calculation Overview

The outright FX forward rate input  $(fx_iFwd^{t,FD})$  is the contract agreed on Index Calculation Day for buying or selling the currency on the future date (FD) at the value of  $fx_iFwd^{t,FD}$ . The calculation of outright ask and bid forward rate input for settlement on SD(i) considers:

1. The appropriate outright bid or ask spot rate for each currency, to incorporate the transaction costs for trading spot FX (refer to 'FX Spot Rate Input' in same Section).

- 2. The appropriate outright bid/ask 1 month FX forward or bid/ask 1 month FX forward point, as available for each currency from data sources (refer to 'Data for 1 month FX Forward'), to incorporate the transaction costs for trading the FX forward.
- 3. The settlement date of spot fx and settlement date of 1 month FX forward. As there is not necessarily a directly observable outright FX forward rate input for settlement on SD(i), the value is determined by linearly interpolating between the outright spot rate and outright 1 month FX forward to get the outright FX forward rate input for settlement on SD(i).

The outright 1 month FX forward  $(fx_i1mFwdOutright_t)$  is the contract agreed for settlement of currency  $fx_i$  1 month from the settlement date of spot fx. It is calculated from the FX spot rate  $(fx_iSpot^t)$  and the 1 month FX forward point  $(fx_i1mFwdPoint_t)$  as

$$fx_i1mFwdOutright^t = fx_iSpot^t + fx_i1mFwdPoint^t$$

For some currencies the data observed from the data sources is the outright 1 month FX forward  $(fx_i1mFwdOutright_t)$  and for others is the 1 month FX forward point  $(fx_i1mFwdPoint_t)$ . The subsection 'Data for 1 month FX Forward' below presents for each currency the availability of the outright 1 month FX forward or the 1 month FX forward point from the relevant data sources. Subsection 'FX Forward Rate Inputs Calculation' presents the formula for computing the FX Forward Rate Input considering the inputs from subsection 'Data for 1 month FX Forward'.

### Data for 1 month FX Forward

**For non-NDF and BRL currencies** the 1 month FX forward point is observed from the relevant data sources. They are denoted as:

- 1. ask 1 month FX forward point  $(fx_i1mFwdPointAsk^t)$  which is the difference between the outright ask 1 month FX forward and outright ask spot rate.
- 2. bid 1 month FX forward point  $(fx_i 1mFwdPointBid^t)$  which is the difference between the outright bid 1 month FX forward and outright bid spot rate.

**For NDF currencies other than BRL** the outright 1 month FX forward is observed from the relevant data sources. They are denoted as:

- 1. the outright ask 1 month FX forward  $(fx_i 1mFwdPointAsk^t)$ .
- 2. the outright bid 1 month FX forward  $(fx_i1mFwdPointBid^t)$ .

# FX Forward Rate Inputs Calculation

The outright ask and bid FX forward rate input for settlement on Index Settlement Date for each currency based on the availability from relevant data sources as either the outright 1 month FX forward or 1 month FX forward point for each currency and the transaction costs are presented in this sub section.

 $(fx_iFwd_a^{t,SD(i)})$  denotes the outright ask forward rate input for currency fxi for settlement on SD(i) on Index Calculation Day t.

 $(fx_i Fwd_b^{t,SD(i)})$  denotes the outright bid forward rate input for currency fxi for settlement on SD(i) on Index Calculation Day t.

For Developed Market Currencies the outright ask forward rate input  $(fx_iFwd_a^{t,SD(i)})$  and the outright bid forward rate input  $(fx_iFwd_b^{t,SD(i)})$  are calculated as below

As there is not necessarily a directly observable quote for FX forward for settlement on SD(i), the outright ask forward rate input for settlement on SD(i),  $fx_iFwd_b^{t,SD(i)}$ , is calculated as a linear interpolation of

- Outright mid spot rate  $fx_iSpot_m^t$
- An outright 1 month FX forward calculated as  $fx_iSpot_m^t + fx_i1mFwdPointMid^t$

$$fx_{i}Fwd_{b}^{t,SD(i)} = \frac{fx_{i}Spot_{m}^{t} * N \; days(SD(i), fx_{i}1mFwdDate^{t}) + (fx_{i}Spot_{m}^{t} + fx_{i}1mFwdPointMid^{t}) * N \; days(SpotSD(i), SD(i))}{N \; days \; (SpotSD(i), fx_{i}1mFwdDate^{t})}$$

As there is not necessarily a directly observable quote for FX forward for settlement on SD(i), the outright bid forward rate input for settlement on SD(i),  $fx_iFwd_b^{t,SD(i)}$ , is calculated as a linear interpolation of

- Outright mid spot rate  $(fx_iSpot_m^t)$
- An outright 1 month FX forward calculated as  $fx_iSpot_m^t + fx_i1mFwdPointMid^t$

$$fx_{i}Fwd_{b}^{t,SD(i)} = \frac{fx_{i}Spot_{m}^{t}*N\;days(SD(i),fx_{i}1mFwdDate^{t}) + (fx_{i}Spot_{m}^{t} + fx_{i}1mFwdPointMid^{t})*N\;days(SpotSD(i),SD(i))}{N\;days\;(SpotSD(i),fx_{i}1mFwdDate^{t})}$$

#### Where:

 $fx_i1mFwdPointMid^t$  is the average of  $fx_i1mFwdPointBid^t$  and  $fx_i1mFwdPointAsk^t$ 

 $Ndays(t_1, t_2)$  is the number of calendar days between  $t_1$  and  $t_2$ 

SD(i) is the Index Settlement Date of the FX forward entered on the preceding Rebalance Date for currency  $fx_i$  (refer to 'Index Settlement Date' in Section 'Index Rebalancing Days and Rebalancing')

 $fx_i 1mFwdDate^t$  is the settlement date of the 1 month FX forward as observed on any Index Calculation Day for currency  $fx_i$ 

SpotSD(i) is the settlement date of spot fx for currency  $fx_i$ 

The primary data source and time of observation for  $fx_i1mFwdPointAsk^t$  and  $fx_i1mFwdPointBid^t$  are:

Currency	Source	Bloomberg Ticker	Time
EUR	WM/Reuters	EUR1M WMCF Curncy	4pm London
GBP	WM/Reuters	GBP1M WMCF Curncy	4pm London
CHF	WM/Reuters	CHF1M WMCF Curncy	4pm London
JPY	WM/Reuters	JPY1M WMCF Curncy	4pm London
CAD	WM/Reuters	CAD1M WMCF Curncy	4pm London
AUD	WM/Reuters	AUD1M WMCF Curncy	4pm London
NZD	WM/Reuters	NZD1M WMCF Curncy	4pm London
SEK	WM/Reuters	SEK1M WMCF Curncy	4pm London
NOK	WM/Reuters	NOK1M WMCF Curncy	4pm London
HUF	WM/Reuters	HUF1M WMCF Curncy	4pm London
MXN	WM/Reuters	MXN1M WMCF Curncy	4pm London
ZAR	WM/Reuters	ZAR1M WMCF Curncy	4pm London
TRY	WM/Reuters	TRY1M WMCF Curncy	4pm London
BRL	WM/Reuters	BCN1M WMCF Curncy	4pm London

The primary data source and time of observation for  $fx_i1mFwdOutrightAsk^t$  and  $fx_i1mFwdOutrightBid^t$  are:

C	urrency	Source	Bloomberg Ticker	Time
IN	NR .	WM/Reuters	IRN + 1M WMND Curncy	4pm London

Currency	Source	Bloomberg Ticker	Time
IDR	WM/Reuters	IHN + 1M WMND Curncy	4pm London
KRW	WM/Reuters	KWN + 1M WMND Curncy	4pm London
PHP	WM/Reuters	PPN + 1M WMND Curncy	4pm London
RUB	WM/Reuters	RRN + 1M WMND Curney	4pm London

Historical data source and time of fixing for Index Level retrospective calculation

The following table presents the period and source of data used for  $fx_i1mFwdOutrightAsk^t$  and  $fx_i1mFwdOutrightBid^t$  for the retrospective calculation of the Index Level (see "Additional Risk Factors—Risk Relating to the Index— The Index Calculation Agent and its affiliates rely on information from various sources without independent verification").

Currency	From	To	Source	Time of fixing
EUR	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
GBP	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
CHF	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
JPY	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
CAD	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
AUD	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
NZD	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
SEK	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
NOK	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
HUF	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
MXN	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
ZAR	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
TRY	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
BRL	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London

The following table presents the period and source of data used for  $fx_i1mFwdOutrightAsk^t$  and  $fx_i1mFwdOutrightBid^t$  for the retrospective calculation of the Index Level (see "Additional Risk Factors—Risk Relating to the Index— The Index Calculation Agent and its affiliates rely on information from various sources without independent verification").

Currency	From	To	Source	Time of fixing
INR	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
IDR	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
KRW	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
PHP	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London
RUB	Index Base Date	Index Live Date	WM/Reuters and Morgan Stanley	4pm London

# **Discount Factor**

 $df_i^{SpotSD(i),SD(i)}$  is the discount Factor in USD for the period from SpotSD(i) to SD(i) for each currency. As a formula it is defined as:

$$df_{i}^{SpotSD(i),SD(i)} = \frac{1}{(1 + 1m\$Libor^{t} * \frac{Ndays(SpotSD(i),SD(i))}{360})}$$

1m\$Libor<sup>t</sup> is the USD Libor Rate for 1 month as observed on any Index Calculation Day. The USD Libor Rates are published by the British Bankers Association and are sourced from Morgan Stanley, Bloomberg or Reuters systems as available.

# **Monthly Review**

This section details the calculations done on the monthly Rebalance Date for the Index. It covers:

The methodology for calculating the strike on the FX forwards for each currency that is
entered on each Rebalance Date, which is used for computing the mark to market of the
Rebalance Portfolio on each Index Calculation Day

- The inputs required for the calculation of the strike on the FX forwards for each currency
- The source for all the data used as inputs for calculation of the strike on the FX forwards for each currency
- The methodology for calculation of Effective Weights for each currency of the Index on the monthly Rebalance Date

Position Entry

This section describes the calculation of the strike for each currency for the positions entered in FX forwards on the Rebalance Date.

### Position Entry Calculation Overview

The "**Position Entry**" is the contract agreed on Rebalance Date for buying or selling the currency on Index Settlement Date (SD(i)) at the value of  $fx_iFwdentry$ . The calculation of Position Entry for settlement on SD(i) considers:

- 1. The appropriate outright bid or ask spot rate for each currency, to incorporate the transaction costs for trading spot FX (refer to 'FX Spot Rate Input' n Section 'Daily Review').
- 2. The appropriate outright bid/ask 1 month FX forward or bid/ask 1 month FX forward point, as available for each currency from data sources (refer to 'Data for 1 month FX Forward'), to incorporate the transaction costs for trading the FX forward.
- 3. The settlement date of spot fx and settlement date of 1 month FX forward. As there is not necessarily a directly observable outright FX forward rate for settlement on SD(i), the value is determined by linearly interpolating between the outright spot rate and outright 1 month FX forward to calculate the outright Position Entry for settlement on SD(i).

The outright 1 month FX forward  $(fx_i1mFwdOutright^t)$  is the contract agreed for settlement of currency  $fx_i$  1 month from the settlement date of spot fx. It is calculated from the FX spot rate  $(fx_iSpot^t)$  and the 1 month FX forward point  $(fx_i1mFwdPoint^t)$  as

$$fx_i1mFwdOutright^t = fx_iSpot^t + fx_i1mFwdPoint^t$$

For some currencies the data observed from the data sources is the outright 1 month FX forward  $(fx_i1mFwdOutright^t)$  and for others is the 1 month FX forward point  $(fx_i1mFwdPoint^t)$ . See "Data for 1 month FX Forward" for additional information regarding the availability of the outright 1 month FX forward or the 1 month FX forward point from the relevant data sources.

### Position Entry Calculation

 $fx_iFwden$  ry denotes the strike for each currency at which the new positions are entered that are used for the mark to market calculation.  $fx_iFwdentry$  for each currency is computed considering:

- 1. The appropriate outright bid and ask spot rate for each currency (refer to 'FX Spot Rate Inputs' in Section 'Daily Review').
- 2. The appropriate outright bid and ask 1 month FX forward for each currency (refer to 'FX Forward Rate Inputs Calculation' in Section 'Daily Review').
- 3. The settlement date of spot FX (SpotSD(i)) and settlement date of 1 month FX forward  $(fx_i1mFwdDate^t)$ . As there is not necessarily a directly observable outright FX forward rate input for settlement on settlement date SD(i), the value is determined by linearly interpolating between appropriate outright bid/ask spot rate

and the appropriate outright bid/ask 1 month FX forward to calculate the outright bid/ask FX forward for settlement on SD(i).

Calculation of  $fx_iFwdentry$  for each currency considering the transaction costs, availability of data for 1 month FX forward data from relevant data sources and whether the position taken on a Rebalance Date is long/short the currency versus USD is described below.

For Developed Market Currencies,  $fx_iFwdentry$  for settlement of currency  $fx_i$  on SD(i) is calculated as a linear interpolation of

- appropriate outright ask spot rate  $(fx_iSpot_a^t)$  or outright bid spot rate  $(fx_iSpot_b^t)$  and
- appropriate outright ask 1 month FX forward  $(fx_iSpot_a^t + fx_i1mFwdPointMid^t)$  or outright bid 1 month FX forward  $(fx_iSpot_b^t + fx_i1mFwdPointMid^t)$

#### As a formula:

• If the *EffectiveWeight*<sub>i</sub> computed on the current Rebalance Date is greater than 0

## $fx_iFwdentry$

```
= \begin{cases} \underbrace{fx_i Spot_a^t * N days(SD(i), fx_i 1mFwdDate^t) + (fx_i Spot_a^t + fx_i 1mFwdPointMid^t) * N days(SpotSD(i), SD(i))}_{N days(SpotDD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = +1 \\ \underbrace{fx_i Spot_b^t * N days(SD(i), fx_i 1mFwdDate^t) + (fx_i Spot_b^t + fx_i 1mFwdPointMid^t) * N days(SpotSD(i), SD(i))}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(SpotSD(i), fx_i 1mFwdDate^t)}_{N days(SpotSD(i), fx_i 1mFwdDate^t)} & if CurrencyConvention_i = -1 \\ \underbrace{N days(S
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If the EffectiveWeight; computed on the current Rebalance Date is less than 0

## $fx_iFwdentry$

```
= \begin{cases} fx_i Spot_b^t * N days(SD(i), fx_i 1mFwdDate^t) + (fx_i Spot_b^t + fx_i 1mFwdPointMid^t) * N days(SpotSD(i), SD(i)) \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = +1 \\ fx_i Spot_a^t * N days(SD(i), fx_i 1mFwdDate^t) + (fx_i Spot_a^t + fx_i 1mFwdPointMid^t) * N days(SpotSD(i), SD(i)) \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(SpotSD(i), fx_i 1mFwdDate^t) & if CurrencyConvention_i = -1 \\ N days(Spo
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Effective Weight

This section describes the methodology for calculation of weights for the Index. The currencies eligible for the Index are  $EUR(fx_1)$ ,  $GBP(fx_2)$ ,  $CHF(fx_3)$ ,  $JPY(fx_4)$ ,  $CAD(fx_5)$ ,  $AUD(fx_6)$ ,  $NZD(fx_7)$ ,  $SEK(fx_8)$  and  $NOK(fx_9)$ 

The Index monitors the performance of the main benchmark equity indices of the countries whose currencies comprise the Developed Market Currencies. Every month on a Rebalance Date the Index calculates the performance of the main benchmark equity indices of the countries over the recent period and ranks their performance. The Index initially allocates a 1/4th long exposure to currencies of countries which are among the top four performing benchmark equity indices and 1/4th short exposure to currencies of countries which are among the bottom four performing benchmark equity indices. Initial weight allocations to all currencies are scaled to target a 5% volatility of the Index.

The Index takes the following steps for calculation of the weights  $(fx_iWeight)$  for each of the eligible currencies  $fx_i$ :

- 1. For the calculation of the weights the Index considers data up until one Index Calculation Day prior to Rebalance Date (the "Selection Date").
- Calculates the performance of the main benchmark equity index of each country whose currency is eligible for the Index. The table below contains the main equity benchmarks associated with each currency in the Index. The official closing level of each equity benchmark index will be used and the primary data source will be the Bloomberg ticker provided below, or any appropriate successor thereof.

Currency	<b>Equity Index</b>	<b>Equity Benchmark Index Name</b>	<b>Bloomberg Ticker</b>
$fx_1$	EquityIndex <sub>1</sub>	Euro Stoxx Price Index	SX5E <index></index>

$fx_2$	$EquityIndex_2$	FTSE 100 Index	UKX <index></index>
$fx_3$	EquityIndex3	Swiss Market Index	SMI <index></index>
$fx_4$	EquityIndex4	Nikkei 225	NKY <index></index>
$fx_5$	EquityIndex5	S&P/TSX 60 Index	SPTSX60 <index></index>
$fx_6$	$EquityIndex_6$	S&P/ASX 200 Index	AS51 <index></index>
$fx_7$	EquityIndex <sub>7</sub>	NZX 50 Index	NZSE50FG <index></index>
$fx_8$	EquityIndex $_8$	OMX Stockholm 30 Index	OMX <index></index>
$fx_9$	EquityIndex9	OBX Stock Index	OBX <index></index>

3. Calculates the performance of all the Equity Benchmark Indices over the last 63 Index Calculation Days ( $EquityPerf_{i.63}$ ). As a formula it is calculated as:

$$EquityPerf_{i,63} = \frac{EquityIndex_i^{t_1}}{EquityIndex_i^{t^2}} - 1$$

- (i)  $EquityIndex_i^{t1}$  is the level of the  $EquityIndex_i$  on day  $t_1$ .  $t_1$  is the nearest date on or prior to Selection Date on which  $EquityIndex_i$  level is available
- (ii)  $EquityIndex_i^{t2}$  is the level of the  $EquityIndex_i$  on day  $t_2$ .  $t_2$  is the nearest date on or prior to 63 Index Calculation Days prior to Selection date on which  $EquityIndext_i$  level is available
- 4. Ranks the value of  $EquityPerf_{i,63}$  from the 9 observed values in ascending order. (The lowest value of  $EquityPerf_{i,63}$  is assigned a rank of 1 and the highest value of  $EquityPerf_{i,63}$  is assigned a rank of 9)
- 5. For all currencies  $fx_i$  eligible for  $Index_4$ 
  - (i) if the rank of the  $EquityPerf_{i,63}$  is less than or equal to 4,  $fx_i$  is assigned a  $fx_i$  Initial Weight of -1/4
  - (ii) if the rank of the  $EquityPerf_{i,63}$  is greater than or equal to 6,  $fx_i$  is assigned a  $fx_i$  InitialWeight of 1/4
  - (iii) if the rank of the  $EquityPerf_{i,63}$  is equal to 5,  $fx_i$  is assigned a  $fx_iInitialWeight$  of 0
- 6.  $fx_i$  InitialWeight are scaled to target a 5% volatility of  $Index_4$ . This is attempted by the following two steps:
  - (i) Calculate Scale Factor ( $ScaleFactor_{Index4}$ ) for the Index based on  $fx_iInitialWeight$  to target 5% volatility of the Index (refer to "Generic Calculation—Scale Factor Calculation" below)
  - (ii) Calculate  $fx_i$  ScaledWeights as the product of  $fx_i$  InitialWeight and  $ScaleFactor_{Index4}$

 $fx_iScaleWeights_4 = fx_iInitialWeights_4 * ScaleFactor_{Index4}$ 

- 7. The effective weight for the currencies (*EffectiveWeight<sub>i</sub>*) is the  $fx_iScaledWeights$  subject to a cap on the absolute weight.
  - (ii) Developed Market Currencies are capped at an absolute weight of 75%. *EffectiveWeight*<sub>i</sub> for each Developed Market Currency is calculated as:

Effective Weight<sub>i</sub> =  $max(-75\%, min(fx_iScaledWeights, 75\%))$ 

#### **Generic Calculation**

### Realized Volatility Calculation

The volatility of the currency  $fx_i$  for N days calculated on Rebalance Date is denoted as  $VOL_{i,N}^t$ 

 $VOL_{i,N}^t$  is the volatility of the currency  $fx_i$ 's previous N-1 days daily returns ( $dailyret_i^t$ ). The currency values are observed from Selection Date (t-1) to N days prior to Rebalance Date (t-N). As a formula:

$$VOL_{i,N}^{t} = \sqrt{\frac{1}{N-2} * \sum_{j=t-N+1}^{t-1} (dailyret_{i}^{j} - \mu_{i,N}^{t-1})^{2}} * \sqrt{252}$$

Where:

Selection Date is one Index Calculation Date prior to Rebalance Date

The daily return is calculated as,  $dailyret_i^t = CurrencyConvention_i * log(\frac{fx_i Spot_m^t}{fx_i Spot_m^{t-1}})$ 

$$\mu_{i,N}^t = \frac{1}{N-1} * \sum_{i=t-N+2}^t (dailyret_i^j)$$

### Portfolio Volatility Calculation

This section describes the calculation for the volatility of a portfolio of n currencies with weights  $(IW_i)$  over a period of N days immediately preceding a Rebalance Date.

To calculate the volatility of the portfolio of currencies the volatility of each currency and the correlations between the currencies are required.

The mathematical rules for matrix multiplication are applied to determine the Portfolio Volatilities. The N-day portfolio volatility is calculated as the square root of the product of vector (a), matrix (c) and vector (b).

- (a.) is a row vector that includes the volatility contribution of the currencies with their Initial weights
- (b.) is a column vector that includes the volatility contribution of the currencies with their Initial weights
- (c.) is the correlation matrix for the last N Index Calculation Days. The matrix has *n* rows and *n* columns where n is the number of currencies and equals the correlation between Asset *i* and Asset *j* of the last N days.

As a formula the Portfolio Volatility for N days, as observed on Index Calculation Day t, PVOLN, is expressed as:

$$PVOLN = \sqrt{x'Ax}$$

where x is a n \* 1 vector displaying the volatility of each currency with their initial weights:

$$x = \begin{bmatrix} IW_1 * VOL_{1,N}^t \\ & \cdot \\ & \cdot \\ & \cdot \\ IW_n * VOL_{n,N}^t \end{bmatrix}$$

where  $VOL_{1,N}^t$  is the volatility for the currency  $fx_i$  for N days prior to Rebalance Date, including the Selection Date (refer to 'Realized Volatility Calculation' above) and x' is the transposed vector of x. A is the correlation matrix for N days, with dimensions  $n^*n$ :

Correlations between *Currency i* and *Currency j* for N days is calculated as:

$$CORRN_{ij}^{t} = \frac{252 * \Sigma_{k=t-N+1}^{t-1} \left( dailyret_i^k - \mu_{i,N}^{t-1} \right) * \left( dailyret_j^k - \mu_{j,N}^{t-1} \right)}{(N-2) * VOLN_i^t * VOLN_j^t}$$

 $\textit{daily}_{j}^{\textit{k}}$  and  $\mu_{\textit{i},\textit{N}}^{\textit{t}}$  have the same definition as in 'Realized Volatility Calculation' above.

### Scale Factor Calculation

This section describes the calculation for the Scale Factor for a volatility target of 5% of a portfolio of n currencies with weights (*IWi*) over the N days preceding a Rebalance Date.

Scale factor is the factor by which the weight of each currency (*IWi*) in the portfolio is multiplied to target a 5% volatility of the portfolio. Scale Factor computes the Portfolio Volatility of the portfolio of n currencies with weights (*IWi*) over (*i*) the twenty-one (21) Index Calculation Days and (*ii*) sixty-three (63) Index Calculation Days prior to the Rebalance Date. As a formula *ScaleFactor* is calculated as:

ScaleFactor = 
$$\frac{5\%}{\max(PVOL21, PV OL63)}$$

Where

- Selection Date is one Index Calculation Day prior to Rebalance Date
- PVOL21 is the volatility of a portfolio of n currencies with weights (*IW<sub>i</sub>*) over the 21 Index Calculation Days prior to the Rebalance Date (refer to 'Portfolio Volatility Calculation' above)
- PVOL63 is the volatility of a portfolio of n currencies with weights (*IWi*) over the last 63 Index Calculation Days prior to the Rebalance Date (refer to 'Portfolio Volatility Calculation' above)

# **Index Disruption Provisions**

Each of the below events is a Disruption Event:

- A Price Source Disruption occurs if the Index Sponsor or the Calculation Agent determines that any of the source data required to calculate the Index is not available from the sources outlined in this document, the source data is manifestly incorrect, or the source data is not an appropriate representation of the current market conditions or a government or other regulatory body has taken an action that materially affects the source data. If a Price Source Disruption occurs, the Index Sponsor may, in its sole discretion: (i) provide data from alternative sources (including Reuters, Bloomberg and/or Morgan Stanley data) to the Calculation Agent; (ii) direct the Calculation Agent to make such determinations and/or adjustments as it considers appropriate to determine the level of the Index by reference to the prevailing market conditions and the last available traded or published price of such Index Component or (iii) take any of the actions outlined below at Possible Consequences of Disruption Events.
- A Termination of Data License occurs if the Index Sponsor determines there has been a
  termination, revocation or suspension of any third party license agreement or permission
  pursuant to which data is supplied to compile or calculate the Index.
- A Change in Law occurs if there has been a change in applicable law or regulation that
  prevents the Index Sponsor and/or the Calculation Agent from calculating and/or publishing
  the Index.
- A Hedging Disruption occurs, if the Index Sponsor determines that Morgan Stanley and/or any of its affiliates would be unable, after using commercially reasonable efforts, to
  - Acquire, establish, re-establish, substitute, maintain, unwind or dispose of any transactions or instruments it deems necessary to hedge its position in relation to any securities issue or other relevant transactions relating to or calculated by reference to the Index; or
  - Realize, recover or remit the proceeds of any such transactions or instruments
- A Force Majeure Event occurs if the Index Sponsor determines that an event or circumstance
  has occurred that is beyond the reasonable control of the Index Sponsor. Such event or
  circumstance may include (without limitation) a systems failure, fire, building evacuation,
  natural or man-made disaster, act of state, armed conflict, act of terrorism, riot or labor
  disruption.

In the event that the Index Sponsor determines that a Disruption Event has occurred the Index Sponsor may in its sole discretion:

- Make such determinations and/or adjustments to the terms of the Index methodology as it deems necessary;
- Defer the availability of the Index Level or the rebalancing of the Index until the next Index Calculation Day on which there is no Disruption Event;
- Remove any currency from the Currency Portfolio;
- Replace any currency in the Currency Portfolio in the event that the Index Sponsor determines
  that the relevant currency has been replaced by a successor currency;

