**Underlying supplement no. 16-I**
*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 17, 2022**
**Rule 424(b)(2)**

# JPMorgan Chase & Co.

***Notes Linked to the MerQube US Small-Cap Vol Advantage Index***

# JPMorgan Chase Financial Company LLC

***Notes, Fully and Unconditionally Guaranteed by JPMorgan Chase & Co., Linked to the MerQube US Small-Cap Vol Advantage 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 MerQube US Small-Cap Vol Advantage 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."

**The Index is subject to a 6.0% per annum daily deduction. This daily deduction will offset any appreciation of the futures contracts included in the Index, will heighten any depreciation of those futures contracts and will generally be a drag on the performance of the Index. The Index will trail the performance of an identical index without a deduction.**

This underlying supplement describes the Index, 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 an Index and provides other 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. 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.

**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-3 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 17, 2022

## TABLE OF CONTENTS



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.

**The notes are not commodity futures contracts or swaps and are not regulated under the Commodity Exchange Act of 1936, as amended (the "Commodity Exchange Act").** The notes are offered pursuant to an exemption from regulation under the Commodity Exchange Act, commonly known as the hybrid instrument exemption, that is available to securities that have one or more payments indexed to the value, level or rate of one or more commodities, as set out in section 2(f) of that statute. Accordingly, you are not afforded any protection provided by the Commodity Exchange Act or any regulation promulgated by the Commodity Futures Trading Commission.

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

All information contained in this underlying supplement regarding the MerQube US Small-Cap Vol Advantage Index (the "**Index**"), including, without limitation, its make-up, method of calculation and changes in its components, has been derived from publicly available information and other information provided by MerQube (the "**Index Sponsor**" and "**Index Calculation Agent**"), without independent verification. This information reflects the policies of, and is subject to change by, the Index Sponsor. The Index was developed by the Index Sponsor, in coordination with J.P. Morgan Securities LLC. The Index is maintained by the Index Sponsor and is calculated and published by the Index Calculation Agent. The Index Sponsor has no obligation to continue to publish, and may discontinue the publication of, the Index.

In September 2021, an affiliate of ours purchased a 10% equity interest in the Index Sponsor, with a right to appoint an employee of J.P. Morgan Securities LLC, another of our affiliates, as a member of the board of directors of the Index Sponsor.

The Index was established on June 21, 2022. The Index is reported by the Bloomberg Professional® service under the ticker symbol "MQUSSVA".

The Index attempts to provide a dynamic rules-based exposure to an unfunded rolling position in E-mini® Russell 2000® futures (the "**Futures Contracts**"), which reference the Russell 2000® Index, while targeting a level of implied volatility, with a maximum exposure to the Futures Contracts of 500% and a minimum exposure to the Futures Contracts of 0%. The Index is subject to a 6.0% per annum daily deduction. The Russell 2000® Index consists of the middle 2,000 companies included in the Russell 3000E™ Index and, as a result of the index calculation methodology, consists of the smallest 2,000 companies included in the Russell 3000® Index. The Russell 2000® Index is designed to track the performance of the small capitalization segment of the U.S. equity market. For more information about the Futures Contracts and the Russell 2000® Index, see "Background on E-mini® Russell 2000® Futures" and "Background on the Russell 2000® Index," respectively, below.

On each weekly Index rebalance day, the exposure to the Futures Contracts is set equal to (a) the 35% implied volatility target (the "**target volatility**") *divided by* (b) the one-week implied volatility of the iShares® Russell 2000 ETF (the "**IWM Fund**"), subject to a maximum exposure of 500%. For example, if the implied volatility of the IWM Fund is equal to 17.5%, the exposure to the Futures Contracts will equal 200% (or 35% / 17.5%) and if the implied volatility of the IWM Fund is equal to 40%, the exposure to the Futures Contracts will equal 87.5% (or 35% / 40%). The Index's exposure to the Futures Contracts will be greater than 100% when the implied volatility of the IWM Fund is below 35%, and the Index's exposure to the Futures Contracts will be less than 100% when the implied volatility of the IWM Fund is above 35%. In general, the Index's target volatility feature is expected to result in the volatility of the Index being more stable over time than if no target volatility feature were employed. No assurance can be provided that the volatility of the Index will be stable at any time.

The investment objective of the IWM Fund is to provide investment results that, before expenses, correspond generally to the price and yield performance of the Russell 2000® Index. For more information about the IWM Fund, see "Background on the iShares® Russell 2000 ETF" below. The Index uses the implied volatility of the IWM Fund as a proxy for the volatility of the Futures Contracts.

The 6.0% per annum daily deduction will offset any appreciation of the Futures Contracts, will heighten any depreciation of the Futures Contracts and will generally be a drag on the performance of the Index. The Index will trail the performance of an identical index without a deduction.

Holding the estimated value of the notes and market conditions constant, the economic terms available on the notes are expected to be more favorable to investors than the terms that would be available on a hypothetical note issued by us linked to an identical index without a daily deduction. However, there can be no assurance that any improvement in the terms of the notes derived from the daily deduction will offset the negative effect of the daily deduction on the performance of the Index. The return on the notes may be lower than the return on a hypothetical note issued by us linked to an identical index without a daily deduction.

The daily deduction and the volatility of the Index (as influenced by the Index's target volatility feature) are two of the primary variables that affect the economic terms of the notes. Additionally, the daily deduction and volatility of the Index are two of the inputs our affiliates' internal pricing models use to value the derivative or derivatives underlying the economic terms of the notes for purposes of determining the estimated value of the notes set forth in the relevant terms supplement. The daily deduction will effectively reduce the value of the derivative or derivatives underlying the economic terms of the notes. See the discussion and risk factors relating to the estimated value of the notes in the accompanying product supplement and the relevant terms supplement.

For additional information about the Index, see "The MerQube US Small-Cap Vol Advantage Index" below.

**The Index is subject to risks associated with the use of significant leverage. In addition, the Index may be significantly uninvested on any given day, and, in that case, will realize only a portion of any gains due to appreciation of the Futures Contracts on that day. The index deduction is deducted daily at a rate of 6.0% per annum, even when the Index is not fully invested.**

**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 Futures Contracts.**

## 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 Futures Contracts, the Russell 2000® Index, any of the equity securities composing the Russell 2000® Index, the IWM Fund 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, in the accompanying product supplement and in any accompanying underlying supplement before you decide that an investment in the notes is suitable for you.***

### Risks Relating to the Index

**J.P. Morgan Securities LLC, an affiliate of the Issuer and the Guarantor (if applicable), coordinated with the Index Sponsor in the development of the Indices, and our affiliate owns an equity interest in the Index Sponsor.**

J.P. Morgan Securities LLC, which is referred to in this underlying supplement as JPMS, an affiliate of the Issuer and the Guarantor (if applicable), coordinated with the Index Sponsor in its development of the guidelines and policies governing the composition and calculation of the Index. Although the Index Sponsor, in developing the Index, coordinated with JPMS, JPMorgan Chase & Co., as the ultimate parent company of JPMS, ultimately controls JPMS.

In September 2021, an affiliate of ours purchased a 10% equity interest in the Index Sponsor, with a right to appoint an employee of JPMS, another of our affiliates, as a member of the board of directors of the Index Sponsor. The Index Sponsor can implement policies, make judgments or enact changes to the Index methodology that could negatively affect the performance of the Index. The Index Sponsor can also alter, discontinue or suspend calculation or dissemination of the Index. Any of these actions could adversely affect the value of the notes. The Index Sponsor has no obligation to consider your interests in calculating, maintaining or revising the Index, and we, JPMS, our other affiliates and our respective employees are under no obligation to consider your interests as an investor in the notes in connection with the role of our affiliate as an owner of an equity interest in the Index Sponsor or the role of an employee of JPMS as a member of the board of directors of the Index Sponsor.

In addition, the policies and judgments for which JPMS was responsible could have an impact, positive or negative, on the level of the Index and the value of your notes. JPMS was under no obligation to consider your interests as an investor in the notes in its role in developing the guidelines and policies governing the Index or making judgments that may affect the level of the Index. Furthermore, the inclusion of Futures Contracts in the Index is not an investment recommendation by the Issuer, the Guarantor (if applicable) or JPMS of the Futures Contracts underlying the Index.

**The level of the Index will include a 6.0% per annum daily deduction.**

One way in which the Index may differ from a typical index is that its level will include a 6.0% per annum daily deduction. As a result of the daily deduction, the level of the Index will trail the value of a hypothetical identically constituted notional portfolio that is not subject to any such deduction.

The index deduction 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 index deduction, and then only to the extent that the return of its investment strategy is greater than the index deduction. As a result of the index deduction, the level of the Index may decline even if the return of its investment strategy is positive.

The daily deduction is one of the inputs our affiliates' internal pricing models use to value the derivative or derivatives underlying the economic terms of the notes for purposes of determining the estimated value of the notes set forth in the relevant terms supplement. The daily deduction will effectively reduce the value of the derivative or derivatives underlying the economic terms of the notes. See the discussion and risk factors relating to the estimated value of the notes in the accompanying product supplement and the relevant terms supplement.

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

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 with respect to the Futures Contracts.

**The Index may not approximate its target volatility.**

No assurance can be given that the Index will maintain an annualized realized volatility that approximates its target volatility of 35%. The Index's target volatility is a level of implied volatility and therefore the actual realized volatility of the Index may be greater or less than the target volatility. On each weekly Index rebalance day, the Index's exposure to the Futures Contracts is set equal to (a) the 35% volatility target divided by (b) the one-week implied volatility of the IWM Fund, subject to a maximum exposure of 500%. The Index uses the implied volatility of the IWM Fund as a proxy for the volatility of the Futures Contracts. However, there is no guarantee that the methodology used by the Index to determine the implied volatility of the IWM Fund will be representative of the implied or realized volatility of the Futures Contracts. The performance of the IWM Fund may not correlate with the performance of the Futures Contracts, particularly during periods of market volatility. In addition, the volatility of the Futures Contracts on any day may change quickly and unexpectedly and realized volatility may differ significantly from implied volatility. In general, over time, the realized volatilities of the IWM Fund and the Futures Contracts have tended to be lower than their respective implied volatilities; however, at any time those realized volatilities may exceed their respective implied volatilities, particularly during periods of market volatility. Accordingly, the actual realized annualized volatility of the Index may be greater than or less than the target volatility, which may adversely affect the level of the Index and the value of the notes.

**The Index is subject to risks associated with the use of significant leverage.**

On a weekly Index rebalance day, the Index will employ leverage to increase the exposure of the Index to the Futures Contracts if the implied volatility of the IWM Fund is below 35%, subject to a maximum exposure of 500%. Under normal market conditions in the past, the IWM Fund has tended to exhibit an implied volatility below 35%. Accordingly, the Index has generally employed leverage in the past, except during periods of elevated volatility. When leverage is employed, any movements in the prices of the Futures Contracts will result in greater changes in the level of the Index than if leverage were not used. In particular, the use of leverage will magnify any negative performance of the Futures Contracts, which, in turn, would negatively affect the performance of the Index. Because the Index's leverage is adjusted only on a weekly basis, in situations where a significant increase in volatility is accompanied by a significant decline in the value of the Futures Contracts, the level of the Index may decline significantly before the following Index rebalance day when the Index's exposure to the Futures Contracts would be reduced.

**The Index may be significantly uninvested.**

On a weekly Index rebalance day, the Index's exposure to the Futures Contracts will be less than 100% when the implied volatility of the IWM Fund is above 35%. If the Index's exposure to the Futures Contracts is less than 100%, the Index will not be fully invested, and any uninvested portion will earn no return. The Index may be significantly uninvested on any given day, and will realize only a portion of any gains due to appreciation of the Futures Contracts on any such day. The 6.0% per annum deduction is deducted daily, even when the Index is not fully invested.

**The Index may be adversely affected if later Futures Contracts have higher prices than an expiring Futures Contract included in the Index.**

As the Futures Contracts included in the Index come to expiration, they are replaced by Futures Contracts that expire three months later. This is accomplished by synthetically selling the expiring Futures Contract and synthetically purchasing the Futures Contract that expires three months from that time. This process is referred to as "rolling." Excluding other considerations, if the market for the Futures Contracts is in "contango," where the prices are higher in the distant delivery months than in the nearer delivery months, the purchase of the later Futures Contract would take place at a price that is higher than the price of the expiring Futures Contract, thereby creating a negative "roll yield." In addition, excluding other considerations, if the market for the Futures Contracts is in "backwardation," where the prices are lower in the distant delivery months than in the nearer delivery months, the purchase of the later Futures Contract would take place at a price that is lower than the price of the expiring Futures Contract, thereby creating a positive "roll yield." The presence of contango in the market for the Futures Contracts could adversely affect the level of the Index and, accordingly, any payment on the notes.

**The Index is an excess return index that does not reflect "total returns."**

The Index is an excess return index that does not reflect total returns. The return from investing in futures contracts derives from three sources: (a) changes in the price of the relevant futures contracts (which is known as the "price return"); (b) any profit or loss realized when rolling the relevant futures contracts (which is known as the "roll return"); and (c) any interest earned on the cash deposited as collateral for the purchase of the relevant futures contracts (which is known as the "collateral return").

The Index measure the returns accrued from investing in uncollateralized futures contracts (*i.e.*, the sum of the price return and the roll return associated with an investment in the Futures Contracts). By contrast, a total return index, in addition to reflecting those returns, would also reflect interest that could be earned on funds committed to the trading of the Futures Contracts (*i.e.*, the collateral return associated with an investment in the Futures Contracts). Investing in the notes will not generate the same return as would be generated from investing in a total return index related to the Futures Contracts.

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

The Index was established on June 21, 2022 and therefore has a limited operating history. Any back-testing or similar analysis performed by any person in respect of the Index must be considered illustrative only and may be based on estimates or assumptions not used by the Index Sponsor when determining the level of the Index. Past performance should not be considered indicative of future performance.

**An investment is subject to risks associated with small capitalization stocks.**

Small capitalization companies may be less able to withstand adverse economic, market, trade and competitive conditions relative to larger companies. Small capitalization companies are less likely to pay dividends on their stocks, and the presence of a dividend payment could be a factor that limits downward stock price pressure under adverse market conditions.

**Concentration risks associated with the Index may adversely affect the value of your notes.**

The Index generally provides exposure to a single futures contract on the Russell 2000® Index that trades on the Chicago Mercantile Exchange. Accordingly, the notes are less diversified than other funds, investment portfolios or indices investing in or tracking a broader range of products and, therefore, could experience greater volatility. You should be aware that other indices may be more diversified than the Indices in terms of both the number and variety of futures contracts. You will not benefit, with respect to the notes, from any of the advantages of a diversified investment and will bear the risks of a highly concentrated investment.

**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.

**The Index is subject to significant risks associated with futures contracts, including volatility.**

The Index tracks the returns of futures contracts. The price of a futures contract depends not only on the price of the underlying asset referenced by the futures contract, but also on a range of other factors, including but not limited to changing supply and demand relationships, interest rates, governmental and regulatory policies and the policies of the exchanges on which the futures contracts trade. In addition, the futures markets are subject to temporary distortions or other disruptions due to various factors, including the lack of liquidity in the markets, the participation of speculators and government regulation and intervention. These factors and others can cause the prices of futures contracts to be volatile.

**Suspension or disruptions of market trading in futures contracts may adversely affect the value of your notes.**

Futures markets like the Chicago Mercantile Exchange, the market for the Futures Contracts, are subject to temporary distortions or other disruptions due to various factors, including the lack of liquidity in the markets, the participation of speculators, and government regulation and intervention. In addition, futures exchanges have regulations that limit the amount of fluctuation in some futures contract prices that may occur during a single day. These limits are generally referred to as “daily price fluctuation limits” and the maximum or minimum price of a contract on any given day as a result of these limits is referred to as a “limit price.” Once the limit price has been reached in a particular contract, no trades may be made at a price beyond the limit, or trading may be limited for a set period of time. Limit prices have the effect of precluding trading in a particular contract or forcing the liquidation of contracts at potentially disadvantageous times or prices. These circumstances could affect the level of the Index and therefore could affect adversely the value of your notes.

**The official settlement price and intraday trading prices of the relevant Futures Contracts may not be readily available.**

The official settlement price and intraday trading prices of the Futures Contracts are calculated and published by the Chicago Mercantile Exchange and are used to calculate the levels of the Index. Any disruption in trading of the Futures Contracts could delay the release or availability of the official settlement price and intraday trading prices and may delay or prevent the calculation of the Index.

**Changes in the margin requirements for the Futures Contracts included in the Index may adversely affect the value of the notes.**

Futures exchanges require market participants to post collateral in order to open and to keep open positions in futures contracts. If an exchange changes the amount of collateral required to be posted to hold positions in the Futures Contracts, market participants may adjust their positions, which may affect the prices of the Futures Contracts. As a result, the level of the Index may be affected, which may adversely affect the value of the notes.

**Historical performance of the Index should not be taken as an indication of the future performance of the Index during the term of the notes.**

The actual performance of the Index over the term of the notes, as well as the amount payable at maturity, may bear little relation to the historical performance of the Index or its hypothetical, back-tested historical performance. As a result, it is impossible to predict whether the level of the Index will rise or fall.

**The notes are not regulated by the Commodity Futures Trading Commission (the "CFTC").**

The net proceeds to be received by the Issuer from the sale of the notes will not be used to purchase or sell any futures contracts or options on futures contracts for your benefit. An investment in the notes thus does not constitute either an investment in futures contracts or options on futures contracts or an investment in a collective investment vehicle that trades in these futures contracts (*i.e.*, the notes will not constitute a direct or indirect investment by you in the futures contracts), and you will not benefit from the regulatory protections of the CFTC. Among other things, this means that the Issuer and the Guarantor (if applicable) are not registered with the CFTC as a futures commission merchant and you will not benefit from the CFTC's or any other non-U.S. regulatory authority's regulatory protections afforded to persons who trade in futures contracts on a regulated futures exchange through a registered futures commission merchant. For example, the price you pay to purchase notes will be used by the Issuer for its own purposes and will not be subject to customer funds segregation requirements provided to customers that trade futures on an exchange regulated by the CFTC.

Unlike an investment in the notes, an investment in a collective investment vehicle that invests in futures contracts on behalf of its participants may be subject to regulation as a commodity pool, and its operator may be required to register with and be regulated by the CFTC as a commodity pool operator, or qualify for an exemption from the registration requirement. Because the notes will not be interests in a commodity pool, the notes will not be regulated by the CFTC as a commodity pool, the Issuer and the Guarantor (if applicable) will not be registered with the CFTC as a commodity pool operator and you will not benefit from the CFTC's or any non-U.S. regulatory authority's regulatory protections afforded to persons who invest in regulated commodity pools.

## THE MERQUBE US SMALL-CAP VOL ADVANTAGE INDEX

All information contained in this underlying supplement regarding the MerQube US Small-Cap Vol Advantage Index (the "**Index**"), including, without limitation, its make-up, method of calculation and changes in its components, has been derived from publicly available information and other information provided by MerQube (the "**Index Sponsor**" and "**Index Calculation Agent**"), without independent verification. This information reflects the policies of, and is subject to change by, the Index Sponsor. The Index was developed by the Index Sponsor, in coordination with J.P. Morgan Securities LLC. The Index is maintained by the Index Sponsor and is calculated and published by the Index Calculation Agent. The Index Sponsor has no obligation to continue to publish, and may discontinue the publication of, the Index.

In September 2021, an affiliate of ours purchased a 10% equity interest in the Index Sponsor, with a right to appoint an employee of J.P. Morgan Securities LLC, another of our affiliates, as a member of the board of directors of the Index Sponsor.

The Index was established on June 21, 2022. The Index is reported by the Bloomberg Professional® service under the ticker symbol "MQUSSVA".

The Index attempts to provide a dynamic rules-based exposure to an unfunded rolling position in E-mini® Russell 2000® futures (the "**Futures Contracts**"), which reference the Russell 2000® Index, while targeting a level of implied volatility, with a maximum exposure to the Futures Contracts of 500% and a minimum exposure to the Futures Contracts of 0%. The Index is subject to a 6.0% per annum daily deduction. The Russell 2000® Index consists of the middle 2,000 companies included in the Russell 3000E™ Index and, as a result of the index calculation methodology, consists of the smallest 2,000 companies included in the Russell 3000® Index. The Russell 2000® Index is designed to track the performance of the small capitalization segment of the U.S. equity market. For more information about the Futures Contracts and the Russell 2000® Index, see "Background on E-mini® Russell 2000® Futures" and "Background on the Russell 2000® Index," respectively, below.

The 6.0% per annum daily deduction will offset any appreciation of the Futures Contracts, will heighten any depreciation of the Futures Contracts and will generally be a drag on the performance of the Index. The Index will trail the performance of an identical index without a deduction.

Holding the estimated value of the notes and market conditions constant, the economic terms available on the notes are expected to be more favorable to investors than the terms that would be available on a hypothetical note issued by us linked to an identical index without a daily deduction. However, there can be no assurance that any improvement in the terms of the notes derived from the daily deduction will offset the negative effect of the daily deduction on the performance of the Index. The return on the notes may be lower than the return on a hypothetical note issued by us linked to an identical index without a daily deduction.

The daily deduction and the volatility of the Index (as influenced by the Index's target volatility feature) are two of the primary variables that affect the economic terms of the notes. Additionally, the daily deduction and volatility of the Index are two of the inputs our affiliates' internal pricing models use to value the derivative or derivatives underlying the economic terms of the notes for purposes of determining the estimated value of the notes set forth in the relevant terms supplement. The daily deduction will effectively reduce the value of the derivative or derivatives underlying the economic terms of the notes. See the discussion and risk factors relating to the estimated value of the notes in the accompanying product supplement and the relevant terms supplement.

**The Index is subject to risks associated with the use of significant leverage. In addition, the Index may be significantly uninvested on any given day, and, in that case, will realize only a portion of any gains due to appreciation of the Futures Contracts on that day. The index deduction is deducted daily at a rate of 6.0% per annum, even when the Index is not fully invested.**

**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 Futures Contracts.**

**Weekly Index Rebalancing**

On each weekly Index Rebalance Day (as defined below), the exposure to the Futures Contracts is set equal to (a) the 35% implied volatility target (the "**target volatility**") *divided by* (b) the one-week implied volatility of the iShares® Russell 2000 ETF (the "**IWM Fund**"), subject to a maximum exposure of 500%. For example, if the implied volatility of the IWM Fund is equal to 17.5%, the exposure to the Futures Contracts will equal 200% (or 35% / 17.5%) and if the implied volatility of the IWM Fund is equal to 40%, the exposure to the Futures Contracts will equal 87.5% (or 35% / 40%). The Index's exposure to the Futures Contracts will be greater than 100% when the implied volatility of the IWM Fund is below 35%, and the Index's exposure to the Futures Contracts will be less than 100% when the implied volatility of the IWM Fund is above 35%. In general, the Index's target volatility feature is expected to result in the volatility of the Index being more stable over time than if no target volatility feature were employed. No assurance can be provided that the volatility of the Index will be stable at any time.

The investment objective of the IWM Fund is to provide investment results that, before expenses, correspond generally to the price and yield performance of the Russell 2000® Index. For more information about the IWM Fund, see "Background on the iShares® Russell 2000 ETF" below. The Index uses the implied volatility of the IWM Fund as a proxy for the volatility of the Futures Contracts.

Volatility is a measure of the degree of variation in the value of an asset over a period of time. One common approach to estimating volatility is to infer the market's expectation of the volatility of an asset over a future period from the prices of listed option contracts that reference the asset, which is referred to as implied volatility.

The Index Calculation Agent calculates the one-week implied volatility of the IWM Fund by referencing out-of-the-money call options on the IWM Fund and out-of-the-money put options on the IWM Fund, centered around an at-the-money strike price, with a scheduled expiry date on the immediately following Index Rebalance Date. The options used for this purpose are put options with strikes at or below the at-the-money strike price, call options with strikes at or above the at-the-money strike price and put and call options with strikes equal to the at-the-money strike price. In calculating the implied volatility of the IWM Fund, the contribution of a single option to the implied volatility of the IWM Fund is generally proportional to the difference between strikes of the options on either side of that option and to the price of that option, and is inversely proportional to the square of that option's strike price. In addition, the Index Calculation Agent adjusts the price of any American-style options that are selected to approximate a European option price for that option and makes an adjustment to account for differences between a year measured in calendar days and a year measured in business days.

The at-the-money strike price referred to above is equal to the forward price of the IWM Fund, determined based on the current price of the IWM Fund, any expected dividend payments on the IWM Fund and interest rates derived from official closing prices of Eurodollar futures. Eurodollar futures currently reference rates for 3-month USD LIBOR rates. LIBOR, which stands for "London Interbank Offered Rate," is the average interest rate estimated by leading banks in London that they would be charged if borrowing from other banks without pledging any collateral or security. On March 5, 2021, the U.K. Financial Conduct Authority, which regulates LIBOR, confirmed that 3-month USD LIBOR settings will cease to be provided by any administrator or no longer be representative immediately after June 30, 2023. In February 2021, the Chicago Mercantile Exchange ("**CME**") announced that, effective March 29, 2021, it would implement amendments to 3-month Eurodollar futures to incorporate procedures to apply from the effective date of a permanent discontinuation of 3-month USD LIBOR or from the effective date that 3-month USD LIBOR was deemed by the U.K. Financial Conduct Authority to be unrepresentative of the underlying market or economic reality (each, a "**Fallback Event**") (collectively, the "**CME Rule Amendments**"). The CME Rule Amendments provide that, on the effective date of a Fallback Event with respect to 3-month USD LIBOR, trading in the 3-month Eurodollar futures will terminate and CME will convert open positions into positions in the corresponding CME Three-Month SOFR futures. SOFR, the

Secured Overnight Financing Rate, is intended to be a broad measure of the cost of borrowing cash overnight collateralized by Treasury securities. At this time, the Index Sponsor has not announced what changes, if any, it will make to the Index as a result of the occurrence of a Fallback Event (which may include referencing alternative futures other than CME Three-Month SOFR futures) and it is impossible to predict the effect of any such changes on the Index.

On an Index Rebalance Day, the implied volatility of the IWM Fund used to determine the exposure of the Index to the Futures Contracts is equal to the arithmetic average of the implied volatility of the IWM Fund, calculated as described above at the end of each minute during the period from and including 2:30 p.m. to but excluding 3:00 p.m. (EST) on that day. If an Option Data Halt Event occurs on an Index Rebalance Day during that period, the Index Calculation Agent may use the most recent time period on that day for which options data was available to perform the relevant calculations, if in its discretion the data from that period is an accurate reflection of the current level of volatility in the market.

An "**Index Rebalance Day**" generally occurs each Friday. However, if the primary exchange on which options on the IWM Fund are listed (the "**Primary Option Market**") or the Chicago Mercantile Exchange (the "**Futures Market**") is not scheduled to open on any Friday, then the Index Rebalance Day will be moved to the immediately preceding business day on which both the Primary Option Market and the Futures Market are scheduled to open. In addition, if the Primary Option Market or the Futures Market is subject to a Futures Market Disruption or an Option Market Disruption on any scheduled Index Rebalance Day, that Index Rebalance Day will be postponed to the first immediately succeeding business day on which the Primary Option Market and the Futures Market are scheduled to open that is not subject to a Futures Market Disruption or an Option Market Disruption. Furthermore, if, in the Index Calculation Agent's discretion, an Option Data Halt Event occurs on an Index Rebalance Day during the period described in the immediately preceding paragraph and the most recent available data is not an accurate reflection of the current level of volatility in the market, the Index Rebalance Day will be postponed to the first immediately succeeding business day on which the Primary Option Market and the Futures Market are scheduled to open that is not subject to a Futures Market Disruption or an Option Market Disruption.

A "**Futures Market Disruption**" means the occurrence of (i) an unplanned closing of the Futures Market or (ii) the suspension from trading of the Futures Contracts on the Futures Market, in each case, that the Index Calculation Agent determines is material.

An "**Option Market Disruption**" means the occurrence of (i) an unplanned closing of all the exchanges on which the options on the IWM Fund are listed, (ii) the suspension from trading of options on the IWM Fund or (iii) the suspension (temporary or not) of the data dissemination in respect of data referencing the IWM Fund from the Options Price Reporting Authority, in each case, that that the Index Calculation Agent determines as material.

An "**Option Data Halt Event**" means the suspension (temporary or not) of the data dissemination in respect of data referencing the Option Underlying Asset from the Option Data Source.

**Calculation and Publication of the Index Level**

The level of the Index is calculated in U.S. dollars at the end of the day on each day on which the Futures Market is scheduled to be open and is not subject to a Futures Market Disruption (an "**Index Calculation Day**"). The level of the Index is rounded to two decimals.

The level of the Index is calculated by reference to the TWAP (time weighted average price) of the Index, as well as the TWAP and closing levels of a sub-index (the "**Futures Tracker**") that tracks the performance of a rolling position in the Futures Contracts, as described under "— The Futures Tracker" below.

The level of the Index was set to 1,000 on January 7, 2005, the first Index Rebalance Day. On each subsequent Index Calculation Day, the level of the Index is calculated by:

- if the current Index Calculation Day is an Index Rebalance Day, adjusting the TWAP level of the Index on that Index Rebalance Day to reflect the percentage change from the TWAP level of the Futures Tracker on the current Index Rebalance Day to the closing level of the Futures Tracker on the current Index Rebalance Day, with that percentage change scaled by the exposure of the Index to the Futures Contracts determined on the current Index Rebalance Day; or

- if the current Index Calculation Day is not an Index Rebalance Day, adjusting the TWAP level of the Index on the immediately preceding Index Rebalance Day to reflect (a) the percentage change from the TWAP level of the Futures Tracker on the immediately preceding Index Rebalance Day to the closing level of the Futures Tracker on the current Index Calculation Day, with that percentage change scaled by the exposure of the Index to the Futures Contracts determined on the immediately preceding Index Rebalance Day, and (b) the 6% per annum daily deduction that has accrued since the immediately preceding Index Rebalance Day, calculated assuming a year with 360 days.

The TWAP level of the Index was set to 1,000 on January 7, 2005. On each subsequent Index Rebalance Day, the TWAP level of the Index is calculated by adjusting the TWAP level of the Index as of the immediately preceding Index Rebalance Day to reflect (a) the percentage change from the TWAP level of the Futures Tracker on the immediately preceding Index Rebalance Day to the TWAP level of the Futures Tracker on the current Index Calculation Day, with that percentage change scaled by the exposure of the Index to the Futures Contracts determined on the immediately preceding Index Rebalance Day, and (b) the 6% per annum daily deduction that has accrued since the immediately preceding Index Rebalance Day, calculated assuming a year with 360 days.

**The Futures Tracker**

The Futures Tracker provides rules-based exposure to an unfunded rolling position in the Futures Contracts. The Futures Tracker generally provides exposure only to the near expiry Futures Contract. The Futures Tracker exits its notional position in the near expiry Futures Contract and enters a notional position in the next expiry Futures Contract in equal increments over a five-day rolling period each quarter shortly before the expiry of the near expiry Futures Contract. The rolling period consists of five Exposure Business Days, subject to postponement, beginning on the sixth Exposure Business Day immediately preceding the Rolling Futures Exposure Closing Day of the near expiry Futures Contract.

An "**Exposure Business Day**" is a day on which the Futures Market is scheduled to be open for its regular trading session for the Futures Contracts.

A "**Rolling Futures Exposure Business Day**" is an Exposure Business Day that is not subject to an Index Market Disruption Event.

An "**Index Market Disruption Event**" for this purpose means the non-publication of the official settlement price by the Futures Market of the Future Contract(s) used to calculate the rolling futures exposure of the Futures Tracker and any events determined by the Index Calculation Agent that materially interfere with the ability of the Index Calculation Agent to calculate a level of the Futures Tracker representative of the relevant market.

The "**Rolling Futures Exposure Closing Day**" means, in respect of a Futures Contract, the earlier of (i) the last trading day for that Futures Contract and (ii) the first notice date for that Futures Contract, in each case as specified by the Futures Market.

The closing level of the Futures Tracker was set to 1,000 on January 3, 2005. On each subsequent Rolling Futures Exposure Business Day, the closing level of the Index is calculated by adjusting the closing level of the Index on the immediately preceding Rolling Futures Exposure Business Day to reflect the weighted performance of the relevant Futures Contract(s) from their official closing prices on the immediately preceding Rolling Futures Exposure Business Day to their official closing prices on the current Rolling Futures Exposure Business Day. Outside a rolling period, the Index tracks a single

Futures Contract, and a weight of 100% is assigned to that Futures Contract. During a rolling period, the weights of the Futures Contracts correspond to the weights associated with a roll from one Futures Contract to the next over five days in equal increments. If, however, an Index Market Disruption Event occurs on any Exposure Business Day during a rolling period prior to the last Exposure Business Day, then the portion of the roll will be postponed to the first Rolling Futures Exposure Business Day immediately following that Exposure Business Day. If an Index Market Disruption Event occurs on the last day of a rolling period, the roll period will be completed on that day and the Index Sponsor will calculate the closing level on that day using its good faith estimate.

The TWAP level of the Futures Tracker was set to 952.94 on January 4, 2005. On each subsequent Rolling Futures Exposure Business Day, the TWAP level of the Index is calculated by adjusting the closing level of the Index on the immediately preceding Rolling Futures Exposure Business Day to reflect the weighted performance of the relevant Futures Contract(s) from their official closing prices on the immediately preceding Rolling Futures Exposure Business Day to their TWAP levels on the current Rolling Futures Exposure Business Day. Outside a rolling period, the Index tracks a single Futures Contract, and a weight of 100% is assigned to that Futures Contract. During a rolling period, the weights of the Futures Contracts correspond to the weights associated with a roll from one Futures Contract to the next over five days in equal increments. If, however, an Index Market Disruption Event occurs on any Exposure Business Day during a rolling period prior to the last Exposure Business Day, then the portion of the roll will be postponed to the first Rolling Futures Exposure Business Day immediately following that Exposure Business Day. If an Index Market Disruption Event occurs on the last day of a rolling period, the roll period will be completed on that day and the Index Sponsor will calculate the TWAP level on that day using its good faith estimate.

The TWAP level of a Futures Contract on any Rolling Futures Exposure Business Day is equal to the time weighted average price of that Futures Contract as determined over a 10-minute period beginning at 3:50 PM EST (in the case of a regular trading session) or 12:50 PM EST (in the case of a half-day trading session). Prior to October 26, 2020, the TWAP level of a Futures Contract on any Rolling Futures Exposure Business Day was equal to the time weighted average price of that Futures Contract as determined over a 15-minute period beginning at 4:00 PM EST (in the case of a regular trading session) or 1:00 PM EST (in the case of a half-day trading session).

**Index Committee**

The Index is overseen by an index committee. The index committee will review the Index's methodology at least once in every twelve-month period, make changes to the methodology as necessary and administer any consultations for any potential material methodology changes. If any scenario not explicitly covered in the methodology occurs, the index committee will use its discretion to determine the action to be taken. The Index Sponsor has advised that any such determination will be announced to clients in advance.

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## BACKGROUND ON E-MINI® RUSSELL 2000® FUTURES

Futures contracts are contracts that legally obligate the holder to buy or sell an asset at a predetermined delivery price during a specified future time period.

E-mini® Russell 2000® futures are U.S. dollar-denominated futures contracts (the "**Futures Contracts**"), based on the Russell 2000® Index, traded on the Chicago Mercantile Exchange (the "**CME**"), representing a contract unit of $50 *multiplied by* the Russell 2000® Index, measured in cents per index point.

Futures Contracts listed for the nearest five quarters, for each March, June, September and December. Trading of the Futures Contracts will terminate at 9:30 A.M. Eastern time on the third Friday of the contract month.

The daily settlement prices of the Futures Contracts are based on trading activity in the relevant contract (and in the case of a lead month also being the expiry month, together with trading activity on lead month-second month spread contracts) on the CME during a specified settlement period. The final settlement price of Futures Contracts is based on the opening prices of the component stocks in the Russell 2000® Index, determined on the third Friday of the contract month.

### Overview of Futures Markets

Futures contracts are traded on regulated futures exchanges, in the over-the-counter market and on various types of electronic trading facilities and markets. As of the date of this underlying supplement, all of the Futures Contracts are exchange-traded futures contracts. A futures contract provides for a specified settlement month in which the cash settlement is made by the seller (whose position is therefore described as "short") and acquired by the purchaser (whose position is therefore described as "long").

No purchase price is paid or received on the purchase or sale of a futures contract. Instead, an amount of cash or cash equivalents must be deposited with the broker as "initial margin." This amount varies based on the requirements imposed by the exchange clearing houses, but it may be lower than 5% of the notional value of the contract. This margin deposit provides collateral for the obligations of the parties to the futures contract.

By depositing margin, which may vary in form depending on the exchange, with the clearing house or broker involved, a market participant may be able to earn interest on its margin funds, thereby increasing the total return that it may realize from an investment in futures contracts. The Indices are not total return indices and do not reflect interest that could be earned on funds notionally committed to the trading of futures contracts.

At any time prior to the expiration of a futures contract, a trader may elect to close out its position by taking an opposite position on the exchange on which the trader obtained the position, subject to the availability of a liquid secondary market. This operates to terminate the position and fix the trader's profit or loss. Futures contracts are cleared through the facilities of a centralized clearing house and a brokerage firm that is a member of the clearing house.

Futures exchanges may adopt rules and take other actions that affect trading, including imposing speculative position limits, maximum price fluctuations and trading halts and suspensions and requiring liquidation of contracts in certain circumstances.

## BACKGROUND ON THE RUSSELL 2000® INDEX

All information contained in this underlying supplement regarding the Russell 2000® Index (a "**Russell 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, FTSE Russell. The Russell Indices were developed by Russell Investment Group and are calculated, maintained and published by FTSE Russell. FTSE Russell has no obligation to publish, and may discontinue publication of, the Russell Indices.

The Russell 2000® Index measures the capitalization-weighted price performance of 2,000 U.S. small-capitalization stocks listed on eligible U.S. exchanges and is designed to track the performance of the small-capitalization segment of the U.S. equity market. The companies included in the Russell 2000® Index are the middle 2,000 of the companies that form the Russell 3000E™ Index, which is composed of the 4,000 largest U.S. companies as determined by total market capitalization and represents approximately 99% of the U.S. equity market. The Russell 2000® Index is reported by Bloomberg L.P. under the ticker symbol "RTY."

### Selection of Stocks Underlying the Russell Indices

The Russell Indices are sub-indices of the Russell 3000E™ Index. To be eligible for inclusion in the Russell 3000E™ Index and, consequently, a Russell Index, a company must meet the following criteria as of the rank day in May (except that initial public offerings ("**IPOs**") are considered for inclusion on a quarterly basis):

- *U.S. Equity Market*. The company must be determined to be part of the U.S. equity market, meaning that its home country is the United States. If a company incorporates in, has a stated headquarters location in, and also trades in the same country (ADRs and ADSs are not eligible), the company is assigned to its country of incorporation.

If any of the three criteria do not match, FTSE Russell then defines three Home Country Indicators ("**HCIs**"): country of incorporation, country of headquarters and country of the most liquid exchange as defined by two-year average daily dollar trading volume from all exchanges within a country. After the HCIs are defined, the next step in the country assignment involves an analysis of assets by location. FTSE Russell cross-compares the primary location of the company's assets with the three HCIs. If the primary location of assets matches any of the HCIs, then the company is assigned to its primary asset location.

If there is not enough information to determine a company's primary location of assets, FTSE Russell uses the primary location of the company's revenue for the same cross-comparison and assigns the company to the appropriate country in a similar fashion. FTSE Russell uses an average of two years of assets or revenue data for analysis to reduce potential turnover.

If conclusive country details cannot be derived from assets or revenue, FTSE Russell assigns the company to the country in which its headquarters are located unless the country is a Benefit Driven Incorporation ("**BDI**") country. If the country in which its headquarters are located is a BDI country, the company is assigned to the country of its most liquid stock exchange. The BDI countries are Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bonaire, British Virgin Islands, Cayman Islands, Channel Islands, Cook Islands, Curacao, Faroe Islands, Gibraltar, Guernsey, Isle of Man, Jersey, Liberia, Marshall Islands, Panama, Saba, Sint Eustatius, Sint Maarten and Turks and Caicos Islands.

- *U.S. Eligible Exchange*. The following exchanges and markets are deemed to be eligible U.S. exchanges: the Chicago Board Options Exchange, the New York Stock Exchange, NYSE American, The Nasdaq Stock Market and NYSE Arca. Stocks that are not traded on an eligible U.S. exchange (Bulletin Board, Pink Sheet and over-the-counter securities, including securities for which prices are displayed on the FINRA Alternative Display Facility) are not eligible for inclusion.

- *Minimum Closing Price*. A stock must have a close price at or above $1.00 (on its primary exchange), subject to exceptions to reduce turnover.

- *Minimum Total Market Capitalization*. Companies with a total market capitalization less than $30 million are not eligible for inclusion.

- *Minimum Free Float*. Companies with 5.5% or less of their shares available in the marketplace are not eligible for inclusion.

- *Company Structure*. Companies structured in the following ways are not eligible for inclusion: royalty trusts, U.S. limited liability companies, closed-end investment companies, business development companies (and other companies that are required to report Acquired Fund Fees and Expenses, as defined by the SEC), blank-check companies, special-purpose acquisition companies, limited partnerships, exchange-traded funds and mutual funds.

- *UBTI*. Real estate investment trusts and publicly traded partnerships that generate or have historically generated unrelated business taxable income ("**UBTI**") and have not taken steps to block UBTI to equity holders are not eligible for inclusion. Information used to confirm UBTI impact includes the following publicly available sources: 10-K, SEC Form S-3, K-1, company annual report, dividend notices or company website.

- *Security Types*. The following types of securities are not eligible for inclusion: preferred and convertible preferred stock, redeemable shares, participating preferred stock, warrants, rights, installment receipts and trust receipts.

- *Minimum Voting Rights*. As of August 2017, more than 5% of a company's voting rights (aggregated across all of its equity securities, including, where identifiable, those that are not listed or trading) must be in the hands of unrestricted shareholders. Existing constituents have a five-year grandfathering period to comply or they will be removed from each applicable Russell Index at the June 2023 reconstitution. Shares referenced as "non-voting" or providing legally minimum rights only will be viewed as having no voting power as it relates to the minimum voting rights review.

- *Multiple Share Classes*. If an eligible company trades under multiple share classes, each share class is reviewed independently for eligibility for inclusion. Share classes in addition to the primary share class must meet the following minimum size, liquidity and float requirements to be eligible: (i) total market capitalization must be larger than $30 million; (ii) average daily dollar trading value must exceed that of the global median; and (iii) more than 5% of shares must be available in the marketplace.

Securities of eligible companies are included in Russell Indices based on total market capitalization. Total market capitalization is determined by multiplying total outstanding shares by the market price (generally, the last price traded on the primary exchange of the share class with the highest two-year trading volume, subject to exceptions) as of the rank day in May (except that IPOs are considered for inclusion on a quarterly basis). Common stock, non-restricted exchangeable shares and partnership units/membership interests (but not operating partnership units of umbrella partnership real estate investment trusts) are used to calculate a company's total market capitalization. If multiple share classes of common stock exist, they are combined to determine total shares outstanding; however, in cases where the common stock share classes act independently of each other (e.g., tracking stocks), each class is considered for inclusion separately. For merger and spin-off transactions that are effective between rank day in May and the business day immediately before the index lock down takes effect ahead of the annual reconstitution in June, the market capitalizations of the impacted securities are recalculated and membership is reevaluated as of the effective date of the corporate action.

The 4,000 securities with the greater total market capitalization become members of the Russell 3000E™ Index. All remaining Russell Indices are a subset of the Russell 3000E™ Index. Market capitalization breakpoints for the Russell 3000® Indices are determined by the breaks between the rankings of companies (based on descending total market capitalization). Market capitalization breakpoints for the Russell 2000® Index are determined by the break between the companies ranked #1,001 through #3,000.

New members are assigned on the basis of the breakpoints, and existing members are reviewed to determine if they fall within a cumulative 5% market cap range around these new market capitalization breakpoints. If an existing member's market cap falls within this cumulative 5% of the market capitalization breakpoint, it will remain in its current Russell Index rather than be moved to a different Russell Index.

After membership is determined, a security's shares are adjusted to include only those shares available to the public ("free float"). The purpose of this adjustment is to exclude from market calculations the capitalization that is not available for purchase and is not part of the investable opportunity set. Stocks in the Russell Indices are weighted by their available (also called float-adjusted) market capitalization. The following types of shares are removed from total market capitalization to arrive at free float or available market capitalization, based on information recorded in SEC corporate filings: officers' and directors' holdings, private holdings exceeding 10% of shares outstanding, institutional holdings exceeding 30% of shares outstanding, shares held by publicly listed companies, shares held by an Employee Stock Ownership Plan or a Leveraged Employee Stock Ownership Plan; shares locked up during an IPO; direct government holdings; and indirect government holdings exceeding 10% of shares outstanding.

Reconstitution occurs on the fourth Friday in June. A full calendar for reconstitution is published each spring, with such reconstitution schedule governed by FTSE Russell guidelines.

**Corporate Actions and Events Affecting the Russell Indices**

FTSE Russell applies corporate actions to the Russell Indices on a daily basis. FTSE Russell applies the following methodology guidelines, among others, when adjusting the applicable Russell Index in response to corporate actions:

- *"No Replacement" Rule.* Securities that leave the relevant Russell Index for any reason (*e.g.*, mergers, acquisitions or other similar corporate activity) are not replaced. Thus, the number of securities in the relevant Russell Index over a year will fluctuate according to corporate activity.

- *Statement of Principles and Adjustments for Specific Corporate Events.* FTSE Russell has stated as general principles that the treatment of corporate events (a) should reflect how such events are likely to be dealt with in investment portfolios to maintain the portfolio structure in line with the target set out in the index objective and index methodology and (b) should normally be designed to minimize the trading activity required by investors to match the index performance. No assurance can be provided that corporate actions and events will be treated by FTSE Russell in a manner consistent with its statement of general principles.

In addition, FTSE Russell has established guidance for the treatment of corporate actions and events, including, but not limited to, dividends, capital repayments, companies converting to a REIT structure, share buybacks, rights issues, mergers, acquisitions, tender offers, split-offs, spin-offs, bankruptcies, insolvencies, liquidations and trading suspensions. However, because of the complexities involved in some cases, those guidelines are not definitive rules that will determine FTSE Russell's actions in all circumstances. FTSE Russell reserves the right to determine the most appropriate method of implementation for any corporate event which is not covered by those guidelines or which is of a complex nature.

- *Changes to Shares Outstanding and Free Float.* Each Russell Index will be reviewed quarterly for updates to shares outstanding and to free floats used within the calculation of each Russell Index. In March, September and December, shares outstanding and free float will be updated to reflect cumulative share changes greater than 1%, cumulative free float changes greater than 1% for constituents with a free float greater than 5% but less than or equal to 15% and cumulative free float changes greater than 3% for constituents with a free float greater than 15%. In June, the shares and free float updates will be implemented regardless of size. Shares and free float updates can be triggered in some cases by certain events, such as some primary or secondary offerings.

## BACKGROUND ON THE iSHARES® RUSSELL 2000 ETF

All information contained in this underlying supplement regarding the iShares® Russell 2000 ETF (the "**IWM Fund**") has been derived from publicly available information, without independent verification. This information reflects the policies of, and is subject to change by, iShares® Trust and BlackRock Fund Advisors ("BFA"). BFA is currently the investment adviser to the iShares® Russell 2000 ETF. The IWM Fund is an exchange-traded fund that trades on the NYSE Arca, Inc. under the ticker symbol "IWM."

The IWM Fund seeks to track the investment results, before fees and expenses, of an index composed of small-capitalization U.S. equities, which is currently the Russell 2000® Index. For more information about the Russell 2000® Index, please see "Background on the Russell 2000® Index" in this underlying supplement.

BFA uses a representative sampling indexing strategy to manage the IWM Fund. "Representative sampling" is an indexing strategy that involves investing in a representative sample of securities that collectively has an investment profile similar to that of the Russell 2000® Index. The securities selected are expected to have, in the aggregate, investment characteristics (based on factors such as market capitalization and industry weightings), fundamental characteristics (such as return variability and yield) and liquidity measures similar to those of the Russell 2000® Index. The IWM Fund may or may not hold all of the securities in the Russell 2000® Index.

The Russell 2000® Index is a financial calculation, based on a grouping of financial instruments, while the IWM Fund is an actual investment portfolio. The performance of the IWM Fund and the Russell 2000® Index may vary for a number of reasons, including transaction costs, non-U.S. currency valuations, asset valuations, corporate actions (such as mergers and spin-offs), timing variances and differences between the IWM Fund's portfolio and the Russell 2000® Index resulting from the IWM Fund's use of representative sampling or from legal restrictions (such as diversification requirements) that apply to the IWM Fund but not to the Russell 2000® Index. "Tracking error" is the divergence of the performance (return) of the IWM Fund's portfolio from that of the Russell 2000® Index. Because the IWM Fund uses a representative sampling indexing strategy, it can be expected to have a larger tracking error than if it used a replication indexing strategy. "Replication" is an indexing strategy in which a fund invests in substantially all of the securities in its Russell 2000® Index in approximately the same proportions as in the Russell 2000® Index.

iShares® Trust is a registered investment company that consists of numerous separate investment portfolios, including the IWM Fund. Information provided to or filed with the SEC by iShares® Trust pursuant to the Securities Act of 1933, as amended, and the Investment Company Act of 1940, as amended, can be located by reference to SEC file numbers 333-92935 and 811-09729, respectively, through the SEC's website at http://www.sec.gov.

Supplemental Terms of 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 debt securities set forth in the accompanying product supplement. Except as noted below, capitalized terms used in this section without definitions are as defined in "The MerQube US Small-Cap Vol Advantage 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 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 the official settlement price and/or time weighted average price (or, if trading in the relevant futures contract has been materially suspended or materially limited, the calculation agent's good faith estimate of the relevant price that would have prevailed but for that suspension or limitation or non-trading day) on that Final Disrupted Determination Date of the futures contract(s) included in the Index.

***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 the official settlement price and/or time weighted average price (or, if trading in the relevant futures contract has been materially suspended or materially limited, the calculation agent's good faith estimate of the relevant price that would have prevailed but for that suspension or limitation or non-trading day) on that Final Disrupted Determination Date of the futures contract(s) included in the Index.

***Additional Defined Terms***

Notwithstanding any contrary definition in the accompanying product supplement, with respect to the Index or any relevant successor index, a "**scheduled trading day**" is, unless otherwise specified in the relevant terms supplement, a day, as determined by the calculation agent, on which:

(a) the relevant exchange for the Index or that successor index, as applicable, is scheduled to be open for trading for its regular trading session;

(b) banking institutions in the City of New York and that principal financial center are not otherwise authorized or required by law, regulation or executive order to close; and

(c) the Index or that successor index, as applicable, is scheduled to calculate and publish the closing level of the Index (or that successor index).

Notwithstanding any contrary definition in the accompanying product supplement, with respect to the Index or any relevant successor index, 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 exchange for the Index or that successor index, as applicable;

(b) banking institutions in the City of New York and that principal financial center are not otherwise authorized or required by law, regulation or executive order to close; and

(c) the Index or that successor index, as applicable, is scheduled to calculate and publish the closing level of the Index (or that successor index).

Notwithstanding anything to the contrary in the accompanying product supplement, with respect to the Index or any relevant successor index, "**relevant exchange**" means the primary exchange or market of trading for the futures contract(s) then included in the Index or that successor index, as applicable.

**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), a "**market disruption event**," unless otherwise specified in the relevant terms supplement, means:

(1) any termination or suspension of, or limitation on, trading imposed by the relevant exchange for the Index (or that successor index);

(2) a failure by the relevant exchange for the Index (or that successor index) to calculate and publish the official settlement price of the futures contract(s) included in the Index (or that successor index) on any day upon which the official settlement price of that futures contract is scheduled to be calculated and published by the relevant exchange;

(3) the closure of the relevant exchange for the Index (or that successor index) prior to its scheduled closing time unless such earlier closing time is announced at least one hour prior to the actual closing time;

(4) the failure of any relevant exchange for the Index (or that successor index) to open;

(5) any other event that disrupts or impairs the ability of market participants in general to effect transactions in, or obtain market values for the futures contract included in the Index (or that successor index);

(6) the failure of the sponsor of the Index (or that successor index) to calculate and publish the closing level of the Index (or that successor index),

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

- a determination by the calculation agent in its sole discretion that the applicable event described above materially interfered with the Issuer's ability or the ability of any of its 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 the 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 for any day because no successor index for the Index is available at that time, or the calculation agent has previously selected a successor index for the Index and publication of that successor index is discontinued prior to, and that discontinuation is continuing on, that day, then the closing level of the Index for that day will be computed by the calculation agent in accordance with the formula for and method of calculating the Index or that successor index, as applicable, last in effect prior to that discontinuation, and giving effect to the Index methodology for rolling from one futures contract to the next over time.