

Nomura Interest Rate Volatility Risk Premium Indices

Index summary disclosures

Global Markets
Index Structuring

DECEMBER 2020

STRICTLY PRIVATE AND CONFIDENTIAL

Copyright © 2024 Nomura

This document is the sole property of Nomura. No part of this document may be reproduced in any form or by any means – electronic, mechanical, photocopying, recording or otherwise – without the prior written permission of Nomura.

Table of Contents

- i. Executive summary
- ii. Important risks and disclosures in relation to the strategy
- iii. Hypothetical Back-Tested and Historical Index Performance Information

Executive Summary

The Nomura Interest Rate Volatility Risk Premium Indices

The following is a summary description of the Nomura Interest Rate Volatility Risk Premium Indices, which is qualified in its entirety by reference to the Index Rulebooks for such indices, copies of which will be made available to you as counterparty (or prospective counterparty) to a swap or another transaction entered into based on such indices. You should read the more detailed description and formulas, including the defined terms, set forth in the Index Rulebooks for a better understanding of the indices.

Overview

What are the Indices?

Each Index in the Nomura Interest Rate Volatility Risk Premium Index (iVRP) family (each, an “**Index**” and, together, the “**Indices**”) is a quantitative, rules-based Index created on December 2014 and July 2020 respectively, by Nomura International plc (acting as the “**Index Sponsor**” and the “**Index Calculation Agent**”). Each Index in the family follows the same investment strategy and the same methodology, but relates to a different hypothetical interest rate swap forward, each of which relates to a specific index currency, tenor and expiration date. This summary describes the general methodology and investment thesis for the Indices.

Each Index aims to implement a “volatility risk premium” investment strategy that seeks to provide returns based on the difference between implied, or expected, volatility and realized, or actual, volatility relating to prices of hypothetical interest rate swap forwards.

Each Index relates to different hypothetical interest rate swaptions and corresponding forward starting swaps, each in a specific index currency (either U.S. dollars or euro) and each with a specific tenor.

Overview of the Nomura iVRP Indices

Each Index is composed of two groups of components, which are collectively used to attempt to capture the potential volatility risk premium: (1) notional short positions in at-the-money (at the time of selling) put and call options contracts on the hypothetical interest rate swap forward with the applicable index currency, tenor and expiry for such Index (the “**hypothetical straddle swaptions**”) and (2) notional long or short positions in the applicable hypothetical interest rate swap forward, which are used to implement each Index’s “delta-hedging” strategy described below. Each group of components is discussed in further detail below. On any given business day, the performance of each Index reflects changes in the prices of the hypothetical straddle swaptions and changes in the prices of the notional positions taken in the underlying hypothetical interest rate swap forwards, minus the transaction-based charges described below.

Each Index aims to implement a “volatility risk premium” investment strategy that seeks to provide returns based on the difference between implied, or expected, volatility and realized, or actual, volatility relating to prices of hypothetical interest rate swap forwards. This volatility risk premium strategy is based upon the hypothesis that implied volatility of hypothetical interest rate swap forwards is generally greater than realized volatility of the hypothetical interest rate swap forwards. Implied volatility represents the expectation of future daily movements of the hypothetical interest rate swap forwards, regardless of direction, and realized volatility is the actual magnitude of daily movements in the hypothetical interest rate swap forwards, regardless of direction. Implied volatility of the hypothetical interest rate swap forwards is measured by reference to the prices of options contracts on the hypothetical interest rate swap forwards (swaptions). Risk-averse investors are generally willing to pay a premium for the insurance offered by sellers of an option contract, and therefore the prices of options contracts reflect this desired transfer of risk. Any potential volatility risk premium is therefore caused by the premium price that investors are willing to pay for portfolio insurance offered by options contracts. Under normal market conditions, implied volatility of the hypothetical interest rate swap forwards has historically been greater than realized volatility of the hypothetical interest

rate swap forwards. However, during times of market stress, realized volatility may exceed implied volatility, and in those and perhaps other cases, the volatility risk premium strategy will suffer significant losses.

Implied volatility is a key variable in pricing options, and so if implied volatility is higher than realized volatility, then the options may be viewed as being relatively expensive, or overpriced. Therefore, each Index's volatility risk premium strategy attempts to capture returns by taking notional short positions in the hypothetical straddle swaptions, which, each Index hypothesizes, are inherently expensive, or overpriced, measured at the time the notional short positions in the hypothetical straddle swaptions are taken, relative to the actual realized volatility of the underlying hypothetical interest rate swap forwards.

The relationship of an option's price to implied volatility is such that, all else being equal, the price of the option is expected to fall as implied volatility decreases, and the price of the option is expected to rise as implied volatility increases. Each Index's notional short exposure to the hypothetical straddle swaptions is therefore effectively similar to a short position in the implied volatility of the underlying hypothetical interest rate swap forwards. By taking notional short positions in hypothetical straddle swaptions on the underlying hypothetical interest rate swap forwards, each Index seeks to capture the difference between implied volatility at the time the notional short positions in the hypothetical straddle swaptions are taken and the actual realized volatility of the underlying hypothetical interest rate swap forwards. In other words, each Index seeks to capture the potential volatility risk premium of the underlying hypothetical interest rate swap forwards.

In order to reduce the effect of any exposure to the underlying interest rates inherent in the hypothetical straddle swaptions, each Index enters into a process of "delta-hedging," to reduce the risk of exposure to movements in the underlying interest rates. However, the delta-hedging process is imperfect, will not completely mitigate the interest rate risk within each Index and will result in reductions to the level of each Index that will need to be offset by gains from the diminishing value of the notional short position in the hypothetical straddle swaptions over time (based on the volatility risk premium strategy) or the applicable Index will decline in value.

As each Index targets returns based on the potential volatility risk premium related to the underlying hypothetical interest rate swap forwards, each Index will tend to perform well when the implied volatility of the hypothetical interest rate swap forwards, measured at the time the notional short positions in the hypothetical straddle swaptions are taken, is greater than their actual realized volatility. On the other hand, each Index will tend to perform poorly when the actual realized volatility of the underlying hypothetical interest rate swap forwards exceeds their implied volatility, measured at the time the notional short positions in the hypothetical straddle swaptions are taken. Moreover, due to the imperfect nature of the delta-hedging process, each Index will incur reductions based on the movements of the underlying hypothetical interest rate swap forwards that will need to be offset by gains from the diminishing value of the notional short position in the hypothetical straddle swaptions over time or each Index will decline in value. Additionally, because each Index takes notional short positions in hypothetical straddle swaptions, there is no limit to the amount by which the level of each Index may decline.

The level of each Index on any given day reflects the cumulative profit and losses arising from the performance of the positions taken by the underlying investment strategy implemented since the inception date of the index, after deducting charges, which includes a period of back-tested performance. The change in the level of the Index from one day to another reflects the return of the investment strategy over that same period.

The Hypothetical Straddle Swaptions

What is a Straddle Swaption?

An interest rate swaption is an option that provides one party with the right, but not the obligation, to enter into an interest rate swap at an agreed-upon fixed rate on the specified future exercise date. In a "pay-fixed" swaption, the holder of the swaption has the right to enter into an interest rate swap as a payer of the fixed rate and receiver of the floating rate, whereas in a "receive-fixed" swaption, the holder has the right to enter into an interest rate swap as a receiver of the fixed rate and a payer of the floating rate. A "straddle" is a combination of a put option and a call option (or a pay-fixed swaption and a receive-fixed swaption) on a

specified underlying interest rate swap. A short straddle is an options strategy carried out by holding a short position in both a call and a put that have the same strike price and expiration date. The maximum profit in a short straddle strategy is the amount of premium collected by writing the options.

A short straddle position is highly risky, because the potential loss is unlimited due to the sale of the call and the put options which expose the investor to unlimited losses whereas profitability is limited to the premium (which is based on implied volatility) received by the initial sale of the options. However, as each Index aims to capture only the potential volatility risk premium related to the Index's hypothetical straddle swaptions, each Index attempts to "delta-hedge" this risk, as described below.

The Index's Hypothetical Straddle Swaptions

Each Index takes notional short positions in at-the-money put and call options contracts on the hypothetical interest rate swap forward with the applicable index currency, tenor and expiry for such Index. The straddle swaption entered into on any given business day will have a fixed maturity into the future. The notional short positions taken by each Index in the applicable hypothetical straddle swaptions are held until they expire. Each Index's hypothetical straddle swaptions are at-the-money, which means that the strike level of each straddle swaption is equal to the forward swap rate on that day.

The hypothetical straddle swaptions and the hypothetical interest rate swap forwards are not traded on any exchange, and therefore they are hypothetical and price data are not publicly available. See "Price Data for the Index Components is Hypothetical" below.

For more information regarding the hypothetical straddle swaptions and the methodology relating to the hypothetical straddle swaptions, see the applicable Index Rulebook.

Index Charges

Each Index deducts transaction-based charges from its level. Each Index deducts a “bid/mid charge” upon implementation of each new straddle swaption position, and also deducts a charge for the positions in the hypothetical interest rate swap forwards.

The fixed charge amounts were determined by the Index Sponsor based on a variety of factors including the costs that would be incurred if an investor were to execute hypothetical transactions to maintain equivalent notional positions to those held by each Index. Such costs would include bid-ask spreads and costs associated with margining. The fixed charge amounts also include fees that accrue to the benefit of the Index Sponsor in consideration for establishing and maintaining each Index.

Hypothetical Straddle Swaptions bid/mid charge. The value of each Index’s hypothetical straddle swaptions reflects mid-prices. However, following the notional sale of each straddle swaption, each Index will deduct a bid/mid cost from its level, which is meant to reflect the fact that a hypothetical investor replicating the notional short positions taken by the applicable Index in the over-the-counter derivative market would be on the bid-side of the market.

Hypothetical interest rate swap forwards charge. Each Index will deduct a hypothetical interest rate swaps forward charge from its level when delta adjustments are made for each non-expired hypothetical interest rate swaption in the corresponding Index. For more information regarding the Index charges, see the relevant Index Rulebook.

Index Disruption Events and Adjustments

Upon the occurrence of certain disruption events in the interest rate swap and swaption markets, the Index Calculation Agent may exercise a certain amount of discretion in determining the prices of each Index component and the level of each Index. See the relevant Index Rulebook for a description of potential disruption events and their consequences.

The Index Calculation Agent may also make adjustments to each Index upon the occurrence of certain events, including changes in law, regulation or any other circumstances that would, in the discretion of the Index Calculation Agent, necessitate a modification or change to the Index methodology.

The Index Sponsor may decide to permanently cancel and discontinue calculating and publishing an Index at any time. There is no guarantee that any Index will continue to be calculated for the full duration of any transaction linked to such Index.

See each Index Rulebook for a description of potential disruption events and their consequences.

Important risks and disclosures in relation to the strategy index

Suitability

Financial products and transactions which are linked any of the Indices in the Nomura Interest Rate Volatility Risk Premium Index (iVRP) family (collectively “Financial Products”) are suitable only for investors who:

- (a) if distributed into the United States, are or are advised by investment advisers that are, qualified institutional buyers as defined in Rule 144A under the Securities Act of 1933, as amended; and if distributed into Singapore, are Institutional Investors as defined in Securities and Futures Act, Chapter 289, as amended;
- (b) have the requisite knowledge and experience in financial and business matters to evaluate the merits and risks of an investment in the Financial Products;
- (c) understand thoroughly the terms and conditions of the Financial Products and are familiar with the relevant underlying and markets and how the performance thereof may affect the payments and value of the Financial Products;
- (d) have access to, and knowledge of, appropriate analytical tools to evaluate such merits and risks in the context of their financial situation and the impact the Financial Products will have on their overall investment portfolio;
- (e) have sufficient financial resources and liquidity to bear all of the risks of an investment in the Financial Products; and
- (f) have reviewed thoroughly all of the materials provided with respect to the Financial Products and the relevant underlying, including the Risk Factors set forth below.

Investments Based On Hypothetical Straddle Swaptions, Interest Rate Swap Forwards and Interest Rate Volatility Are Not Suitable For All Investors

Each Index provides notional exposure to hypothetical straddle swaptions and hypothetical interest rate swap forwards, and seeks returns based on the difference between implied and realized interest rate volatility. An investment in any Index is exposed to the performance of notional short positions in hypothetical straddle swaptions and notional long or short positions in hypothetical interest rate swap forwards, the value of which is based on interest rate movements. The values of hypothetical straddle swaptions and hypothetical interest rate swap forwards can be volatile and move dramatically over short periods of time. Because of the large and sudden value movements associated with hypothetical straddle swaptions and hypothetical interest rate swap forwards, an investment in any Index is suitable only for sophisticated investors who understand the risks associated with investments linked to short positions in hypothetical straddle swaptions, long/short positions in hypothetical interest rate swap forwards and exposure to interest rate volatility.

Risk Factors Relating to the Indices

Complexity of the Indices

Each Index is complex and takes multiple positions in hypothetical straddle swaptions and hypothetical interest rate swap forwards. Hypothetical straddle swaptions and hypothetical interest rate swap forwards constitute risky investments the value of which can change dramatically over short periods of time depending upon various factors. Thus, an investor must have the requisite knowledge and understanding of hypothetical straddle swaptions, hypothetical interest rate swap forwards and volatility so as to be able to assess the significant risks associated with the Indices and the Financial Products.

Performance Risk

There is no assurance that any Index will achieve positive returns, and the level of each Index may decline significantly over any given period.

As each Index targets returns based on the potential volatility risk premium related to the underlying hypothetical interest rate swap forwards, each Index will tend to perform well when the implied volatility of the hypothetical interest rate swap forwards, measured at the time the notional short positions in the hypothetical straddle swaptions are taken, is greater than their actual realized volatility. On the other hand, each Index will tend to perform poorly when the actual realized volatility of the underlying hypothetical interest rate swap forwards exceeds their implied volatility, measured at the time the notional short positions in the hypothetical straddle swaptions are taken. For example, an Index will perform poorly when the underlying hypothetical interest rate swap forward is unstable and experiences large, sudden changes in value, in which case such Index can experience sharp, severe losses.

Strategy Risk

Each Index aims to implement a “volatility risk premium” investment strategy that seeks to provide returns based on the difference between implied, or expected, volatility and realized, or actual, volatility relating to prices of hypothetical interest rate swap forwards.

This volatility risk premium strategy is based upon the hypothesis that implied volatility of hypothetical interest rate swap forwards is generally greater than realized volatility of the hypothetical interest rate swap forwards. Implied volatility represents the expectation of future daily movements of the hypothetical interest rate swap forwards, regardless of direction, and realized volatility is the actual magnitude of daily movements in the hypothetical interest rate swap forwards, regardless of direction.

Each Index is composed of two groups of components, which are collectively used to attempt to capture the potential volatility risk premium: (1) notional short positions in at-the-money (at the time of selling) put and call options contracts on the hypothetical interest rate swap forward with the applicable index currency, tenor and expiry for such Index (the “**hypothetical straddle swaptions**”) and (2) notional long or short positions in the applicable hypothetical interest rate swap forward.

Implied volatility of the hypothetical interest rate swap forwards is measured by reference to the prices of options contracts on the hypothetical interest rate swap forwards (swaptions). Risk-averse investors are generally willing to pay a premium for the insurance offered by sellers of an option contract, and therefore the prices of options contracts reflect this desired transfer of risk. Any potential volatility risk premium is therefore caused by the premium price that investors are willing to pay for portfolio insurance offered by options contracts. Under normal market conditions, implied volatility of the hypothetical interest rate swap forwards has historically been greater than realized volatility of the hypothetical interest rate swap forwards. However, during times of market stress, realized volatility may exceed implied volatility, and in those and perhaps other cases, the volatility risk premium strategy will suffer significant losses.

There can be no assurance that the Indices’ strategy will be effective, and each Index may not achieve its stated investment objectives. Each Index has been constructed on the basis of certain historically observed trends and assumptions, which may not prove to be correct in any future period. Additionally, each Index’s methodology is fixed, and the Index rules will not change in response to changing market conditions.

Moreover, even if a volatility risk premium strategy on the hypothetical interest rate swap forwards would be generally successful, the manner in which the Indices implement their volatility risk premium strategy may prove to be unsuccessful. As described in more detail in the index summary and the following risk factors, the methodology of each Index has set parameters to determine the strike level and the notional amount of the hypothetical straddle swaptions.

Movements in Implied Volatility Will Affect the Value of Each Index

Each Index takes notional short positions in the hypothetical straddle swaptions on the hypothetical interest rate swap forwards. The relationship of an option’s price to implied volatility is such that, all else being equal, the price of the option is expected to fall as implied volatility decreases, and the price of the option is expected to rise as implied volatility increases. Each Index’s notional short exposure to the hypothetical straddle swaptions is therefore effectively similar to a short position in the implied volatility of the hypothetical interest rate swap forwards. Therefore, each day, changes in implied volatility levels will affect the value of each Index. Specifically, increases in implied volatility will increase the prices of the hypothetical straddle swaptions in which each Index holds notional short positions, which will reduce the value of each Index.

Risks Related to Interest Rates

The performance of each Index will depend on the values of interest rate swaps and options on interest rate swaps. Interest rates are subject to volatility due to a variety of factors, including:

- sentiment regarding underlying strength in the economies of the countries for which the currencies are legal tender;
- expectations regarding the level of price inflation in such countries;
- sentiment regarding credit quality in such countries, as well as in global credit markets generally;
- the policies of worldwide central banks regarding interest rates; and
- the performance of capital markets.

Fluctuations in interest rates will affect the level of each Index.

Currency Exchange Rate Risk

When the Index converts the returns of the respective Sub-Index into U.S. Dollar on a daily basis, based on the applicable spot rate at such time. As a result, to the extent there is a non-zero return in the applicable future component during a holding period, investors will take exposure to U.S. Dollar on that non-zero return for that holding period, and increases or decreases in the U.S. Dollar exchange rates relative to Index Denomination will have a positive or negative effect on the level of the Index.

Currency exchange rates vary over time, and may vary considerably during the term of any transaction. The values of the relevant currencies relative to the Index Denomination are, at any time, a result of the supply and demand for those currencies. Changes in currency exchange rates result over time from the interaction of many factors directly or indirectly affecting economic and political conditions in a relevant country, and economic and political developments in other countries. Currency exchange rates can also be affected by actions of the relevant sovereign government.

The following factors are of particular importance to potential currency exchange risk:

- the overall growth and performance of the economies of relevant countries;
- existing and expected rates of inflation;
- existing and expected interest rate levels;
- the balance of payments in the relevant countries and between each relevant country and its major trading partners;
- the extent of governmental surplus or deficit in the relevant countries; and
- the stability of the governments and banking systems of the relevant countries.

All of these factors are, in turn, sensitive to the monetary, fiscal and trade policies pursued by the relevant countries and those of other countries important to international trade and finance, and all of which could have a material effect on the performance of the Index.

Each Index's Hypothetical Straddle Swaptions and Hypothetical Interest Rate Swap Forwards Are Hypothetical, and Price Data Are Not Publicly Available and Will Be Determined by the Index Sponsor

The hypothetical straddle swaptions and the hypothetical interest rate swap forwards (referred to collectively as the "index components") are each hypothetical, and price data for the index components are not publicly available. The Index Sponsor determines the price of each Index Component by referencing data that are predominantly publicly available relating to the applicable index components, and by then using a proprietary model that is meant to approximate a market-standard method of determining the price of the applicable

index component. However, there is no single accepted market-standard method for determining the prices of the index components. The proprietary model used by the Index Sponsor may differ in certain respects from alternative methods of determining the prices of the index components, and the prices determined by the Index Sponsor may therefore differ from prices determined through such alternative methods. In addition, the pricing of interest rate swaptions is inherently more complex than the pricing of many other options because interest rate swaption value is a function of a forward swap rate. In the event that any price data necessary to calculate the levels of the Indices are unavailable on the price sources set forth in the relevant Index Rulebook, the Index Calculation Agent may determine such price data in its sole discretion, acting in a manner that it reasonably believes will be consistent with the objectives of the Indices.

There can be no assurance that the prices of the index components determined by the Index Sponsor will correspond to prices of actual interest rate swaptions or interest rate swap forwards. You will not necessarily have access to all of the data used by the index sponsor in determining the prices of the index components, and you may not be able to determine the prices of the index components on any given day.

The Index Calculation Agent Will Determine the Mark-to-Market Value Of The Hypothetical Straddle Swaptions Based On Approximations Of Implied Volatility That May Deviate From Their Actual Value

The mark-to-market value of each Index's hypothetical straddle swaptions is based on an approximation of implied volatility by the Index Calculation Agent based on available public data. Because public data are not available for options with all expiries and strikes, the Index Calculation Agent's approximation will use implied volatility of options with different expiries and strikes (as described in the index summary) than the actual hypothetical straddle swaptions, which may cause deviations from the actual market value of the hypothetical straddle swaptions and may negatively affect the performance of an Index.

Impact of Index Charges

Each Index deducts transaction-based charges from its level. Each Index deducts a "bid/mid charge" upon implementation of each new straddle swaption position, and also deducts a charge for the positions in the hypothetical interest rate swap forwards. The amounts of such charges are described in the index summary.

The Index charges will reduce the level of each Index in all cases, whether the Index performs well or poorly, and will need to be offset by gains from the volatility risk premium strategy in order for each Index to appreciate.

Risk of Inopportune or Disadvantageous Exposure to the Hypothetical Straddle Swaptions

Each Index enters into notional short positions in the hypothetical straddle swaptions, regardless of market conditions. Each Index's volatility risk premium strategy is based upon the hypothesis that implied volatility of hypothetical interest rate swap forwards is generally greater than realized volatility of the hypothetical interest rate swap forwards; however, each Index does not take into account current market conditions regarding either implied volatility or realized volatility when taking new positions in the hypothetical straddle swaptions.

Therefore, the Index may take new positions that subsequently lead to a loss, which could have been avoided had the Index used set parameters to determine when to take new positions based on current market conditions.

Risks Related to the Strike Levels of the Hypothetical Straddle Swaptions

Each Index's hypothetical straddle swaptions are at-the-money at the time of selling, which means that the strike level of each straddle swaption is equal to the forward swap rate on that day.

The determination of the strike level is fixed and will not change based on changing market conditions. Each Index's approach of using at-the-money strike levels was set based on the Index Sponsor's ability to source publicly available data that the Index Sponsor deems appropriate to be used in this particular trading strategy. There is no guarantee that the hypothetical straddle swaptions' strike levels will result in positive returns, and they may underperform a strategy that sells hypothetical swaptions with different strikes.

Each Index's Investments Are Entirely Hypothetical

The exposure to the hypothetical straddle swaptions and hypothetical interest rate swap forwards provided by each Index is purely notional and will exist solely in the records maintained by or on behalf of the Index Calculation Agent. There is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. Consequently, you will not have any ownership rights with respect to any of the hypothetical straddle swaptions or hypothetical interest rate swap forwards that each Index references.

Each Index is Calculated on an Unfunded/Excess Return Basis

Each Index is calculated on an “unfunded” or “excess return” basis and not on a “total return” basis. As excess return Indices, each Index reflects the returns that are potentially available through an investment in the notional positions held by such Index. By contrast, a total return Index, in addition to reflecting those returns, also reflects interest that could be earned on funds committed to the trading of the underlying positions. None of the Indices include such a total return feature.

Past Performance is No Guide to Future Performance

The historical levels of any Index should not be viewed as an indication of its future performance. The actual performance of an Index during any future period may bear little or no relation to its historical performance. No one can predict with any degree of certainty the future performance of any Index. This will be particularly the case in periods of greater market stress.

Lack of Operating History; Back-Tested Performance

Each Index was established in December 2014 or July 2020 respectively, and, therefore, does not have sufficient data upon which to evaluate long-term performance over various economic cycles. Any performance information for periods prior to the inception of each Index represents simulated returns based on back-tested data, intended to illustrate how the relevant Index may have performed had it been created in the past, but those simulations are subject to many limitations. Unlike actual historical performance, such simulations do not reflect actual trading, liquidity constraints and other factors that may affect the results obtained from such back-tested data, should not be considered indicative of the actual results that might be obtained from an investment in any Index, and the actual performance of each Index may vary significantly from the results obtained from back-testing. Unlike an actual performance record, simulated results are achieved by means of the retroactive application of a back-tested model which was itself designed with the benefit of hindsight and knowledge of factors that may have possibly affected its performance. In addition, the model used to simulate these hypothetical returns is based on certain data, assumptions and estimates. Different models or models using different data, assumptions and estimates might result in materially different hypothetical performance results. Due to inherent limitations in hypothetical performance results, there may frequently be significant differences between hypothetical performance results and the actual results subsequently achieved.

Disruptions may Impact Performance

Interest rate markets are subject to temporary distortions or other disruptions due to various factors, including the lack of liquidity in the markets, market fragmentation, the participation of speculators and government regulation and intervention. These circumstances could adversely affect the level of the Index. Accordingly the Index Sponsor has attempted to describe in the Index methodology (through appropriate fallback provisions) the particular disruptions or periods of stress that may affect the Index from time to time, including circumstances where transaction data sources may become insufficient, inaccurate, unreliable or absent; as well as the potential consequences that these events may have on the determination and/or publication of the Index. The Index is also reviewed periodically to ensure that any input data used in the determination of the Index remains appropriate, sufficient, and reliable to accurately reflect the market or economic reality that the Index is intended to measure, including in response to market conditions. Changes to the data used and/or the data sources may therefore become necessary to ensure that these standards are met on an ongoing basis.

Interest Rate Benchmark Reform may Adversely Affect the Value of the Index

The Index consists of market standard interest rate swaptions and swaps in major markets. The convention for USD swaptions and swaps is to refer to the London Interbank Offered Rate (LIBOR) for floating leg swap payments, and for EUR swaptions and swaps to refer to the EURIBOR rate for floating leg swap payments.

Interest rate benchmarks are being reformed and, in some cases, may be discontinued as part of a global benchmark reform process. Different interest rate benchmarks are being reformed or discontinued at different speeds and in different ways.

The UK Financial Conduct Authority (the FCA), as the regulator in the context of LIBOR, has stated that (i) it will not compel banks to make LIBOR submissions post 2021 and (ii) the base case assumption should be that there will be no LIBOR publication after 2021.

Financial markets in some currencies and regions have changed significantly since the global financial crisis. Banks no longer fund themselves in the interbank market to the same extent as they used to. Regulators do not believe that these fundamental shifts are likely to be reversed in the near term. The decline in the liquidity of the underlying interbank market is one of the key drivers for reform and transition away from LIBOR. As a result of these trends, **the Chief Executive of the FCA referred to LIBOR as "measuring the rate at which banks are not borrowing from one another" to highlight the growing risk of it no longer being representative of the economic reality it intends to measure.**

Alternative reference rates or what the market has termed "risk-free rates" (RFRs) are being developed by industry working groups and may be used in the financial markets in place of the existing key interbank offered rates. In some cases the **existing IBORs may be discontinued and replaced with the RFRs whilst in other cases both rates may be available for the relevant currency at least for a period of time.**

For some currencies, the selected RFR is already in use in the overnight market (e.g. SONIA for GBP) whilst for other currencies, a transition from the incumbent overnight rate to the new RFR will be required (e.g. for EUR from EONIA to €STR). The administrator of EONIA (Euro OverNight Index Average) has announced that EONIA will also be discontinued after 2021. For USD the industry working groups have identified SOFR as overnight RFR and for JPY TONAR or TIBOR.

Whilst IBORs are forward-looking term rates that embed bank credit risk, the RFRs identified to date are overnight rates and are intended to be nearly risk-free. To transition an interest rate swap or swaption from an IBOR to a RFR may require adjustment spreads to be applied to the RFR. Forward looking RFRs do not yet exist but may be developed in the future. However, there is no certainty that a forward looking RFR will be available in respect of any currency or any particular product.

The above measures may cause disruption events in the interest rate swaption and swap markets, including but not limited to having a material adverse effect on the liquidity of interest rate swaptions and swaps that refer to LIBOR or EURIBOR rates or other applicable IBORs, upon which the Index sponsor/calculation agent may exercise a certain amount of discretion in determining the prices of the Index Components and the level of the Index. See the Index Rulebook for a description of potential disruption events and their consequences.

Further, the above measures may cause LIBOR and EURIBOR and potentially other IBORs to disappear entirely, and/or render interest rate swaps and swaptions that reference these rates unrepresentative of the market economic reality the Index is intended to measure. **It is uncertain when these events will materialize and in case of LIBOR this may be in advance of the 2021 deadline.** In consideration of any of these circumstances the Index Sponsor may amend the methodology of the Index as it deems appropriate, including adjusting the Index's prescribed interest rate swaption and swap conventions and calculation methodology, replacing Index Components with those consistent with an alternative rate and accounting for any increase in cost and any spread adjustment in relation to such adjustments; or the Index Sponsor may decide to permanently cancel and discontinue calculating and publishing the Index. Such decisions would likely need to be made based on a limited sample of historical data on the new rates, and any decision to amend the methodology may require calculations to use a blend of historical IBOR swaps and RFR swaps data for a certain period. The use of any replacement rate or replacement Index Component and the related adjustments to the methodology of the Index made to reflect the relevant replacement may adversely affect the Index performance. Further, such action taken, or discretion exercised, by the Index Sponsor may result in benefits to Nomura International plc or any of its affiliates and/or losses to an investor. If the index is terminated, any transaction linked to the Index may be terminated early at a value reflecting a level of the index that may be considerably less than the last published level of the index, and such level may even be zero or negative.

Conflicts of Interest

Nomura International plc is the Index Sponsor of each Index, and is therefore responsible for the administration of each Index, including maintaining each Index, as well as calculating and publishing the levels of each Index, based on a proprietary model and relying on market information. In addition, Nomura International plc (or any of its affiliates) will be the Nomura counterparty to any investment product entered into based on any Index. This gives rise to potential conflicts of interest.

In respect of any index-linked investment product Nomura International plc or any of its affiliates enters into, Nomura International plc (or any of its affiliates) will typically enter into hedging and pre-hedging transactions. Such hedging and pre-hedging activities will typically involve trading the instruments underlying the relevant Index or instruments related to those underlying the relevant Index. Potentially market sensitive information, such as Index signal determinations, are shared with the respective trading desk in order to risk manage Nomura International plc's (or its affiliates') index-linked investment products in the normal course of its hedging activities. There is no physical separation between the Index Sponsor and other front office functions within Nomura International plc. Nomura International plc and its affiliates may also trade otherwise (either for proprietary accounts or their client accounts), in the normal course of business, in each Index, in instruments underlying each Index or in instruments related to those that are linked to any of the foregoing, which may affect the level of any Index. These trading activities may present a conflict between the interests of an investor that is considering whether or not to enter (or has already entered) into an investment product based on the Index with Nomura International plc or any of its affiliates and the interests that Nomura International plc and its affiliates will have in their risk management of any index-linked investment product, in their proprietary accounts, in facilitating transactions for their customers and in accounts under their management.

In the ordinary course of business, Nomura International plc or any of its affiliates may have expressed views on expected movements in each Index and/or in any of the instruments underlying an Index and may do so in the future. These views or reports may be communicated to the clients of Nomura International plc or any of its affiliates. However, any such views are and will be subject to change from time to time. Moreover, other professionals who deal in markets relating to the Index and/or any instruments underlying an Index may at any time have significantly different views from those of Nomura International plc or its affiliates.

In addition, Nomura International plc or any of its affiliates may, from time to time, publish research that may influence the level of any Index, or may express opinions or provide recommendations that are inconsistent with the investment views inherent in the Indices.

Neither the creation, calculation or maintenance of the Indices nor any view which Nomura International plc or any of its affiliates may from time to time express constitutes a recommendation as to the merits of any investment product based on any of the Indices.

Impact of Pre-hedging, Hedging and Trading Activities

Each Index was designed by Nomura International plc with the intention of earning a profit for the Nomura Group through entering into transactions linked to each Index, including pre-hedging and hedging transactions. Pre-hedging and hedging activities conducted by Nomura International plc or any of its affiliates relating to an Index involve trading in the index components, which in some cases may be of low liquidity. It is possible that hedging activities conducted by Nomura International plc and its affiliates in relation to an Index will lead to movements in the relevant index components markets that could adversely affect the performance of the applicable Index. Nomura International plc and its affiliates may realize a profit in connection with pre-hedging and hedging activities regardless of whether the level of each Index increases or decreases.

Index Sponsor / Index Calculation Agent Discretion

Each Index was developed and is calculated and published by Nomura International plc, as Index Sponsor and Index Calculation Agent. As the Index Sponsor and Index Calculation Agent, Nomura International plc is responsible for and has determinative influence over each Index's composition, calculation and maintenance. The potentially subjective judgments that Nomura International plc, as Index Sponsor and Index Calculation Agent, makes in connection with the composition, calculation and maintenance of each Index, could have an adverse effect on the level of any Index.

Nomura International plc maintains certain discretion (i) to determine whether certain types of disruption events have occurred, (ii) to determine any resulting adjustments and calculations and (iii) to make such other determinations or adjustments necessary to calculate the level of each Index. In such circumstances, Nomura International plc may delay publication of the Index level for any Index and/or may estimate the value of a disrupted index component to determine the level of any Index, or may make such further adjustments to any Index as it deems necessary.

This may include the removal or replacement of any affected index component by the Index Sponsor, in which case the Index Sponsor shall make any other adjustments to the affected Index to account for the price or value of the affected index component at the time of its removal and any related costs. This may mean that the economic benefit, if any, of the replacement component is reduced or that the replacement has a material adverse effect on the applicable Index's performance. For example, and without limitation, the value of the replacement component may be adjusted by the same proportion as any fall in the value of the affected index component at the time of its removal relative to the live date of the relevant Index and may be further reduced to account for the cost to the Index Sponsor for implementing the replacement instrument.

The exercise by Nomura International plc of these prescribed and non-prescribed discretion is governed by Appendix 2, Section 14 of the summary of the Index Sponsor's Governance Policy and Control Framework (as may be amended and/or updated from time to time), and will have direct impact on the level of the affected Index. The Governance Policy and Control Framework is available at: www.nomuranow.com/portal/site/nnextranet/en/global-markets/structured-derivatives/quant-investment-strategies.shtml.

Potential Adjustments to an Index

The Index Sponsor has the authority to amend the methodology of any Index and/or make such adjustments to the index methodology as it considers appropriate, in each case in its sole discretion acting in good faith, in order to take into account events or changes in the relevant underlying markets or to preserve the investability and objective of the applicable Index (including cancelling any Index in certain circumstances). Such action taken, or discretion exercised, by the Index Sponsor may result in benefits to Nomura International plc or any of its affiliates and/or losses to an investor.

Potential Termination of an Index

Nomura International plc may decide to permanently cancel and discontinue calculating and publishing any Index at any time. There is no guarantee that any Index will continue to be calculated for the full duration of any transaction linked to such Index.

If any Index is terminated, any transaction linked to such Index may be terminated early at a value reflecting a level of such Index that may be considerably less than the last published level of such Index, and such level may even be zero or negative.

Hypothetical Back-Tested and Historical Index Performance Information

This section contains hypothetical back-tested performance information for an illustrative portfolio of the Indices. All index performance information prior to December 2014 is hypothetical and back-tested, as the Indices did not exist prior to that date. Hypothetical back-tested index performance information is subject to significant limitations. The Index Sponsor developed the index rules with the benefit of hindsight—that is, with the benefit of being able to evaluate how the index rules would have caused the Indices to perform had they existed during the hypothetical back-tested period. The fact that the illustrative portfolio of the Indices generally appreciated over the hypothetical back-tested period may not therefore be an accurate or reliable indication of any fundamental aspect of the index methodology. Furthermore, the hypothetical back-tested performance of the illustrative portfolio of the Indices might look different if it covered a different historical period. The market conditions that existed during the hypothetical back-tested period may not be representative of market conditions that will exist in the future.

It is impossible to predict whether the performance of a portfolio of the Indices will rise or fall. By providing the hypothetical back-tested and historical index performance information below, we are not representing that a portfolio of the Indices is likely to achieve gains similar to those shown, and a portfolio of the Indices may in future exhibit a higher loss than its historical worst performance. There are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved. One of the limitations of hypothetical performance information is that it did not involve financial risk and cannot account for all factors that would affect actual performance. The actual future performance of the Indices and thus a portfolio of the Indices may bear no relation to the hypothetical back-tested or historical performance of the portfolio of the Indices.

The tables below show, in respect of the back-tested and live portfolio performance of the Indices since the back-test inception date, for the specified time periods (a) the average return observed (b) the maximum loss incurred by the a portfolio of the Indices (c) the maximum gains made by the a portfolio of the Indices. The table also shows the maximum cumulative historical drawdown observed historically.

Nomura iVRP USD 1M10Y Index (Odd & Even)

Periodicity->	1m	3m	6m	12m	Maximum Drawdown
Average Performance	0.6%	1.7%	3.5%	7.1%	
Worst Performance	-13.6%	-16.7%	-12.3%	-14.6%	18.8%
Best Performance	13.8%	29.1%	40.3%	47.8%	

Nomura iVRP USD 1M30Y Index (Odd & Even)

Periodicity->	1m	3m	6m	12m	Maximum Drawdown
Average Performance	0.7%	2.3%	4.6%	9.5%	
Worst Performance	-11.7%	-19.4%	-13.2%	-15.1%	19.5%
Best Performance	25.3%	38.7%	52.8%	96.0%	

Nomura iVRP EUR 1M10Y Index (Odd & Even)

Periodicity->	1m	3m	6m	12m	Maximum Drawdown
Average Performance	0.2%	0.6%	1.3%	2.8%	
Worst Performance	-8.1%	-9.3%	-10.9%	-10.4%	29.7%
Best Performance	13.2%	20.5%	31.6%	42.9%	

Nomura iVRP EUR 1M30Y Index (Odd & Even)

Periodicity->	1m	3m	6m	12m	Maximum Drawdown
Average Performance	0.5%	1.6%	3.3%	6.8%	
Worst Performance	-18.5%	-26.5%	-20.4%	-30.0%	56.2%
Best Performance	35.5%	54.4%	77.1%	92.9%	

Nomura iVRP USD 3M10Y Index (1, 2, 3 & 4)

Periodicity->	1m	3m	6m	12m	Maximum Drawdown
Average Performance	1.9%	5.8%	12.4%	24.4%	
Worst Performance	-67.2%	-99.8%	-83.4%	-112.4%	122.8%
Best Performance	59.7%	107.0%	141.2%	179.0%	

Nomura iVRP USD 3M30Y Index (1, 2, 3 & 4)

Periodicity->	1m	3m	6m	12m	Maximum Drawdown
Average Performance	1.7%	5.3%	10.9%	22.5%	
Worst Performance	-64.2%	-114.8%	-104.9%	-117.1%	132.2%
Best Performance	75.7%	103.5%	156.8%	273.5%	

Nomura iVRP EUR 3M10Y Index (1, 2, 3 & 4)

Periodicity->	1m	3m	6m	12m	Maximum Drawdown
Average Performance	0.9%	2.8%	5.7%	11.6%	
Worst Performance	-43.7%	-50.6%	-56.1%	-61.3%	88.0%
Best Performance	34.8%	51.4%	90.8%	136.8%	

Nomura iVRP EUR 3M30Y Index (1, 2, 3 & 4)

Periodicity->	1m	3m	6m	12m	Maximum Drawdown
Average Performance	1.7%	5.2%	10.6%	21.2%	
Worst Performance	-97.3%	-133.9%	-126.2%	-167.3%	218.0%
Best Performance	124.3%	176.8%	275.9%	340.8%	

Disclaimer

This material has been prepared by the Index Sponsor, NIP (“Nipic”), which is authorised by the Prudential Regulation Authority (PRA), regulated by the Financial Conduct Authority (FCA) and the PRA in the UK, and is a member of the London Stock Exchange.

Nipic has been registered as a Benchmark Administrator by the FCA pursuant to UK BMR and has accordingly been listed on the FCA Register of Benchmark Administrators.

This material is made available to you by Nipic and/or its affiliates (collectively, "Nomura Group"), as the case may be. This is not investment research as defined by the US rules and regulations, FCA nor is it research under the applicable rules in Hong Kong. It does not constitute a personal recommendation, as defined by the FCA, or take into account the particular investment objectives, financial situations, or needs of individual investors. It is intended only for investors who are "eligible market counterparties" or "professional clients" as defined by the FCA, and may not, therefore, be redistributed to other classes of investors. This material does not fall within the definition of an analyst report as defined by the Japan Securities Dealer's Association. It is intended for professional and institutional investors only.

This material is: (i) for your private information only, and we are not soliciting any action based upon it; (ii) not to be construed as an offer to sell or a solicitation of an offer to buy any security in any jurisdiction where such offer or solicitation would be illegal; and (iii) is based upon information that we consider reliable, and it should not be relied upon as such. While all reasonable care has been taken to ensure that the information contained herein is not untrue or misleading at the time of publication, no representation, warranty or undertaking, expressed or implied, is made and no responsibility or liability is accepted by the Nomura Group and/or its directors, officers and employees as to the accuracy, completeness, merchantability or fitness for a particular purpose of the information contained herein or any other information provided by any other person in connection with the information described herein or their distribution or for the results obtained from the use of this information.

Nomura Group and/or its directors, officers and employees do not accept any liability whatsoever for any loss or damage (including, without limitation, direct, indirect or consequential loss or loss of profits or loss of opportunity) suffered by you or any third party in connection with the use of this material or its content. It is not intended for investors who are unfamiliar with the relevant markets or who are unwilling or unable to bear the risks associated with the investment. You should refrain from entering into any transaction unless you fully understand all the risks involved and you have independently determined that the investment is suitable for you. We are not your designated investment adviser.

In reaching a determination as to the appropriateness of any proposed transaction linked to the Index, clients should undertake a thorough independent review of the legal, regulatory, credit, tax, accounting and economic consequences of such action. The Nomura Group may from time to time perform investment banking or other services (including acting as advisor, manager or lender) for, or solicit investment banking or other business from, companies mentioned herein. Further, the Nomura Group, and/or its officers, directors and employees, including persons, without limitation, involved in the preparation or issuance of this material may, from time to time, have long or short positions in, and buy or sell, the securities, or in options, futures or other derivatives based thereon, of companies mentioned herein, or related securities or in options, futures or other derivative instruments based thereon. In addition, the Nomura Group may act as a market maker and principal, willing to buy and sell certain of the securities or in options, futures or other derivatives of companies mentioned herein. Further, the Nomura Group may buy and sell certain securities or in options, futures or other derivatives of companies mentioned herein, as agent for its clients.

Nomura manages conflicts identified through the following: their Chinese wall, confidentiality and independence policies, maintenance of a Stop List and a Watch List, personal account dealing rules, policies and procedures for managing conflicts of interest arising from the allocation and pricing of securities and impartial investment research and disclosure to clients via client documentation. Disclosure information is available at <http://www.nomura.com/research/>. No part of this material may be (i) copied, photocopied, or duplicated in any form, by any means, or (ii) redistributed without our prior express consent. If this publication has been distributed by electronic transmission, such as e-mail, then such transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of this publication, which may arise as a result of electronic transmission. If verification is required, please request a hard-copy version

Nomura International (Hong Kong) Limited ("NIHK"), is regulated by the Securities and Futures Commission under Hong Kong laws which differ from Australian laws. Neither Nipic nor NIHK hold an Australian financial services license as both are exempt from the requirements to hold this license in respect of the financial services either provides.

If distributed into the US, the following section will also apply to US clients:

Nomura Securities International, Inc. ("NSI") is regulated by the Securities and Futures Commission and a member of SIPC. NSI does not provide legal, accounting or tax advice. In compliance with Internal Revenue Service Circular 230, we hereby notify you that any discussion of tax matters set forth herein was written in connection with the promotion or marketing of the matters described herein and was not intended or written to be used, and cannot be used by any person, for the purposes of avoiding tax-related penalties under federal, state or local tax law. Each person should seek legal, accounting and tax advice based on its particular circumstances from independent advisors.