

**Underlying supplement no. 9-II**  
*To the prospectus dated April 8, 2020 and  
the prospectus supplement dated April 8, 2020*

**Registration Statement Nos. 333-236659  
and 333-236659-01**  
**Dated August 31, 2021**  
**Rule 424(b)(2)**

**JPMORGAN CHASE & CO.**

***Notes Linked to the J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index***

**JPMORGAN CHASE FINANCIAL COMPANY LLC**

***Notes, Fully and Unconditionally Guaranteed by JPMorgan Chase & Co., Linked to the J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index***

Each of JPMorgan Chase & Co. and JPMorgan Chase Financial Company LLC may, from time to time, offer and sell notes linked in whole or in part to the J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index (the “**Index**”). The issuer of the notes, as specified in the relevant terms supplement, is referred to in this underlying supplement as the “Issuer.” The Issuer will be either JPMorgan Chase & Co. or JPMorgan Chase Financial Company LLC. For notes issued by JPMorgan Chase Financial Company LLC, JPMorgan Chase & Co., in its capacity as guarantor of those notes, is referred to in this product supplement as the “Guarantor.”

This underlying supplement describes the Index and the relationship between JPMorgan Chase & Co., JPMorgan Chase Financial Company LLC and the sponsor of the Index and terms that will apply generally to notes linked in whole or in part to the Index and other relevant information. This underlying supplement supplements the terms described in the accompanying product supplement, the prospectus supplement and the prospectus. A separate term sheet or pricing supplement, as the case may be, will describe terms that apply to specific issuances of the notes. These term sheets and pricing supplements are referred to generally in this underlying supplement as terms supplements. The accompanying product supplement, the relevant terms supplement or another accompanying underlying supplement will describe any other index or reference asset to which the notes are linked. If the terms described in the relevant terms supplement are inconsistent with those described in this underlying supplement, any other accompanying underlying supplement, the accompanying product supplement, the prospectus supplement or the prospectus, the terms described in the relevant terms supplement will control. In addition, if this underlying supplement and the accompanying product supplement or another accompanying underlying supplement contain information relating to the Index, the information contained in the document with the most recent date will control.

The Index is subject to the deduction of a fee of 0.35% per annum deducted daily and, when leverage is provided, a notional financing cost that is intended to approximate the cost of using borrowed funds for the leveraged portion is deducted daily.

**Investing in the notes involves a number of risks. See “Risk Factors” beginning on page S-2 of the prospectus supplement, “Risk Factors” in the accompanying product supplement and “Risk Factors” beginning on page US-5 of this underlying supplement.**

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the notes or passed upon the accuracy or the adequacy of the relevant terms supplement, this underlying supplement, any other accompanying underlying supplement, the accompanying product supplement, the prospectus supplement or the prospectus. Any representation to the contrary is a criminal offense.

***The notes are not bank deposits, are not insured by the Federal Deposit Insurance Corporation or any other governmental agency and are not obligations of, or guaranteed by, a bank.***

**J.P.Morgan**

August 31, 2021

## TABLE OF CONTENTS

	<u>Page</u>
Summary .....	US-1
Risk Factors .....	US-5
The J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index .....	US-11
Background on the S&P 500® Index .....	US-19
Supplemental Terms of the Notes .....	US-25
Annex A: The J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index Rules .....	A-1

The Issuer and the Guarantor (if applicable) have not authorized anyone to provide any information other than that contained or incorporated by reference in the relevant terms supplement, this underlying supplement, any other accompanying underlying supplement, the accompanying product supplement, the prospectus supplement or the prospectus with respect to the notes offered by the relevant terms supplement and with respect to the Issuer and the Guarantor (if applicable). The Issuer and the Guarantor (if applicable) take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. The relevant terms supplement, together with this underlying supplement, any other accompanying underlying supplement, the accompanying product supplement, the prospectus supplement and the prospectus, will contain the terms of the notes and will supersede all other prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, fact sheets, brochures or other educational materials of the Issuer. The information in each of the relevant terms supplement, this underlying supplement, any other accompanying underlying supplement, the accompanying product supplement, the prospectus supplement and the prospectus may be accurate only as of the date of that document.

The notes are not appropriate for all investors and involve a number of risks and important legal and tax consequences that should be discussed with your professional advisers. You should be aware that the regulations of Financial Industry Regulatory Authority, Inc., or FINRA, and the laws of certain jurisdictions (including regulations and laws that require brokers to ensure that investments are suitable for their customers) may limit the availability of the notes. The relevant terms supplement, this underlying supplement, any other accompanying underlying supplement, the accompanying product supplement, the prospectus supplement and the prospectus do not constitute an offer to sell or a solicitation of an offer to buy the notes under any circumstances in which that offer or solicitation is unlawful.

In this underlying supplement, “we,” “us” and “our” refer to the Issuer, unless the context requires otherwise, and “JPMorgan Financial” refers to JPMorgan Chase Financial Company LLC. To the extent applicable, the index described in this underlying supplement is deemed to be one of the “Indices” referred to in the accompanying product supplement.

## SUMMARY

The J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index (the “**Index**”) was developed and is maintained and calculated by J.P. Morgan Securities plc (“**JPMS plc**”). The description of the Index and methodology included in this underlying supplement is based on rules formulated by JPMS plc (the “**Rules**”). The Rules, and not this description, will govern the calculation and constitution of the Index and other decisions and actions related to its maintenance. The Rules in effect as of the date of this underlying supplement are attached as Annex A to this underlying supplement. The Index is the intellectual property of JPMS plc and its affiliates, and JPMS plc and its affiliates reserve all rights with respect to their ownership of the Index. The Index is reported by Bloomberg L.P. under the ticker symbol “JPUSKRSE Index.”

The Index attempts to provide a dynamic rules-based exposure to the S&P 500® Index (the “**Constituent**”). The Index tracks (a) a 50%, 100% or 150% long position in the price performance of the Constituent (*i.e.*, dividends, if any, are not reflected), where the exposure to the price performance of the Constituent is determined as described below, (b) a 100% short position in the total return performance of the Constituent (*i.e.*, dividends, if any, *are* reflected), (c) a notional cash return (only if the exposure to the price performance of the Constituent is 50%) or a notional financing cost (only if the exposure to the price performance of the Constituent is 150%) and (d) the daily deduction of a fee of 0.35% per annum (the “**Index Fee**”). The Constituent consists of stocks of 500 companies selected to provide a performance benchmark for the U.S. equity markets. For additional information about the Constituent, see “Background on the S&P 500® Index” below.

While this underlying supplement generally describes the performance of the Index in the manner set forth in the immediately preceding paragraph, which mirrors the Index calculation set forth in the Rules, the Index could equivalently be described as tracking (a) -50%, 0% or 50% of the price performance of the Constituent (*i.e.*, dividends, if any, are *not* reflected), (b) a deduction equal to dividends, if any, on the components of the Constituent, (c) a notional cash return (only if the exposure to the price performance of the Constituent is -50%) or a notional financing cost (only if the exposure to the price performance of the Constituent is 50%) and (d) the daily deduction of the Index Fee. This description of the Index performance is based on a netting of the performance of the price performance and the total return performance of the Constituent.

The Index’s exposure to the price performance of the Constituent is determined based on strategies that reference the following historical tendencies:

- historical outperformance around the turn of the month;
- historical price momentum ahead of monthly index options’ expiry; and
- historical mean reversion into month-end.

*Historical turn-of-the-month outperformance.* Historically, the performance of the Constituent has tended to be better over the first few and last few days of the month than at other times during the month. There can be no assurance that this outperformance effect will be observed regularly or at all in the future or that any instances of outperformance observed in the future will exceed any instances of underperformance observed in the future.

It has been theorized that this outperformance effect might be due in part to month-end portfolio adjustments by institutions, distributions from pensions and other retirement accounts that are immediately reinvested and monthly investments by retail mutual fund investors through systematic investment plans in the equity securities included in the Constituent, as these purchases may cause the value of the relevant equity securities, and therefore the Constituent, to increase. However, other unidentified factors might contribute to or be primarily responsible for this effect, and there can be no assurance that any factor will continue to exist or continue to cause this effect.

*Historical momentum into monthly options expiry.* Historically, the performance of the Constituent has tended to exhibit momentum in the third week of each month prior to the scheduled monthly expiry of option contracts on the Constituent, as compared to the remainder of the period following the immediately preceding scheduled monthly expiry and prior to the third week of the relevant month, meaning that the Constituent has tended to continue to increase if it has been increasing and has tended to continue to decrease if it has been decreasing. There can be no assurance that this momentum effect will be observed regularly or at all in the future or that any instances of momentum observed in the future will exceed any instances of mean reversion observed in the future.

Because this effect appears to have been visible in data only since 1983, when the Chicago Board Options Exchange first listed option contracts on the Constituent, it has been theorized this effect could be due in part to systematic call overwriting. A call option contract is a financial contract that gives the option contract buyer the right, but not the obligation, to buy an asset or index at a specified price (called the “strike price”) on a specified day or within a specific time period in the future from the option contract seller. In a call overwriting strategy, an investor sells a call option contract on an asset or index where the strike price of the call option is typically higher than the current value of that asset or index.

As option contracts on the Constituent near their expiry, if the Constituent has increased since the immediately preceding scheduled monthly expiry, investors engaged in a call overwriting strategy may buy back their call option contracts at a loss (or let them be exercised at a loss), and sell new call option contracts with higher strikes to market-makers. Under these circumstances, market-makers may buy the equity securities included in the Constituent to hedge their risk, and this buying could cause the level of the Constituent to increase.

As option contracts on the Constituent near their expiry, if the Constituent has decreased since the immediately preceding scheduled monthly expiry, investors engaged in a call overwriting strategy may buy back their call option contracts at a profit (or let them expire at a profit), and sell new call option contracts with lower strikes to market-makers. Under these circumstances, market-makers may sell the equity securities included in the Constituent to hedge their risk, and this selling could cause the level of the Constituent to decline.

However, other unidentified factors might contribute to or be primarily responsible for this effect, and there can be no assurance that any factor will continue to exist or continue to cause this effect.

*Historical mean reversion into month-end.* Historically, the performance of the Constituent has tended to exhibit mean reversion into the last week of the month, as compared to the preceding portion of that month, meaning that the Constituent has tended to increase if it has been decreasing and has tended to decrease if it has been increasing. There can be no assurance that this mean reverting effect will be observed regularly or at all in the future or that any instances of mean reversion observed in the future will exceed any instances of momentum in the future.

It has been theorized that this effect might be due in part to month-end rebalancing flows from investors targeting fixed portfolio weights of equities securities included in the Constituent. An investor seeking to apply fixed portfolio weights may determine to sell assets that have increased in value (which may cause the value of those assets to decline) and buy assets that have decreased in value (which may cause the value of those assets to increase) in order to return those assets to their target fixed portfolio weights. However, other unidentified factors might contribute to or be primarily responsible for this effect, and there can be no assurance that any factor will continue to exist or continue to cause this effect.

*Index construction.* The Index generally provides a fully-invested (*i.e.*, 100%) long exposure to the price performance of the Constituent (subject to the Index Fee), but that exposure may be increased to a leveraged long 150% exposure (with an accompanying notional financing cost) or decreased to a long exposure of 50% (with a notional cash return), during portions of each month in order to implement the Index’s strategies described below, in each case, subject to modification in the event of a market disruption. In addition, the Index reflects a constant 100% short exposure to the total return performance of the Constituent. The exposure to the price performance of the Constituent is determined as described below:

- Turn-of-the-month strategy: For the first four days of each calendar month on which the New York Stock Exchange is scheduled to open for trading for its regular trading session (each, an **"Index Business Day"**), the Index will provide a leveraged exposure to the price performance of the Constituent (with an accompanying notional financing cost). The Index will also seek to apply the turn-of-the-month strategy for the last two Index Business Days of each calendar month, but the exposure to the price performance of the Constituent during that period is also subject to the month-end mean reversion strategy as described below.
- Options expiry momentum strategy: If the closing level of the Constituent on the fifth Index Business Day immediately preceding the Saturday following the third Friday of each calendar month (the third Friday of each calendar month is typically the scheduled monthly expiry of U.S. equity and equity index option contracts, including on the Constituent) is greater than the closing level of the Constituent on the Index Business Day immediately following the third Friday of the prior calendar month, the Index will provide a leveraged exposure to the price performance of the Constituent (with an accompanying notional financing cost) for the four Index Business Days ending on the Index Business Day after the third Friday of the current calendar month. If the closing level of the Constituent on the fifth Index Business Day immediately preceding the Saturday following the third Friday of each calendar month is less than the closing level of the Constituent on the Index Business Day immediately following the third Friday of the prior calendar month, the Index will provide reduced exposure to the price performance of the Constituent (with a notional cash return) for the four Index Business Days ending on the Index Business Day after the third Friday of the current calendar month.
- Month-end mean reversion strategy: If the closing level of the Constituent on the seventh Index Business Day immediately preceding the last Index Business Day of the calendar month is greater than the closing level of the Constituent on the last Index Business Day of the immediately preceding calendar month, the Index will provide reduced exposure to the price performance of the Constituent (with a notional cash return) for the four Index Business Days immediately preceding the final two Index Business Days of the month and, due to the turn-of-the-month strategy, the Index will be fully invested in the Constituent for the final two Index Business Days of the month. If the closing level of the Constituent on the seventh Index Business Day immediately preceding the last Index Business Day of the calendar month is less than the closing level of the Constituent on the last Index Business Day of the immediately preceding calendar month, the Index will provide a leveraged exposure to the price performance of the Constituent (with an accompanying notional financing cost) for the final six Index Business Days of the month. The exposure to the price performance of the Constituent is capped at 150%, so it will not exceed 150% even during the period when the turn-of-the-month strategy and the month-end mean reversion strategy overlap.

*Calculating the level of the Index.* On any given day, the closing level of the Index (the **"Index Level"**) reflects (a) (i) the price performance of the Constituent (*i.e.*, dividends, if any, are not reflected), (ii) 50% of the price performance of the Constituent (*i.e.*, dividends, if any, are not reflected) *plus* a notional cash return, or (iii) 150% of the price performance of the Constituent (*i.e.*, dividends, if any, are not reflected) *less* a notional financing cost with respect to the leveraged portion of the exposure, in each case *less* (b) the total return performance of the Constituent (*i.e.*, dividends, if any, are reflected) *less* (c) the daily deduction of the Index Fee of 0.35% per annum. The Index Level was set equal to 0.50 on July 7, 1954, the base date of the Index. The Index Calculation Agent (as defined below) began calculating the Index on a live basis on June 11, 2021.

The notional cash return is intended to approximate interest that could be earned with the excess notional funds when the Index provides only partial exposure to the price performance of the Constituent, and the notional financing cost is intended to approximate the cost of using borrowed funds for the leveraged portion. The notional cash return and the notional financing cost are each currently calculated by reference to the Effective Federal Funds Rate. The Effective Federal Funds Rate is a measure of the interest rate at which depository institutions lend balances at the Federal Reserve to other depository institutions overnight, calculated as the volume-weighted median of overnight federal funds transactions reported by U.S. banks and U.S. branches and agencies of non-U.S. banks, and is quoted on the basis of

an assumed year of 360 days. Assuming a positive Effective Federal Funds Rate, the notional cash return will have a positive effect on the performance of the Index when the exposure to the price performance of the Constituent is 50%, and the notional financing cost will have a negative effect on the performance of the Index when the exposure to the price performance of the Constituent is 150%.

JPMS plc is currently the sponsor of the Index (the “**Index Sponsor**”) and the calculation agent of the Index (the “**Index Calculation Agent**”).

See “The J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index” in this underlying supplement for additional information about the Index.

**No assurance can be given that the investment strategy used to construct the Index will achieve its intended results or that the Index will be successful or will outperform any alternative index or strategy that might reference the Constituent.**

**Due to the netting effect arising from the deduction of the total return performance of the Constituent, the effective exposure to the price performance of the Constituent will be -50%, 0% or 50%. Accordingly, the Index will provide reduced long or short effective exposure to the price performance of the Constituent, or will provide no effective exposure to the price performance of the Constituent. The Index Fee is deducted daily at a rate of 0.35% per annum, even when the Index provides no effective exposure to the price performance of the Constituent.**

**The Index is described as a “notional” or “synthetic” portfolio of assets because there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. The Index merely references certain assets, the performance of which will be used as a reference point for calculating the Index Level.**

## RISK FACTORS

*Your investment in the notes will involve certain risks. Investing in the notes is not equivalent to investing directly in the Index, the Constituent or any of the equity securities underlying the Constituent, or any futures contracts or exchange-traded or over-the-counter instruments based on, or other instruments linked to, any of the foregoing. **You should consider carefully the following discussion of risks, as well as the discussion of risks included in the relevant terms supplement, the accompanying product supplement and any other accompanying underlying supplement, before you decide that an investment in the notes is appropriate for you.***

*Capitalized terms used in this section without definition are as defined in “Summary” above.*

### Risks Relating to the Index

**JPMS plc, the Index Sponsor and the Index Calculation Agent, may adjust the Index in a way that affects its level, and JPMS plc has no obligation to consider your interests.**

JPMS plc, one of our affiliates, currently acts as the Index Sponsor and the Index Calculation Agent and is responsible for calculating and maintaining the Index and developing the guidelines and policies governing its composition and calculation. In performing these duties, JPMS plc may have interests adverse to the interests of the holders of the notes, which may affect your return on the notes, particularly where JPMS plc, as the Index Sponsor and the Index Calculation Agent, is entitled to exercise discretion. The rules governing the Index may be amended at any time by the Index Sponsor, in its sole discretion. The rules also permit the use of discretion by the Index Sponsor and the Index Calculation Agent in relation to the Index in specific instances, including, but not limited to, the determination of whether to replace the Constituent with a substitute or successor upon the occurrence of certain events affecting the Constituent, the selection of any substitute or successor and the determination of the levels to be used in the event of market disruptions that affect the ability of the Index Calculation Agent to calculate and publish the levels of the Index and the interpretation of the rules governing the Index. Although JPMS plc, acting as the Index Sponsor and the Index Calculation Agent, will make all determinations and take all action in relation to the Index acting in good faith, it should be noted that JPMS plc may have interests adverse to the interests of the holders of the notes and the policies and judgments for which JPMS plc is responsible could have an impact, positive or negative, on the level of the Index and the value of your notes.

Although judgments, policies and determinations concerning the Index are made by JPMS plc, JPMorgan Chase & Co. ultimately controls JPMS plc. JPMS plc has no obligation to consider your interests in taking any actions that might affect the value of your notes. Furthermore, the inclusion of the Constituent in the Index is not an investment recommendation by us or JPMS plc of the Constituent or any of the equity securities underlying the Constituent. See “The J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index.”

**The level of the Index will include the deduction of a fee and, in some circumstances, a notional financing cost.**

One way in which the Index may differ from a typical index is that its level will include the deduction of a 0.35% per annum fee and, if the exposure to the price performance of the Constituent is leveraged, the deduction from the performance of the Constituent of a notional financing cost that is intended to approximate the cost of using borrowed funds for the leveraged portion. The per annum fee and, when applicable, the notional financing cost will be deducted daily. As a result of the deduction of the per annum fee and the notional financing cost, the level of the Index will trail the value of a hypothetical identically constituted notional portfolio from which no such fee or cost is deducted, assuming that the rates underlying the notional financing cost remain positive.

The notional financing cost is currently calculated by reference to the Effective Federal Funds Rate. The Effective Federal Funds Rate is a measure of the interest rate at which depository institutions lend balances at the Federal Reserve to other depository institutions overnight, calculated as the volume-weighted median of overnight federal funds transactions reported by U.S. banks and U.S. branches and

agencies of non-U.S. banks. The Effective Federal Funds Rate will be affected by many factors, including, among others described under “— Risks Relating to the Notional Cash Return and the Notional Financing Cost” below, the monetary policy of the Federal Reserve. The Effective Federal Funds Rate has fluctuated significantly over time. For example, on February 28, 2007, the Effective Federal Funds Rate was 5.41% and, on April 30, 2020, the Effective Federal Funds Rate was 0.05%. The Federal Reserve raised its federal funds target rate from 2015 to 2018 and may do so again in the future. Any increase in the Effective Federal Funds Rate, whether due to the Federal Reserve decisions to raise interest rates (specifically, its federal funds target rate) or otherwise, will increase the adverse effect of the notional financing cost on performance of the Index.

The deduction of the per annum fee will place a significant drag on the performance of the Index potentially offsetting positive returns on the Index’s investment strategy, exacerbating negative returns of its investment strategy and causing the level of the Index to decline steadily if the return of its investment strategy is relatively flat. The Index will not appreciate unless the return of its investment strategy is sufficient to offset the negative effects of the per annum fee, and then only to the extent that the return of its investment strategy is greater than the fee. As a result of the per annum fee, the level of the Index may decline even if the return of its investment strategy is positive.

**Dividends or other distributions on the equity securities underlying the Constituent will adversely affect the performance of the Index, and therefore, the return on the notes.**

Because the Index reflects, among other things, a 100% short exposure to the total return performance of the Constituent (*i.e.*, dividends, if any, *are* reflected), the performance of the Index will be reduced in respect of any dividends on the components of the Constituent. As a result, the level of the Index will trail the value of a hypothetical identically constituted notional portfolio that does not reflect the deduction of dividends.

**Due to the deduction of the total return performance of the Constituent, the Index will provide an effective exposure to the price performance of the Constituent of 50%, 0% or -50%, which may adversely affect the performance of the Index, and therefore, the return on the notes.**

During any portion of each month in which the exposure to the price performance of the Constituent is set to 150% under the methodology governing the Index, due to the netting effect arising from the deduction of the total return performance of the Constituent, the Index will provide an effective exposure to the price performance of the Constituent of 50% (subject to the deduction of dividends, the notional financing cost and the Index Fee). The level of the Constituent may increase significantly while the effective exposure to the price performance of the Constituent is 50%, but the Index will benefit from only 50% of any such increase.

During any portion of each month in which the exposure to the price performance of the Constituent is set to 100% under the methodology governing the Index, due to the netting effect arising from the deduction of the total return performance of the Constituent, the Index will provide an effective exposure to the price performance of the Constituent of 0% (subject to the deduction of dividends and the Index Fee). The level of the Constituent may increase or decrease significantly while the effective exposure to the price performance of the Constituent is 0%, but the Index will not benefit from any such increase or decrease. The Index Fee is deducted daily at a rate of 0.35% per annum, even when the effective exposure to the price performance of the Constituent is 0%.

During any portion of each month in which the exposure to the price performance of the Constituent is set to 50% under the methodology governing the Index, due to the netting effect arising from the deduction of the total return performance of the Constituent, the Index will provide an effective exposure to the price performance of the Constituent of -50% (subject to the deduction of dividends, the notional cash return and the Index Fee). The level of the Constituent may decrease significantly while the effective exposure to the price performance of the Constituent is -50%, but the Index will benefit from only 50% of any such decrease.



**The Index may not be successful or outperform any alternative strategy that might be employed in respect of the Constituent.**

The Index follows a notional rules-based proprietary strategy that operates on the basis of pre-determined rules. No assurance can be given that the investment strategy on which the Index is based will be successful or that the Index will outperform any alternative strategy that might be employed in respect of the Constituent.

**The Index is subject to risks associated with its turn-of-the-month strategy.**

The Index involves risks associated with its turn-of-the-month strategy. The turn-of-the-month strategy is designed to benefit from positive returns in the Constituent at the beginning and end of each month. However, there is no guarantee that the level of the Constituent will rise during these periods and unexpected market conditions or other external events may cause the level of the Constituent to fall during these periods. No assurance can be given that the turn-of-the-month strategy will be successful or that it will outperform any alternative strategy.

**The Index is subject to risks associated with its options expiry momentum strategy.**

The Index involves risks associated with its options expiry momentum investment strategy. Momentum investing generally seeks to capitalize on trends in the price of an asset. As such, the exposure of the Index during the portion of the month governed by the momentum strategy is based on the recent performance trend of the Constituent. However, there is no guarantee that this trend will continue in the future and, even if the monthly options expiry convention changes, the timing of the options expiry momentum strategy will remain the same. A momentum strategy is different from a strategy that seeks long-term exposure to the underlying asset with fixed weights. If market conditions during the portion of the month governed by the momentum strategy do not represent a continuation of prior observed trends, the Index may decline. In particular, momentum investment strategies are subject to “whipsaws.” A whipsaw occurs when the market reverses and does the opposite of what is indicated by the trend indicator, resulting in a trading loss during the particular period. Consequently, the Index may perform poorly during the portion of the month governed by the options expiry momentum strategy in non-trending, “choppy” markets characterized by short-term volatility. No assurance can be given that the options expiry momentum strategy will be successful or that it will outperform any alternative strategy.

In addition, the Index’s options expiry momentum strategy assumes that the scheduled monthly expiry of U.S. equity and equity index option contracts, including on the Constituent, will typically fall on the third Friday of each calendar month. Any change to the scheduled monthly expiry of U.S. equity or equity index option contracts may adversely affect the performance of the Index’s options expiry momentum strategy.

**The Index is subject to risks associated with its month-end mean reversion strategy.**

The Index involves risks associated with its month-end mean reversion investment strategy. A mean reversion strategy seeks to capitalize on the view that over short periods of time, markets are cyclical — meaning that an upward trend in the level of an asset is usually followed by a downward trend or vice versa. There is no guarantee that the actual performance of the Constituent will exhibit any mean reversion during the portion of the month governed by the month-end mean reversion strategy, and any sustained decline in the level of the Constituent at a time when the month-end mean reversion theory would suggest that the level should increase may result in unexpected losses, which could be significant. No assurance can be given that the month-end mean reversion strategy will be successful or that it will outperform any alternative strategy.

**The Index’s strategies are applied during only a portion of each month.**

Each of the Index’s strategies is implemented over only a limited number of days in a calendar month as described under “The J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index” below. Outside of these limited number of days, the Index will track 100% of the performance of the Constituent (subject to the deduction of the Index Fee) and will not benefit from the application of any strategy. The

Index may underperform the Constituent due to the limited application of the strategies along with the deduction of the Index Fee.

**The Index may be adversely affected by an overlap between its turn-of-the-month strategy and its month-end mean reversion strategy.**

During the final two Index Business Days of each month, the turn-of-the-month strategy and the month-end mean revision strategy are both applicable, subject to a maximum exposure to the price performance of the Constituent of 150%. As a result, the exposure to the price performance of the Constituent may be higher or lower than would have been the case had only one of those strategies been applied and the performance of the Index may be worse than if only one strategy were applied or no maximum exposure limit were applied.

**The Index should not be compared to any other index or strategy sponsored by any of our affiliates (each, a “J.P. Morgan Index”) and cannot necessarily be considered a revised, enhanced or modified version of any other J.P. Morgan Index.**

The Index follows a notional rules-based proprietary strategy that may have objectives, features and/or constituents that are similar to those of other J.P. Morgan Indices. No assurance can be given that these similarities will form a basis for comparison between the Index and any other J.P. Morgan Index, and no assurance can be given that the Index would be more successful than or outperform any other J.P. Morgan Index. The Index operates independently and does not necessarily revise, enhance, modify or seek to outperform any other J.P. Morgan Index.

**Hypothetical back-tested data relating to the Index do not represent actual historical data and are subject to inherent limitations.**

Hypothetical back-tested performance measures of the Index are purely theoretical and do not represent the actual historical performance of the Index and have not been verified by an independent third party. Hypothetical back-tested performance measures have inherent limitations. Hypothetical back-tested performance is derived by means of the retroactive application of a back-tested model that has been designed with the benefit of hindsight. Alternative modelling techniques might produce significantly different results and may prove to be more appropriate. Past performance, and especially hypothetical back-tested performance, is not indicative of future results. This type of information has inherent limitations and you should carefully consider these limitations before placing reliance on such information.

**If the level of the Constituent changes, the level of the Index and the market value of your notes may not change in the same manner.**

Owning the notes is not the same as owning the Constituent. Accordingly, changes in the level of the Constituent may not result in a comparable change in the level of the Index or the market value of your notes.

**The Index comprises notional assets and liabilities.**

The exposure of the Index to the Constituent 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 claim against any of the reference assets that compose the Index.

**The Index has a limited operating history and may perform in unanticipated ways.**

The Index was established on June 11, 2021 and therefore has a limited operating history. Past performance should not be considered indicative of future performance.

**The Index is subject to market risks.**

The performance of the Index is dependent in part on the price performance of the Constituent. As a consequence, your investment in the notes is exposed to the price performance of the Constituent.

**The Constituent may be replaced by a substitute index upon the occurrence of certain extraordinary events.**

As described under “The J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index — Succession and Extraordinary Events” below, following the occurrence of certain extraordinary events with respect to the Constituent, the Constituent may be replaced by a substitute index or the Index Calculation Agent may cease calculation and publication of the Index on a date determined by the Index Calculation Agent. These extraordinary events generally include events that could materially interfere with the ability of market participants to transact in, or events that could materially change the underlying economic exposure of, positions with respect to the Index or the Constituent, where that material interference or change is not acceptable to the Index Calculation Agent. See “The J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index — Succession and Extraordinary Events” below for a summary of events that could trigger an extraordinary event.

You should realize that the changing of the Constituent may affect the performance of the Index, and therefore, the return on the notes, as the replacement Constituent may perform significantly better or worse than the original Constituent. Moreover, the policies of the sponsor of the substitute index concerning the methodology and calculation of the substitute index, including decisions regarding additions, deletions or substitutions of the assets underlying the substitute index, could affect the level of the substitute index and therefore the value of the notes. The amount payable on the notes and their market value could also be affected if the sponsor of a substitute index discontinues or suspends calculation or dissemination of the relevant index, in which case it may become difficult to determine the market value of the notes. The sponsor of the substitute index will have no obligation to consider your interests in calculating or revising such substitute index.

**Risks Relating to the Constituent****The equity securities of JPMorgan Chase & Co. are currently included in the Constituent.**

The equity securities of JPMorgan Chase & Co. are currently included in the Constituent. We have no obligation to consider your interests as a holder of the notes in taking any action that might affect the level of the Constituent, including those that might affect the value of your notes. We will have no ability to control the actions of the other issuers of the equity securities included in the Constituent, including actions that could affect the value of the equity securities included in the Constituent or your notes. None of those issuers will have any obligation to consider your interests as a holder of the notes in taking any actions that might affect the value of your notes.

**Risks Relating to the Notional Cash Return and the Notional Financing Cost****The notional cash return will be negatively affected if the underlying interest rate is negative.**

The notional cash return is currently determined by reference to the Effective Federal Funds Rate. If the Effective Federal Funds Rate becomes negative, when the exposure to the price performance of the Constituent is 50%, the notional cash return will have a negative effect on the performance of the Index and therefore the value of the notes.

**The interest rate referenced in determining the notional cash return and the notional financing cost will be affected by a number of factors.**

The notional cash return and the notional financing cost are currently determined by reference to the Effective Federal Funds Rate. A number of factors can affect the levels of the Effective Federal Funds Rate, including, but not limited to:

- *changes in, or perceptions about, future rates*: increased interest rate volatility is historically associated with an increased spread between long- and short-term interest rates and, conversely, decreased volatility is historically associated with tighter spreads;
- *general economic conditions*: the economic, financial, political, regulatory and judicial events that affect financial markets generally will affect the Effective Federal Funds Rate;
- *prevailing interest rates*: the Effective Federal Funds Rate is subject to daily fluctuations depending on the levels of prevailing interest rates in the market generally; in addition, lower overall interest rates are historically associated with an increased spread between long and short-term interest rates and, conversely, higher overall interest rates are historically associated with tighter spreads; and
- *policy of the Federal Reserve Board or central banks of other countries regarding interest rates*: an easing of monetary policy is historically associated with an increased spread between long and short-term interest rates and, conversely, a tightening of monetary policy is historically associated with tighter spreads.

These and other factors may have an impact on the performance of the Effective Federal Funds Rate.

**The interest rate referenced in determining the notional cash return and the notional financing cost and the manner in which they are calculated may change in the future.**

There can be no assurance that the method by which the Effective Federal Funds Rate is calculated will not change. Such changes in the method of calculation could reduce or increase the level of the relevant interest rate.

**The interest rate referenced in determining the notional cash return and the notional financing cost may be volatile.**

The Effective Federal Funds Rate is subject to volatility due to a variety of factors affecting interest rates generally, including:

- sentiment regarding underlying strength in the U.S. and global economies;
- expectation regarding the level of price inflation;
- sentiment regarding credit quality in U.S. and global credit markets;
- central bank policy regarding interest rates; and
- performance of capital markets.

**Regulatory developments may result in changes to the rules or methodology used to determine the Effective Federal Funds Rate, which may adversely affect any payment on the notes.**

The methodologies used to determine the value of certain “benchmarks,” including the Effective Federal Funds Rate, are the subject of recent national, international and other regulatory guidance, proposals for reform and investigations. These reforms or changes made in response to these investigations may cause those benchmarks to perform differently than in the past and may have other consequences that cannot be predicted. In addition, market participants may elect not to continue to participate in the administration of certain benchmarks if these reforms and investigations increase the costs and risks associated with those activities, which could cause changes in the rules or methodologies used in certain benchmarks or lead to the disappearance of certain benchmarks. Any of these changes could adversely affect the value of the notes and any payment on the notes.

**The relevant terms supplement or a separate underlying supplement will provide additional risk factors relating to any other index or reference assets to which the notes are linked.**

## THE J.P. MORGAN KRONOS US EQUITY (JPUSKRSE) EXCESS RETURN INDEX

The J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index (the “**Index**”) was developed and is maintained and calculated by J.P. Morgan Securities plc (“**JPMS plc**”). The description of the Index and methodology included in this underlying supplement is based on rules formulated by JPMS plc (the “**Rules**”). The Rules, and not this description, will govern the calculation and constitution of the Index and other decisions and actions related to its maintenance. The Rules in effect as of the date of this underlying supplement are attached as Annex A to this underlying supplement. The Index is the intellectual property of JPMS plc and its affiliates, and JPMS plc and its affiliates reserve all rights with respect to their ownership of the Index. The Index is reported by Bloomberg L.P. under the ticker symbol “JPUSKRSE Index.”

The Index attempts to provide a dynamic rules-based exposure to the S&P 500® Index (the “**Constituent**”). The Index tracks (a) a 50%, 100% or 150% long position in the price performance of the Constituent (*i.e.*, dividends, if any, are not reflected), where the exposure to the price performance of the Constituent is determined as described below, (b) a 100% short position in the total return performance of the Constituent (*i.e.*, dividends, if any, are reflected), (c) a notional cash return (only if the exposure to the price performance of the Constituent is 50%) or a notional financing cost (only if the exposure to the price performance of the Constituent is 150%) and (d) the daily deduction of a fee of 0.35% per annum (the “**Index Fee**”). The Constituent consists of stocks of 500 companies selected to provide a performance benchmark for the U.S. equity markets. For additional information about the Constituent, see “Background on the S&P 500® Index” below.

While this underlying supplement generally describes the performance of the Index in the manner set forth in the immediately preceding paragraph, which mirrors the Index calculation set forth in the Rules, the Index could equivalently be described as tracking (a) -50%, 0% or 50% of the price performance of the Constituent (*i.e.*, dividends, if any, are *not* reflected), (b) a deduction equal to dividends, if any, on the components of the Constituent, (c) a notional cash return (only if the exposure to the price performance of the Constituent is -50%) or a notional financing cost (only if the exposure to the price performance of the Constituent is 50%) and (d) the daily deduction of the Index Fee. This description of the Index performance is based on a netting of the performance of the price performance and the total return performance of the Constituent.

The Index’s exposure to the price performance of the Constituent is determined based on strategies that reference the following historical tendencies:

- historical outperformance around the turn of the month;
- historical price momentum ahead of monthly index options’ expiry; and
- historical mean reversion into month-end.

*Historical turn-of-the-month outperformance.* Historically, the performance of the Constituent has tended to be better over the first few and last few days of the month than at other times during the month. There can be no assurance that this outperformance effect will be observed regularly or at all in the future or that any instances of outperformance observed in the future will exceed any instances of underperformance observed in the future.

It has been theorized that this outperformance effect might be due in part to month-end portfolio adjustments by institutions, distributions from pensions and other retirement accounts that are immediately reinvested and monthly investments by retail mutual fund investors through systematic investment plans in the equity securities included in the Constituent, as these purchases may cause the value of the relevant equity securities, and therefore the Constituent, to increase. However, other unidentified factors might contribute to or be primarily responsible for this effect, and there can be no assurance that any factor will continue to exist or continue to cause this effect.

*Historical momentum into monthly options expiry.* Historically, the performance of the Constituent has tended to exhibit momentum in the third week of each month prior to the scheduled monthly expiry of

option contracts on the Constituent, as compared to the remainder of the period following the immediately preceding scheduled monthly expiry and prior to the third week of the relevant month, meaning that the Constituent has tended to continue to increase if it has been increasing and has tended to continue to decrease if it has been decreasing. There can be no assurance that this momentum effect will be observed regularly or at all in the future or that any instances of momentum observed in the future will exceed any instances of mean reversion observed in the future.

Because this effect appears to have been visible in data only since 1983, when the Chicago Board Options Exchange first listed option contracts on the Constituent, it has been theorized this effect could be due in part to systematic call overwriting. A call option contract is a financial contract that gives the option contract buyer the right, but not the obligation, to buy an asset or index at a specified price (called the “strike price”) on a specified day or within a specific time period in the future from the option contract seller. In a call overwriting strategy, an investor sells a call option contract on an asset or index where the strike price of the call option is typically higher than the current value of that asset or index.

As option contracts on the Constituent near their expiry, if the Constituent has increased since the immediately preceding scheduled monthly expiry, investors engaged in a call overwriting strategy may buy back their call option contracts at a loss (or let them be exercised at a loss), and sell new call option contracts with higher strikes to market-makers. Under these circumstances, market-makers may buy the equity securities included in the Constituent to hedge their risk, and this buying could cause the level of the Constituent to increase.

As option contracts on the Constituent near their expiry, if the Constituent has decreased since the immediately preceding scheduled monthly expiry, investors engaged in a call overwriting strategy may buy back their call option contracts at a profit (or let them expire at a profit), and sell new call option contracts with lower strikes to market-makers. Under these circumstances, market-makers may sell the equity securities included in the Constituent to hedge their risk, and this selling could cause the level of the Constituent to decline.

However, other unidentified factors might contribute to or be primarily responsible for this effect, and there can be no assurance that any factor will continue to exist or continue to cause this effect.

*Historical mean reversion into month-end.* Historically, the performance of the Constituent has tended to exhibit mean reversion into the last week of the month, as compared to the preceding portion of that month, meaning that the Constituent has tended to increase if it has been decreasing and has tended to decrease if it has been increasing. There can be no assurance that this mean reverting effect will be observed regularly or at all in the future or that any instances of mean reversion observed in the future will exceed any instances of momentum in the future.

It has been theorized that this effect might be due in part to month-end rebalancing flows from investors targeting fixed portfolio weights of equities securities included in the Constituent. An investor seeking to apply fixed portfolio weights may determine to sell assets that have increased in value (which may cause the value of those assets to decline) and buy assets that have decreased in value (which may cause the value of those assets to increase) in order to return those assets to their target fixed portfolio weights. However, other unidentified factors might contribute to or be primarily responsible for this effect, and there can be no assurance that any factor will continue to exist or continue to cause this effect.

*Index construction.* The Index generally provides a fully-invested (*i.e.*, 100%) long exposure to the price performance of the Constituent (subject to the Index Fee), but that exposure may be increased to a leveraged long 150% exposure (with an accompanying notional financing cost) or decreased to a long exposure of 50% (with a notional cash return), during portions of each month in order to implement the Index’s strategies described below, in each case, subject to modification in the event of a market disruption. In addition, the Index reflects a constant 100% short exposure to the total return performance of the Constituent. The exposure to the price performance of the Constituent is determined as described below:

- Turn-of-the-month strategy: For the first four days of each calendar month on which the New York Stock Exchange is scheduled to open for trading for its regular trading session (each, an

**“Index Business Day”**), the Index will provide a leveraged exposure to the price performance of the Constituent (with an accompanying notional financing cost). The Index will also seek to apply the turn-of-the-month strategy for the last two Index Business Days of each calendar month, but the exposure to the price performance of the Constituent during that period is also subject to the month-end mean reversion strategy as described below.

- **Options expiry momentum strategy:** If the closing level of the Constituent on the fifth Index Business Day immediately preceding the Saturday following the third Friday of each calendar month (the third Friday of each calendar month is typically the scheduled monthly expiry of U.S. equity and equity index option contracts, including on the Constituent) is greater than the closing level of the Constituent on the Index Business Day immediately following the third Friday of the prior calendar month, the Index will provide a leveraged exposure to the price performance of the Constituent (with an accompanying notional financing cost) for the four Index Business Days ending on the Index Business Day after the third Friday of the current calendar month. If the closing level of the Constituent on the fifth Index Business Day immediately preceding the Saturday following the third Friday of each calendar month is less than the closing level of the Constituent on the Index Business Day immediately following the third Friday of the prior calendar month, the Index will provide reduced exposure to the price performance of the Constituent (with a notional cash return) for the four Index Business Days ending on the Index Business Day after the third Friday of the current calendar month.
- **Month-end mean reversion strategy:** If the closing level of the Constituent on the seventh Index Business Day immediately preceding the last Index Business Day of the calendar month is greater than the closing level of the Constituent on the last Index Business Day of the immediately preceding calendar month, the Index will provide reduced exposure to the price performance of the Constituent (with a notional cash return) for the four Index Business Days immediately preceding the final two Index Business Days of the month and, due to the turn-of-the-month strategy, the Index will be fully invested in the Constituent for the final two Index Business Days of the month. If the closing level of the Constituent on the seventh Index Business Day immediately preceding the last Index Business Day of the calendar month is less than the closing level of the Constituent on the last Index Business Day of the immediately preceding calendar month, the Index will provide a leveraged exposure to the price performance of the Constituent (with an accompanying notional financing cost) for the final six Index Business Days of the month. The exposure to the price performance of the Constituent is capped at 150%, so it will not exceed 150% even during the period when the turn-of-the-month strategy and the month-end mean reversion strategy overlap.

*Calculating the level of the Index.* On any given day, the closing level of the Index (the **“Index Level”**) reflects (a) (i) the price performance of the Constituent (*i.e.*, dividends, if any, are not reflected), (ii) 50% of the price performance of the Constituent (*i.e.*, dividends, if any, are not reflected) *plus* a notional cash return, or (iii) 150% of the price performance of the Constituent (*i.e.*, dividends, if any, are not reflected) *less* a notional financing cost with respect to the leveraged portion of the exposure, in each case *less* (b) the total return performance of the Constituent (*i.e.*, dividends, if any, *are* reflected) *less* (c) the daily deduction of the Index Fee of 0.35% per annum. The Index Level was set equal to 0.50 on July 7, 1954, the base date of the Index. The Index Calculation Agent (as defined below) began calculating the Index on a live basis on June 11, 2021.

The notional cash return is intended to approximate interest that could be earned with the excess notional funds when the Index provides only partial exposure to the price performance of the Constituent, and the notional financing cost is intended to approximate the cost of using borrowed funds for the leveraged portion. The notional cash return and the notional financing cost are each currently calculated by reference to the Effective Federal Funds Rate. The Effective Federal Funds Rate is a measure of the interest rate at which depository institutions lend balances at the Federal Reserve to other depository institutions overnight, calculated as the volume-weighted median of overnight federal funds transactions reported by U.S. banks and U.S. branches and agencies of non-U.S. banks, and is quoted on the basis of an assumed year of 360 days. Assuming a positive Effective Federal Funds Rate, the notional cash return will have a positive effect on the performance of the Index when the exposure to the price

performance of the Constituent is 50%, and the notional financing cost will have a negative effect on the performance of the Index when the exposure to the price performance of the Constituent is 150%.

**No assurance can be given that the investment strategy used to construct the Index will achieve its intended results or that the Index will be successful or will outperform any alternative index or strategy that might reference the Constituent.**

**Due to the netting effect arising from the deduction of the total return performance of the Constituent, the effective exposure to the price performance of the Constituent will be -50%, 0% or 50%. Accordingly, the Index will provide reduced long or short effective exposure to the price performance of the Constituent, or will provide no effective exposure to the price performance of the Constituent. The Index Fee is deducted daily at a rate of 0.35% per annum, even when the Index provides no effective exposure to the price performance of the Constituent.**

**The Index is described as a “notional” or “synthetic” portfolio of assets because there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. The Index merely references certain assets, the performance of which will be used as a reference point for calculating the Index Level.**

### **Index Level Rebalancing**

Subject to modification in the event of a market disruption as described under “Index Market Disruption Events” below, the Index’s exposure to the price performance of the Constituent is rebalanced up to six times each month on the days set forth below (each, a “**Rebalancing Date**”):

- Turn-of-the-month exit day: the fourth Index Business Day of each calendar month;
- Options expiry momentum entry day: the Index Business Day that is four Index Business Days prior to the Saturday immediately following the third Friday of each calendar month;
- Options expiry momentum exit day: the Index Business Day following the third Friday of each calendar month;
- Month-end mean reversion entry day: the Index Business Day that is six Index Business Days prior to the last Index Business Day of each calendar month;
- Turn-of-the-month entry day: the Index Business Day that is two Index Business Days prior to the last Index Business Day of each calendar month; and
- Month-end mean reversion exit day: the last Index Business Day of each calendar month.

After the close on each Rebalancing Date, the exposure to the price performance of the Constituent is set to 50%, 100% or 150% and that exposure is applied until after the close on the following Rebalancing Date.

### **Calculation of the Index Level**

The Index Calculation Agent will calculate the Index Level with respect to each Index Trading Day and will publish the Index Level to an accuracy of two decimal places.

The Index Level on each Index Trading Day is calculated by adjusting the Index Level as of the immediately preceding Rebalancing Date to reflect:

- if the exposure to the price performance of the Constituent as of the immediately preceding Rebalancing Date was set to 50%, (a) 50% *times* the price return of the Constituent (*i.e.*, the return on the level of the Constituent without adjustment for dividends) since the immediately preceding Rebalancing Date *minus* (b) the total return of the Constituent (*i.e.*, the return on the level of the Constituent with an adjustment for dividends) since the immediately preceding Rebalancing Date *plus* (c) the compounded notional cash return that has accrued since the



immediately preceding Rebalancing Date *minus* (d) the Index Fee that has accrued since the immediately preceding Rebalancing Date;

- if the exposure to the price performance of the Constituent as of the immediately preceding Rebalancing Date was set to 100%, (a) the price return of the Constituent (*i.e.*, the return on the level of the Constituent without adjustment for dividends) since the immediately preceding Rebalancing Date *minus* (b) the total return of the Constituent (*i.e.*, the return on the level of the Constituent with an adjustment for dividends) since the immediately preceding Rebalancing Date *minus* (c) the Index Fee that has accrued since the immediately preceding Rebalancing Date; and
- if the exposure to the price performance of the Constituent as of the immediately preceding Rebalancing Date was set to 150%, (a) 150% *times* the price return of the Constituent (*i.e.*, the return on the level of the Constituent without adjustment for dividends) since the immediately preceding Rebalancing Date *minus* (b) the total return of the Constituent (*i.e.*, the return on the level of the Constituent with an adjustment for dividends) since the immediately preceding Rebalancing Date *minus* (c) the compounded notional financing cost that has accrued since the immediately preceding Rebalancing Date *minus* (d) the Index Fee that has accrued since the immediately preceding Rebalancing Date.

The notional cash return is intended to approximate interest that could be earned with the excess notional funds when the Index provides only partial exposure to the price performance of the Constituent, and the notional financing cost is intended to approximate the cost of using borrowed funds for the leveraged portion. The notional cash return and the notional financing cost are each currently calculated by reference to the Effective Federal Funds Rate. The Effective Federal Funds Rate is a measure of the interest rate at which depository institutions lend balances at the Federal Reserve to other depository institutions overnight, calculated as the volume-weighted median of overnight federal funds transactions reported by U.S. banks and U.S. branches and agencies of non-U.S. banks, and is quoted on the basis of an assumed year of 360 days. Assuming a positive Effective Federal Funds Rate, the notional cash return will have a positive effect on the performance of the Index when the exposure to the price performance of the Constituent is 50%, and the notional financing cost will have a negative effect on the performance of the Index when the exposure to the price performance of the Constituent is 150%.

While the Index Calculation Agent will publish the Index Level with respect each Index Trading Day to an accuracy of two decimal places, the Index Calculation Agent may calculate the Index to a greater degree of accuracy or specificity and may use any rounding convention it considers appropriate for any data used or calculations performed (which may include using data with a higher level of specificity than that which is published on any particular data source) to determine the Index Level.

If the Index Level on any Index Trading Day is less than or equal to zero, the Index Level for that Index Trading Day and each subsequent Index Trading Day will be zero and the Index Calculation Agent will no longer calculate the Index Level as described above.

See the Rules for additional information about the calculation of the Index Level.

**“Index Trading Day”** is defined in the Rules and means generally an Index Business Day that is not subject to any market disruption and an Index Business Day that is subject to a market disruption if the Index is rebalanced on that Index Business Day notwithstanding a market disruption as described under “Index Market Disruption Events” below.

### **Index Market Disruption Events**

The calculation and publication of the Index Level and the rebalancing of the Index will be affected by the occurrence of certain market disruptions relating to the Constituent. These events are set out in full in the Rules and include, without limitation, suspensions or disruptions of trading or data unavailability relating to the Constituent, the equity securities of the Constituent or related futures or option contracts that the Index Calculation Agent determines in its sole discretion could materially interfere with the ability

of market participants to transact in positions with respect to the Index, the Constituent, its equity securities or related futures or option contracts.

If a market disruption affecting the Constituent has occurred or is continuing on a scheduled Rebalancing Date, that Rebalancing Date will generally be postponed until no such market disruption is occurring. However, if that market disruption continues for a sustained period, the Index Calculation Agent may nevertheless rebalance the Index using good faith estimates, and those estimates may be subject to later correction. The Index Level will not be calculated and published on any day on which the Constituent is affected by a market disruption, except for a Rebalancing Date on which the Index Calculation Agent rebalances the Index notwithstanding the occurrence of a market disruption.

If, due to the postponement of one of more Rebalancing Dates, more than one Rebalancing Date occurs on the same day, the exposure to the price performance of the Constituent associated with the latest such scheduled Rebalancing Date will be applied on that day.

See the Rules for additional information about market disruptions and their effects on the Index.

### **Succession and Extraordinary Events**

Upon the occurrence of certain succession events set out in the Rules that affect the Constituent, the Index Calculation Agent will replace the Constituent with a successor.

In addition, upon the occurrence of certain events set out in the Rules that are referred to as extraordinary events, and if Index Calculation Agent determines that the applicable event materially interferes with the ability of market participants to transact in positions with respect to the Index, then the Index Calculation Agent will replace the Constituent with a successor or substitute that the Index Calculation Agent determines, in its sole discretion, possesses substantially similar characteristics or provides substantially similar exposure as compared to the original Constituent. If no such substitute is available, the Index Calculation Agent will replace the Constituent with a substitute that the Index Calculation Agent determines to be an appropriate substitute, considering the context of the Index. In any such case, the Index Calculation Agent will, in good faith, make related adjustments to the Rules that it determines to be appropriate.

The extraordinary events are set out in full in the Rules and include, without limitation, (a) the permanent cancellation of the Constituent, (b) a material change to the calculation of, or a material modification to, the Constituent, (c) the occurrence of a market disruption affecting the Constituent that continues for a sustained period, (d) the termination or impairment of any relevant license or other right relied upon by the Index Calculation Agent in administering the Index and (e) the occurrence of certain changes in law.

The Index Sponsor may, in its discretion, at any time and without notice, terminate the calculation or publication of the Index, including, without limitation, subsequent to the occurrence of an extraordinary event. The Index Sponsor is under no obligation to continue the calculation and publication of the Index.

### **Interest Rate Extraordinary Events**

If the Interest Rate is not calculated and announced by the relevant sponsor, but is calculated and announced by a successor sponsor acceptable to the Index Calculation Agent, or if the Interest Rate is replaced by a successor rate that, in the determination of the Index Calculation Agent, is the same or substantially similar to the Interest Rate, then the Interest Rate will be deemed to be the successor Interest Rate, with effect from a date determined by the Index Calculation Agent.

If the Interest Rate materially changes, is cancelled, is not published for a sustained period or is found no longer to be a representative measure of market interest rates, then the Index Calculation Agent may determine to select a replacement Interest Rate that possesses substantially similar characteristics to the Interest Rate that is being replaced or, if the Index Calculation Agent determines that there is no replacement interest rate that possesses substantially similar characteristics to the original Interest Rate, then the Index Calculation Agent may select a replacement Interest Rate that it determines will be an appropriate replacement Interest Rate. In connection with any such replacement, the Index Calculation

Agent may make adjustments to the Rules that it determines are appropriate to account for such changes. Such adjustments to the Rules could include, without limitation, the addition of a spread adjustment to such successor Interest Rate or replacement Interest Rate. The inclusion of a spread adjustment could adversely affect the Index and therefore the return on and market value of the notes.

The Index Sponsor may, in its discretion, at any time and without notice, terminate the calculation or publication of the Index, including, without limitation, subsequent to the occurrence of an event described above affecting an Interest Rate. The Index Sponsor is under no obligation to continue the calculation and publication of the Index.

### **Corrections**

If the closing level of the Constituent is publicly corrected after its initial dissemination or if the Index Calculation Agent identifies an error or omission in respect of the Index, and if the Index Calculation Agent determines that the correction, error or omission is material, then the Index Calculation Agent may make an adjustment or correction to the Index Level.

### **The Index Sponsor and the Index Calculation Agent**

JPMS plc is currently the sponsor of the Index (together with any successor sponsor or assign, the **"Index Sponsor"**). The Index Sponsor may appoint a successor sponsor or assign, delegate or transfer any or all of its rights, obligations or responsibilities in its capacity as Index Sponsor in connection with the Index to one or more entities (including an unrelated third party) that the Index Sponsor determines is appropriate.

The Index Sponsor is also responsible for the appointment of the calculation agent of the Index (the **"Index Calculation Agent"**), which may be the Index Sponsor, an unrelated third party or an affiliate or subsidiary of the Index Sponsor. JPMS plc is currently the Index Calculation Agent. The Index Sponsor may at any time and for any reason (i) appoint a successor Index Calculation Agent if the Index Sponsor is at that time the Index Calculation Agent or (ii) terminate the appointment of the Index Calculation Agent and appoint an alternative entity as a replacement Index Calculation Agent if the Index Sponsor is not at that time the Index Calculation Agent. The Index Calculation Agent (unless the Index Calculation Agent is the same entity as the Index Sponsor) must obtain written permission from the Index Sponsor prior to any delegation or transfer of the Index Calculation Agent's responsibilities or obligations in connection with the Index. The Index Calculation Agent is responsible for making calculations and determinations as described above and in the Rules.

### **Index Sponsor and Index Calculation Agent Determinations**

The Index Calculation Agent will act in good faith and in a commercially reasonable manner in making determinations, interpretations and calculations pursuant to the Rules. Subject to the prior agreement of the Index Sponsor, the Index Calculation Agent's determinations, and all calculations related to the Index and the Index Calculation Agent's interpretations of the Rules, will be final.

None of the Index Sponsor, the Index Calculation Agent and any of their respective affiliates and subsidiaries and any of their respective directors, officers, employees, representatives, delegates and agents (each, a **"Relevant Person"**) will have any responsibility to any person (whether as a result of negligence or otherwise) for any determinations, interpretations or calculations made or anything done (or omitted to be determined or done) in connection with the Index or any use to which any person may put the Index or the Index Levels.

Subject to the prior agreement of the Index Sponsor, the Index Calculation Agent may make certain determinations, adjustments, amendments and interpretations related to the Index. All such determinations, adjustments, amendments and interpretations (in each case, subject to such prior agreement on the part of the Index Sponsor) of the Index Calculation Agent related to the Index and all calculations performed by the Index Calculation Agent related to the Index will be final, conclusive and binding and no person will be entitled to make any claim against the Index Sponsor, the Index Calculation Agent, or any of the Relevant Persons in respect thereof. Once a determination, adjustment, amendment

or interpretation is made or action is taken by the Index Calculation Agent (in each case, as agreed in advance by the Index Sponsor) in relation to the Index, or a calculation is performed by the Index Calculation Agent in relation to the Index, none of the Index Sponsor, the Index Calculation Agent or any Relevant Person will be under any obligation to revise any such determination, adjustment, amendment, interpretation or calculation made or anything done (or omitted to be determined, adjusted, amended, interpreted, calculated or done) for any reason.

The Index Calculation Agent's exercise of discretion or failure to exercise discretion in relation to the Index may have a detrimental effect on the Index Level and the volatility of the Index. The Index Sponsor or the Index Calculation Agent may make certain determinations or calculations based on information obtained from publicly available sources without independently verifying such information.

#### **Amendment of the Rules; Termination of the Index**

The Rules may be supplemented, amended or restated from time to time in the sole discretion of JPMS plc in its capacity as the Index Sponsor. Although the Rules are intended to be comprehensive and accurate, ambiguities may arise and errors or omissions may have been made. Under these circumstances, the Index Sponsor will resolve these ambiguities and, if necessary, amend the Rules to reflect their resolution. In the case of any errors or omissions, the Index Sponsor may amend the Rules to address those errors or omissions. The Rules will be made available (in a manner determined by the Index Sponsor from time to time) following any supplementation, amendment or restatement, but the Index Sponsor is under no obligation to inform any person of any amendments to the Rules (except as may be required by law).

Following any amendment, the Index Sponsor will make available (as soon as practicable) the amended version of the Rules and will include the effective date of such amendment in the new version of the Rules. However, the Index Sponsor is under no obligation to inform any person about any amendments to the Index (except as required by law or regulation).

The Index Sponsor may at any time, for any reason and without notice, terminate or cease the calculation or publication of the Index.

## BACKGROUND ON THE S&P 500® INDEX

All information contained in this underlying supplement regarding the S&P 500® Index, including, without limitation, its make-up, method of calculation and changes in its components, has been derived from publicly available information, without independent verification. This information reflects the policies of, and is subject to change by, S&P Dow Jones Indices LLC (“**S&P Dow Jones**”). The S&P 500® Index is calculated, maintained and published by S&P Dow Jones. S&P Dow Jones has no obligation to continue to publish, and may discontinue the publication of, the S&P 500® Index.

The S&P 500® Index consists of stocks of 500 companies selected to provide a performance benchmark for the U.S. equity markets. The price return version of the S&P 500® Index is reported by Bloomberg L.P. under the ticker symbol “SPX.” The total return version of the S&P 500® Index is reported by Bloomberg L.P. under the ticker symbol “SPXT.”

### Composition of the S&P 500® Index

Securities must satisfy the following eligibility factors to be considered for inclusion in the S&P 500® Index. Constituent selection is at the discretion of the S&P Dow Jones’ U.S. index committee (the “Index Committee”) and is based on the eligibility criteria. The S&P 500® Index has a fixed constituent company count of 500.

Index constituents are selected from the S&P Total Market Index. Additions to the S&P 500® Index are evaluated based on the following eligibility criteria:

- *Market Capitalization.* The unadjusted company market capitalization should be within the specified range for the S&P 500® Index. These ranges are reviewed quarterly and updated as needed to ensure they reflect current market conditions. A company meeting the unadjusted company market capitalization criteria is also required to have a security level float-adjusted market capitalization that is at least 50% of the S&P 500® Index’s unadjusted company level minimum market capitalization threshold. For spin-offs, S&P 500® Index membership eligibility is determined using when-issued prices, if available.
- *Liquidity.* Using composite pricing and volume, the ratio of annual dollar value traded (defined as average closing price multiplied by historical volume over the last 365 calendar days) to float-adjusted market capitalization should be at least 1.00, and the stock should trade a minimum of 250,000 shares in each of the six months leading up to the evaluation date.
- *Domicile.* Only common stocks of U.S. companies are eligible. For index purposes, a U.S. company has the following characteristics:
  - the company files 10-K annual reports;
  - the U.S. portion of fixed assets and revenues constitutes a plurality of the total, but need not exceed 50%. When these factors are in conflict, fixed assets determine plurality. Revenue determines plurality when there is incomplete asset information. Geographic information for revenue and fixed asset allocations are determined by the company as reported in its annual filings. If this criteria is not met or is ambiguous, S&P Dow Jones may still deem the company to be a U.S. company for index purposes if its primary listing, headquarters and incorporation are all in the United States and/or “a domicile of convenience” (Bermuda, Channel Islands, Gibraltar, islands in the Caribbean, Isle of Man, Luxembourg, Liberia or Panama); and
  - the primary listing is on an eligible U.S. exchange as described below.

In situations where the only factor suggesting that a company is not a U.S. company is its tax registration in a “domicile of convenience” or another location chosen for tax-related reasons, S&P Dow Jones normally determines that the company is still a U.S. company. The final determination of domicile eligibility is made by the S&P Dow Jones’ U.S. Index Committee.

- *Public Float.* There should be a public float of at least 50% of the company's stock.
- *Sector Classification.* The company is evaluated for its contribution to sector balance maintenance, as measured by a comparison of each GICS® sector's weight in the S&P 500® Index with its weight in the S&P Total Market Index, in the relevant market capitalization range. The S&P Total Market Index is a float-adjusted, market-capitalization weighted index designed to track the broad equity market, including large-, mid-, small- and micro-cap stocks.
- *Financial Viability.* The sum of the most recent four consecutive quarters' Generally Accepted Accounting Principles ("GAAP") earnings (net income excluding discontinued operations) should be positive as should the most recent quarter. For equity real estate investment trusts ("REITs"), financial viability is based on GAAP earnings and/or Funds From Operations ("FFO"), if reported.
- *Treatment of IPOs.* Initial public offerings should be traded on an eligible exchange for at least 12 months before being considered for addition to an S&P U.S. Index. Spin-offs or in-specie distributions from existing constituents do not need to be seasoned for 12 months prior to their inclusion in the S&P 500® Index.
- *Exchange Listing.* A primary listing on one of the following U.S. exchanges is required: New York Stock Exchange, NYSE Arca, NYSE American, Nasdaq Global Select Market, Nasdaq Select Market, Nasdaq Capital Market, Cboe BZX, Cboe BYX, Cboe EDGA or Cboe EDGX exchanges. Ineligible exchanges include the OTC Bulletin Board and Pink Sheets.
- *Organizational Structure and Share Type.* Eligible organizational structures and share types are corporations (including equity and mortgage REITs) and common stock (*i.e.*, shares). Ineligible organizational structures and share types include, but are not limited to, business development companies, limited partnerships, master limited partnerships, limited liability companies, closed-end funds, exchange-traded funds, exchange-traded notes, royalty trusts, special purposes acquisition companies, preferred and convertible preferred stock, unit trusts, equity warrants, convertible bonds, investment trusts, rights, American Depositary Receipts and tracking stocks.

As of July 31, 2017, the securities of companies with multiple share class structures (including companies with listed and unlisted share classes) are no longer eligible to be added to the S&P 500® Index, but securities already included in the S&P 500® Index have been grandfathered and are not affected by this change.

Removals from the S&P 500® Index are evaluated based as follows:

- *Companies that are involved in mergers, acquisitions or significant restructuring such that they no longer meet inclusion criteria.* Companies delisted as a result of merger, acquisition or other corporate action are removed at a time announced by S&P Dow Jones, normally at the close of the last day of trading or expiration of a tender offer. Constituents that are halted from trading may be kept in the S&P 500® Index until trading resumes, at the discretion of S&P Dow Jones. If a stock is moved to the pink sheets or the bulletin board, the stock is removed.

Any company that is removed from the S&P 500® Index (including discretionary and bankruptcy/exchange delistings) must wait a minimum of one year from its index removal date before being reconsidered as a replacement candidate.

- *Companies that substantially violate one or more of the addition criteria.* S&P Dow Jones believes turnover in membership in the S&P 500® Index should be avoided when possible. At times a stock may appear to temporarily violate one or more of the addition criteria. However, the addition criteria are for addition to the S&P 500® Index, not for continued membership. As a result, an index constituent of the S&P 500® Index that appears to violate criteria for addition to that index is not deleted unless ongoing conditions warrant an index change. When a stock is removed from an index, S&P Dow Jones explains the basis for the removal.

Current constituents of the S&P 500® Index, the S&P MidCap 400® Index and the S&P SmallCap 600® Index (each, an “S&P U.S. Index”) can be migrated from one S&P U.S. Index to another, *provided* they meet the unadjusted company level market capitalization eligibility criteria for the new S&P U.S. Index. Migrations from one S&P U.S. Index to another S&P U.S. Index do not need to meet the financial viability, liquidity, or 50% of the new S&P U.S. Index’s unadjusted company level minimum market capitalization threshold criteria. Companies that are spun-off from current S&P U.S. Index constituents do not need to meet the outside addition criteria, but they should have a total market cap representative of the relevant S&P U.S. Index.

### **Calculation of the S&P 500® Index**

The S&P 500® Index is a float-adjusted market capitalization-weighted index. On any given day, the index value of the price return version of the S&P 500® Index is the total float-adjusted market capitalization of the S&P 500® Index’s constituents *divided* by its divisor. On any given day, the index value of the total return version of the S&P 500® Index reflects the reinvestment of dividends on the S&P 500® Index’s constituents in the S&P 500® Index as a whole (and not in the specific constituents paying the dividends), in addition to the price performance of the S&P 500® Index’s constituents. The float-adjusted market capitalization reflects the price of each stock in the S&P 500® Index *multiplied* by the number of shares used in the index value calculation.

*Float Adjustment.* Float adjustment means that the number of shares outstanding is reduced to exclude closely held shares from the calculation of the index value because such shares are not available to investors. The goal of float adjustment is to adjust each company’s total shares outstanding for long-term, strategic shareholders, whose holdings have interests such as maintaining control rather than the shorter-term economic fortunes of the company. Generally, these long-term strategic shareholders include, but are not limited to, officers and directors, private equity, venture capital & special equity firms, asset managers and insurance companies with board of director representation, other publicly traded companies that hold shares, holders of restricted shares, company-sponsored employee share plans/trusts, defined contribution plans/savings, and investment plans, foundations or family trusts associated with the company, government entities at all levels (other than government retirement/pension funds), sovereign wealth funds and any individual person who controls a 5% or greater stake in a company as reported in regulatory filings. Restricted shares are generally not included in total shares outstanding except for shares held as part of a lock-up agreement. Shares that are not considered outstanding are also not included in the available float. These generally include treasury stock, stock options, equity participation units, warrants, preferred stock, convertible stock and rights.

For each component, S&P Dow Jones calculates an Investable Weight Factor (“IWF”), which represents the portion of the total shares outstanding that are considered part of the public float for purposes of the S&P 500® Index.

*Divisor.* Continuity in index values of the S&P 500® Index is maintained by adjusting its divisor for all changes in its constituents’ share capital after its base date. This includes additions and deletions to the S&P 500® Index, rights issues, share buybacks and issuances and non-zero price spin-offs. The value of the S&P 500® Index’s divisor over time is, in effect, a chronological summary of all changes affecting the base capital of the S&P 500® Index. The divisor of the S&P 500® Index is adjusted such that the index value of the S&P 500® Index at an instant just prior to a change in base capital equals the index value of the S&P 500® Index at an instant immediately following that change.

### **Maintenance of the S&P 500® Index**

Changes to index composition are made on an as-needed basis. There is no scheduled reconstitution. Rather, changes in response to corporate actions and market developments can be made at any time. Index additions and deletions are announced with at least three business days advance notice. Less than three business days’ notice may be given at the discretion of the S&P Dow Jones’ U.S. Index Committee.

*Share Updates.* Changes in a company’s shares outstanding and IWF due to its acquisition of another public company are made as soon as reasonably possible. At S&P Dow Jones’ discretion, de

minimis merger and acquisition share changes are accumulated and implemented with the quarterly share rebalancing. All other changes of less than 5% are accumulated and made quarterly on the third Friday of March, June, September and December.

**5% Rule.** Constituent share changes related to public offerings of at least 5% are implemented weekly. Public offerings are eligible for weekly implementation if all information is available in a timely fashion. Any concurrent share repurchase or share issuance by the affected company, even if less than 5% will also be included in the treatment as long as the selling shareholder's stake equals at least 5% of the total shares of the company.

If a 5% or more share change causes a company's IWF to change by five percentage points or more (for example from 0.80 to 0.85), the IWF is updated at the same time as the share change. IWF changes resulting from partial tender offers are considered on a case by case basis.

For weekly share reviews involving companies with multiple share classes, the 5% share change threshold is based on each individual share class rather than total company shares.

**Share/IWF Freezes.** A share/IWF freeze period is implemented during each quarterly rebalancing. The freeze period begins after the market close on the Tuesday preceding the second Friday of each rebalancing month (*i.e.*, March, June, September and December) and ends after the market close on the third Friday of a rebalancing month. Pro-forma files are normally released after the market close on the second Friday, one week prior to the rebalancing effective date. In September, preliminary share and float data are released on the first Friday of the month, but the share freeze period for September will follow the same schedule as the other three quarterly share freeze periods. For illustration purposes, if rebalancing pro-forma files are scheduled to be released on Friday, March 13, the share/IWF freeze period will begin after the close of trading on Tuesday, March 10 and will end after the close of trading the following Friday, March 20 (*i.e.*, the third Friday of the rebalancing month).

During the share/IWF freeze period, shares and IWFs are not changed except for mandatory corporate action events (such as merger activity, stock splits, and rights offerings), and the accelerated implementation rule is suspended. The suspension includes all changes that qualify for accelerated implementation and would typically be announced or effective during the share/IWF freeze period. At the end of the freeze period, all suspended changes will be announced on the third Friday of the rebalancing month and implemented five business days after the quarterly rebalancing effective date.

**Outside Additions to the S&P 500® Index.** If a company is added to the S&P 500® Index, its IWF and shares outstanding are subject to review at the discretion of the S&P Dow Jones' U.S. Index Committee.

**Corporate Actions.** Corporate actions (such as stock splits, stock dividends, non-zero price spin-offs and rights offerings) are applied after the close of trading on the day prior to the ex-date.

**Other Adjustments.** In cases where there is no achievable market price for a stock being deleted, it can be removed at a zero or minimal price at the S&P Dow Jones' U.S. Index Committee's discretion.

The table below summarizes the types of index maintenance adjustments and indicates whether or not a divisor adjustment is required.

Type of Corporate Action	Comments	Divisor Adjustment
Company added/deleted	Net change in market value determines divisor adjustment.	Yes
Change in shares outstanding	Any combination of secondary issuance, share repurchase or buy back – share counts revised to reflect change.	Yes



Type of Corporate Action	Comments	Divisor Adjustment
Stock split	Share count revised to reflect new count. Divisor adjustment is not required since the share count and price changes are offsetting.	No
Spin-off	The spin-off is added to the S&P 500® Index on the ex-date at a price of zero.	No
Change in IWF	Increasing (decreasing) the IWF increases (decreases) the total market value of the S&P 500® Index. The divisor change reflects the change in market value caused by the change to an IWF.	Yes
Special dividend	The stock price is adjusted by the amount of the dividend; the divisor adjustment reflects the net change to the index market capitalization.	Yes
Rights offering	The calculation assumes that the offering is fully subscribed. Divisor adjustment reflects increase in market capitalization measured as the shares issued multiplied by the price paid.	Yes

Stock splits and stock dividends do not affect the divisor, because following a split or dividend, both the stock price and number of shares outstanding are adjusted by S&P Dow Jones so that there is no change in the market value of the relevant component. All stock split and dividend adjustments are made after the close of trading on the day before the ex-date.

### **Governance of the S&P 500® Index**

The S&P 500® Index is maintained by the S&P Dow Jones' U.S. Index Committee. All S&P Dow Jones' U.S. Index Committee members are full-time professional members of S&P Dow Jones' staff. The S&P Dow Jones' U.S. Index Committee meets monthly. At each meeting, the S&P Dow Jones' U.S. Index Committee reviews pending corporate actions that may affect Index constituents, statistics comparing the composition of the S&P 500® Index to the market, companies that are being considered as candidates for addition to the S&P 500® Index, and any significant market events. In addition, the S&P Dow Jones' U.S. Index Committee may revise index policy covering rules for selecting companies, treatment of dividends, share counts or other matters.

### **License Agreement**

JPMorgan Chase & Co. or its affiliate has entered into an agreement with S&P Dow Jones that provides it and certain of its affiliates or subsidiaries, including JPMorgan Financial, with a non-exclusive license and, for a fee, with the right to use the S&P 500® Index, which is owned and published by S&P Dow Jones, in connection with certain securities, including the notes.

The notes are not sponsored, endorsed, sold or promoted by S&P Dow Jones or its third party licensors. Neither S&P Dow Jones nor its third party licensors makes any 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 S&P 500® Index to track general stock market performance. S&P Dow Jones' and its third party licensor's only relationship to the Issuer or the Guarantor (if applicable) is the licensing of certain trademarks and trade names of S&P Dow Jones and the third party licensors and of the S&P 500® Index which is determined, composed and calculated by S&P Dow Jones or its third party licensors without regard to the Issuer or the Guarantor (if applicable) or the notes. S&P Dow Jones and its third party licensors have no obligation to take the needs of the Issuer or the Guarantor (if applicable) or the owners of the notes into consideration in determining, composing or calculating the S&P 500® Index. Neither S&P Dow Jones nor its third party licensors is responsible for and has 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 are to be converted into cash. S&P Dow Jones has no obligation or liability in connection with the administration, marketing or trading of the notes.

NEITHER S&P DOW JONES, ITS AFFILIATES NOR THEIR THIRD PARTY LICENSORS GUARANTEE THE ADEQUACY, ACCURACY, TIMELINESS OR COMPLETENESS OF THE S&P 500® INDEX OR ANY DATA INCLUDED THEREIN OR ANY COMMUNICATIONS, INCLUDING BUT NOT LIMITED TO, ORAL OR WRITTEN COMMUNICATIONS (INCLUDING ELECTRONIC COMMUNICATIONS) WITH RESPECT THERETO. S&P DOW JONES, ITS AFFILIATES AND THEIR THIRD PARTY LICENSORS SHALL NOT BE SUBJECT TO ANY DAMAGES OR LIABILITY FOR ANY ERRORS, OMISSIONS OR DELAYS THEREIN. S&P DOW JONES MAKES NO EXPRESS OR IMPLIED WARRANTIES, AND EXPRESSLY DISCLAIMS ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE WITH RESPECT TO THE MARKS, THE S&P 500® INDEX OR ANY DATA INCLUDED THEREIN. WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT WHATSOEVER SHALL S&P DOW JONES, ITS AFFILIATES OR THEIR THIRD PARTY LICENSORS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS, TRADING LOSSES, LOST TIME OR GOODWILL, EVEN IF THEY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER IN CONTRACT, TORT, STRICT LIABILITY OR OTHERWISE.

“Standard & Poor’s,” “S&P” and “S&P 500” are trademarks of S&P Dow Jones and have been licensed for use by JPMorgan Chase & Co and its affiliates, including JPMorgan Financial.

## SUPPLEMENTAL TERMS OF THE NOTES

*The following supplemental terms of the notes supplement, and to the extent they are inconsistent, supersede, the description of the general terms of the notes set forth in the accompanying product supplement. Except as noted below, capitalized terms used in this section without definition are as defined in "The J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index" above.*

### **Postponement of a Determination Date**

#### ***Notes linked solely to the Index***

Notwithstanding any contrary provision in the accompanying product supplement, for notes linked solely to the Index, the following provisions will apply. If a Determination Date (as defined in the accompanying product supplement) is a Disrupted Day (as defined in the accompanying product supplement), the applicable Determination Date will be postponed to the immediately succeeding scheduled trading day that is not a Disrupted Day.

In no event, however, will any Determination Date be postponed to a date that is after the applicable Final Disrupted Determination Date (as defined in the accompanying product supplement). If a Determination Date is or has been postponed to the applicable Final Disrupted Determination Date and that day is a Disrupted Day, the calculation agent will determine the closing level of the Index for that Determination Date on that Final Disrupted Determination Date in accordance with the formula for and method of calculating the closing level of the Index last in effect prior to the commencement of the market disruption event (or prior to the non-trading day), using:

- (a) the official closing levels of the price return and total return versions of the Constituent (or, if a market disruption event or a non-trading day that affected the Constituent has occurred, the closing level of the Constituent determined by the calculation agent in accordance with the formula for and method of calculating the closing level of the Constituent last in effect prior to the commencement of the market disruption event (or prior to the non-trading day), using the calculation agent's good faith estimate of the closing price or other trading price or level of, and dividends on, each security most recently composing the Constituent that would have prevailed but for that suspension or limitation or non-trading day) on the scheduled trading day immediately preceding that Final Disrupted Determination Date; and
- (b) the relevant interest rate associated with the notional cash return and the notional financing cost (or, if such interest rate is not published on that day, the calculation agent's good faith estimate of such interest rate) on the scheduled trading day immediately preceding that Final Disrupted Determination Date.

#### ***Notes linked to the Index and other reference assets***

If the notes are linked to the Index and other reference assets, the provisions relating to postponement of a Determination Date as set forth in the accompanying product supplement will apply, except that if a Determination Date is or has been postponed to the applicable Final Disrupted Determination Date and, on that day, the closing level of the Index has not been established in accordance with the postponement provisions of the accompanying product supplement that apply prior to the applicable Final Disrupted Determination Date, the closing level of the Index for that Determination Date will be determined by the calculation agent on the applicable Final Disrupted Determination Date in accordance with the formula for and method of calculating the closing level of the Index last in effect prior to the commencement of the market disruption event (or prior to the non-trading day), using:

- (a) the official closing levels of the price return and total return versions of the Constituent (or, if a market disruption event or a non-trading day that affected the Constituent has occurred, the closing level of the Constituent determined by the calculation agent in accordance with the formula for and method of calculating the closing level of the Constituent last in effect prior to the commencement of the market disruption event (or prior to the non-trading day), using the calculation agent's good faith estimate of the closing price or other trading price or level of, and

dividends on, each security most recently composing the Constituent that would have prevailed but for that suspension or limitation or non-trading day) on the scheduled trading day immediately preceding that Final Disrupted Determination Date; and

- (b) the relevant interest rate associated with the notional cash return and the notional financing cost (or, if such interest rate is not published on that day, the calculation agent's good faith estimate of such interest rate) on the scheduled trading day immediately preceding that Final Disrupted Determination Date.

### ***Additional Defined Terms***

Notwithstanding any contrary definition in the accompanying product supplement, a “**scheduled trading day**” is, unless otherwise specified in the relevant terms supplement, a day, as determined by the calculation agent, on which (a) each of the following exchanges is scheduled to be open for trading for their respective regular trading sessions: the relevant exchanges for the Constituent and the principal options and futures exchanges relating to the Constituent, and (b) banking institutions in the City of New York are not scheduled to be authorized or required by law, regulation or executive order to close.

Notwithstanding anything to the contrary in the accompanying product supplement, a “**trading day**” is, unless otherwise specified in the relevant terms supplement, a day, as determined by the calculation agent, on which (a) trading is generally conducted on the relevant exchanges for the Constituent and the principal options and futures exchanges relating to the Constituent and (b) banking institutions in the City of New York are not otherwise authorized or required by law, regulation or executive order to close.

Notwithstanding any contrary definition in the accompanying product supplement, “**relevant exchange**” means the primary exchange or market of trading for any security (or any combination thereof) included in the Constituent.

### **Market Disruption Events**

Notwithstanding any contrary provision in the accompanying product supplement, the following provisions will apply to notes linked in whole or in part to the Index. With respect to the Index or any relevant successor index (as defined in the accompanying product supplement), a “**market disruption event**,” unless otherwise specified in the relevant terms supplement, means:

- (1) any suspension of, or limitation on, trading imposed by the relevant exchange for the Constituent;
- (2) any other event has occurred that disrupts or impairs the ability of market participants in general to effect transactions in, or obtain market values for the Constituent or any equity securities that compose 20% or more of the level of the Constituent;
- (3) the closure of any relevant exchange for the Constituent prior to its scheduled closing time unless that earlier closing time is announced at least one hour prior to the actual closing time;
- (4) the failure of the relevant exchange with respect to the Constituent to open;
- (5) the closure of a material number of leading commercial banks in the City of New York prior to their scheduled weekday closing time;
- (6) the failure of the administrator or publisher of the relevant interest rate associated with the notional financing cost (or any other relevant entity) to report that interest rate; or
- (7) the failure of the Index Calculation Agent to calculate and publish the official closing level of the Index (or that successor index),

in each case as determined by the calculation agent in its sole discretion; and

- in the case of an event described in clause (1), (2) or (3) above, a determination by the calculation agent in its sole discretion that the applicable event described above materially

interfered with our ability or the ability of any of our affiliates to adjust or unwind all or a material portion of any hedge with respect to the notes.

A limitation on the hours or number of days of trading will not constitute a market disruption event with respect to the Index or any relevant successor index if the limitation results from an announced change in the regular business hours of the relevant exchange or market.

**Discontinuation of the Index; Alteration of Method of Calculation**

The provisions relating to the discontinuation of an index as set forth in the accompanying product supplement will apply, except that, if the calculation agent is to determine the closing level of the Index or any successor index for any Determination Date or other relevant date because no successor index is available at that time, or the calculation agent has previously selected a successor index and publication of that successor index is discontinued prior to, and that discontinuation is continuing on, that Determination Date or other relevant date, then the closing level of the Index will be computed by the calculation agent in accordance with the rules governing the Index or successor index, as applicable, last in effect prior to that discontinuation.

## ANNEX A

# **J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index Index Rules**

**J.P.Morgan**

11 June 2021 (as amended and restated August 30, 2021)

© All Rights Reserved

# Contents

1.	Introduction.....	3
2.	Index Sponsor and Index Calculation Agent.....	3
2.1	<i>Identity and responsibilities</i> .....	3
2.2	<i>Index Sponsor determinations and Index Calculation Agent determinations</i> .....	4
3.	Amendments .....	4
4.	General Notes on the Index.....	5
5.	Publication of the Index Level .....	6
6.	The notional Cash Level.....	6
7.	Determining the Momentum Exposure .....	7
8.	Determining the Mean Reversion Exposure.....	7
9.	Determining the Turn-of-Month Exposure.....	8
10.	Calculating the Effective Exposure.....	8
11.	Calculation of the Index Level .....	9
12.	Market Disruption .....	10
12.1	<i>Market disruption on a Rebalancing Date</i> .....	10
12.2	<i>Calculation of the Index Level in respect of a Final Disruption Determination Date</i> .....	10
12.3	<i>Definitions related to market disruption</i> .....	10
13.	Extraordinary Events .....	11
13.1	<i>Successors to the Constituent</i> .....	11
13.2	<i>Substitutes for the Constituent</i> .....	12
13.3	<i>Definitions related to Extraordinary Events</i> .....	12
14.	Interest Rate Extraordinary Events.....	14
15.	Corrections.....	14
	Definitions .....	16



# J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index Index Rules

## 1. Introduction

This document comprises the rules (as may be supplemented, amended or restated from time to time, the “**Index Rules**”) of the J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index (the “**Index**”), a notional, rules-based proprietary index.

**ALL PERSONS READING THIS DOCUMENT SHOULD REFER TO THE NOTICES, DISCLAIMERS AND CONFLICTS OF INTEREST SECTIONS BELOW AND CONSIDER THE INFORMATION CONTAINED IN THIS DOCUMENT IN LIGHT OF SUCH NOTICES, DISCLAIMERS AND CONFLICTS OF INTEREST.**

**NOTHING IN THE INDEX RULES CONSTITUTES AN OFFER TO BUY OR SELL ANY FINANCIAL PRODUCT, PARTICIPATE IN ANY TRANSACTION OR ADOPT ANY INVESTMENT STRATEGY. THE INDEX RULES DO NOT CONSTITUTE INVESTMENT, LEGAL, TAX, REGULATORY OR ACCOUNTING ADVICE.**

**THIS DOCUMENT IS IMPORTANT. YOU SHOULD NOT INVEST IN A PRODUCT LINKED TO THE INDEX UNLESS YOU HAVE ENSURED THAT YOU FULLY UNDERSTAND THE NATURE OF SUCH AN INVESTMENT AND THE RISKS INVOLVED AND ARE SATISFIED THAT THE INVESTMENT IS SUITABLE AND APPROPRIATE FOR YOUR CIRCUMSTANCES AND OBJECTIVES. IF YOU ARE IN ANY DOUBT ABOUT THIS YOU SHOULD TAKE ADVICE FROM AN APPROPRIATELY QUALIFIED ADVISER. EVEN IF YOU ARE A HIGHLY SOPHISTICATED INVESTOR WHO REGULARLY TRANSACTS IN PRODUCTS LINKED TO INDICES OF THIS TYPE, YOU ARE STRONGLY ADVISED TO TAKE SUCH ADVICE IN ANY EVENT.**

This document is published by the Index Sponsor, J.P. Morgan Securities plc of 25 Bank Street, London, E14 5JP, United Kingdom, in its capacity as such. The following further information is available at <https://www.jpmorganindices.com>:

- (i) supplemental disclosure on the Index Sponsor’s governance and oversight framework;
- (ii) information on complaints handling; and
- (iii) in respect of Indices for which the Index Sponsor is J.P. Morgan Securities plc, further information on conflicts of interest.

## 2. Index Sponsor and Index Calculation Agent

### 2.1 Identity and responsibilities

As of the Live Date (as defined in “*Definitions*”), J.P. Morgan Securities plc (“**JPMS**”) is the sponsor of the Index (the “**Index Sponsor**”, which term shall include any successor or assign of the Index Sponsor). The Index Sponsor may appoint a successor sponsor or assign, delegate or transfer any or all of its rights, obligations or responsibilities in its capacity as Index Sponsor in connection with the Index to one or more entities (including an unrelated third party) that the Index Sponsor determines appropriate. The Index Calculation Agent (unless the Index Calculation Agent is the same entity as the Index Sponsor) must obtain written permission from the Index Sponsor prior to any delegation or transfer of the Index Calculation Agent’s responsibilities or obligations in connection with the Index.

The initial Index Sponsor is responsible for, among other things, the creation and design of the Index and the documentation of the Index Rules. The Index Sponsor is responsible for the appointment of the calculation agent of the Index (the “**Index Calculation Agent**”), which may be the Index Sponsor, an unrelated third party or an affiliate or subsidiary of the Index Sponsor. The Index Calculation Agent will (unless the Index Calculation Agent is the same entity as the Index Sponsor) be an agent of the Index Sponsor. As of the Live Date, the Index Sponsor has appointed JPMS to be the initial Index Calculation Agent.

The Index Sponsor may at any time and for any reason (i) appoint a successor Index Calculation Agent, if the Index Sponsor is at that time the Index Calculation Agent or (ii) terminate the appointment of the Index Calculation Agent and appoint an alternative entity as a replacement Index Calculation Agent, if the Index Sponsor is not at that time the Index Calculation Agent.

The Index Calculation Agent is responsible for (i) calculating the Index Level in respect of each Trading Day (each as defined herein) in accordance with the Index Rules and (ii) determining (among other things and subject to the prior agreement of the Index Sponsor or at the direction of the Index Sponsor) if a Market Disruption Event or Extraordinary Event (each as defined herein) has occurred or whether an anti-dilution adjustment shall be made in respect of any Constituent (as defined herein), whether any input necessary to perform any calculations under the Index Rules is not published or otherwise made available by the relevant data provider, sponsor of a Constituent or Reference Index (as defined herein), other input sponsor or exchange to the Index Calculation Agent, and any related consequences or adjustments in accordance with the Index Rules.

The Index Calculation Agent shall act in good faith and in a commercially reasonable manner in making determinations, interpretations and calculations pursuant to the Index Rules. Subject to the prior agreement of the Index Sponsor, the Index Calculation Agent's determinations, and all calculations related to the Index and the Index Calculation Agent's interpretations of the Index Rules, shall be final.

None of the Index Sponsor, the Index Calculation Agent, or any of their respective affiliates or subsidiaries or any of their respective directors, officers, employees, representatives, delegates or agents (each, a **"Relevant Person"**) shall have any responsibility to any person (whether as a result of negligence or otherwise) for any determinations, interpretations or calculations made or anything done (or omitted to be determined or done) in connection with the Index or any use to which any person may put the Index or the Index Levels.

The Index Sponsor may, in its discretion, at any time and without notice, terminate the calculation or publication of the Index, including, without limitation, subsequent to the occurrence of one of the events described in Section 12 (*Extraordinary Events and Anti-Dilution Events*).

## *2.2 Index Sponsor determinations and Index Calculation Agent determinations*

The Index Calculation Agent's exercise of discretion or failure to exercise discretion in relation to the Index may have a detrimental effect on the Index Level and the volatility of the Index. The Index Sponsor or the Index Calculation Agent may make certain determinations or calculations based on information obtained from publicly available sources without independently verifying such information.

Subject to the prior agreement of the Index Sponsor, the Index Calculation Agent may make certain determinations, adjustments, amendments and interpretations related to the Index. All such determinations, adjustments, amendments and interpretations (in each case, subject to such prior agreement on the part of the Index Sponsor) of the Index Calculation Agent related to the Index and all calculations performed by the Index Calculation Agent related to the Index shall be final, conclusive and binding and no person shall be entitled to make any claim against the Index Sponsor, the Index Calculation Agent, or any of the Relevant Persons in respect thereof. Once a determination, adjustment, amendment or interpretation is made or action is taken by the Index Calculation Agent (in each case, as agreed in advance by the Index Sponsor) in relation to the Index, or a calculation is performed by the Index Calculation Agent in relation to the Index, none of the Index Sponsor, the Index Calculation Agent or any Relevant Person shall be under any obligation to revise any such determination, adjustment, amendment, interpretation or calculation made or anything done (or omitted to be determined, adjusted, amended, interpreted, calculated or done) for any reason.

## **3. Amendments**

The Index Rules may be supplemented, amended or restated from time to time in the sole discretion of the Index Sponsor. The Index Rules will be made available (in a manner determined by the Index Sponsor from time to time) following such supplementation, amendment or restatement. Following any amendment, the Index Sponsor will make available (as soon as practicable) the amended version of the Index Rules and will

include the effective date of such amendment in the new version of the Index Rules. However, the Index Sponsor is under no obligation to inform any person about any amendments to the Index (except as required by law or regulation).

Although the Index Rules are intended to be comprehensive and accurate, ambiguities may arise and errors or omissions may have been made. In such circumstances, the Index Sponsor will resolve such ambiguities and, if necessary, amend the Index Rules to reflect such resolution. In the case of any inaccuracy, the Index Sponsor may amend the Index Rules to address errors or omissions. The Index Sponsor is under no obligation to inform any person of any amendments to the Index (except as may be required by law).

#### 4. General Notes on the Index

These general notes on the Index set forth in this Section 4 are qualified in their entirety by the remainder of the Index Rules.

**Objective.** The Index is designed to track the return of a dynamic notional exposure, determined pursuant to these Index Rules, to an index of U.S. large capitalization equities.

The Index tracks the return of a dynamic notional exposure to the S&P 500® Index (or such successor or substitute as may be applicable pursuant to Section 13 (*Extraordinary Events*), the “**Constituent**”), subject to the daily deduction of a thirty-five basis points (0.35%) per annum index fee (the “**Fee**”).

This Index’s exposure at baseline will be full invested, and will be increased or reduced based on three market timing strategies:

- a momentum strategy, implemented for approximately a week each month with respect to the third (3<sup>rd</sup>) Friday of each calendar month, which has historically been the monthly expiry for listed options on the Constituent, as provided in Section 7 (*Determining the Momentum Exposure*);
- a mean reversion strategy, implemented for approximately the last week of each calendar month, as provided in Section 8 (*Determining the Mean Reversion Exposure*); and
- a turn-of-month strategy, which invests at the start and end of each calendar month, as provided in Section 9 (*Determining the Turn-of-Month Exposure*).

The exposures derived from each strategy are summed, subject to a maximum exposure of one hundred and fifty percent (150%) (the “**Maximum Exposure**”), as provided in Section 10 (*Calculating the Effective Exposure*), and the Index is rebalanced on Rebalancing Dates (as defined in Section 10 (*Calculating the Effective Exposure*)) to a resulting exposure (the “**Effective Exposure**”) of:

- one hundred percent (100%), in which case the Index will be fully invested in the Constituent;
- fifty percent (50%), in which case the Index will be partially uninvested and its return will be based on the Constituent and the return of a notional cash position based on an overnight interest rate; or
- one hundred and fifty percent (150%), in which case the Index will provide a leveraged exposure to the Constituent, and the return of the notional cash position will be deducted to reflect the financing cost associated with the use of leverage.

The Rebalancing Dates (as defined in Section 10) are subject to Market Disruption provisions, as provided in Section 12 (*Market Disruption*). The Closing Level and TR Level of the Constituent used to calculate historical performance is subject to market disruption provisions, including those set forth in Section 12.

The Constituent is subject to the provisions of Section 13 (*Extraordinary Events*).

**No assurance can be given that the investment strategy used to construct the Index will be successful or that the Index will outperform any strategy that might be constructed from the Constituent.**

**The Index’s exposure is described as a notional exposure because there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. The Index merely**

references certain indices, the performance of which will be used as a reference point for calculating the Index Level.

## 5. Publication of the Index Level

The level of the Index (the “**Index Level**”) will be calculated by the Index Calculation Agent in respect of each Trading Day (as defined in “*Definitions*”) in U.S. dollars in accordance with the methodology set out in Section 10 (*Calculation of the Index Level*) below. The Index Calculation Agent will publish the Index Level in respect of each Trading Day. The Index Level in respect of each Trading Day may be obtained by reference to Bloomberg ticker “JPUSKRSE Index” or from a successor or alternate source as may be identified by the Index Calculation Agent from time to time.

By operation of the definition of Trading Day, the level of Index Level will be published on each Index Business Day that is not a Disrupted Day (as defined in Section 11.4 (*Definitions related to market disruption*)), on each Index Business Day, and on each Effective Rebalancing Date (as defined in “*Definitions*”), regardless of whether any market disruption causes a Disrupted Day.

The Index Calculation Agent may, at any time and without notice, change the frequency of publication of the Index Level, the means or place of publication of the Index Level or cease the calculation, publication or dissemination of the Index Level. The published level will be initially to an accuracy of two decimal places; however, the Index Calculation Agent may calculate the Index to a greater degree of accuracy or specificity and may use any rounding convention it considers appropriate for any data used or calculations performed (which may include using data with a higher level of specificity than that which is published on any particular data source) to determine the Index Level.

## 6. The notional Cash Level

As of the Base Date, the level of a notional cash position (the “**Cash Level**”) was set equal to one hundred (100.00). Thereafter, subject to the provisions of Section 11.3 (*Calculation of the Index Level in respect of a Final Disruption Determination Date*), the Cash Level will be calculated by the Index Calculation Agent in U.S. dollars in respect of each Trading Day as follows:

$$\text{Cash Level}_t = \text{Cash Level}_{t-1} \times \left( 1 + \text{Rate}_{t-1} \times \frac{\text{Daycount}_{t-1,t}}{360} \right)$$

Where:

Cash Level<sub>t</sub> means the Cash Level as of Trading Day t.

Cash Level<sub>t-1</sub> means the Cash Level as of the Trading Day immediately preceding Trading Day t.

Rate<sub>t-1</sub> means the level of the Interest Rate published by the Interest Rate Publisher (as defined below) for the Trading Day immediately preceding Trading Day t, provided that, if such Interest Rate Publisher does not publish a level for such Trading Day, Rate<sub>t-1</sub> shall be the level of the Interest Rate for the immediately preceding calendar day for which the Interest Rate Publisher did publish a level.

Daycount<sub>t-1,t</sub> means, the number of calendar days from but excluding the Trading Day immediately preceding Trading Day t to and including Trading Day t.

Interest Rate means the Effective Federal Funds Rate (or such successor or substitute as may be applicable pursuant to Section 14 (*Interest Rate Extraordinary Events*)) as administered and published by the Interest Rate Publisher.

Interest Rate Publisher means the Federal Reserve Bank of New York (or such successor or substitute as maybe applicable pursuant to Section 14 (*Interest Rate Extraordinary Events*)).

## 7. Determining the Momentum Exposure

Unless a Market Disruption Event (as defined in Section 12.3 (*Definitions related to market disruption*)) has occurred and is continuing, the Index will implement a momentum strategy by rebalancing its exposure on:

- (i) the Index Business Day that is four (4) Index Business Days prior to the Saturday immediately following third (3<sup>rd</sup>) Friday of each calendar month (the “**Scheduled Momentum Entry Day**”); and
- (ii) the Index Business Day following the third (3<sup>rd</sup>) Friday of each calendar month (the “**Scheduled Momentum Exit Day**”);

in each case, subject to postponement subject to Section 12.1 (*Market disruption on a Rebalancing Date*).

In respect of each Trading Day, the Index Calculation Agent shall determine the exposure with respect to the monthly momentum strategy (the “**Momentum Exposure**”) as follows:

- (a) For each Trading Day from and including an Effective Momentum Entry Day to but excluding an Effective Momentum Exit Day:
  - (i) If the Closing Level as of the Trading Day immediately preceding such Effective Momentum Entry Day is greater than the Closing Level as of the immediately preceding Effective Momentum Exit Day, the Momentum Exposure shall be fifty percent (50%).
  - (ii) If the Closing Level as of the Trading Day immediately preceding such Effective Momentum Entry Day is less than the Closing Level as of the immediately preceding Effective Momentum Exit Day, the Momentum Exposure shall be minus fifty percent (-50%).
  - (iii) If the Closing Level as of the Trading Day immediately preceding such Effective Momentum Entry Day is equal to the Closing Level as of the immediately preceding Effective Momentum Exit Day, the Momentum Exposure shall be zero percent (0%).
- (b) For each Trading Day from and including an Effective Momentum Exit Day to but excluding an Effective Momentum Entry Day, the Momentum Exposure shall be zero percent (0%).

## 8. Determining the Mean Reversion Exposure

Unless a Market Disruption Event (as defined in Section 12.3 (*Definitions related to market disruption*)) has occurred and is continuing, the Index will implement a mean reversion strategy by rebalancing its exposure on:

- (i) the Index Business Day that is six (6) Index Business Days prior to the last Index Business Day of each calendar month (the “**Scheduled Mean Reversion Entry Day**”); and
- (ii) the last Index Business Day of each calendar month (the “**Scheduled Mean Reversion Exit Day**”);

in each case, subject to postponement subject to Section 12.1 (*Market disruption on a Rebalancing Date*).

In respect of each Trading Day, the Index Calculation Agent shall determine the exposure with respect to the monthly mean reversion strategy (the “**Mean Reversion Exposure**”) as follows:

- (a) For each Trading Day from and including an Effective Mean Reversion Entry Day to but excluding an Effective Mean Reversion Exit Day:
  - (i) If the Closing Level as of the Trading Day immediately preceding such Effective Mean Reversion Entry Day is less than the Closing Level as of the immediately preceding Effective Mean Reversion Exit Day, the Mean Reversion Exposure shall be fifty percent (50%).
  - (ii) If the Closing Level as of the Trading Day immediately preceding such Effective Mean Reversion Entry Day is greater than the Closing Level as of the immediately preceding Effective Mean Reversion Exit Day, the Mean Reversion Exposure shall be minus fifty percent (-50%).
  - (iii) If the Closing Level as of the Trading Day immediately preceding such Effective Mean Reversion Entry Day is equal to the Closing Level as of the immediately preceding Effective Mean Reversion Exit Day, the Mean Reversion Exposure shall be zero percent (0%).
- (b) For each Trading Day from and including an Effective Mean Reversion Exit Day to but excluding an Effective Mean Reversion Entry Day, the Mean Reversion Exposure shall be zero percent (0%).

## 9. Determining the Turn-of-Month Exposure

Unless a Market Disruption Event (as defined in Section 12.3 (*Definitions related to market disruption*)) has occurred and is continuing, the Index will implement a turn-of-month strategy by rebalancing its exposure on:

- (i) the Index Business Day that is two (2) Index Business Days prior to the last Index Business Day of each calendar month (the “**Scheduled Turn-of-Month Entry Day**”); and
- (ii) the fourth (4<sup>th</sup>) Index Business Day of each calendar month (the “**Scheduled Turn-of-Month Exit Day**”);

in each case, subject to postponement subject to Section 12.1 (*Market disruption on a Rebalancing Date*).

In respect of each Trading Day, the Index Calculation Agent shall determine the exposure with respect to the monthly turn-of-month strategy (the “**Turn-of-Month Exposure**”) as follows:

- (a) For each Trading Day from and including an Effective Turn-of-Month Entry Day to but excluding an Effective Turn-of-Month Exit Day, the Turn-of-Month Exposure shall be fifty percent (50%); and
- (b) For each Trading Day from and including an Effective Turn-of-Month Exit Day to but excluding an Effective Turn-of-Month Entry Day, the Turn-of-Month Exposure shall be zero percent (0%).

## 10. Calculating the Effective Exposure

In respect of each Effective Momentum Entry Day, Effective Momentum Exit Day, Effective Mean Reversion Entry Day, Effective Mean Reversion Exit Day, Effective Turn-of-Month Entry Day or an Effective Turn-of-Month Exit Day (each, a “**Rebalancing Date**”), the Index Calculation Agent shall calculate the Effective Exposure in accordance with the following formula:

$$\text{Exp}_r = \max[50\%, \min(\text{Max Exposure}, 100\% + \text{Momentum}_r + \text{Mean Reversion}_r + \text{Turn-of-Month}_r)]$$

where:

$\text{Exp}_t$  means the Effective Exposure for Rebalancing Date  $r$ .

$\text{Momentum}_r$  means the Momentum Exposure for Rebalancing Date  $r$ .

$\text{Mean Reversion}_r$  means the Mean Reversion Exposure for Rebalancing Date  $r$ .

$\text{Turn-of-Month}_r$  means the Turn-of-Month Exposure for Rebalancing Date  $r$ .

$\text{Max Exposure}$  means the Maximum Exposure (as defined in Section 4 (*General Notes on the Index*)) of one hundred and fifty percent (150%).

## 11. Calculation of the Index Level

As of the Base Date, the Index Level was set equal to zero point five zero (0.50). Thereafter, subject to the provisions of Section 11.3 (*Calculation of the Index Level in respect of a Final Disruption Determination Date*), the Index Level will be calculated by the Index Calculation Agent in U.S. dollars in respect of each Trading Day as follows:

$$\text{Index}_t = \text{Index}_r \times \left[ 1 + \text{Exp}_r \times \left( \frac{\text{Closing Level}_t}{\text{Closing Level}_r} - 1 \right) + (1 - \text{Exp}_r) \times \left( \frac{\text{Cash Level}_t}{\text{Cash Level}_r} - 1 \right) - \left( \frac{\text{TR Level}_t}{\text{TR Level}_r} - 1 \right) - \text{Fee} \times \frac{\text{Daycount}_{r,t}}{360} \right]$$

where:

$\text{Index}_t$  means the Index Level for Trading Day  $t$ .

$\text{Index}_r$  means the Index Level for the Rebalancing Date immediately preceding Trading Day  $t$ .

$\text{Exp}_r$  means the Effective Exposure for the Rebalancing Date immediately preceding Trading Day  $t$ .

$\text{Closing Level}_t$  means the Closing Level of the Constituent for Trading Day  $t$ .

$\text{Closing Level}_r$  means the Closing Level of the Constituent for the Rebalancing Date immediately preceding Trading Day  $t$ .

$\text{TR Level}_t$  means the TR Level of the Constituent for Trading Day  $t$ .

$\text{TR Level}_r$  means the TR Level of the Constituent for the Rebalancing Date immediately preceding Trading Day  $t$ .

$\text{Cash Level}_t$  means the Cash Level for Trading Day  $t$ .

$\text{Cash Level}_r$  means the Cash Level for the Rebalancing Date immediately preceding Trading Day  $t$ .

$\text{Fee}$  means the Fee (as defined in Section 4 (*General Notes on the Index*)) of thirty-five basis points (0.35%) per annum.

$\text{Daycount}_{r,t}$  means the number of calendar days from but excluding the Rebalancing Date immediately preceding Trading Day  $t$  to and including Trading Day  $t$ .

If, in respect of any Trading Day, the calculations in this Section above would result in an Index Level that is less than or equal to zero (0), the Index Level for that Trading Day and each Trading Day thereafter shall be zero (0), and the Index Calculation Agent will no longer calculate the Index Level using the formulas in this Section 11 above.

## **12. Market Disruption**

The Index is generally constructed so that the Index Calculation Agent will typically not calculate or publish the Index Level on a Disrupted Day; and so that the Index shall not rebalance on a Disrupted Day for the Constituent.

### *12.1 Market disruption on a Rebalancing Date*

The rebalancing originally scheduled to occur on a Rebalancing Date shall be postponed (such postponed Rebalancing Date, an “**Affected Rebalancing Date**”) if it is a Disrupted Day. In the event that a Rebalancing Date is an Affected Rebalancing Date, such Affected Rebalancing Date will be postponed to the date (the “**Postponed Rebalancing Date**”) that is the first day to occur of:

- (i) the first following Index Business Day that is not a Disrupted Day; and
- (ii) the fifth (5<sup>th</sup>) Index Business Day following the date on which such Affected Rebalancing Date was originally scheduled to occur.

By operation of this Section 12.1 and Section 10 above, to the extent there are several Affected Rebalancing Dates within a six (6) Index Business Day time period, a single Postponed Rebalancing Date may, in effect, be the Postponed Rebalancing Date for all such Affected Rebalancing Dates.

### *12.2 Calculation of the Index Level in respect of a Final Disruption Determination Date*

If a Postponed Rebalancing Date is a Disrupted Day, then such Postponed Rebalancing Date shall be a “**Final Disruption Determination Date**”.

On each Final Disruption Determination Date, the Index Calculation Agent will calculate its good faith estimate of the Index Level as of such Final Disruption Determination Date (notwithstanding the fact that such Final Disruption Determination Date is a Disrupted Day) using its good faith estimate of the Closing Level or TR Level of the Constituent, as applicable, if such Final Disruption Determination Date is a Disrupted Day for such Constituent. Any such estimated levels may be subject to correction on any of (x) the first succeeding Index Business Day that is not a Final Disruption Determination Date for the Index, (y) the first succeeding Index Business Day that is not a Disrupted Day in respect of any Constituent and (z) the first succeeding Index Business Day that is not a Disrupted Day for a Constituent with respect to which such an estimated level was determined pursuant to this Section 11.3.

For the avoidance of doubt, on each Final Disruption Determination Date, the Index Calculation Agent will rebalance the Index on such day in accordance with Section 11 (*Calculation of the Index Level*) using its good faith estimates determined pursuant to this Section 11.3. Such Final Disruption Determination Date shall be a Trading Day for the purposes of the Index Rules, notwithstanding the fact that it is a Disrupted Day for the Constituent.

### *12.3 Definitions related to market disruption*

- (a) “**Disrupted Day**” means an Index Business Day on which a Market Disruption Event occurs or is continuing in respect of the Constituent.
- (b) A “**Market Disruption Event**” occurs if (i) the Index Calculation Agent determines in its sole discretion that on any Index Business Day there has been, subject to the provisions of paragraph (c) below, a failure by the Constituent’s sponsor or its agent to calculate and publish the Closing Level or TR Level



for the Constituent on such Index Business Day, or any event that, in the determination of the Index Calculation Agent, disrupts or impairs the ability of market participants to effect transactions in or obtain levels or market values for (a) the Constituent, (b) any securities or components that in the aggregate comprise 20 percent (20%) or more of the level of the Constituent, (c) any futures or options contracts or other financial contracts relating to the Constituent, or (d) any futures or options contracts or other financial contracts relating to securities or components that in the aggregate comprise 20 percent (20%) or more of the level of the Constituent; and (ii) the Index Calculation Agent determines in its sole discretion that the applicable event described above could materially interfere with the ability of market participants to transact in positions with respect to the Index (including, without limitation, positions with respect to the Constituent).

(c) For the purpose of determining whether a Market Disruption Event has occurred:

- (i) at any time with respect to an Index Business Day, if trading in a security or component included in the Constituent is materially suspended or materially limited at that time, then the relevant percentage contribution of that security or component to the level of the Constituent will be based on a comparison of (x) the portion of the level of the Constituent attributable to that security or component relative to (y) the overall level of the Constituent, in each case immediately before that suspension or limitation;
- (ii) a limitation on the hours or number of days of trading will not constitute a Market Disruption Event if it results from an announced change in the regular business hours of the relevant exchange or the exchange or market for trading in futures or options contracts related to the relevant securities;
- (iii) limitations pursuant to the rules of any relevant exchange similar to New York Stock Exchange Rule 80B (or any applicable rule or regulation enacted or promulgated by any other self-regulatory organization or any government agency of scope similar to New York Stock Exchange Rule 80B as determined by the Index Calculation Agent) on trading during significant market fluctuations will constitute a suspension, absence or material limitation of trading;
- (iv) a suspension of trading in futures or options contracts on the Constituent by the exchange or market for trading in such contracts by reason of (a) a price change exceeding limits set by such exchange or market, (b) an imbalance of orders relating to such contracts or (c) a disparity in bid and ask quotes relating to such contracts, will constitute a suspension, absence or material limitation of trading in futures or options contracts related to the Constituent; and
- (v) a suspension, absence or material limitation of trading on any relevant exchange or, if applicable, on the exchange or market on which futures or options contracts related to the Reference Index or the securities of a Constituent are traded will not include any time when such exchange or market is itself closed for trading under ordinary circumstances.

### **13. Extraordinary Events**

#### *13.1 Successors to the Constituent*

- (a) (x) If the official closing level of the Constituent is not calculated or is not announced by or on behalf of the Constituent's sponsor or the relevant calculation agent that such sponsor designates, (y) yet such level is calculated and announced by or on behalf of a successor sponsor acceptable to the Index Calculation Agent or a calculation agent (that such successor sponsor designates) acceptable to the Index Calculation Agent;
- (b) (x) If a Constituent is replaced by a successor Constituent, (y) yet such successor Constituent is an index using, in the determination of the Index Calculation Agent, the same or a substantially similar

formula for and method of calculation as used in the calculation of the replaced Constituent or (2) such successor Constituent is otherwise acceptable to the Index Calculation Agent;

then, in each case, that Constituent or the relevant sponsor or calculation agent will thereafter be deemed to be the successor Constituent or the successor sponsor or calculation agent described in the relevant clause above, with effect from a date determined by the Index Calculation Agent, which may make such adjustments to the Index Rules as it determines in good faith are appropriate to account for such change.

For the avoidance of doubt, the Index Calculation Agent shall not accept a particular successor Constituent if the Index Calculation Agent determines, in its sole discretion, that doing so would immediately result in the occurrence of an Extraordinary Event. Upon the acceptance of a successor Constituent, such successor shall take the place of the Constituent. For the avoidance of doubt, the prior performance of such successor Constituent shall be used in the determination of future exposures if the relevant prior performance of such successor is available; *provided that*, if some portion of the relevant prior performance of such successor is not available, the prior performance of the replaced Constituent shall be used (in place of such portion of the relevant prior performance of such successor that is not available) in the determination of exposures with such adjustments as the Index Calculation Agent determines in good faith are appropriate to account for the use of prior performance of both such successor and such replaced Constituent.

### *13.2 Substitutes for the Constituent*

If an Extraordinary Event occurs in respect of the Constituent, the Index Calculation Agent, acting in good faith and a commercially reasonable manner, shall select as a substitute for such Constituent an index that the Index Calculation Agent determines, in its sole discretion, possesses substantially similar characteristics or provides a substantially similar exposure (as considered prior to the occurrence of such Extraordinary Event) as compared to the Constituent that is being replaced, *provided that*, if the Index Calculation Agent determines that no such substitute (that the Index Calculation Agent determines, in its sole discretion, possesses substantially similar characteristics or provides a substantially similar exposure) is available, the Index Calculation Agent shall instead select an appropriate substitute by considering the context of the Index.

In any such case, the Index Calculation Agent shall, in good faith, make such adjustments that it determines to be appropriate to any variable, calculation methodology, valuation terms or any other rule in relation to the Index to account for such substitution. The Index Sponsor may, in its discretion, at any time and without notice, terminate the calculation or publication of the Index, including, without limitation, subsequent to the occurrence of an Extraordinary Event.

The Index Calculation Agent shall not select a particular substitute index if the Index Calculation Agent determines, in its sole discretion, that doing so would immediately result in the occurrence of an Extraordinary Event. Upon the selection of a substitute index, such substitute shall take the place of the relevant Constituent. For the avoidance of doubt, the prior performance of such substitute index shall be used in the determination of future exposures if the relevant prior performance of such substitute is available; *provided that*, if some portion of the relevant prior performance of such substitute is not available, the prior performance of the replaced index shall be used (in place of such portion of the relevant prior performance of such substitute that is not available) in the identification of future exposures with such adjustments as the Index Calculation Agent determines in good faith are appropriate to account for the use of prior Performance of both such substitute and such replaced index.

### *13.3 Definitions related to Extraordinary Events*

An “**Extraordinary Event**” occurs if the Index Calculation Agent determines in its sole discretion that (i) on any Index Business Day in respect of the Constituent one or more of the following events has occurred and (ii) the applicable event or events described below materially interferes with the ability of market participants to

transact in positions with respect to the Index (including, without limitation, positions with respect to any Constituent or the Reference Index of any Constituent):

- (i) the Constituent's sponsor permanently cancels the Constituent, and no successor exists, or the Constituent's official closing level is not calculated and is not announced by or on behalf of the Constituent's sponsor, and is not calculated and announced by or on behalf of a successor sponsor acceptable to the Index Calculation Agent;
- (ii) the event specified in clause (x) of subsection (a) or (b) of Section 13.1 above occurs, but the relevant event specified in clause (y) of such subsection of Section 13.1 above does not occur;
- (iii) a failure by the Constituent's sponsor to calculate and publish the Closing Level or TR Level for five (5) consecutive Index Business Days;
- (iv) a Market Disruption Event occurs for ten (10) consecutive Index Business Days and the Index Calculation Agent determines that such Market Disruption Event is reasonably likely to continue for a period of an indeterminate duration;
- (v) (x) a suspension or limitation on trading in respect of a Relevant Underlying (as defined below) is announced or imposed for ten (10) consecutive Index Business Days or for a period of indeterminate duration that the Index Calculation Agent determines is reasonably likely to include ten (10) consecutive Index Business Days or (y) any other event occurs or condition exists that causes trading to cease in respect of a Relevant Underlying for ten (10) consecutive Index Business Days;
- (vi) if, at any time, any relevant license or other right or ability of the Index Calculation Agent or the Index Sponsor (or any of their affiliates) to use the Constituent, underlying reference input or relevant data or information or to refer to the level or price or other information in respect of the Constituent, any underlying reference input or relevant data or information (or other component or input of the Index or other matter that could affect the Index) terminates, becomes impaired, ceases or cannot be obtained or will cease to be available on commercially reasonable terms or the Index Calculation Agent's right or ability to use (i) the Constituent for the purposes of the Index or (ii) the Index in connection with the grant or receipt of any other inbound or outbound licensing or sub-licensing rights is otherwise impaired, ceases or cannot be obtained or will cease to be available on commercially reasonable terms (for any reason); or
- (vii) the occurrence or continuation of a Change in Law (as defined below in this Section 13.3).

A "**Change in Law**" occurs when, due to either:

- (a) the adoption of, or any change in, any applicable law, regulation or rule (including, without limitation, (x) any tax law or (y) adoption or promulgation of new regulations authorized or mandated by existing statute); or
- (b) the promulgation of, or any change in, the announcement or statement of a formal or informal interpretation by any court, tribunal or regulatory authority with competent jurisdiction of any applicable law, rule, regulation or order (including, without limitation, as implemented by the U.S. Commodity Futures Trading Commission, the U.S. Securities and Exchange Commission or any exchange or trading facility), and

the Index Calculation Agent determines in good faith that (x) it is contrary to such law, rule, regulation or order for any market participants that are brokers or financial intermediaries (individually or collectively) to hold, acquire or dispose of (in whole or in part) a position in or a transaction referencing or relating to (1) the Constituent or (2) a component of the Constituent (each such underlying described in any of the immediately preceding clauses (1) and (2), being a "**Relevant Underlying**") or (y) holding a position in or a transaction referencing or relating to a Relevant Underlying is (or, but for the consequent disposal or termination thereof, would otherwise be) in excess of any allowable position limit(s) applicable to any market participants that are

brokers or financial intermediaries (individually or collectively) under any such law, rule or regulation in relation to a Relevant Underlying, including in any case traded on any exchange(s), market or other trading facility.

#### **14. Interest Rate Extraordinary Events**

If the Interest Rate is (a) not calculated and announced by the relevant sponsor, but is calculated and announced by a successor sponsor acceptable to the Index Calculation Agent, or (b) replaced by a successor rate that, in the determination of the Index Calculation Agent, is the same or substantially similar to that relevant rate, then the Interest Rate will be deemed to be the Interest Rate so calculated and announced by that successor sponsor or that successor rate, as the case may be, with effect from a date determined by the Index Calculation Agent.

If on or prior to any Index Calculation Day, an Interest Rate Extraordinary Event (as defined below) occurs, then the Index Calculation Agent shall do one of the following, as determined by the Index Calculation Agent in its sole discretion: (i) continue to use the original Interest Rate in determining the Index Level (but only if the Interest Rate has not been cancelled); (ii) cease calculation or publication of the Index on such date as is determined by the Index Calculation Agent or (iii) select a replacement Interest Rate that it determines possesses substantially similar characteristics to the Interest Rate that is being replaced, with effect from a date determined by the Index Calculation Agent, provided that, if the Index Calculation Agent determines that there is no replacement Interest Rate that possesses substantially similar characteristics to the original Interest Rate, then the Index Calculation Agent may select a replacement Interest Rate that it determines will be an appropriate replacement rate.

In connection with any of the changes described above, the Index Calculation Agent may make such adjustments to the Index Rules that it determines are appropriate to account for such change. Such adjustments to the Index Rules may include, without limitation, the addition of a spread adjustment to such successor rate or replacement rate, giving due consideration to any industry-accepted spread adjustment or method for calculating or determining such spread adjustment for such successor rate or replacement rate.

An “**Interest Rate Extraordinary Event**” occurs when one or more of the following events occurs, as determined by the Index Calculation Agent in its sole discretion (although, for the avoidance of doubt, the Index Calculation Agent has no obligation to monitor actively whether or not any of the following events has occurred): (a) the Interest Rate Publisher makes a material change in the formula for or the method of calculating an Interest Rate or in any other way materially modifies an Interest Rate (other than a modification prescribed in the formula or method for determining the Interest Rate in the event of routine events), (b) the Interest Rate is not published for ten (10) consecutive scheduled publication days for such Interest Rate, (c) the regulatory supervisor for the Interest Rate Publisher makes a public statement or publishes information announcing that the Interest Rate is no longer representative or (d) the Interest Rate is cancelled.

#### **15. No advice or offer of securities**

The Index Rules do not constitute investment, tax, legal, accounting, regulatory or other advice, including within the meaning of Article 53 of the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 or investment advice within the meaning of Article 4(4) of the Markets in Financial Instruments Directive 2004/39/EC or otherwise.

The Index Rules neither constitute an offer to purchase or sell securities nor constitute specific advice in whatever form (investment, tax, legal, accounting or regulatory) in respect of any Product that may be linked to the Index.

#### **16. The Index is synthetic**

The Index references a “notional” or synthetic exposure to the Constituents and there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. The Index merely references certain synthetic exposures the performance of which are used as reference points for calculating Index Levels.

## **17. Corrections**

If (i) the Closing Level or TR Level of the Constituent as of any date which is published or otherwise made available in respect of the Constituent is subsequently corrected and such correction is published or otherwise made available in respect of such Constituent; or (ii) the Index Calculation Agent identifies an error or omission in any of its calculations, determinations or interpretations in respect of the Index, then the Index Calculation Agent may, if practicable and if the Index Calculation Agent determines in good faith that such correction, error or omission (as the case may be) is material, adjust or correct the relevant calculation, determination or interpretation or the Index Level as of any Index Business Day to take into account any such correction, error or omission (as the case may be).

## **18. Hypothetical Back-Tested Levels**

Any Index Level prior to the Index Live Date is a hypothetical, back-tested level. Such levels should not be taken as an indication of future performance, and no assurance can be given as to the levels or performance of the Index on a future date. Back-tested results are achieved by means of a retroactive application of a back-tested model designed with the benefit of hindsight. The Index Sponsor or the Index Calculation Agent, in calculating hypothetical back-tested index levels, may have applied the disruption provisions and any other provisions (including but not limited to the Extraordinary Events) specified in these Index Rules differently than it otherwise would have applied such provisions in a “live” calculation scenario. Additionally, the precision and rounding of the levels of the Index or a Constituent Stock (or other calculated values) may differ from the methodology applied on a going-forward basis. In calculating the hypothetical back-tested levels, the Index Sponsor or the Index Calculation Agent may have made certain assumptions in respect of the timing surrounding the publication of certain indicators, Closing Prices and Index Levels. These assumptions may have a material impact on the hypothetical back-tested levels occurring on or before the Index Live Date. No representation is made that any Product that references the Index will or is likely to achieve returns similar to any hypothetical back-tested returns. Alternative modelling techniques or assumptions might provide different results. Finally, hypothetical back-tested past performance is neither an indicator nor a guarantee of future performance or returns. Actual results and performance may vary compared to such hypothetical back-tested levels.

## Definitions

Terms not otherwise defined herein, shall have the following meanings:

- “Affected Rebalancing Date”** has the meaning given to such term in Section 12.2 (*Market disruption on a Rebalancing Date*).
- “Base Date”** means July 7, 1954.
- “Cash Level”** has the meaning given to such term in Section 6 (*The notional Cash Level*).
- “Change in Law”** has the meaning given to such term in Section 13.3 (*Definitions related to Extraordinary Events*).
- “Closing Level”** means, subject to the provisions of Section 12 (*Market Disruption*) and Section 13 (*Extraordinary Events*), in respect of the Constituent and an Index Business Day, the official closing level of the price return series of the Constituent, the S&P 500® Price Index (ticker: SPX), published by the Constituent’s sponsor for such Index Business Day; provided, however, that if the Index Calculation Agent determines that such official closing level reflects manifest error on the part of the Constituent’s sponsor, the Index Calculation Agent shall determine the closing level of the Constituent in good faith and in a commercially reasonable manner.
- “Constituent”** has the meaning given to such term in Section 4 (*General Notes on the Index*).
- “Disrupted Day”** has the meaning given to such term in Section 12.3 (*Definitions related to market disruption*).
- “Effective Exposure”** has the meaning given to such term in Section 4 (*General Notes on the Index*).
- “Effective Mean Reversion Entry Day”** means, with respect to any Scheduled Mean Reversion Entry Day, (i) if such Scheduled Mean Reversion Entry Day is not an Affected Rebalancing Date, such originally Scheduled Mean Reversion Entry Day, or (ii) if such Scheduled Mean Reversion Entry Day is an Affected Rebalancing Date, the Postponed Rebalancing Date in respect of such Affected Rebalancing Date.
- “Effective Mean Reversion Exit Day”** means, with respect to any Scheduled Mean Reversion Exit Day, (i) if such Scheduled Mean Reversion Exit Day is not an Affected Rebalancing Date, such originally Scheduled Mean Reversion Exit Day, or (ii) if such Scheduled Mean Reversion Exit Day is an Affected Rebalancing Date, the Postponed Rebalancing Date in respect of such Affected Rebalancing Date.
- “Effective Momentum Entry Day”** means, with respect to any Scheduled Momentum Entry Day, (i) if such Scheduled Momentum Entry Day is not an Affected Rebalancing Date, such originally Scheduled Momentum Entry Day, or (ii) if such Scheduled Momentum Entry Day is an Affected Rebalancing Date, the Postponed Rebalancing Date in respect of such Affected Rebalancing Date.
- “Effective Momentum Exit Day”** means, with respect to any Scheduled Momentum Exit Day, (i) if such Scheduled Momentum Exit Day is not an Affected Rebalancing Date, such originally Scheduled Momentum Exit Day, or (ii) if such Scheduled Momentum Exit Day is an Affected Rebalancing Date, the Postponed Rebalancing Date in respect of such Affected Rebalancing Date.

**“Effective Turn-of-Month Entry Day”** means, with respect to any Scheduled Turn-of-Month Entry Day, (i) if such Scheduled Turn-of-Month Entry Day is not an Affected Rebalancing Date, such originally Scheduled Turn-of-Month Entry Day, or (ii) if such Scheduled Turn-of-Month Entry Day is an Affected Rebalancing Date, the Postponed Rebalancing Date in respect of such Affected Rebalancing Date.

**“Effective Turn-of-Month Exit Day”** means, with respect to any Scheduled Turn-of-Month Exit Day, (i) if such Scheduled Turn-of-Month Exit Day is not an Affected Rebalancing Date, such originally Scheduled Turn-of-Month Exit Day, or (ii) if such Scheduled Turn-of-Month Exit Day is an Affected Rebalancing Date, the Postponed Rebalancing Date in respect of such Affected Rebalancing Date.

**“Extraordinary Event”** has the meaning given to such term in Section 13.3 (*Definitions related to Extraordinary Events*).

**“Fee”** has the meaning given to such term in Section 4 (*General Notes on the Index*).

**“Final Disruption Determination Date”** has the meaning given to such term in Section 11.3 (*Calculation of the Index Level in respect of a Final Disruption Determination Date*).

**“Index”** means the J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index, as provided in Section 1 (*Introduction*).

**“Index Business Day”** means a day on which the New York Stock Exchange is scheduled to open for trading for its regular trading session.

**“Index Calculation Agent”** has the meaning given to such term in Section 2.1 (*Index Sponsor and Index Calculation Agent; Identity and responsibilities*).

**“Index Level”** has the meaning given to such term in Section 5 (*Publication of the Index Level*).

**“Index Rules”** means, as provided in Section 1 (*Introduction*), the rules of the J.P. Morgan Kronos US Equity (JPUSKRSE) Excess Return Index as set out in this document, as the same may be supplemented, amended or restated from time to time.

**“Index Sponsor”** has the meaning given to such term in Section 2.1 (*Index Sponsor and Index Calculation Agent; Identity and responsibilities*).

**“Interest Rate”** has the meaning given to such term in Section 6 (*The notional Cash Level*).

**“Interest Rate Publisher”** has the meaning given to such term in Section 6 (*The notional Cash Level*).

**“JPMS”** has the meaning provided in Section 2.1 (*Index Sponsor and Index Calculation Agent; Identity and responsibilities*).

**“Live Date”** means 11 June 2021.

**“Market Disruption Event”** has the meaning given to such term in Section 12.3 (*Definitions related to market disruption*).

**“Maximum Exposure”** has the meaning given to such term in Section 4 (*General Notes on the Index*).

**“Mean Reversion Exposure”** has the meaning given to such term in Section 8 (*Determining the Mean Reversion Exposure*).

- “Momentum Exposure”** has the meaning given to such term in Section 7 (*Determining the Momentum Exposure*).
- “Postponed Rebalancing Date”** has the meaning given to such term in Section 12.1 (*Market disruption on a Rebalancing Date*).
- “Rebalancing Date”** has the meaning given to such term in Section 10 (*Calculating the Effective Exposure*) and is subject to the provisions of Section 12.1 (*Market disruption on a Rebalancing Date*).
- “Relevant Person”** has the meaning given to such term in Section 2.1 (*Index Sponsor and Index Calculation Agent; Identity and Responsibilities*).
- “Relevant Underlying”** has the meaning given to such term in Section 13.3 (*Definitions related to Extraordinary Events*).
- “Scheduled Mean Reversion Entry Day”** has the meaning given to such term in Section 8 (*Determining the Mean Reversion Exposure*).
- “Scheduled Mean Reversion Exit Day”** has the meaning given to such term in Section 8 (*Determining the Mean Reversion Exposure*).
- “Scheduled Momentum Entry Day”** has the meaning given to such term in Section 7 (*Determining the Momentum Exposure*).
- “Scheduled Momentum Exit Day”** has the meaning given to such term in Section 7 (*Determining the Momentum Exposure*).
- “Scheduled Turn-of-Month Entry Day”** has the meaning given to such term in Section 9 (*Determining the Turn-of-Month Exposure*).
- “Scheduled Turn-of-Month Exit Day”** has the meaning given to such term in Section 9 (*Determining the Turn-of-Month Exposure*).
- “Trading Day”** means a day that is:
- (i) an Index Business Day that is not a Rebalancing Date or a Disrupted Day, or
  - (ii) a Rebalancing Date.
- “TR Level”** means, subject to the provisions of Section 12 (*Market Disruption*) and Section 13 (*Extraordinary Events*), in respect of the Constituent and an Index Business Day, the official closing level of the total return series of the Constituent, the S&P 500® Total Return Index (ticker: SPTR), published by the Constituent’s sponsor for such Index Business Day; provided, however, that if the Index Calculation Agent determines that such official closing level reflects manifest error on the part of the Constituent’s sponsor, the Index Calculation Agent shall determine the closing level of the Constituent in good faith and in a commercially reasonable manner.
- “Turn-of-Month Exposure”** has the meaning given to such term in Section 9 (*Determining the Turn-of-Month Exposure*).



### **Notices, Disclaimers and Conflicts of Interest**

The Index Rules have been prepared solely for informational purposes and nothing in the Index Rules constitutes (i) an offer to buy or sell any securities, participate in any transaction or adopt any investment linked to the Index or (ii) legal, tax, regulatory, financial or accounting advice. The Index Rules may change at any time without prior notice.

Neither the Index Calculation Agent nor any of its affiliates or subsidiaries or their respective directors, officers, employees, representatives, delegates or agents (each a **"Relevant Person"**) make any representation or warranty, whatsoever, express or implied, as to the results that may be obtained through the use of this document or the Index. Each Relevant Person hereby expressly disclaims, to the fullest extent permitted by law, all warranties of accuracy, completeness, merchantability, or fitness for a particular purpose with respect to any information contained in this document and no Relevant Person shall have any liability (direct or indirect, special, punitive, consequential or otherwise) to any person even if notified of the possibility of any such damages.

The Index Calculation Agent is under no obligation to continue the calculation, publication and dissemination of the Index or the Index Level.

During the course of their normal business, the Index Calculation Agent or any of the other Relevant Persons may (i) enter into or promote, offer or sell transactions or investments (structured or otherwise) linked to the Index or any of the Constituents or (ii) act as an investment manager, investment advisor, administrator, custodian, prime broker or other service provider to any Constituent. In addition, any Relevant Person may have, or may have had, interests or positions, or may buy, sell or otherwise trade positions in or relating to the Index or any of the Constituents, or may invest or engage in transactions with other persons, or on behalf of such persons relating to any of these items. Such activity may or may not have an impact on the Index Level but all persons reading this document should be aware that a conflict of interest could arise where anyone is acting in more than one capacity, and such conflict may have an impact, positive or negative, on the Index Level. Neither the Index Calculation Agent nor any other Relevant Person has any duty to consider the circumstances of any person when participating in such transactions or to conduct themselves in a manner that is favorable to anyone with exposure to the Index.

The Index Rules have been developed with the possibility of the Index Calculation Agent or any of the other Relevant Persons entering into or promoting, offering or selling transactions or investments (structured or otherwise) linked to the Index and hedging such transactions or investments in any manner that they see fit. Accordingly it should be assumed that the Index Rules have and will be analyzed from this point of view.

As mentioned above, the Index is described as a notional basket because there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. The Index merely identifies certain reference assets, the performance of which will be used as a reference point for calculating the Index Level.

Notwithstanding anything to the contrary herein, nothing in these Index Rules should be construed to be investment advice or a recommendation to purchase a specific instrument or make a specific investment. Nothing in these Index Rules or any other communication between you and J.P. Morgan Chase & Co. (together with its affiliates, "J.P. Morgan") should be deemed to or be construed as creating a "fiduciary relationship". J.P. Morgan and its subsidiaries, officers, directors, employees and agents, are not your fiduciary. You should make your own investment decision based on your own judgment and on your own examination of the specific product that you are purchasing or investment that you are entering into, and you should consult your own legal, regulatory, investment, tax, accounting and other professional advisers as you deem necessary in connection with any purchase of a financial product or undertaking any investment.

The Index is the exclusive property of the Index Sponsor and the Index Sponsor retains all proprietary rights in the Index.

The Index is protected by copyright and trade secret rights and is and will always remain the sole property of J.P. Morgan, all rights, title and full ownership in and to the Index are expressly reserved to and will remain with J.P. Morgan, the Index was developed, compiled, prepared and arranged by J.P. Morgan through the expenditure of substantial time, effort and money and constitutes valuable intellectual property and trade secrets of J.P. Morgan and all proprietary and intellectual property rights of any nature, including patents, copyrights, trademarks and trade secrets regarding the Index and the Index Rules, and any and all copies, modifications, enhancements and derivative works thereof are owned by and will remain the property of J.P. Morgan.

Third parties shall not use the Index Sponsor's intellectual property without the prior written consent of the Index Sponsor (including in situations where a third party performs certain functions in relation to the Index) and may not (directly or indirectly) (a) share, reproduce, distribute or otherwise disseminate the Index, Index Rules or any related data in any form without the express prior written consent of J.P. Morgan (b) alter, remove or conceal any copyright, trademark or other proprietary notice or disclaimer regarding the Index, (c) modify, copy, translate, distribute, recompile, decompile, disassemble or reverse engineer the Index; (d) make or distribute any other form of or any derivative work from, the Index or (e) grant any rights in, permit or provide access to the Index or the Index Rules in a manner that could infringe the intellectual property rights of J.P. Morgan or any third party or violate any applicable laws, tariffs, rules or regulations.

Any third party who enters into a transaction or investment or purchases a product that references the Index is thereby deemed to acknowledge that (i) THE INDEX, INDEX RULES AND RELATED DATA ARE PROVIDED "AS IS" WITH ALL FAULTS, (ii) ALL WARRANTIES AND REPRESENTATIONS OF ANY KIND WITH REGARD TO THE INDEX ARE DISCLAIMED BY J.P. MORGAN, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY, QUALITY, ACCURACY, FITNESS FOR A PARTICULAR PURPOSE OR AGAINST INFRINGEMENT AND WARRANTIES AS TO ANY RESULTS TO BE OBTAINED BY OR FROM THE USE OF THE INDEX, (iii) J.P. MORGAN DOES NOT GUARANTEE THE AVAILABILITY, SEQUENCE, TIMELINESS, ACCURACY OR COMPLETENESS OF THE INDEX, (iv) J.P. MORGAN MAY DISCONTINUE CALCULATION OF THE INDEX AT ANY TIME WITHOUT PRIOR NOTICE AND, (v) TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, J.P. MORGAN WILL NOT BE LIABLE (IN CONTRACT, TORT OR OTHERWISE) FOR ANY ORDINARY, DIRECT, INDIRECT, CONSEQUENTIAL, SPECIAL, PUNITIVE OR EXEMPLARY DAMAGES IN CONNECTION WITH ANY USE OF THE INDEX, THE INDEX RULES OR ANY ASSOCIATED DATA, EVEN IF J.P. MORGAN HAS BEEN APPRISED OF THE LIKELIHOOD OF SUCH DAMAGES OCCURRING, and agrees to release, indemnify, defend and hold J.P. Morgan harmless from and against any claim, liability, loss, injury, damage, cost, or expense of any kind (including reasonable attorney's fees), as incurred, relating to or arising out of such third party's use of the Index, the Index Rules or any associated data.

No one may reproduce or disseminate the information contained in this document or the Index Level of the Index without the prior written consent of the Index Sponsor. This document is not intended for distribution to, or use by any person in, a jurisdiction where such distribution is prohibited by law or regulation.

Copyright JPMorgan Chase & Co. 2021. All rights reserved. J.P. Morgan is the marketing name for JPMorgan Chase & Co. and its subsidiaries and affiliates worldwide. J.P. Morgan Securities plc is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority and is a member of the London Stock Exchange. The Index Sponsor owns all intellectual property rights in: (i) the development of and methodology for producing the Index, (ii) the Index Levels and (iii) these Index Rules. Third parties shall not use the Index Sponsor's intellectual property without the prior written consent of the Index Sponsor (including in situations where a third party performs certain functions in relation to the Index).

## **S&P 500 Price Index**

The Index is not sponsored, endorsed, sold or promoted by Standard & Poor's Financial Services, LLC, a subsidiary of The McGraw-Hill Companies, Inc., ("**S&P**") or its third party licensors. Neither S&P nor its third party licensors makes any representation or warranty, express or implied, to any investor in an instrument linked to the Index or any member of the public regarding the advisability of investing in securities generally or in financial instruments linked to the Index particularly or the ability of the S&P 500® Price Index to track general stock market performance. S&P's and its third party licensor's only relationship to JPMorgan Chase & Co. is the licensing of certain trademarks and trade names of S&P and the third party licensors and of the S&P 500® Price Index which is determined, composed and calculated by S&P or its third party licensors without regard to JPMorgan Chase & Co., the Index or any instruments linked to the Index. S&P and its third party licensors have no obligation to take the needs of JPMorgan Chase & Co. or the owners of the instruments or counterparties to transactions linked to the Index into consideration in determining, composing or calculating the S&P 500® Price Index. Neither S&P nor its third party licensors is responsible for and has not participated in the determination of the timing of issuance or sale, prices, or quantities of instruments or transactions linked to the Index or in the determination or calculation of the Index Level or equation by which any instruments or transactions linked to any Index is to be converted into cash. S&P has no obligation or liability in connection with the administration, marketing or trading of the any instrument or transaction linked to the Index.

NEITHER S&P AND ITS AFFILIATES NOR THEIR THIRD PARTY LICENSORS GUARANTEE THE ADEQUACY, ACCURACY, TIMELINESS OR COMPLETENESS OF THE S&P 500® PRICE INDEX OR ANY DATA INCLUDED THEREIN OR ANY COMMUNICATIONS, INCLUDING BUT NOT LIMITED TO, ORAL OR WRITTEN COMMUNICATIONS (INCLUDING ELECTRONIC COMMUNICATIONS) WITH RESPECT THERETO. S&P, ITS AFFILIATES AND THEIR THIRD PARTY LICENSORS SHALL NOT BE SUBJECT TO ANY DAMAGES OR LIABILITY FOR ANY ERRORS, OMISSIONS OR DELAYS THEREIN. S&P MAKES NO EXPRESS OR IMPLIED WARRANTIES, AND EXPRESSLY DISCLAIMS ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE WITH RESPECT TO THE MARKS, THE S&P 500® PRICE INDEX OR ANY DATA INCLUDED THEREIN. WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT WHATSOEVER SHALL S&P, ITS AFFILIATES OR THEIR THIRD PARTY LICENSORS BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS, TRADING LOSSES, LOST TIME OR GOODWILL, EVEN IF THEY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER IN CONTRACT, TORT, STRICT LIABILITY OR OTHERWISE.

"Standard & Poor's," "S&P" and "S&P 500" are trademarks of Standard & Poor's and have been licensed for use by J.P. Morgan Securities LLC and sub-licensed for use by JPMorgan Chase & Co.