

**Underlying supplement no. 22-I**  
*To the prospectus dated April 13, 2023 and  
the prospectus supplement dated April 13, 2023*

**Registration Statement Nos. 333-270004  
and 333-270004-01**  
**Dated May 12, 2023**  
**Rule 424(b)(2)**

**JPMORGAN CHASE & CO.**

***Notes Linked to the J.P. Morgan Total Return Index***

**JPMORGAN CHASE FINANCIAL COMPANY LLC**

***Notes, Fully and Unconditionally Guaranteed by JPMorgan Chase & Co., Linked to the J.P. Morgan Total 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 Total 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, 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, including any changes to the terms specified below. 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.

**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-4 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**

May 12, 2023

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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 Total Return Index (the “**Index**”) was developed and is maintained and calculated by J.P. Morgan Securities LLC (“**JPMS**”). The description of the Index and methodology included in this underlying supplement is based on rules formulated by JPMS (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, and JPMS reserves all rights with respect to its ownership of the Index. The Index is reported by Bloomberg L.P. under the ticker symbol “JPUSTRI Index.”

The Index seeks to provide a dynamic asset allocation to the U.S. dollar fixed income sector based on a momentum allocation strategy. The Index tracks the return of a notional dynamic portfolio consisting of up to 12 U.S. dollar fixed-income exchange-traded funds (“**ETFs**”) (each a “**Constituent**,” and collectively, the “**Constituents**”), in each case with distributions, if any, notionally reinvested.

The Index selects and rebalances into a new notional portfolio composed of the Constituents each month using a methodology that is designed to:

- (i) maintain a diversified allocation within the U.S. dollar fixed income sector at all times; and
- (ii) allocate dynamically based on recent performance.

*Maintaining a diversified allocation within the U.S. dollar fixed income sector.* A diversified portfolio’s return is the weighted average of its constituents’ returns, but its volatility is less than the weighted average of its constituents’ volatilities, because different assets don’t always move in the same direction — in this sense, a diversified portfolio can be said to deliver average returns with below-average volatility. In order to ensure diversification, the Index selects its monthly portfolio from a universe of 12 Constituents, and imposes caps and floors on the Constituent weights at the individual and sector levels. Each Constituent’s assigned weight must also be an increment of 5%, and the assigned weights must sum to 100%. The following table sets forth the current Constituents, the exchange ticker for each Constituent, the maximum assigned weight for each Constituent and the maximum aggregate assigned weight for each sector. For additional information about the Constituents, see “Background on the iShares® ETFs” below.

	Constituent	Ticker	Maximum Assigned Weight	Maximum Aggregate Assigned Weight
1	iShares® 1-3 Year Treasury Bond ETF	SHY	20%	U.S. Treasury Bond Sector: 50%
2	iShares® 7-10 Year Treasury Bond ETF	IEF	20%	
3	iShares® 20+ Year Treasury Bond ETF	TLT	20%	

	Constituent	Ticker	Maximum Assigned Weight	Maximum Aggregate Assigned Weight
4	iShares® 1-5 Year Investment Grade Corporate Bond ETF <sup>1</sup>	IGSB	20%	Investment Grade Credit Sector: 50%
5	iShares® 5-10 Year Investment Grade Corporate Bond ETF <sup>2</sup>	IGIB	20%	
6	iShares® 10+ Year Investment Grade Corporate Bond ETF <sup>3</sup>	IGLB	20%	
7	iShares® MBS ETF	MBB	20%	Other Government and Agency Sector: 50%
8	iShares® TIPS Bond ETF	TIP	20%	
9	iShares® J.P. Morgan USD Emerging Markets Bond ETF	EMB	10%	
10	iShares® iBoxx® \$ High Yield Corporate Bond ETF	HYG	20%	Other Credit Sector: 25%
11	iShares® Floating Rate Bond ETF	FLOT	10%	
12	iShares® Preferred and Income Securities ETF	PFF	10%	

*Allocating dynamically based on recent performance.* Academic research has shown that, historically, asset classes exhibiting strong recent returns have been more likely to continue to exhibit positive returns. The Index attempts to take advantage of this dynamic by selecting a monthly portfolio that reflects the strongest recent returns from among the possible portfolios that meet the weight constraints set forth above and the volatility threshold described below.

*Selecting a monthly portfolio.* Each month, the Index identifies every notional portfolio that meets the individual Constituent and sector weight constraints set forth above with weights in increments of 5% and a total weight of 100% and that has a recent historical volatility at or below a volatility threshold of 5%. The Index then selects and rebalances into the notional portfolio from that set with the strongest recent performance. If no such notional portfolio exists, then the volatility threshold is increased by 1% (e.g., from 5% to 6%), and the procedure described in this paragraph is repeated, including the increase to the volatility threshold, until a notional portfolio has been selected.

*Calculating the level of the Index.* On any given day, the closing level of the Index (the “**Index Level**”) reflects the weighted performance of the Constituents, in each case with distributions, if any, notionally reinvested. The Index Level was set equal to 100.00 on May 3, 2004, the base date of the Index. The Index Calculation Agent (as defined below) began calculating the Index on a live basis on July 13, 2017.

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

<sup>1</sup> The iShares® 1-5 Year Investment Grade Corporate Bond ETF (ticker: IGSB) was formerly known as the iShares® 1-3 Year Credit Bond ETF (ticker: CSJ).

<sup>2</sup> The iShares® 5-10 Year Investment Grade Corporate Bond ETF (ticker: IGIB) was formerly known as the iShares® Intermediate Credit Bond ETF (ticker: CIU).

<sup>3</sup> The iShares® 10+ Year Investment Grade Corporate Bond ETF (ticker: IGLB) was formerly known as the iShares® 10+ Year Credit Bond ETF (ticker: CLY).

See “The J.P. Morgan Total 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 be successful or that the Index will outperform any alternative portfolio or strategy that might be constructed from the Constituents. There is no guarantee that past performance trends referenced in selecting a monthly portfolio will continue during the subsequent period when the Index provides exposure to that monthly portfolio. In addition, no assurance can be given that the actual realized volatility of the Index will approximate 5%. The actual realized volatility of the Index will depend on the performance of the Constituents included in the monthly portfolio(s) from time to time, and, at any time or for extended periods, may be greater than 5%, perhaps significantly, or less than 5%. Furthermore, the volatility threshold is subject to upward adjustment and, thus, the realized volatility threshold used to determine any monthly portfolio may be greater than 5%, perhaps significantly.**

**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, any Constituent or any of the securities underlying any 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, the Index Sponsor and the Index Calculation Agent, may adjust the Index in a way that affects its level, and JPMS has no obligation to consider your interests.**

JPMS, 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 may have interests adverse to the interests of the holders of the notes, which may affect your return on the notes, particularly where JPMS, 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 a Constituent with a substitute or successor upon the occurrence of certain events affecting that Constituent, the selection of any substitute or successor, 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, 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 may have interests adverse to the interests of the holders of the notes and the policies and judgments for which JPMS 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, JPMorgan Chase & Co., as the ultimate parent company of JPMS, ultimately controls JPMS. JPMS has no obligation to consider your interests in taking any actions that might affect the value of your notes. Furthermore, the inclusion of any Constituent in the Index is not an investment recommendation by us or JPMS of that Constituent or any of the securities or other assets held by that Constituent. See “The J.P. Morgan Total Return Index.”

**The securities of JPMorgan Chase & Co. are currently held by the iShares® 1-5 Year Investment Grade Corporate Bond ETF, the iShares® 5-10 Year Investment Grade Corporate Bond ETF, the iShares® 10+ Year Investment Grade Corporate Bond ETF, the iShares® Floating Rate Bond ETF and the iShares® Preferred and Income Securities ETF, but, to our knowledge, the securities of JPMorgan Chase & Co. are not currently held by any other Constituent.**

We will have no ability to control the actions of the issuers of those securities, including actions that could affect the value of the securities held by any Constituent or your notes. None of JPMorgan Chase & Co. and 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. In the event that our securities are held by any Constituent, we will have no obligation to consider your interests as a holder of the notes in taking any action that might affect the value of your notes.

**We are affiliated with the sponsor of the reference index of one of the Constituents.**

One of our affiliates developed and maintains and calculates the J.P. Morgan Emerging Markets Bond Index Global CORE, which is the reference index of the iShares® J.P. Morgan USD Emerging

Markets Bond ETF, one of the Constituents. Accordingly, conflicts of interest exist between our affiliate and you. Our affiliate will have no obligation to consider your interests as a holder of the notes in taking any actions that might affect the value of your notes.

In addition, the J.P. Morgan Emerging Markets Bond Index Global CORE makes use of certain weights, prices, values, levels or dates that are determined by PricingDirect Inc. (“**PricingDirect**”). PricingDirect is JPMorgan Chase & Co.’s wholly owned subsidiary and provides valuation and other metrics data for fixed-income securities and derivatives. PricingDirect determines these prices through a proprietary evaluation process that takes into account market-based evaluations (such as market intelligence for traded, quoted securities). In addition, under some circumstances, the pricing information provided by PricingDirect on the bonds held by the J.P. Morgan Emerging Markets Bond Index Global CORE may be derived solely from price quotations or internal valuations made by one or more of our affiliates. Accordingly, conflicts of interest exist between PricingDirect and you. PricingDirect will have no obligation to consider your interests as a holder of the notes in taking any actions that might affect the value of your notes.

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

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 Constituents.

**An investment in the notes carries the risks associated with the Index’s momentum allocation strategy.**

The Index is constructed using what is generally known as a momentum allocation strategy. A momentum strategy generally seeks to capitalize on positive trends in the returns of financial instruments. As such, the weights of the Constituents in the Index are based on the performance of the Constituents from the immediately preceding six-month period. However, there is no guarantee that trends existing in the preceding six-month period will continue in the future. A momentum strategy is different from a strategy that seeks long-term exposure to a notional portfolio consisting of constant components with fixed weights. The Index may fail to realize gains that could occur as a result of obtaining exposures to financial instruments that have experienced negative returns, but which subsequently experience a recovery or a sudden spike in positive returns. As a result, if market conditions do not represent a continuation of prior observed trends, the level of the Index, which is rebalanced based on prior trends, may decline.

Due to the “long-only” construction of the Index, Constituents with negative performance over the relevant lookback period may be selected for inclusion in the Index, and the weight of each Constituent will not be less than zero at any time. Additionally, the Index is rebalanced only once each month. As a result, the composition of the Index will not change between re-weightings even if the Constituents tracked by the Index during a given month decline significantly. No assurance can be given that the investment strategy used to construct the Index will cause it to outperform any alternative index that might be constructed from the Constituents.

**The Index may perform poorly during periods characterized by short-term volatility.**

The Index’s strategy is based on momentum investing. Momentum investing strategies are effective at identifying the current market direction in trending markets. However, in non-trending, sideways markets, 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 in non-trending, “choppy” markets characterized by short-term volatility.

**The Index may not approximate its initial volatility threshold of 5%.**

No assurance can be given that the Index will maintain an annualized realized volatility that approximates its initial volatility threshold of 5%. The actual realized volatility of the Index will depend on the performance of the Constituents included in the monthly portfolio(s) from time to time, and, at any time or for extended periods, may be greater than 5%, perhaps significantly, or less than 5%. Furthermore, the volatility threshold is subject to upward adjustment and, thus, the realized volatility threshold used to determine any monthly portfolio may be greater than 5%, perhaps significantly. While the assigned weights of the notional portfolio(s) tracked by the Index are based in part on the recent historical volatility of the relevant notional portfolio, there is no guarantee that trends existing in the relevant measurement periods will continue in the future. The volatility of the notional portfolio on any day may change quickly and unexpectedly. Accordingly, the actual realized annualized volatility of the Index on a daily basis may be greater than or less than the volatility threshold used to select to the relevant monthly portfolio(s), which may adversely affect the level of the Index and the value of the notes.

**The Index should not be compared to any other index or strategy sponsored by any of our affiliates 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.

**Correlation of performances among the Constituents may reduce the performance of the notes.**

Performances of the Constituents may become highly correlated from time to time during the term of the notes, including, but not limited to, a period in which there is a substantial decline in a particular sector or asset type represented by the Constituents that have a higher weighting in the Index relative to those representing any of the other sectors or asset types, as determined by the Index's strategy. High correlation during periods of negative returns among Constituents representing any one sector or asset type that have a substantial percentage weighting in the Index could have an adverse effect on any payments on, and the value of, your notes.

**Changes in the values of the Constituents may offset each other.**

The Constituents collectively represent a diverse range of sectors of the U.S. dollar fixed-income market, and price movements between the Constituents representing different sectors of the U.S. dollar fixed-income market may not correlate with each other. At a time when the value of a Constituent representing a particular sector of the U.S. dollar fixed-income market increases, the value of other Constituents representing a different sector may not increase as much or may decline. Therefore, in calculating the level of the Index, increases in the values of some of the Constituents may be moderated, or more than offset, by lesser increases or declines in the values of other Constituents.

**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. Alternative modelling techniques might produce significantly different results and may prove to be more appropriate. The use of alternative "proxy" performance information in the calculation of hypothetical back-tested weights and levels may have resulted in different, perhaps significantly different, weights and higher levels than would have resulted from the use of actual performance information of the Constituents. 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. 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. See also “The J.P. Morgan Total Return Index — Additional Information about Hypothetical Back-tested Performance Data” below.

**If the values of the Constituents included in the Index change, 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 Constituents. Accordingly, changes in the values of the Constituents included in the Index 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 exposures to the Constituents are purely notional and will exist solely in the records maintained by or on behalf of the index calculation agent of the Index. 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 July 13, 2017 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 on the total return performance of the 12 Constituents. As a consequence, your investment in the notes is exposed to the total return performance of the Constituents.

**The investment strategy used to construct the Index involves monthly rebalancing and weighting constraints that are applied to the Constituents.**

The Constituents are subject to monthly rebalancing and weighting constraints by asset type and on subsets of assets based on historical volatility. By contrast, a notional portfolio that does not rebalance monthly and is not subject to any weighting constraints could see greater compounded gains over time through exposure to a consistently and rapidly appreciating portfolio consisting of the Constituents. Therefore, your return on the notes may be less than the return you could realize on an alternative investment in the Constituents that is not subject to monthly rebalancing or weighting constraints. No assurance can be given that the investment strategy used to construct the Index will outperform any alternative investment in the Constituents.

**The Constituents composing the Index may be replaced by a substitute upon the occurrence of certain extraordinary events.**

As described under “The J.P. Morgan Total Return Index — Succession and Extraordinary Events” below, following the occurrence of certain extraordinary events with respect to a Constituent, the affected Constituent may be replaced by a substitute ETF 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, any Constituent or any reference index, where that material interference or change is not acceptable to the calculation agent of the Index. See “The J.P. Morgan Total 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 a 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. For example, the substitute or successor Constituent may have

higher fees or worse performance than the original Constituent. Moreover, the policies of the sponsor of the substitute ETF concerning the methodology and calculation of the substitute ETF, including decisions regarding additions, deletions or substitutions of the assets underlying the substitute ETF, could affect the level or price of the substitute ETF 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 the reference index of a substitute ETF 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 ETF will have no obligation to consider your interests in calculating or revising such substitute ETF.

## **Risks Relating to the Constituents**

### **The Constituents are subject to the risks associated with ETFs.**

The Constituents are ETFs and will be subject to the risks associated with ETFs. See “— Risks Relating to Exchange-Traded Funds” below.

### **The notes are subject to significant risks associated with fixed-income securities, including interest rate-related risks.**

The Constituents attempt to track the performance of indices composed of fixed-income securities. Investing in the notes that provide exposure to those Constituents differs significantly from investing directly in bonds to be held to maturity, as the values of those Constituents change, at times significantly, during each trading day based upon the current market prices of their underlying bonds. The market prices of these bonds are volatile and significantly influenced by a number of factors, particularly the duration of the underlying bonds, the yields on these bonds as compared to current market interest rates and the actual or perceived credit quality of the issuer of these bonds.

The bond prices used to calculate the levels of the reference index of the iShares® iBoxx® \$ High Yield Corporate Bond ETF are determined, in part, by reference to the bid and ask quotations provided by contributing banks, including us or our affiliates. In addition, one of our affiliates developed, maintains and calculates the J.P. Morgan EMBI® Global CORE Index, which is the reference index of the iShares® J.P. Morgan USD Emerging Markets Bond ETF, one of the Constituents. The J.P. Morgan EMBI® Global CORE Index makes use of certain weights, prices, values, levels or dates that are determined by PricingDirect. PricingDirect is JPMorgan Chase & Co.’s wholly owned subsidiary and provides valuation and other metrics data for fixed income securities and derivatives. PricingDirect determines these prices through a proprietary evaluation process that takes into account market-based evaluations (such as market intelligence for traded, quoted securities). In addition, under some circumstances, the pricing information provided by PricingDirect on the bonds underlying the J.P. Morgan EMBI® Global CORE Index may be derived solely from price quotations or internal valuations made by one or more of our affiliates.

In general, fixed-income instruments are significantly affected by changes in current market interest rates. As interest rates rise, the prices of fixed-income instruments are likely to decrease. Instruments with longer durations tend to be more sensitive to interest rate changes, usually making them more volatile than securities with shorter durations. As a result, rising interest rates may cause the value of the long-dated bonds underlying the relevant Constituents to decline, possibly significantly, which would adversely affect the value of the notes.

Interest rates are subject to volatility due to a variety of factors, including:

- sentiment regarding underlying strength or weakness in the local economies of the issuers of the securities underlying the relevant Constituents and global economies;
- expectations regarding the level of price inflation;
- sentiment regarding credit quality in the markets of the issuers of the securities underlying the relevant Constituents and global credit markets;
- central bank policies regarding interest rates; and

- the performance of capital markets that include the issuers of the securities underlying the relevant Constituents and foreign capital markets.

In addition, inflation-protected bonds typically have lower yields than conventional fixed-rate bonds because of their inflation adjustment feature. For the iShares® TIPS Bond ETF, which tracks inflation-protected bonds, if inflation is low, the benefit received from the inflation-protected feature of the underlying bonds may not sufficiently compensate you for their reduced yield.

**The notes are subject to significant risks associated with fixed-income securities, including credit risk.**

The Constituents attempt to track the performance of indices composed of fixed-income securities. The prices of the bonds held by those Constituents are significantly influenced by the creditworthiness of the issuers of those bonds. The bonds held by those Constituents may have their credit ratings downgraded, including, in the case of the investment-grade bonds, a downgrade from investment grade to non-investment grade status, or their credit spreads may widen significantly. Following a ratings downgrade or the widening of credit spreads, some or all of the bonds held by those Constituents may suffer significant and rapid price declines. These events may affect only a few or a large number of the bonds held by those Constituents. For example, during the most recent credit crisis in the United States, credit spreads widened significantly as the market demanded very high yields on corporate bonds, and as a result, the prices of the bonds in the United States dropped significantly. There can be no assurance that some or all of the factors that contributed to that credit crisis will not depress the price, perhaps significantly, of the bonds held by those Constituents, which would adversely affect the value of the notes.

Further, the Constituents that provide exposure to the high yield corporate market are subject to high-yield securities risk. Securities that are rated below investment grade (commonly known as “junk bonds,” including those bonds rated at BB+ or lower by S&P or Fitch or Ba1 or lower by Moody’s) may be more volatile than higher-rated securities of similar maturity. High-yield securities may also be subject to greater levels of credit or default risk than higher-rated securities. The value of high-yield securities can be adversely affected by overall economic conditions, such as an economic downturn or a period of rising interest rates, and high-yield securities may be less liquid and more difficult to sell at an advantageous time or price or to value than higher-rated securities. In particular, high-yield securities are often issued by smaller, less creditworthy companies or by highly leveraged (indebted) firms, which are generally less able than more financially stable firms to make scheduled payments of interest and principal.

**The value of the notes may be influenced by unpredictable changes in the markets and economies of the local governments of the issuers of the bonds held by the Constituents.**

The values of the Constituents may be influenced by unpredictable changes, or expectations of changes, in the local markets for the bonds held by those Constituents. Changes in the local governments of the issuers of the bonds held by those Constituents that may influence the value of the notes include:

- economic performance, including any financial or economic crises and changes in the gross domestic product, the principal sectors, inflation, employment and labor, and prevailing prices and wages;
- the monetary system, including the monetary policy, the exchange rate policy, the economic and tax policies, banking regulation, credit allocation and exchange controls;
- the external sector, including the amount and types of foreign trade, the geographic distribution of trade, the balance of payments, and reserves and exchange rates;
- public finance, including the budget process, any entry into or termination of any economic or monetary agreement or union, the prevailing accounting methodology, the measures of fiscal balance, revenues and expenditures, and any government enterprise or privatization program; and
- public debt, including external debt, debt service and the debt record.

These factors interrelate in complex ways, and the effect of one factor on the market value of the bonds held by the Constituents may offset or enhance the effect of another factor. Changes in the values of the Constituents may adversely affect any payment on the notes.

**The notes may be affected by changes in the perceived creditworthiness of the governments that issue the bonds held by several of the Constituents.**

Several of the Constituents hold government bonds. The prices of government bond are significantly influenced by the creditworthiness of the government that issues those bonds. U.S. rating agencies have downgraded the credit ratings and/or assigned negative outlooks to many governments worldwide and may continue to do so in the future. Any perceived decline in the creditworthiness of the governments that issue bonds held by Constituents, as a result of a credit rating downgrade or otherwise, may cause the yield on those bonds to increase and the prices of those bonds to fall, perhaps significantly, and may cause increased volatility in local or global credit markets. In addition, any perceived improvement in the creditworthiness of the governments that issue bonds held by Constituents may result in an increase in the risk tolerance of market participants, which may cause the yield on those bonds to increase and the prices of those bonds to fall, which may adversely impact the prices of the relevant Constituents and could have a negative impact on any payment on the notes.

**An investment in the notes is subject to risks associated with non-U.S. securities markets, including emerging markets.**

Some or all of the securities held by several of the Constituents have been issued by non-U.S. companies. An investment in the notes therefore involves risks associated with the securities markets in those countries where the relevant non-U.S. securities are traded, including risks of volatility in those markets, governmental intervention in those markets and cross shareholdings in companies in certain countries. Also, there is generally less publicly available information about companies in some of these jurisdictions than about U.S. companies that are subject to the reporting requirements of the SEC, and generally non-U.S. companies are subject to accounting, auditing and financial reporting standards and requirements and securities trading rules different from those applicable to U.S. reporting companies. Moreover, the bonds held by the iShares® J.P. Morgan USD Emerging Markets Bond ETF have been issued by emerging-markets countries. Investments in the notes, which are linked in part to the economic stability and development of such countries, involve risks associated with investments in, or the securities markets in, those countries.

The prices of securities in non-U.S. markets may be affected by political, economic, financial and social factors in those markets, including changes in a country's government, economic and fiscal policies, currency exchange laws or other laws or restrictions. Moreover, the economies of these countries may differ favorably or unfavorably from the economy of the United States in such respects as growth of gross national product, rate of inflation, capital reinvestment, resources and self-sufficiency. These countries may be subjected to different and, in some cases, more adverse economic environments.

The economies of emerging market countries in particular face several concerns, including relatively unstable governments that may present the risks of nationalization of businesses, restrictions on foreign ownership and prohibitions on the repatriation of assets, and which may have less protection of property rights than more developed countries. These economies may also be based on only a few industries, be highly vulnerable to changes in local and global trade conditions and may suffer from extreme and volatile debt burdens or inflation rates. In addition, local securities markets may trade a small number of securities and may be unable to respond effectively to increases in trading volume, potentially making prompt liquidation of holdings difficult or impossible at times.

Some or all of these factors may influence the value of the relevant Constituents, and therefore, the Index. The impact of any of the factors set forth above may enhance or offset some or all of any change resulting from another factor or factors. You cannot predict the future performance of any Constituent based on its historical performance. The value of any Constituent may, decrease, which may adversely affect any payment on the notes.

**The notes are subject to significant risks associated with floating rate notes.**

The iShares® Floating Rate Bond ETF invests in floating rate notes. Securities with floating or variable interest rates can be less sensitive to interest rate changes than securities with fixed interest rates, but may decline in value if their interest rates do not rise as much, or as quickly, as interest rates in general. Conversely, floating rate securities will not generally increase in value if interest rates decline. A decline in interest rates may result in a reduction in income received from floating rate securities held by the iShares® Floating Rate Bond ETF and may adversely affect the value of the iShares® Floating Rate Bond ETF's shares. Generally, floating rate securities carry lower yields than fixed notes of the same maturity. The interest rate for a floating rate note resets or adjusts periodically by reference to a benchmark interest rate, in some cases subject to a minimum or maximum rate. The impact of interest rate changes on floating rate investments is typically mitigated by the periodic interest rate reset of the investments. Floating rate notes in many instances are subject to legal or contractual restrictions on resale, may trade infrequently, and their value may be impaired when the iShares® Floating Rate Bond ETF needs to liquidate these notes. Benchmark interest rates, such as SOFR, may not accurately track market interest rates.

There is no guarantee or assurance that: (i) the iShares® Floating Rate Bond ETF will be able to invest in a desired amount of floating rate notes, (ii) the iShares® Floating Rate Bond ETF will be able to buy floating rate notes at a desirable price or (iii) floating rate notes will be actively traded. Any or all of the foregoing, should they occur, would negatively impact the iShares® Floating Rate Bond ETF, which may adversely affect the value of, or any payment on, the notes.

**The notes are subject to significant risks associated with mortgage-backed securities.**

The iShares® MBS ETF invests in mortgage-backed securities issued or guaranteed by U.S. government agencies or government-sponsored entities. Mortgage-backed securities are subject to prepayment risk, which is the risk that during periods of falling interest rates, an issuer of mortgages and other fixed-income securities may be able to repay principal prior to the security's maturity causing the iShares® MBS ETF to have to reinvest in securities with a lower yield or higher risk of default, resulting in a decline in the iShares® MBS ETF's income or return potential. The iShares® MBS ETF may also have to reinvest in securities with a lower yield upon a default on underlying mortgages that triggers an acceleration of securities held by the iShares® MBS ETF. Mortgage-backed securities are also subject to extension risk, which is the risk that when interest rates rise, certain mortgage-backed securities will be paid off substantially more slowly than originally anticipated and the value of those securities may fall sharply, resulting in a decline in income and potentially in the value of the investment. Because of prepayment and extension risk, mortgage-backed securities react differently to changes in interest rates than other bonds. Small movements in interest rates (both increases and decreases) may quickly and significantly reduce the value of certain mortgage-backed securities. In recent years, the market for mortgage-backed securities experienced substantially lower valuations and reduced liquidity. Ongoing economic and market uncertainty suggests that mortgage-backed securities may continue to be more difficult to value and to dispose of than previously.

Mortgage-backed securities issued or guaranteed by U.S. government agencies or government-sponsored entities (other than Ginnie Mae) are generally backed only by the general creditworthiness and reputation of the U.S. government agency or government-sponsored entity and are not guaranteed by the U.S. Department of the Treasury or backed by the full faith and credit of the U.S. government. If a U.S. government agency or government-sponsored entity that is the issuer or guarantor of securities held by the iShares® MBS ETF is unable to meet its obligations or ceases to exist and no plan is made for repayment of those securities, the performance of the iShares® MBS ETF will be adversely impacted, which may adversely affect the value of, or any payment on, the notes. In addition, government-sponsored entities that issue or guarantee mortgage-backed securities may be privatized in the future, which may adversely affect the value of, or any payment on, the notes.

**The notes are subject to significant risks associated with preferred stock.**

The iShares® Preferred and Income Securities ETF holds preferred stock. Unlike interest payments on debt securities, dividend payments on a preferred stock typically must be declared by the issuer's

board of directors. An issuer's board of directors is generally not under any obligation to pay a dividend (even if such dividends have accrued) and may suspend payment of dividends on a preferred stock at any time. In the event an issuer of preferred stock experiences economic difficulties, the issuer's preferred stock may lose substantial value due to the reduced likelihood that the issuer's board of directors will declare a dividend and the fact that the preferred stock may be subordinated to other securities of the same issuer. Certain additional risks associated with preferred stock could adversely affect the value of the iShares® Preferred and Income Securities ETF.

Because many preferred stocks pay dividends at a fixed rate, their market price can be sensitive to changes in interest rates in a manner similar to bonds — that is, as interest rates rise, the value of any preferred stocks held by the iShares® Preferred and Income Securities ETF are likely to decline. To the extent that the iShares® Preferred and Income Securities ETF invests in fixed-rate preferred stocks, rising interest rates may cause the value of the iShares® Preferred and Income Securities ETF's investments to decline. In addition, because many preferred stocks allow holders to convert the preferred stock into common stock of the issuer, their market price can be sensitive to changes in the value of the issuer's common stock. To the extent that the iShares® Preferred and Income Securities ETF invests in convertible preferred stocks, declining common stock values may also cause the value of the iShares® Preferred and Income Securities ETF's investments to decline.

There is a chance that the issuer of any preferred stock held by the iShares® Preferred and Income Securities ETF will have its ability to pay dividends deteriorate or will default (*i.e.*, fail to make scheduled dividend payments on the preferred stock or scheduled interest payments on other obligations of the issuer not held by the iShares® Preferred and Income Securities ETF), which would negatively affect the value of any such holding.

Preferred stocks are subject to market volatility and the prices of preferred stocks will fluctuate based on market demand. Preferred stocks often have call features which allow the issuer to redeem the security at its discretion. If a preferred stock is redeemed by the issuer, it will be removed from the relevant reference index. The redemption of preferred stocks having a higher than average yield may cause a decrease in the yield of the iShares® Preferred and Income Securities ETF and its reference index.

**The notes are subject to significant risks associated with hybrid securities.**

The iShares® Preferred and Income Securities ETF holds exchange-listed U.S. dollar-denominated hybrid securities. Hybrid securities are securities that contain characteristics of both a debt security and an equity security. Therefore, hybrid securities are subject to the risks of equity securities and risks of debt securities. The terms of hybrid instruments may vary substantially, and certain hybrid securities may be subject to similar risks as preferred stocks, such as interest rate risk, issuer risk, dividend risk, call risk and extension risk. The claims of holders of hybrid securities of an issuer are generally subordinated to those of holders of traditional debt securities in bankruptcy, and thus hybrid securities may be more volatile and subject to greater risk than traditional debt securities, and may in certain circumstances even be more volatile than traditional equity securities. At the same time, hybrid securities may not fully participate in gains of their issuer and thus potential returns of such securities are generally more limited than traditional equity securities, which would participate in such gains. Hybrid securities may also be more limited in their rights to participate in management decisions of an issuer (such as voting for the board of directors). Certain hybrid securities may be more thinly traded and less liquid than either publicly issued equity securities or debt securities, especially hybrid securities that are “customized” to meet the needs of particular investors, potentially making it difficult for the Fund to sell such securities at a favorable price or at all. Any of these features could cause a loss in market value of hybrid securities held by the iShares® Preferred and Income Securities ETF or otherwise adversely affect the iShares® Preferred and Income Securities ETF and, therefore, the Index and the notes.

## **Risks Relating to Exchange-Traded Funds**

### **There are risks associated with ETFs.**

An ETF may have a limited operating history. Although the shares of an ETF may be listed for trading on a securities exchange and a number of similar products have been traded on securities exchanges for varying periods of time, there is no assurance that an active trading market will continue for the shares of any ETF or that there will be liquidity in the trading market.

In addition, ETFs are subject to management risk, which is the risk that the applicable investment adviser's investment strategy, the implementation of which is subject to a number of constraints, may not produce the intended results. These constraints could affect the market prices of the shares of an ETF and, consequently, could adversely affect the value of the notes. See the description of the relevant ETF in this underlying supplement for additional information.

### **The policies of the investment adviser for an ETF, and the sponsor of its reference index, if any, could affect the value of, and the amount payable on, the notes.**

The policies of the investment adviser for any ETF concerning the calculation of the ETF's net asset value; additions, deletions or substitutions of securities underlying the ETF; substitutions of its reference index, if applicable; and the manner in which changes affecting the reference index, if any, of the ETF are reflected in the ETF, could affect the market price of shares of the ETF and, therefore, affect the value of the notes before maturity. Any amount payable on the notes and their values could also be affected if the investment adviser changes these policies, for example, by changing the manner in which it calculates the ETF's net asset value or by changing the advisory management fee or making other changes that increase the expenses of the ETF, or if the investment adviser discontinues or suspends calculation or publication of the ETF's net asset value, in which case it may become difficult to determine the value of the notes.

In addition, the sponsor of the reference index, if any, of an ETF is responsible for the design and maintenance of that reference index. The policies of the sponsor concerning the calculation of a reference index, including decisions regarding the addition, deletion or substitution of the securities included in that reference index, could affect the value of the reference index and, consequently, could affect the market prices of the relevant ETF and, therefore, any payment on the notes and the value of the notes.

### **The performance and market value of an ETF that tracks a reference index, particularly during periods of market volatility, may not correlate with the performance of its reference index as well as the net asset value per share of that ETF.**

An ETF that tracks a reference index uses a representative sampling strategy or a replication or indexing strategy to attempt to track the performance of its reference index. Pursuant to a representative sampling strategy, an ETF invests in a representative sample of securities that collectively has an investment profile similar to its reference index; however, an ETF may not hold all or substantially all of the securities included in its reference index. Even if an ETF uses a replication or indexing strategy, that ETF may not hold all of the securities included in its reference index. In certain cases, an ETF may invest a significant portion of its portfolio in cash or money market instruments. While an ETF will principally hold the securities included in its reference index, its investment adviser generally may invest a portion of that ETF's assets in securities or other assets not included in its reference index and in other assets, including potentially shares of money market funds affiliated with or advised by its investment adviser. Consequently, the performance of an ETF is generally linked in part to assets other than the securities included in its reference index.

In addition, the performance of an ETF will reflect additional transaction costs and fees that are not included in the calculation of its reference index. Also, the component securities of an ETF may be unavailable in the secondary market due to other extraordinary circumstances. Corporate actions with respect to any securities (such as mergers and spin-offs) also may impact the variance between an ETF and its reference index. Finally, because the shares of an ETF are traded on a securities exchange and

are subject to market supply and investor demand, the market value of one share of that ETF may differ from the net asset value per share of that ETF.

During periods of market volatility, the securities held by an ETF may be unavailable in the secondary market, market participants may be unable to calculate accurately the net asset value per share of an ETF and the liquidity of an ETF may be adversely affected. This kind of market volatility may also disrupt the ability of market participants to create and redeem shares of an ETF. Further, market volatility may adversely affect, sometimes materially, the prices at which market participants are willing to buy and sell shares of an ETF. As a result, under these circumstances, the market value of shares of an ETF may vary substantially from the net asset value per share of that ETF.

For all of the foregoing reasons, the performance of an ETF that is designed to track a reference index may not correlate with the performance of its reference index as well as the net asset value per share of that ETF, which could materially and adversely affect the value of the notes in the secondary market and/or reduce any payments on the notes. Consequently, the return on the notes will not be the same as investing (or taking a short position) directly in any ETF or any relevant reference index or in the securities held by any ETF or included in any relevant reference index, and will not be the same as investing in a financial product linked to the performance of any relevant reference index.

Additionally, if market volatility or these events were to occur on any of the Determination Date(s) (as defined in the accompanying product supplement), in some circumstances, the Index Calculation Agent and the calculation agent would each maintain discretion to determine whether these market volatility or events have caused a market disruption event to occur, and these determinations may affect payments on the notes. If the Index Calculation Agent and the calculation agent each determine that no market disruption event has occurred, payments on the notes would be based on the closing level of the relevant Index on the Determination Date(s), which will reflect the closing price of one share of the applicable ETF on the Determination Date(s), even if the relevant ETF is underperforming its reference index or the component securities of its reference index and/or trading below the net asset value per share of that ETF.

**There can be no assurance that publicly available information provided about any ETF is accurate or complete.**

All disclosures contained in this underlying supplement or the relevant terms supplement regarding any ETF have been derived from publicly available documents and other publicly available information, without independent verification. We have not participated, and will not participate, in the preparation of those documents, and we have not made, and will not make, any due diligence inquiry with respect to any ETF in connection with the offering of the notes. We do not make any representation that those publicly available documents or any other publicly available information regarding any ETF is accurate or complete, and we are not responsible for public disclosure of information by any ETF, whether contained in filings with the SEC or otherwise. We also cannot give any assurance that all events occurring prior to the date of this underlying supplement or the relevant terms supplement (including events that would affect the accuracy or completeness of the publicly available documents of any ETF) that would affect the value of any ETF will have been publicly disclosed. Subsequent disclosure of any of these events or the disclosure of, or failure to disclose, material future events concerning any ETF could affect the market value of the notes or any payment on the notes. Any prospective purchaser of the notes should undertake an independent investigation of any ETF as in its judgment is appropriate to make an informed decision with respect to an investment in the notes.

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



## THE J.P. MORGAN TOTAL RETURN INDEX

*Terms defined within this “The J.P. Morgan Total Return Index” section are defined only with respect to this “The J.P. Morgan Total Return Index” section.*

The J.P. Morgan Total Return Index (the “**Index**”) was developed and is maintained and calculated by J.P. Morgan Securities LLC (“**JPMS**”). The description of the Index and methodology included in this underlying supplement is based on rules formulated by JPMS (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, and JPMS reserves all rights with respect to its ownership of the Index. The Index is reported by Bloomberg L.P. under the ticker symbol “JPUSTRI Index.”

The Index seeks to provide a dynamic asset allocation to the U.S. dollar fixed income sector based on a momentum allocation strategy. The Index tracks the return of a notional dynamic portfolio consisting of up to 12 U.S. dollar fixed-income exchange-traded funds (“**ETFs**”) (each a “**Constituent**,” and collectively, the “**Constituents**”), in each case with distributions, if any, notionally reinvested.

The Index selects and rebalances into a new notional portfolio composed of the Constituents each month using a methodology that is designed to:

- (i) maintain a diversified allocation within the U.S. dollar fixed income sector at all times; and
- (ii) allocate dynamically based on recent performance.

*Maintaining a diversified allocation within the U.S. dollar fixed income sector.* A diversified portfolio's return is the weighted average of its constituents' returns, but its volatility is less than the weighted average of its constituents' volatilities, because different assets don't always move in the same direction — in this sense, a diversified portfolio can be said to deliver average returns with below-average volatility. In order to ensure diversification, the Index selects its monthly portfolio from a universe of 12 Constituents, and imposes caps and floors on the Constituent weights at the individual and sector levels. Each Constituent's assigned weight must also be an increment of 5%, and the assigned weights must sum to 100%. The following table sets forth the current Constituents, the exchange ticker for each Constituent, the maximum assigned weight for each Constituent and the maximum aggregate assigned weight for each sector. For additional information about the Constituents, see “Background on the iShares® ETFs” below.

	Constituent	Ticker	Maximum Assigned Weight	Maximum Aggregate Assigned Weight
1	iShares® 1-3 Year Treasury Bond ETF	SHY	20%	U.S. Treasury Bond Sector: 50%
2	iShares® 7-10 Year Treasury Bond ETF	IEF	20%	
3	iShares® 20+ Year Treasury Bond ETF	TLT	20%	

	Constituent	Ticker	Maximum Assigned Weight	Maximum Aggregate Assigned Weight
4	iShares® 1-5 Year Investment Grade Corporate Bond ETF <sup>4</sup>	IGSB	20%	Investment Grade Credit Sector: 50%
5	iShares® 5-10 Year Investment Grade Corporate Bond ETF <sup>5</sup>	IGIB	20%	
6	iShares® 10+ Year Investment Grade Corporate Bond ETF <sup>6</sup>	IGLB	20%	
7	iShares® MBS ETF	MBB	20%	Other Government and Agency Sector: 50%
8	iShares® TIPS Bond ETF	TIP	20%	
9	iShares® J.P. Morgan USD Emerging Markets Bond ETF	EMB	10%	
10	iShares® iBoxx® \$ High Yield Corporate Bond ETF	HYG	20%	Other Credit Sector: 25%
11	iShares® Floating Rate Bond ETF	FLOT	10%	
12	iShares® Preferred and Income Securities ETF	PFF	10%	

*Allocating dynamically based on recent performance.* Academic research has shown that, historically, asset classes exhibiting strong recent returns have been more likely to continue to exhibit positive returns. The Index attempts to take advantage of this dynamic by selecting a monthly portfolio that reflects the strongest recent returns from among the possible portfolios that meet the weight constraints set forth above and the volatility threshold described below.

*Selecting a monthly portfolio.* Each month, the Index identifies every notional portfolio that meets the individual Constituent and sector weight constraints set forth above with weights in increments of 5% and a total weight of 100% and that has a recent historical volatility at or below a volatility threshold of 5%. The Index then selects and rebalances into the notional portfolio from that set with the strongest recent performance. If no such notional portfolio exists, then the volatility threshold is increased by 1% (e.g., from 5% to 6%), and the procedure described in this paragraph is repeated, including the increase to the volatility threshold, until a notional portfolio has been selected.

*Calculating the level of the Index.* On any given day, the closing level of the Index (the “**Index Level**”) reflects the weighted performance of the Constituents, in each case with distributions, if any, notionally reinvested. The Index Level was set equal to 100.00 on May 3, 2004, the base date of the Index. The Index Calculation Agent (as defined below) began calculating the Index on a live basis on July 13, 2017.

**No assurance can be given that the investment strategy used to construct the Index will be successful or that the Index will outperform any alternative portfolio or strategy that might be constructed from the Constituents. There is no guarantee that past performance trends referenced in selecting a monthly portfolio will continue during the subsequent period when the Index provides exposure to that monthly portfolio. In addition, no assurance can be given that the**

<sup>4</sup> The iShares® 1-5 Year Investment Grade Corporate Bond ETF (ticker: IGSB) was formerly known as the iShares® 1-3 Year Credit Bond ETF (ticker: CSJ).

<sup>5</sup> The iShares® 5-10 Year Investment Grade Corporate Bond ETF (ticker: IGIB) was formerly known as the iShares® Intermediate Credit Bond ETF (ticker: CIU).

<sup>6</sup> The iShares® 10+ Year Investment Grade Corporate Bond ETF (ticker: IGLB) was formerly known as the iShares® 10+ Year Credit Bond ETF (ticker: CLY).

actual realized volatility of the Index will approximate 5%. The actual realized volatility of the Index will depend on the performance of the Constituents included in the monthly portfolio(s) from time to time, and, at any time or for extended periods, may be greater than 5%, perhaps significantly, or less than 5%. Furthermore, the volatility threshold is subject to upward adjustment and, thus, the realized volatility threshold used to determine any monthly portfolio may be greater than 5%, perhaps significantly.

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.

### Identifying the Monthly Portfolio

Each calendar month, on the Index Trading Day immediately preceding the commencement of a Monthly Rebalancing Period (as defined below), the Index Calculation Agent identifies a single portfolio composed of the Constituents (the “**Monthly Portfolio**”) from among the set of hypothetical portfolios that meet the weight constraints, based on an evaluation of the historical performance and volatility of each of those hypothetical portfolios.

“**Index Business Day**” is defined in the Rules and means generally a day on which each of the NYSE Arca, Inc. and the primary listing exchange for each Constituent is scheduled to open for trading for its regular trading session.

“**Index Trading Day**” is defined in the Rules as “Trading Day” and means generally an Index Business Day for which all of the Constituents tracked by the Index are not subject to any market disruption or on which the Index rebalances a portion of its exposure from one Monthly Portfolio to the next.

#### *Step 1: Identify All Eligible Portfolios*

On each monthly selection date, the Index Calculation Agent identifies all possible portfolios composed of Constituents that satisfy the following weight constraints (each, an “**Eligible Portfolio**”):

- (i) the sum of the assigned weights for all the Constituents is equal to 100% (i.e., the Index is always fully invested without leverage);
- (ii) the assigned weight for each Constituent is a non-negative integral multiple of 5% (e.g., 0%, 5%, 10%, 15%, etc.);
- (iii) the assigned weight for each Constituent is less than or equal to the maximum assigned weight for that Constituent set forth in the table above;
- (iv) the sum of the assigned weights for the Constituents in any sector is less than or equal to any maximum aggregate assigned weight for that sector, in each case, as set forth in the table above.

#### *Step 2: Select the Eligible Portfolio with the Highest Performance, Subject to a Volatility Threshold*

On each monthly selection date, the Index Calculation Agent selects the Eligible Portfolio with the highest performance that has a volatility less than or equal to a volatility threshold of 5% as the Monthly Portfolio; *provided* that, if there is more than one Eligible Portfolio with the same highest performance, the Eligible Portfolio that has the lowest volatility will be selected. If none of the Eligible Portfolios has a volatility equal to or less than 5%, the Index Calculation Agent will increase the volatility threshold by 1% and will repeat the procedure described in this paragraph, including the increase to the volatility threshold, until a portfolio has been selected.

For purposes of selecting a Monthly Portfolio:

- (i) the performance of an Eligible Portfolio is the return of that Eligible Portfolio over the immediately preceding six-month period; and
- (ii) the volatility of an Eligible Portfolio is the annualized realized volatility of that Eligible Portfolio over the immediately preceding six-month period.

See the Rules for additional information about how the Index Calculation Agent calculates the returns and annualized realized volatility of each Eligible Portfolio.

### Monthly Rebalancing of the Index

Each calendar month, the Index exits its notional position in of the Monthly Portfolio associated with the prior month's selection date and enters a notional position in the Monthly Portfolio associated with the current month's selection date. This rebalancing of the Index is effected in equal increments over five rebalancing days, occurring over the last five consecutive Index Business Days of that calendar month (the "**Monthly Rebalancing Period**"). Rebalancing days are subject to postponement or adjustment if a market disruption affecting an incoming or outgoing Constituent has occurred or is continuing, as described under "Index Market Disruption Events" below.

### Calculation and Publication 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 generally calculated by adjusting the Index Level as of the immediately preceding Index Trading Day to reflect the performance of the Monthly Portfolio since the immediately preceding Index Trading Day. However, the Index Level on the final four rebalancing days of each Monthly Rebalancing Period is calculated by adjusting the Index Level as of the immediately preceding rebalancing day to reflect the weighted performances of the incoming and outgoing Monthly Portfolios since the immediately preceding rebalancing day, using the assigned weights set out in the following table.

Rebalancing Day	Assigned Weight of Outgoing Monthly Portfolio	Assigned Weight of Incoming Monthly Portfolio
Second	80%	20%
Third	60%	40%
Fourth	40%	60%
Final	20%	80%

The performance of a Monthly Portfolio from one Index Trading Day to the next reflects the change in the value of that Monthly Portfolio over that period, where the value of a Monthly Portfolio on each Index Trading Day is equal to the weighted average of the closing total return levels of its Constituents on that Index Trading Day.

The closing total return level of each Constituent is generally calculated by adjusting the closing total return level of that Constituent as of the immediately preceding Index Trading Day to reflect (a) the change in the closing price of that Constituent since the immediately preceding Index Trading Day and (b) the notional reinvestment of any dividends or other distributions with an ex-date that has occurred since the immediately preceding Index Trading Day.

The Index Calculation Agent will make anti-dilution adjustments to a Constituent only upon a share split or reverse share split, an issuance of additional shares of that Constituent that is given ratably to all or substantially all holders of shares of that Constituent or a distribution of securities of that Constituent as a result of the triggering of any provision of the corporate charter of that Constituent.

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.

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

### **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 Constituents. 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 Constituents, their reference indices or components 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 Constituents, their reference indices or components or related futures or option contracts.

If a market disruption affecting an incoming or outgoing Constituent has occurred or is continuing on a scheduled rebalancing day, that rebalancing day 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 a Constituent included in a relevant Monthly Portfolio is affected by a market disruption, except for a rebalancing day on which the Index Calculation Agent rebalances the Index notwithstanding the occurrence of a market disruption.

The five rebalancing days in each Monthly Rebalancing Period will occur on five separate calendar days, notwithstanding the postponement of one or more days due to a market disruption. If a rebalancing day is postponed, any subsequent rebalancing days in the same rebalancing period will also be postponed so as to prevent multiple rebalancing days from occurring on the same 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 events set out in the Rules that relate to successor Constituents or 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 affected Constituent with a successor to that Constituent or with a 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 Constituents. If no such substitute is available, the Index Calculation Agent will replace the affected Constituent with a substitute that the Index Calculation Agent determines to be an appropriate substitute, considering the context of the Index and the weight constraints or, if no such substitute is available, the Index Calculation Agent may freeze the closing price of that Constituent at a level it determines until the conclusion of the next Monthly Rebalancing Period, and then remove that Constituent from 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 delisting, termination, liquidation, bankruptcy, insolvency, dissolution or winding-up of a Constituent, (b) nationalization or expropriation of a Constituent or its securities or all or substantially all of its assets, (c) the occurrence of a market disruption affecting a 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, (e) the occurrence of certain changes in law and (f) certain other events affecting the trading, value, redeemability, liquidity, market capitalization or listing of a Constituent or affecting data relating to a Constituent.

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.

## **Corrections**

If the closing price of any 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 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 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 the Index Sponsor. The Rules will be made available (in a manner determined by the Index Sponsor from time to time) following any supplementation, amendment or restatement. 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).

Although the Rules are intended to be comprehensive and accurate, ambiguities may arise and errors or omissions may have been made. In those circumstances, the Index Sponsor will resolve those ambiguities and, if necessary, amend the Rules to reflect their resolution. In the case of any inaccuracy, the Index Sponsor may amend the 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).

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 under "Succession and Extraordinary Events" above. 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.

### **Additional Information About Hypothetical Back-tested Performance Data**

For time periods prior to the launch of each of the Constituents, and prior to that Constituent's satisfaction of a minimum liquidity standard, any hypothetical back-tested performance of the Index set forth in any terms supplement will reflect alternative performance derived from the reference index tracked by that Constituent as of the live date of the Index (except in the case of each of the iShares® 7-10 Year Treasury Bond ETF and the iShares® 20+ Year Treasury Bond ETF, where each proxy was the reference index tracked by the relevant Constituent prior to April 1, 2016), after deducting hypothetical fund expenses equal to that Constituent's expense ratio as of the live date of the Index, rather than actual performance of that Constituent for that period. See the following table for more information.

<b>Constituent</b>	<b>Proxy</b>	<b>Expenses Subtracted from Proxy's Returns</b>	<b>Last Date Proxy Used</b>
iShares® 1-3 Year Treasury Bond ETF	n/a	n/a	n/a
iShares® 7-10 Year Treasury Bond ETF	Barclays U.S. 7-10 Year Treasury Bond Index	0.15%	4/23/2004
iShares® 20+ Year Treasury Bond ETF	Barclays U.S. 20+ Year Treasury Bond Index	0.15%	4/16/2004

<b>Constituent</b>	<b>Proxy</b>	<b>Expenses Subtracted from Proxy's Returns</b>	<b>Last Date Proxy Used</b>
iShares® 1-5 Year Investment Grade Corporate Bond ETF	Bloomberg Barclays US 1-3 Year Credit Bond Index	0.20%	1/13/2009
iShares® 5-10 Year Investment Grade Corporate Bond ETF	Bloomberg Barclays US Intermediate Credit Bond Index	0.20%	4/6/2009
iShares® 10+ Year Investment Grade Corporate Bond ETF	Bloomberg Barclays US Long Credit Index	0.20%	6/25/2014
iShares® MBS ETF	Bloomberg Barclays US Mortgage-Backed Securities (MBS) Index	0.29%	9/11/2008
iShares® TIPS Bond ETF	Bloomberg Barclays US Treasury Inflation Protected Securities (TIPS) Index (Series-L)	0.20%	5/27/2004
iShares® J.P. Morgan USD Emerging Markets Bond ETF	J.P. Morgan EMBI <sup>SM</sup> Global Core Index	0.40%	11/17/2009
iShares® iBoxx® \$ High Yield Corporate Bond ETF	Markit iBoxx® USD Liquid High Yield Index	0.50%	5/23/2008
iShares® Floating Rate Bond ETF	Bloomberg Barclays US Floating Rate Note < 5 Years Index	0.20%	1/15/2013
iShares® Preferred and Income Securities ETF	S&P U.S. Preferred Stock Index	0.47%	10/20/2008



## BACKGROUND ON THE iSHARES® ETFS

All information contained in this underlying supplement regarding the iShares® 1-3 Year Treasury Bond ETF, the iShares® 7-10 Year Treasury Bond ETF, the iShares® 20+ Year Treasury Bond ETF, the iShares® 1-5 Year Investment Grade Corporate Bond ETF, the iShares® 5-10 Year Investment Grade Corporate Bond ETF, the iShares® 10+ Year Investment Grade Corporate Bond ETF, the iShares® MBS ETF, the iShares® TIPS Bond ETF, the iShares® J.P. Morgan USD Emerging Markets Bond ETF, the iShares® iBoxx® \$ High Yield Corporate Bond ETF, the iShares® Floating Rate Bond ETF and the iShares® Preferred and Income Securities ETF (each, an “iShares® ETF” and collectively, the “iShares® ETFs”), including, without limitation, their make-up, method of calculation and changes in their components, has been derived from publicly available information, without independent verification. This information reflects the policies of, and is subject to change by, the fund manager of each iShares® ETF and BlackRock Fund Advisors (“BFA”). The iShares® ETFs are investment portfolios of iShares® Trust and are maintained and managed by their respective fund managers. BFA is currently the investment adviser to the iShares® ETFs.

BFA uses a representative sampling indexing strategy to manage each iShares® ETF. “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 an applicable reference 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, duration, maturity, credit rating and yield) and liquidity measures similar to those of an applicable reference index. Each iShares® ETF may or may not hold all of the securities in its reference index.

Each iShares® ETF's reference index is a financial calculation, based on a grouping of financial instruments, and is not an investment product, while each iShares® ETF is an actual investment portfolio. The performance of each iShares® ETF and its reference 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 that iShares® ETF's portfolio and its reference index resulting from that iShares® ETF's use of representative sampling or from legal restrictions (such as diversification requirements) that apply to that iShares® ETF but not to its reference index. “Tracking error” is the divergence of the performance (return) of an iShares® ETF's portfolio from that of its reference index. Because each iShares® ETF 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 reference index in approximately the same proportions as in the reference index.

iShares® Trust is a registered investment company that consists of numerous separate investment portfolios, including the iShares® ETFs. 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>.

### The iShares® 1-3 Year Treasury Bond ETF

The iShares® 1-3 Year Treasury Bond ETF seeks to track the investment results, before fees and expenses, of an index composed of U.S. Treasury bonds with remaining maturities between one and three years, which is currently the ICE U.S. Treasury 1-3 Year Bond Index. The ICE U.S. Treasury 1-3 Year Bond Index measures the performance of U.S. Treasury public obligations that have a remaining maturity of greater than or equal to one year and less than three years. The iShares® 1-3 Year Treasury Bond ETF trades on The Nasdaq Stock Market under the ticker symbol “SHY.”

### The iShares® 7-10 Year Treasury Bond ETF

The iShares® 7-10 Year Treasury Bond ETF seeks to track the investment results, before fees and expenses, of an index composed of U.S. Treasury bonds with remaining maturities between seven and ten years, which is currently the ICE® U.S. Treasury 7-10 Year Bond Index. The ICE® U.S. Treasury 7-10

Year Bond Index measures the performance of the U.S. dollar-denominated fixed-rate U.S. Treasury public obligations that have a remaining maturity of greater than or equal to seven years and less than ten years. The iShares® 7-10 Year Treasury Bond ETF trades on The Nasdaq Stock Market under the ticker symbol “IEF.”

### **The iShares® 20+ Year Treasury Bond ETF**

The iShares® 20+ Year Treasury Bond ETF seeks to track the investment results, before fees and expenses, of an index composed of U.S. Treasury bonds with remaining maturities greater than twenty years. On March 31, 2016, the 20+ Treasury Fund ceased tracking the Barclays U.S. 20+ Year Treasury Bond Index and began tracking the ICE® U.S. Treasury 20+ Year Bond Index. The ICE® U.S. Treasury 20+ Year Bond Index measures the performance of the U.S. dollar-denominated fixed-rate U.S. Treasury public obligations that have a remaining maturity of greater than or equal to twenty years. The iShares® 20+ Year Treasury Bond ETF trades on The Nasdaq Stock Market under the ticker symbol “TLT.”

### **The iShares® 1-5 Year Investment Grade Corporate Bond ETF**

The iShares® 1-5 Year Investment Grade Corporate Bond ETF seeks to track the investment results, before fees and expenses, of an index composed of U.S. dollar-denominated, investment-grade corporate bonds with remaining maturities between one and five years, which is currently the ICE BofAML 1-5 Year US Corporate Index. The ICE BofAML 1-5 Year US Corporate Index measures the performance of investment-grade corporate bonds of both U.S. and non- U.S. issuers that are U.S. dollar-denominated and publicly issued in the U.S. domestic market and have a remaining maturity of greater than or equal to one year and less than five years. The iShares® 1-5 Year Investment Grade Corporate Bond ETF trades on The Nasdaq Stock Market under the ticker symbol “IGSB.”

### **The iShares® 5-10 Year Investment Grade Corporate Bond ETF**

The iShares® 5-10 Year Investment Grade Corporate Bond ETF seeks to track the investment results, before fees and expenses, of an index composed of U.S. dollar-denominated, investment-grade corporate bonds with remaining maturities between five and ten years, which is currently the ICE BofAML 5-10 Year US Corporate Index. The ICE BofAML 5-10 Year US Corporate Index measures the performance of investment-grade corporate bonds of both U.S. and non-U.S. issuers that are U.S. dollar-denominated and publicly issued in the U.S. domestic market and have a remaining maturity of greater than or equal to five years and less than ten years. The iShares® 5-10 Investment Grade Corporate Bond ETF trades on The Nasdaq Stock Market under the ticker symbol “IGIB.”

### **The iShares® 10+ Year Investment Grade Corporate Bond ETF**

The iShares® 10+ Year Investment Grade Corporate Bond ETF seeks to track the investment results, before fees and expenses, of an index composed of U.S. dollar-denominated, investment-grade corporate bonds with remaining maturities greater than ten years, which is currently the ICE BofAML 10+ Year US Corporate Index. The ICE BofAML 10+ Year US Corporate Index measures the performance of investment-grade corporate bonds of both U.S. and non-U.S. issuers that are U.S. dollar-denominated and publicly issued in the U.S. domestic market and have a remaining maturity of greater than or equal to ten years. The iShares® 10+ Year Investment Grade Corporate Bond ETF trades on NYSE Arca, Inc. under the ticker symbol “IGLB.”

### **The iShares® MBS ETF**

The iShares® MBS ETF seeks to track the investment results, before fees and expenses, of an index composed of investment-grade mortgage-backed pass-through securities issued and/or guaranteed by U.S. government agencies, which is currently the Bloomberg US MBS Index. The Bloomberg US MBS Index measures the performance of investment-grade (as determined by Bloomberg Index Services Limited) mortgage-backed pass-through securities (“MBS”) issued or guaranteed by U.S. government agencies. The Bloomberg US MBS Index includes fixed-rate MBS issued by the Government National Mortgage Association (commonly known as Ginnie Mae), Federal National Mortgage Association (commonly known as Fannie Mae) and Federal Home Loan Mortgage Corporation (commonly known as

Freddie Mac) that have 30-, 20-, 15-year maturities. The iShares® MBS ETF trades on The Nasdaq Stock Market under the ticker symbol “MBB.”

### **The iShares® TIPS Bond ETF**

The iShares® TIPS Bond ETF seeks to track investment results, before fees and expenses, of an index composed of inflation-protected U.S. Treasury bonds, which is currently the ICE U.S. Treasury Inflation Linked Bond Index. The ICE U.S. Treasury Inflation Linked Bond Index tracks the performance of inflation-protected securities issued by the U.S. Treasury known as “TIPS.” The iShares® TIPS Bond ETF trades on NYSE Arca, Inc. under the ticker symbol “TIP.”

### **The iShares® J.P. Morgan USD Emerging Markets Bond ETF**

The iShares® J.P. Morgan USD Emerging Markets Bond ETF seeks to track the investment results, before fees and expenses, of an index composed of U.S. dollar-denominated, emerging market bonds, which is currently the J.P. Morgan EMBI® Global Core Index. The J.P. Morgan EMBI® Global Core Index is a broad, diverse U.S. dollar-denominated emerging markets debt benchmark that tracks the total return of actively traded external debt instruments in emerging markets. The J.P. Morgan EMBI® Global Core Index was developed and is maintained by one of our affiliates. The iShares® J.P. Morgan USD Emerging Markets Bond ETF trades on The Nasdaq Stock Market under the ticker symbol “EMB.”

### **The iShares® iBoxx® \$ High Yield Corporate Bond ETF**

The iShares® iBoxx® \$ High Yield Corporate Bond ETF seeks to track the investment results, before fees and expenses, of an index composed of U.S. dollar-denominated, high-yield corporate bonds, which is currently the Markit iBoxx® USD Liquid High Yield Index. The Markit iBoxx® USD Liquid High Yield Index is a rules-based index consisting of U.S. dollar-denominated, high yield (as determined by Markit Indices Limited) corporate bonds for sale in the U.S. The iShares® iBoxx® \$ High Yield Corporate Bond ETF trades on NYSE Arca, Inc. under the ticker symbol “HYG.”

### **The iShares® Floating Rate Bond ETF**

The iShares® Floating Rate Bond ETF seeks to track the investment results, before fees and expenses, of an index composed of U.S. dollar-denominated, investment-grade floating rate bonds with remaining maturities between one month and five years, which is currently the Bloomberg US Floating Rate Note < 5 Years Index. The Bloomberg US Floating Rate Note < 5 Years Index measures the performance of U.S. dollar-denominated, investment-grade (as determined by Bloomberg Index Services Limited) floating rate notes. Securities in the Bloomberg US Floating Rate Note < 5 Years Index have a remaining maturity of greater than or equal to one month and less than five years, and have \$300 million or more of outstanding face value. The iShares® Floating Rate Bond ETF trades on Cboe BZX Exchange, Inc. under the ticker symbol “FLOT.”

### **The iShares® Preferred and Income Securities ETF**

The iShares® Preferred and Income Securities ETF seeks to track the investment results, before fees and expenses, of an index composed of U.S. dollar-denominated preferred and hybrid securities, which is currently the ICE Exchange-Listed Preferred & Hybrid Securities Index. The ICE Exchange-Listed Preferred & Hybrid Securities Index is designed to measure the performance of a select group of exchange-listed U.S. dollar-denominated preferred securities, hybrid securities and convertible preferred securities listed on the New York Stock Exchange (“NYSE”) or the Nasdaq Capital Market. The iShares® Preferred and Income Securities ETF trades on The Nasdaq Stock Market under the ticker symbol “PFF.”

## 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 Total 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 the closing price of one share of that Constituent (or, if a market disruption event or a non-trading day that affected that Constituent has occurred, the calculation agent's good faith estimate of the closing price of one share of that Constituent that would have prevailed but for that market disruption event or non-trading day) 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 the closing price of one share of that Constituent (or, if a market disruption event or a non-trading day that affected that Constituent has occurred, the calculation agent's good faith estimate of the closing price of one share of that Constituent that would have prevailed but for that market disruption event or non-trading day) 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 Constituents and the principal options and futures exchanges relating to the Constituents, 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 Constituents and the

principal options and futures exchanges relating to the Constituents 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, with respect to a Constituent, (1) the primary exchange or market of trading for that Constituent, (2) the primary exchange or market of trading for any security (or any combination thereof) included in the reference index, if any, for that Constituent or (3) if that Constituent does not have a reference index, the primary exchange or market of trading for any security (or any combination thereof) included in that 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 any 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 any Constituent or any securities that compose 20% or more of the level of the relevant reference index or, if that Constituent does not have a reference index, the value of that Constituent;
- (3) the closure of any relevant exchange for any 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 any 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; or
- (6) 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 Total Return Index Index Rules**

**J.P.Morgan**

June 7, 2017 (as amended and restated on July 13, 2017)

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# J.P. Morgan Total 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 Total 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 published by the Index Sponsor, J.P. Morgan Securities LLC of 383 Madison Avenue, 5th Floor, New York, New York 10179, United States, in its capacity as such. Further information relating to: (i) the internal governance framework; and (ii) the identity and role of third parties that are non-affiliates of JPMorgan, in respect of this Index are available on request to the Index Sponsor.

### 2. Index Sponsor and Index Calculation Agent

#### 2.1 Identity and responsibilities

As of the Live Date (as defined and specified in Section 7 (*Initial Composition of the Index*), J.P. Morgan Securities LLC (“**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. 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 total return of a notional portfolio of U.S. dollar fixed-income exchange-traded funds selected from a pre-set universe and rebalanced monthly to weights determined pursuant to these Index Rules, which implement a momentum-driven allocation strategy, subject to a historical volatility constraint and portfolio concentration limits.

The Index tracks the return of a notional, dynamic basket. During the course of each month, the basket will consist of one (1) Monthly Reference Portfolio (as defined in Section 9.1 (*The Monthly Reference Portfolio*)), except during a Monthly Rebalancing Period in which the basket will consist of the exiting Monthly Reference Portfolio (in a declining proportion) and the entering Monthly Reference Portfolio (in an increasing proportion). Each Monthly Reference Portfolio is made up of up to twelve (12) exchange-traded funds (or such successors or substitutes as may be applicable pursuant to Section 12 (*Extraordinary Events and Anti-Dilution Events*)), each, a “**Constituent**”) with distributions (if any) notionally reinvested. The Constituents represent a broad range of sectors of the U.S. dollar fixed income market, comprising debt obligations of both U.S. and non-U.S. obligors. The Constituents are each listed on a U.S. securities exchange.

Each month, a new Monthly Reference Portfolio is constituted, as provided in Section 8 (*Determining the Monthly Weights for the Constituents in the Monthly Reference Portfolio*), by identifying the portfolio that would have achieved the best hypothetical total return during an approximately six (6)-month look-back period, subject to a volatility constraint and to various portfolio concentration limits. On each Monthly Rebalancing Selection Date (as defined in in “*Definitions*”), the Index Calculation Agent will determine the Monthly Weight (as defined in Section 8) to be assigned to each Constituent in the Monthly Reference Portfolio. Each Monthly Reference Portfolio is identified from among the universe of all possible Eligible Portfolios, which are the portfolios that satisfy the Weight Constraints (each as defined in Section 8.2 (*Identifying the Unique Portfolio for each Lookback Period*))), as provided in Section 8.

The Weight Constraints apply to each Constituent, to groups of Constituents, and to all of the Constituents in aggregate:

- the minimum Monthly Weight for each Constituent is zero (0%) (i.e., the Index is long-only),
- the maximum Monthly Weight is specified for each Constituent as either ten percent (10%) or twenty percent (20%)
- the Monthly Weight for each Constituent must be a percentage divisible by five percent (5%) (i.e., the Monthly Weights are determined in 5% increments),
- the total Monthly Weight for specified groups of broadly similar Constituents are capped at either twenty-five percent (25%) or fifty percent (50%), and
- the total Monthly Weight for all of the Constituents must be one hundred percent (100%) (i.e., the Index is always fully invested without leverage).

The Index Calculation Agent will identify the Eligible Portfolios and calculate the Performance (as defined in Section 8.2) of each Eligible Portfolio over the Lookback Period consisting of the one hundred twenty-six (126) Weekday period ending on and including the Monthly Rebalancing Selection Date. The Index Calculation Agent will calculate the Realized Volatility (as defined in Section 8.2) of each Eligible Portfolio. The Index Calculation Agent will then identify the Eligible Portfolio with the highest Performance over the relevant Lookback Period that had Realized Volatility equal to or less than the Realized Volatility Constraint (as defined in “*Definitions*”) of five percent (5%) (*provided that*, if there is more than one (1) Eligible Portfolio that has the same highest Performance over the relevant Lookback Period, the Index Calculation Agent will identify the Eligible Portfolio that has the lowest annualized Realized Volatility from among such Eligible Portfolios).

If none of the Eligible Portfolios had Realized Volatility equal to or less than the Realized Volatility Constraint, the Index Calculation Agent shall increase the Realized Volatility Constraint by one percent (1%) and repeat

the calculations described above until an Eligible Portfolio meeting the adjusted Realized Volatility Constraint is identified. The Realized Volatility Constraint may continue to be increased in one percent (1%) increments to the extent necessary for there to be at least one (1) Eligible Portfolio that satisfies the adjusted Realized Volatility Constraint. As a result, the Realized Volatility Constraint is not capped and could deviate substantially from five percent (5%) in the event that the Constituents experience high volatility during any Lookback Period.

The relative weights of the Constituents within each Monthly Reference Portfolio will change from the Monthly Weights as the total return performances of the Constituents vary over the period in which the Monthly Reference Portfolio is included in the Index.

The Index will rebalance each month from the prior to the new Monthly Reference Portfolio during a five (5)-day Monthly Rebalancing Period (as defined in Section 9 (*Monthly Rebalancing*)) consisting of the first five (5) consecutive Index Business Days of each month, subject to postponement upon the occurrence of a Market Disruption Event (as defined in Section 11.4 (*Definitions related to market disruption*)). The proportion of the basket that tracks the prior Monthly Reference Portfolio will decline from one hundred percent (100%) in twenty percent (20%) daily increments over the five (5)-day period, and the proportion of the basket that tracks the new Monthly Reference Portfolio will correspondingly increase from zero percent (0%) to one hundred percent (100%) in twenty percent (20%) daily increments. At the conclusion of the Monthly Rebalancing Period, the Index will track the new Monthly Reference Portfolio only until the beginning of the next Monthly Rebalancing Period.

The Monthly Rebalancing Selection Dates and Monthly Rebalancing Dates (as defined in Section 9) are subject to Market Disruption provisions, as provided in Section 11 (*Market Disruption*). The Closing TR Levels (*i.e.*, 'total return' levels) (as defined in Section 6 (*The Constituents; Closing TR Levels*)) of the Constituents used to calculate historical performance are subject to market disruption provisions, including those set forth in Section 11.

The Constituents are subject to the provisions of Section 12 (*Extraordinary Events and Anti-Dilution 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 alternative basket or strategy that might be constructed from the Constituents. Furthermore, no assurance can be given that the volatility experienced by the Index will be less than or equal to the Realized Volatility Constraint. The actual volatility of the Index will depend on the performance of the Monthly Reference Portfolios. The Index may thus experience volatility that is greater or less than the Realized Volatility Constraint. The Realized Volatility Constraint is itself subject to upward adjustment when constructing any particular Monthly Reference Portfolio, and thus the Realized Volatility Constraint used to constitute any Monthly Reference Portfolio may itself exceed five percent (5%).**

**The Index is described as a notional basket 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.**

## **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 "JPUSTRI 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 11.3 (*Definitions related to market disruption*)) for any Constituent with a non-zero Monthly Weight with respect to the relevant Monthly Reference Portfolio, and on each Effective Monthly Rebalancing Date, 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 Constituents; Closing TR Levels

The Index tracks the total return of a notional, dynamic basket composed by selecting from among twelve (12) Constituents with distributions notionally reinvested. Each of the Constituents is an exchange-traded fund.

Each Constituent is set out in Table 1 below. For ease of identification, Table 1 contains, for each Constituent, its current ticker symbol (provided solely for ease of identification) as well as its current Primary Listing Exchange and applicable Related Exchange(s) (each as defined in "*Definitions*") for each Constituent.

Table 1

i	Constituents	Ticker	Current Primary Listing Exchange for each Constituent on June 7, 2017
1	iShares 1-3 Year Treasury Bond ETF	SHY	NYSE Arca
2	iShares 7-10 Year Treasury Bond ETF	IEF	NYSE Arca
3	iShares 20+ Year Treasury Bond ETF	TLT	NASDAQ Global Market
4	iShares 1-3 Year Credit Bond ETF	CSJ	NYSE Arca
5	iShares Intermediate Credit Bond ETF	CIU	NYSE Arca
6	iShares 10+ Year Credit Bond ETF	CLY	NYSE Arca
7	iShares MBS ETF	MBB	NYSE Arca
8	iShares TIPS Bond ETF	TIP	NYSE Arca
9	iShares J.P. Morgan USD Emerging Markets Bond ETF	EMB	NYSE Arca
10	iShares iBoxx \$ High Yield Corporate Bond ETF	HYG	NYSE Arca
11	iShares Floating Rate Bond ETF	FLOT	NYSE Arca
12	iShares U.S. Preferred Stock ETF	PFF	NYSE Arca

For each Weekday (as defined in "*Definitions*"), the Index Calculation Agent shall calculate the Closing TR Level of each Constituent. If any Weekday is not a Dealing Day (as defined in "*Definitions*") with respect to the relevant Constituent, or if the Index Calculation Agent cannot obtain reliable information from any third party source as of such Weekday for such Constituent, the Closing TR Level for that Constituent in respect of such Weekday shall be deemed to be the Closing TR Level for that Constituent as of the immediately preceding

Dealing Day for that Constituent for which the Index Calculation Agent can obtain reliable information from any third party source.

**"Closing TR Level"** means, subject to the provisions of Section 11 (*Market Disruption*) and Section 12 (*Extraordinary Events and Anti-Dilution Events*), with respect to a Constituent and a Dealing Day  $t$ , the Closing Level (as defined in "*Definitions*") of such Constituent with distributions reinvested, which will be determined as follows:

$$\text{Closing TR Level}_t = \text{Closing TR Level}_{t-1} \times \left( \frac{\text{Closing Level}_t + d_t}{\text{Closing Level}_{t-1}} \right)$$

Where:

$\text{Closing TR Level}_{t-1}$  means the Closing TR Level of the relevant Constituent as of the Dealing Day immediately preceding Dealing Day  $t$ .

$\text{Closing Level}_t$  means the Closing Level of the relevant Constituent as of Dealing Day  $t$ .

$\text{Closing Level}_{t-1}$  means the Closing Level of the relevant Constituent as of the Dealing Day immediately preceding Dealing Day  $t$ .

$d_t$  means, in respect of a Constituent and a Dealing Day  $t$ :

- (a) If such Dealing Day  $t$  is not an Ex-Distribution Date (as defined below) for the relevant Constituent, zero.
- (b) If such Dealing Day  $t$  is an Ex-Distribution Date for the relevant Constituent, the Gross Distribution Amount (as defined below) in respect of such Constituent for such Ex-Distribution Date.

Where:

**"Ex-Distribution Date"** means, with respect to a distribution for a Constituent, the first Dealing Day on which transactions in the securities of such Constituent trade on the relevant Primary Listing Exchange without the right to receive that distribution.

**"Gross Distribution Amount"** means, in respect of a Constituent and an Ex-Distribution Date for such Constituent, one hundred percent (100%) of the amount of any distribution per share or security of the Constituent that a shareholder or security-holder in that Constituent on that Ex-Distribution Date would no longer have the right to receive due to the occurrence of such Ex-Distribution Date, as determined by the Index Calculation Agent in its sole discretion as the sum of (x) the amount of any cash distribution made and (y) the fair market value of any distribution of shares of capital stock, evidences of indebtedness or other assets or property of such Constituent or its issuer (other than share dividends or distributions for which an adjustment is made pursuant to Section 12.4 (*Anti-dilution adjustments*)). If a portion of such distribution consists of property traded on the Ex-Distribution Date on a U.S. national securities exchange, the fair market value of such portion will equal the closing price of such distributed property on such Ex-Distribution Date.

For purposes of determining the Closing TR Level for any Constituent for any Dealing Day, if the immediately preceding Dealing Day (the **"Prior Dealing Day"**) for such Constituent was a Disrupted Day, then in the formula for determining the Closing TR Level in respect of such Dealing Day, (i) the Closing TR Level for that Prior Dealing Day shall be replaced with the Closing TR Level for the first Dealing Day preceding such Prior Dealing Day that was not a Disrupted Day (the **"Prior Non-Disrupted Dealing Day"**) for such Constituent, (ii) the Closing Level for that Prior Dealing Day shall be replaced with the Closing Level for such Prior Non-Disrupted Dealing Day for such Constituent and (iii) the Gross Distribution Amount in respect of such Constituent in respect of such Dealing Day shall be replaced with the sum of each of the Gross Distribution

Amounts in respect of such Constituent in respect of each day from but excluding the Prior Non-Disrupted Dealing Day to and including such Dealing Day.

## 7. Initial Composition of the Index

At the Closing Time on July 13, 2017 (the “**Live Date**”), the Index was composed of notional holdings in a single Monthly Reference Portfolio, as determined by operation of Section 9 (*Monthly Rebalancing*). The Index was composed of the Monthly Reference Portfolio determined as of the Monthly Rebalancing Selection Date immediately preceding the Live Date (the “**Starting Selection Date**”). References in the Index Rules to “Monthly Rebalancing Selection Date” shall be deemed to include references to the Starting Selection Date.

The composition of the Index will be adjusted in accordance with the methodology described in these Index Rules. As of the Base Date (as defined in “*Definitions*”), the Index Level was set equal to one hundred (100.00).

## 8. Determining the Monthly Weights for the Constituents in the Monthly Reference Portfolio

On the Starting Selection Date and thereafter on a monthly basis on each subsequent Monthly Rebalancing Selection Date, the Index Calculation Agent will determine the weight (the “**Monthly Weight**”) to be assigned to each Constituent in the Monthly Reference Portfolio, whether zero (0) or a positive number, for the relevant Monthly Reference Portfolio determined as of such Monthly Rebalancing Selection Date, in accordance with the methodology described in Section 8.3 (*Identifying the Unique Portfolio for each Lookback Period*) below.

Each Constituent is set to the relevant Monthly Weight, determined as of the relevant Monthly Rebalancing Selection Date, only once per month in order to create the relevant Monthly Reference Portfolio. The actual weight of each of the Constituents within a Monthly Reference Portfolio determined on the relevant Monthly Rebalancing Selection Date is expected to fluctuate, during the period from the Closing Time on the first Effective Monthly Rebalancing Date (each as defined in “*Definitions*”) in the Monthly Rebalancing Period immediately following such Monthly Rebalancing Selection Date to the Closing Time on the final Effective Monthly Rebalancing Date in the next Monthly Rebalancing Period, due to movements in the levels of the Constituents.

### 8.1 Identifying the Lookback Periods

On each Monthly Rebalancing Selection Date *k*, the Index Calculation Agent will identify the applicable Lookback Period *k* (being the period of one hundred twenty-six (126) Weekdays composed of (i) the one hundred twenty-five (125) Weekdays immediately prior to Monthly Rebalancing Selection Date *k* and (ii) the Weekday that is Monthly Rebalancing Selection Date *k*) (the “**Lookback Period**”).

### 8.2 Identifying the Unique Portfolio for each Lookback Period

With respect to the applicable Lookback Period identified by the Index Calculation Agent with respect to a Monthly Rebalancing Selection Date, the Index Calculation Agent will:

- (a) Identify all hypothetical portfolios of Constituents (the “**Eligible Portfolios**” and each individually an “**Eligible Portfolio**”) that satisfy the weight constraints below (the “**Weight Constraints**”):
  - (i) The Monthly Weight assigned to each Constituent numbered: one (1) through eight (8) or ten (10) in Table 1 in Section 6 (*The Constituents; Closing TR Levels*) above shall be equal to one (1) of: zero percent (0%), five percent (5%), ten percent (10%), fifteen percent (15%) or twenty percent (20%).
  - (ii) The Monthly Weight assigned to each Constituent numbered: nine (9), eleven (11) or twelve (12) in Table 1 in Section 6 above shall be equal to one (1) of: zero percent (0%), five percent (5%) or ten percent (10%).

- (iii) The sum of the Monthly Weights assigned to all the Constituents shall be equal to one hundred per cent (100%).
  - (iv) The sum of the Monthly Weights assigned to the Constituents numbered: one (1) through three (3) in Table 1 in Section 6 above shall be less than or equal to fifty percent (50%).
  - (v) The sum of the Monthly Weights assigned to the Constituents numbered: four (4) through six (6) in Table 1 in Section 6 above shall be less than or equal to fifty percent (50%).
  - (vi) The sum of the Monthly Weights assigned to the Constituents numbered: ten (10) through twelve (12) in Table 1 in Section 6 above shall be less than or equal to twenty-five percent (25%).
- (b) Calculate the performance of each Eligible Portfolio over the relevant Lookback Period (the **"Performance"**) in accordance with the following formula:

$$\text{Performance}_k^j = \sum_i \left[ \text{Weight}_i^j \times \left( \frac{\text{Closing TR Level}_k^i}{\text{Closing TR Level}_{k-125}^i} - 1 \right) \right]$$

where:

$\text{Performance}_k^j$  means the Performance of Eligible Portfolio j as of Monthly Rebalancing Selection Date k;

$\text{Closing TR Level}_k^i$  means the Closing TR Level of Constituent i as of Monthly Rebalancing Selection Date k.

$\text{Closing TR Level}_{k-125}^i$  means the Closing TR Level of Constituent i as of the first Weekday of Lookback Period k (being the Weekday that is one hundred twenty-five (125) Weekdays prior to Monthly Rebalancing Selection Date k).

$\text{Weight}_i^j$  means the weight of Constituent i within Eligible Portfolio j.

- (c) Calculate the annualized observed volatility of each Eligible Portfolio over Lookback Period k (the **"Realized Volatility"**) in accordance with the following formula:

$$\text{Realized Volatility}_k^j = \sqrt{260 \times \frac{125 \times \sum_{n=1}^{125} (\text{Return}_{k,n}^j)^2 - (\sum_{n=1}^{125} \text{Return}_{k,n}^j)^2}{125^2}}$$

where:

$\text{Realized Volatility}_k^j$  means the Realized Volatility of Eligible Portfolio j as of Monthly Rebalancing Selection Date k.

$\text{Return}_{k,n}^j$  means the weighted sum of the natural logarithms of daily returns of each Constituent from Weekday n-1 to Weekday n of Lookback Period k, calculated in accordance with the following formula:

$$\text{Return}_{k,n}^j = \sum_i \left[ \text{Weight}_i^j \times \ln \left( \frac{\text{Closing TR Level}_{k,n}^i}{\text{Closing TR Level}_{k,n-1}^i} \right) \right]$$



where:

Closing TR Level $_{k,n}^i$  means the Closing TR Level of Constituent i in respect of Weekday n of Lookback Period k.

Closing TR Level $_{k,n-1}^i$  means the Closing TR Level of Constituent i as of Weekday n-1 of Lookback Period k.

n denotes a Weekday within Lookback Period k that is not the first Weekday of Lookback Period k (for the avoidance of doubt, the first Weekday n of Lookback Period k shall be the Weekday that is one hundred twenty-four (124) Weekdays prior to Monthly Rebalancing Selection Date k and the last Weekday n of Lookback Period k shall be Monthly Rebalancing Selection Date k).

n – 1 denotes the Weekday that is immediately prior to Weekday n (for the avoidance of doubt, the first Weekday n-1 in respect of Lookback Period k shall be the Weekday that is one hundred twenty-five (125) Weekdays prior to Monthly Rebalancing Selection Date k and the last Weekday n-1 of Lookback Period k shall be the Weekday that is immediately prior to Monthly Rebalancing Selection Date k).

Weight $_j^i$  means the weight of Constituent i within Eligible Portfolio j.

- (d) Identify the Eligible Portfolio with the highest Performance over the relevant Lookback Period that has Realized Volatility equal to or less than the Realized Volatility Constraint; *provided that*, if there is more than one such Eligible Portfolio with the same highest Performance over the relevant Lookback Period, the Eligible Portfolio that has the lowest annualized Realized Volatility shall be selected. The single Eligible Portfolio that satisfies these criteria is referred to herein as the “**Unique Portfolio**” for a particular Lookback Period.
- (e) If none of the Eligible Portfolios has Realized Volatility equal to or less than the Realized Volatility Constraint, the Index Calculation Agent shall increase the Realized Volatility Constraint by one percent (1%) and repeat the step set forth in Section 8.2(d) above until a Unique Portfolio is selected. This step, of increasing the Realized Volatility Constraint, may be repeated until a Unique Portfolio is selected.

### 8.3 *Determining the Monthly Weight to be assigned to each Constituent in the relevant Monthly Reference Portfolio*

The Monthly Weight to be assigned to each Constituent within a Monthly Reference Portfolio will be determined by the Index Calculation Agent as the weight assigned to such Constituent in the Unique Portfolio identified with respect to the relevant Monthly Rebalancing Selection Date in accordance with Section 8.2 above.

Each Constituent is set to the relevant Monthly Weight, determined as of the relevant Monthly Rebalancing Selection Date, only once per month in order to create a new relevant Monthly Reference Portfolio.

## 9. **Monthly Rebalancing**

Unless a Market Disruption Event (as defined in Section 11.4 (*Definitions related to market disruption*)) has occurred and is continuing, on a monthly basis, the Index will be rebalanced over the “**Monthly Rebalancing Period**”, which is a the period composed of the first five (5) consecutive Index Business Days in such month (each a “**Monthly Rebalancing Date**”), subject to postponement pursuant to Section 11.2 (*Market disruption on a Monthly Rebalancing Date*). Such rebalancing over the Monthly Rebalancing Period will transition the Index from the prior Monthly Reference Portfolio selected on the Monthly Rebalancing Selection Date prior to

such most recent Monthly Rebalancing Selection Date (the “**Prior Monthly Reference Portfolio**”) to the next Monthly Reference Portfolio selected on the most recent Monthly Rebalancing Selection Date (the “**Next Monthly Reference Portfolio**”).

### 9.1 The Monthly Reference Portfolio

Each Monthly Rebalancing Selection Date  $k$  will be associated with a reference portfolio composed of the Constituents with weights set equal to the Monthly Weights determined as of such Monthly Rebalancing Selection Date  $k$  (the “**Monthly Reference Portfolio**”). During Monthly Rebalancing Period  $k$ , the Index progressively rolls out of the Monthly Reference Portfolio associated with the previous Monthly Rebalancing Selection Date (*i.e.*, Monthly Rebalancing Selection Date  $k-1$ ), which is the Prior Monthly Reference Portfolio, and rolls into the Monthly Reference Portfolio associated with Monthly Rebalancing Selection Date  $k$ , which is the Next Monthly Reference Portfolio. After the Closing Time on the final Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k$ , the Index will be exposed only to the Monthly Reference Portfolio associated with Monthly Rebalancing Selection Date  $k$  and will continue to remain exposed only to such Monthly Reference Portfolio until the Closing Time on the first Effective Monthly Rebalancing Date occurring in the next Monthly Rebalancing Period (*i.e.*, Monthly Rebalancing Period  $k+1$ ).

### 9.2 Level of the Monthly Reference Portfolio

On each Index Business Day  $t$  from and including the first Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k$  to and including the last Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k+1$ , the level of the Monthly Reference Portfolio determined as of Monthly Rebalancing Selection Date  $k$  is determined as follows:

$$\text{Monthly Reference Portfolio}_{k,t} = \sum_i \left( \text{Monthly Weight}_k^i \times \frac{\text{Closing TR Level}_t^i}{\text{Closing TR Level}_{k,f}^i} \right)$$

where:

$t$  means an Index Business Day from and including the first Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k$  to and including the final Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k+1$ .

$f$  denotes the first Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k$ .

$\text{Monthly Reference Portfolio}_{k,t}$  means the level of the Monthly Reference Portfolio associated with Monthly Rebalancing Selection Date  $k$  in respect of Index Business Day  $t$ .

$\text{Closing TR Level}_t^i$  means the Closing TR Level of Constituent  $i$  in respect of Index Business Day  $t$ .

$\text{Closing TR Level}_{k,f}^i$  means the Closing TR Level of Constituent  $i$  in respect of the first Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k$ .

$\text{Monthly Weight}_k^i$  means the Monthly Weight set for Constituent  $i$  in the Monthly Reference Portfolio associated with Monthly Rebalancing Selection Date  $k$ .

## 10. Calculation of the Index Level

As of the Base Date, the Index 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 Index Level will be calculated by the Index Calculation Agent in U.S. dollars in respect of each Trading Day as follows:

- (a) For each Trading Day  $t$  from but excluding the last Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k$  to and including the first Effective Monthly Rebalancing Date in the immediately following Monthly Rebalancing Period  $k+1$ , the Index Level will be calculated in accordance with the following formula:

$$\text{Index}_t = \text{Index}_{k,l} \times \frac{\text{Monthly Reference Portfolio}_{k,t}}{\text{Monthly Reference Portfolio}_{k,l}}$$

where:

$t$  denotes the relevant Trading Day  $t$ .

$l$  denotes the last Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k$ .

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

$\text{Index}_{k,l}$  means the Index Level for the last Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k$ .

$\text{Monthly Reference Portfolio}_{k,t}$  means the level of the Monthly Reference Portfolio with respect to Monthly Rebalancing Selection Date  $k$  for Trading Day  $t$ .

$\text{Monthly Reference Portfolio}_{k,l}$  means the level of the Monthly Reference Portfolio with respect to Monthly Rebalancing Selection Date  $k$  for the last Effective Monthly Rebalancing Date in such Monthly Rebalancing Period  $k$ .

- (b) Subject to the provisions of Section 11.2 (*Market disruption on a Monthly Rebalancing Date*), for each Trading Day  $t$  from but excluding the first Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k$  to and including the last Effective Monthly Rebalancing Date in Monthly Rebalancing Period  $k$ , the Index Level will be calculated according to the following formula:

$$\text{Index}_t = \text{Index}_{t-1} \times \left( \frac{5-n}{5} \times \frac{\text{Monthly Reference Portfolio}_{k-1,t}}{\text{Monthly Reference Portfolio}_{k-1,t-1}} + \frac{n}{5} \times \frac{\text{Monthly Reference Portfolio}_{k,t}}{\text{Monthly Reference Portfolio}_{k,t-1}} \right)$$

where:

$t$  denotes the relevant Trading Day  $t$  (which in the case of this Section 10(b) will always also be an Effective Monthly Rebalancing Date).

$t-1$  denotes the Trading Day that immediately precedes Trading Day  $t$  (which in the case of this Section 10(b) will always also be an Effective Monthly Rebalancing Date).

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

$\text{Index}_{t-1}$  means the Index Level for Trading Day  $t-1$ .

$\text{Monthly Reference Portfolio}_{k,t}$  means the level of the Monthly Reference Portfolio with respect to Monthly Rebalancing Selection Date  $k$  for Trading Day  $t$ .

$\text{Monthly Reference Portfolio}_{k,t-1}$  means the level of the Monthly Reference Portfolio with respect to Monthly Rebalancing Selection Date  $k$  for Trading Day  $t-1$ .

$\text{Monthly Reference Portfolio}_{k-1,t}$  means the level of the Monthly Reference Portfolio with respect to Monthly Rebalancing Selection Date  $k-1$  for Trading Day  $t$ .

Monthly Reference Portfolio<sub>k-1,t-1</sub> means the level of the Monthly Reference Portfolio with respect to Monthly Rebalancing Selection Date k-1 for Trading Day t-1.

n is the number of Effective Monthly Rebalancing Dates that have occurred in Monthly Rebalancing Period k prior to but excluding Trading Day t, such that:

- (i) If Trading Day t is the second Effective Monthly Rebalancing Date in Monthly Rebalancing Period k, n=1.
- (ii) If Trading Day t is the third Effective Monthly Rebalancing Date in Monthly Rebalancing Period k, n=2.
- (iii) If Trading Day t is the fourth Effective Monthly Rebalancing Date in Monthly Rebalancing Period k, n=3.
- (iv) If Trading Day t is the fifth Effective Monthly Rebalancing Date in Monthly Rebalancing Period k, n=4.

For the avoidance of doubt:

<b>For the Trading Day that is the...</b>	<b>The Index Level calculated for such day will reflect...</b>	<b>The Index Level calculated for the next Trading Day will reflect...</b>
First Effective Monthly Rebalancing Date	One hundred percent (100%) of the Performance of Monthly Reference Portfolio k-1 (which is the Prior Monthly Reference Portfolio)	Eighty percent (80%) of the Performance of Monthly Reference Portfolio k-1 (which is the Prior Monthly Reference Portfolio) and twenty percent (20%) of the Performance of Monthly Reference Portfolio k (which is the Next Monthly Reference Portfolio)
Second Effective Monthly Rebalancing Date	Eighty percent (80%) of the Performance of Monthly Reference Portfolio k-1 and twenty percent (20%) of the Performance of Monthly Reference Portfolio k	Sixty percent (60%) of the Performance of Monthly Reference Portfolio k-1 and forty percent (40%) of the Performance of Monthly Reference Portfolio k
Third Effective Monthly Rebalancing Date	Sixty percent (60%) of the Performance of Monthly Reference Portfolio k-1 and forty percent (40%) of the Performance of Monthly Reference Portfolio k	Forty percent (40%) of the Performance of Monthly Reference Portfolio k-1 and sixty percent (60%) of the Performance of Monthly Reference Portfolio k
Fourth Effective Monthly Rebalancing Date	Forty percent (40%) of the Performance of Monthly Reference Portfolio k-1 and sixty percent (60%) of the Performance of Monthly Reference Portfolio k	Twenty percent (20%) of the Performance of Monthly Reference Portfolio k-1 and eighty percent (80%) of the Performance of Monthly Reference Portfolio k
Fifth Effective Monthly Rebalancing Date	Twenty percent (20%) of the Performance of Monthly Reference Portfolio k-1 and eighty percent (80%) of the Performance of Monthly Reference Portfolio k	One hundred percent (100%) of the Performance of Monthly Reference Portfolio k

## 11. 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 for any Constituent whose Closing Level would affect the level of the Index; and so that the Index shall not rebalance on a Disrupted Day for any Constituent whose Closing Level

would affect the rebalancing of the Index. However, the occurrence of a Disrupted Day for any Constituent shall not affect the timing of the Monthly Rebalancing Selection Date.

If any originally scheduled Monthly Rebalancing Date is a Disrupted Day for any Constituent whose Closing Level would affect the rebalancing of the Index, then such Monthly Rebalancing Date and all following Monthly Rebalancing Dates in the relevant Monthly Rebalancing Period shall be postponed. This shall not cause any Monthly Rebalancing Date to be skipped, or cause more than one (1) Monthly Rebalancing Date to effectively occur on the same date. Instead, the rebalancing originally scheduled to occur on each Monthly Rebalancing Date on or after such affected Monthly Rebalancing Date shall also be postponed for up to five (5) Index Business Days.

Consequently, the effective Monthly Rebalancing Dates for the relevant Monthly Rebalancing Period will occur in the originally scheduled order and on different Index Business Days. As a result, a Monthly Rebalancing Period will effectively be extended, but will nevertheless occur over five (5) potentially non-consecutive days.

#### *11.1 Market disruption on a Monthly Rebalancing Selection Date*

If a Monthly Rebalancing Selection Date is a Disrupted Day (as defined in Section 11.4 below) for any Constituent, then the relevant Monthly Rebalancing Selection Date shall remain the originally scheduled Monthly Rebalancing Selection Date and the Closing TR Level for each such affected Constituent in respect of such Disrupted Day shall be deemed to be the Closing TR Level for each such affected Constituent as of the immediately preceding day that was both (x) a Dealing Day for such affected Constituent and (y) not a Disrupted Day for such affected Constituent.

#### *11.2 Market disruption on a Monthly Rebalancing Date*

The rebalancing originally scheduled to occur on a Monthly Rebalancing Date shall be postponed (such postponed Monthly Rebalancing Date, an “**Affected Monthly Rebalancing Date**”) if any Monthly Rebalancing Date occurring on or before such Monthly Rebalancing Date in the relevant Monthly Rebalancing Period is a Disrupted Day for any Constituent included in either the Prior Monthly Reference Portfolio or the Next Monthly Reference Portfolio.

In the event that a Monthly Rebalancing Date is an Affected Monthly Rebalancing Date, such Affected Monthly Rebalancing Date will be postponed to the date (the “**Postponed Monthly Rebalancing Date**”) that is the first day to occur of:

- (i) the first following Index Business Day that is neither (x) a Disrupted Day for any Constituent included in either the Prior Monthly Reference Portfolio or the Next Monthly Reference Portfolio, nor (y) the Postponed Monthly Rebalancing Date for any Affected Monthly Rebalancing Date that was originally scheduled to occur prior to the date on which such Affected Monthly Rebalancing Date was originally scheduled to occur; and
- (ii) the fifth (5<sup>th</sup>) Index Business Day following the date on which such Affected Monthly Rebalancing Date was originally scheduled to occur.

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

If a Postponed Monthly Rebalancing Date is a Disrupted Day for any Constituent included in either the Prior Monthly Reference Portfolio or the Next Monthly Reference Portfolio, then such Postponed Monthly 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 for at least one Constituent included in a Monthly Reference Portfolio) using its good faith estimate of (i) the Closing TR Level for any Constituent, if

such Final Disruption Determination Date is a Disrupted Day for such Constituent, and (ii) the level of any Monthly Reference Portfolio that affects the calculation of the Index Level. 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 re-weight the portion of the Index to be rebalanced on such day in accordance with Section 10 (*Calculation of the Index Level*) using its good faith estimates determined pursuant to this Section 11.3. For purposes of determining the Closing TR Level for any Constituent for any Dealing Day, if the Prior Dealing Day for such Constituent was a Disrupted Day then, in the formula for determining the Closing TR Level for such Dealing Day, (i) the Closing TR Level for that Prior Dealing Day shall be replaced with the Closing TR Level for the Prior Non-Disrupted Dealing Day for such Constituent, (ii) the Closing Level for that Prior Dealing Day shall be replaced with the Closing Level for such Prior Non-Disrupted Dealing Day for such Constituent, and (iii) the Gross Distribution Amount of such Constituent in respect of such Dealing Day shall be replaced with the sum of each of the Gross Distribution Amounts for such Constituent in respect of each day from but excluding the Prior Non-Disrupted Dealing Day to and including such Dealing Day. 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 at least one (one) Constituent.

#### 11.4 Definitions related to market disruption

- (a) **“Disrupted Day”** means, in respect of a Constituent, a Dealing Day on which a Market Disruption Event occurs or is continuing in respect of such Constituent.
- (b) A **“Market Disruption Event”** occurs if the Index Calculation Agent determines in its sole discretion that on any Dealing Day there has been, subject to the provisions of paragraph (c), below:
  - (i) in respect of any Reference Index (as defined in “Definitions”) of any Constituent included in the relevant Monthly Reference Portfolio or Monthly Reference Portfolios, a failure by the relevant sponsor or its agent to calculate and publish the Closing Level for such index on such Dealing 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 relevant Reference Index, (b) any securities or components that in the aggregate comprise 20 percent (20%) or more of the level of the relevant Reference Index, (c) any futures or options contracts or other financial contracts relating to the relevant Reference Index, 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 relevant Reference Index; or
  - (ii) the occurrence or existence of a suspension, absence or material limitation of trading of the securities of a Constituent on the relevant Primary Listing Exchange for such securities for more than two hours of trading during, or during the last one-half ( $\frac{1}{2}$ ) hour period preceding the close of, the principal trading session on such relevant Primary Listing Exchange; or
  - (iii) a breakdown or failure in the price and trade reporting systems of the relevant Primary Listing Exchange for the securities of a Constituent as a result of which the reported trading prices for such securities are materially inaccurate for more than two hours of trading during, or during the last one-half hour period preceding the close of, the principal trading session on such relevant Primary Listing Exchange; or

- (iv) if applicable, the occurrence or existence of a suspension, absence or material limitation of trading on the Primary Listing Exchange or market for trading in futures or options contracts related to the securities of a Constituent or on any Related Exchange for such Constituent for more than two hours of trading during, or during the last one-half hour period preceding the close of, the principal trading session on the applicable exchange or market; or
- (v) as applicable, if any of the following is calculated or announced in the ordinary course, but is not calculated or is not announced by or on behalf of the relevant sponsor of the Constituent or the relevant calculation agent or information provider that the relevant sponsor of such Constituent designates: the intraday net asset value or the intraday indicative value of such Constituent, the intraday indicative value of a Reference Index of such Constituent, or any intraday value or level that indicates or affects the approximate intrinsic economic value of such Constituent or the amount of any payment in respect of such Constituent; or
- (vi) as applicable, if any of the following is calculated or announced in the ordinary course, but is not calculated or is not announced by or on behalf of the relevant sponsor of a Constituent or the relevant calculation agent or information provider that the relevant sponsor of such Constituent designates: the closing net asset value or the closing indicative value of a Constituent, the closing indicative value of the Reference Index of such Constituent, or any closing value or level or other value or level that indicates or affects the approximate intrinsic economic value of such Constituent or the amount of any payment in respect of such Constituent; or
- (vii) the relevant sponsor of a Constituent suspends creations, issuances or redemptions of securities of such Constituent; and

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 any Constituent or the Reference Index of any Constituent).

- (c) For the purpose of determining whether a Market Disruption Event has occurred:
  - (i) at any time with respect to a Reference Index and a Dealing Day, if trading in a security or component included in the applicable Reference Index is materially suspended or materially limited at that time, then the relevant percentage contribution of that security or component to the level of the applicable Reference Index will be based on a comparison of (x) the portion of the level of the applicable Reference Index attributable to that security or component relative to (y) the overall level of the applicable Reference Index, 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 Primary Listing 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 Primary Listing 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 Reference Index or securities of a Constituent by the exchange or market for trading in such contracts or securities of such

Constituent 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 securities of such Constituent or (c) a disparity in bid and ask quotes relating to such contracts or securities of such Constituent, will constitute a suspension, absence or material limitation of trading in futures or options contracts related to such equity index or the securities of such Constituent; and

- (v) a suspension, absence or material limitation of trading on any relevant Primary Listing 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.

## **12. Extraordinary Events and Anti-Dilution Events**

### *12.1 Successors to a Constituent*

- (a) (x) If any of the following is calculated or announced in the ordinary course, but is not calculated or is not announced by or on behalf of the relevant sponsor or issuer for the Constituent or the relevant calculation agent or information provider that such sponsor or issuer designates: its intraday or closing net asset value or another value or level that indicates or affects the approximate intrinsic economic value of the Constituent or the amount of any payment in respect of the Constituent, (y) yet such value or level is calculated and announced by or on behalf of a successor sponsor or issuer acceptable to the Index Calculation Agent or a calculation agent or information agent (in either case, that such successor sponsor or issuer designates) acceptable to the Index Calculation Agent;
- (b) (x) If a Constituent is replaced by a successor Constituent, (y) yet (1) the Reference Index of such successor Constituent is either the same as that of the replaced Constituent or 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's Reference Index or (2) such successor Constituent is otherwise acceptable to the Index Calculation Agent;

then, in each case, that Constituent, that Reference Index or the relevant sponsor, issuer, calculation agent or information provider will thereafter be deemed to be the successor Constituent, successor Reference Index or the successor sponsor, issuer, calculation agent or information provider 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 (including, without limitation, adjustments to market disruption provisions in respect of an index that includes securities or components that are bonds or loans).

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 relevant Constituent. For the avoidance of doubt, the prior performance of such successor Constituent shall be used in the identification of the Unique Portfolio for future Lookback Periods 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 identification of the Unique Portfolio for future Lookback Periods 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.

### *12.2 Substitutes for a Constituent*

If an Extraordinary Event occurs in respect of a Constituent, the Index Calculation Agent, acting in good faith and a commercially reasonable manner, shall select as a substitute for such Constituent an ETF that has a Reference Index (such substitute ETF being referred to herein as a "substitute ETF") that, in any case, 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 and its Weight Constraints; *provided further that*, if the Index Calculation Agent determines, in its sole discretion, that neither a substantially similar nor an appropriate substitute ETF is available, then the Index Calculation Agent will, in its sole discretion, (x) determine its good faith estimate of the closing price of such Constituent as of a date on or prior to the occurrence of such Extraordinary Event and use such estimate of the closing price (without modification over time) in respect of such Constituent in subsequent calculations of the Index Level until the final Effective Monthly Rebalancing Date in the immediately following Monthly Rebalancing Period, (y) remove such Constituent from 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 ETF 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 ETF, such substitute shall take the place of the relevant Constituent. For the avoidance of doubt, the prior performance of such substitute ETF shall be used in the identification of the Unique Portfolio for future Lookback Periods 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 ETF shall be used (in place of such portion of the relevant prior performance of such substitute that is not available) in the identification of the Unique Portfolio for future Lookback Periods 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 ETF.

### *12.3 Definitions related to Extraordinary Events*

An “**Extraordinary Event**” occurs if the Index Calculation Agent determines in its sole discretion that (i) on any Dealing Day in respect of a 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) for any Constituent for which the securities of the relevant exchange-traded fund are issued by a trust (such issuer trust, the “**Trust Issuer**”), the trust agreement or any similar governing document of the Trust Issuer is terminated, or the Trust Issuer becomes, for any reason, subject to voluntary or involuntary termination, liquidation, bankruptcy, insolvency, dissolution or winding-up or any other analogous proceeding;
- (ii) for any Constituent, the issuer becomes, for any reason, subject to voluntary or involuntary termination, liquidation, bankruptcy, insolvency, dissolution or winding-up or any other analogous proceeding;
- (iii) for any Constituent, all the securities of the Constituent or all or substantially all of the assets of the Constituent are nationalized, expropriated or otherwise required to be transferred to any governmental agency, authority, entity or instrumentality thereof;

- (iv) for any Constituent, the sponsor of the Constituent permanently cancels the Constituent, and no successor exists, or the Constituent's level, net asset value or indicative value is not calculated and is not announced by or on behalf of the relevant sponsor or issuer of the Constituent, and is not calculated and announced by or on behalf of a successor sponsor or issuer acceptable to the Index Calculation Agent;
- (v) for a Constituent, the event specified in clause (x) of subsection (a) or (b) of Section 12.1 above occurs, but the relevant event specified in clause (y) of such subsection of Section 12.1 above does not occur;
- (vi) for any Constituent, such Constituent is de-listed from the relevant Primary Listing Exchange for such Constituent and is not concurrently listed on a U.S. securities exchange acceptable to the Index Calculation Agent;
- (vii) in respect of any Constituent, an ETF Material Event (as defined below in this Section 12.3) occurs in respect of such Constituent;
- (viii) in respect of a Constituent, a Market Disruption Event occurs for ten (10) consecutive Dealing Days and the Index Calculation Agent determines that such Market Disruption Event is reasonably likely to continue for a period of an indeterminate duration;
- (ix) in respect of a Constituent, (x) a suspension or limitation on trading in respect of a Relevant Underlying (as defined below) is announced or imposed for ten (10) consecutive Dealing Days for such Constituent or for a period of indeterminate duration that the Index Calculation Agent determines is reasonably likely to include ten (10) consecutive Dealing Days for such Constituent or (y) any other event occurs or condition exists that causes trading to cease in respect of a Relevant Underlying for ten (10) consecutive Dealing Days for such Constituent;
- (x) 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 any Constituent, underlying reference input or relevant data or information or to refer to the level or price or other information in respect of any Constituent, 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) any 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
- (xi) the occurrence or continuation of a Change in Law (as defined below in this Section 12.3).

An **"ETF Material Event"** occurs in respect of a Constituent when one or more of the following events occurs, and the Index Calculation Agent determines in its sole discretion that such event or combination of events is material (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) there is an amendment, variation or modification to the constitutional documents or offering documents of the Constituent, that the Index Calculation Agent determines has or is reasonably likely to have an adverse impact on the ability of market participants to trade in securities of the Constituent;
- (b) there is an amendment, variation or modification to the terms of the Constituent or the obligations of the issuer in respect of the Constituent, in any case and by any means, that the Index Calculation

Agent determines has or is reasonably likely to have an adverse impact on the value, redeemability or liquidity of the securities of the Constituent;

- (c) an ETF Regulatory Action occurs in respect of the Constituent; **“ETF Regulatory Action”** means (i) any cancellation, suspension or revocation of the registration or approval of the Constituent or the securities of the Constituent by any governmental, legal or regulatory entity with authority over the Constituent or the securities of the Constituent, (ii) any change in the legal, tax, accounting, or regulatory treatments of the Constituent, any sponsor, issuer or adviser of the Constituent or the securities of the Constituent that the Index Calculation Agent determines has or is reasonably likely to have an adverse impact on the holders of the securities of the Constituent or on the value of the securities of the Constituent, (iii) the Constituent or any sponsor, issuer or adviser of the Constituent becoming subject to any investigation, proceeding or litigation by any relevant governmental, legal or regulatory authority involving any activities relating to or resulting from the operation of the Constituent (including, without limitation, any future, announced or implemented material change to any one or more exemptive orders, no action letters or interpretative guidance of the U.S. Securities and Exchange Commission (the “SEC”), including guidance issued by the SEC’s staff, relating to the Constituent or to exchange-traded funds generally that affects holders of the securities of the Constituent, whether occurring through action of the SEC or otherwise, including as a result of a court order or executive order) that the Index Calculation Agent determines has or is reasonably likely to have a material adverse effect on the value, redeemability or liquidity of the securities of the Constituent, or the operation of the Constituent in accordance with the terms of the Constituent or the Constituent’s offering documents or (iv) the issuance by the SEC of an order to suspend redemption obligations of the Constituent, to freeze assets of the Constituent or to take any other action that the Index Calculation Agent determines is reasonably likely to have a material effect on the value, redeemability or liquidity of the Constituent;
- (d) the Average Daily Trading Volume (as defined in “Definitions”) of any Constituent declines below (x) an amount equal to 20 percent (20%) of its Average Daily Trading Volume as of June 7, 2017 or (y) five million U.S. dollars (\$5,000,000);
- (e) the Market Capitalization of any Constituent declines below (x) an amount equal to 20 percent (20%) of its Market Capitalization as of June 7, 2017 or (y) five hundred million U.S. dollars (\$500,000,000);
- (f) the relevant Primary Listing Exchange for the Constituent announces that such Constituent will be de-listed from such exchange;
- (g) if any of the following is calculated or announced in the ordinary course, but, for a period of five (5) consecutive Dealing Days, is not calculated or is not announced by or on behalf of the relevant sponsor or issuer of the Constituent or the relevant calculation agent or information provider that the relevant sponsor or issuer of the Constituent designates: the intraday net asset value of the Constituent, the intraday indicative value of a Reference Index of the Constituent, or any intraday value or level that indicates or affects the approximate intrinsic economic value of the Constituent or the amount of any payment in respect of the Constituent;
- (h) if any of the following is calculated or announced in the ordinary course, but, for a period of five (5) consecutive Dealing Days, is not calculated or is not announced by or on behalf of the relevant sponsor or issuer of the Constituent or the relevant calculation agent or information provider that the relevant sponsor or issuer of the Constituent designates: the closing net asset value of the Constituent, the closing indicative value of a Reference Index of the Constituent, or any closing value or level or other value or level that indicates or affects the approximate intrinsic economic value of the Constituent or the amount of any payment in respect of the Constituent;
- (i) if any of the following is calculated or announced in the ordinary course, but, for a period of five (5) consecutive Dealing Days, the Closing Level of the Constituent reflects a premium greater than five percent (5%) or a discount greater than five percent (5%) as compared to the closing net asset value

of the Constituent, the closing indicative value of a Reference Index of the Constituent, or any closing value or level or other value or level that indicates or affects the approximate intrinsic economic value of the Constituent or the amount of any payment in respect of the Constituent;

- (j) the relevant sponsor of the Reference Index of the Constituent fails to calculate and publish the Closing Level for such index for five (5) consecutive Dealing Days; or
- (k) the relevant sponsor of the Constituent suspends new issuances, creations or redemptions of securities of such Constituent for five (5) consecutive Dealing Days or announces a suspension of unlimited duration of such creations or redemptions.

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) a Constituent, (2) a component of a Constituent that is an index or (3) a component of a Reference Index of a Constituent (each such underlying described in any of the immediately preceding clauses (1), (2) and (3), 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.

#### *12.4 Anti-dilution adjustments*

With respect to each Constituent (or the relevant successor or substitute Constituent), the Index Calculation Agent will make anti-dilution adjustments to the Closing Level of such Constituent only (a) if the securities of such Constituent are subject to a split or reverse split, once such split has become effective, and (b) if such Constituent is subject to (i) an issuance of additional securities of such Constituent that is given ratably to all or substantially all holders of securities of such Constituent or (ii) a distribution of securities of such Constituent as a result of the triggering of any provision of the corporate charter of such Constituent or its issuer, as applicable, once the dividend or distribution has become effective and the securities of such Constituent are trading ex-distribution. The Index Calculation Agent will be solely responsible for the determination and calculation of any such anti-dilution adjustments and any related determinations and calculations, and its determinations and calculations with respect thereto will be conclusive in the absence of manifest error.

### **13. Corrections**

If (i) the Closing Level of any Constituent as of any date which is published or otherwise made available in respect of the relevant 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.

## Definitions

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

<b>“Affected Monthly Rebalancing Date”</b>	has the meaning given to such term in Section 11.2 ( <i>Market disruption on a Monthly Rebalancing Date</i> ).
<b>“Average Daily Trading Volume”</b>	means, with respect to a Constituent and an Index Business Day, the product of (a) the ratio of (i) the total volume of trading in the securities of such Constituent from but excluding the calendar day that is six months prior to such Index Business Day, to and including such Index Business Day, as reported to the consolidated tape, divided by (ii) the total number of Index Business Days from but excluding the calendar day six (6) months prior to such Index Business Day, to and including such Index Business Day, times (b) the Closing Level of such Constituent on such Index Business Day. The Average Daily Trading Volume for each Constituent as of June 7, 2017 is provided in Schedule 1.
<b>“Base Date”</b>	means May 3, 2004.
<b>“Change in Law”</b>	has the meaning given to such term in Section 12.3 ( <i>Definitions related to Extraordinary Events</i> ).
<b>“Closing Level”</b>	means, subject to the provisions of Section 11 ( <i>Market Disruption</i> ) and Section 12 ( <i>Extraordinary Events and Anti-Dilution Events</i> ), in respect of a Constituent and a Dealing Day, the official closing price for such Constituent on the Primary Listing Exchange for such Constituent, as of the closing time of the regular trading session of such Primary Listing Exchange on such Dealing Day.
<b>“Closing Time”</b>	means, for an Index Business Day, the scheduled closing time of the regular trading session for NYSE Arca.
<b>“Closing TR Level”</b>	has the meaning, in respect of a Constituent and a Dealing Day, given to such term in Section 6 ( <i>The Constituents; Closing TR Levels</i> ).
<b>“Constituent”</b>	has the meaning given to such term in Section 4 ( <i>General Notes on the Index</i> ).
<b>“Dealing Day”</b>	means, for each Constituent, a day on which the Primary Listing Exchange for such Constituent is scheduled to be open for trading for its regular trading session.
<b>“Disrupted Day”</b>	has the meaning given to such term in Section 11.4 ( <i>Definitions related to market disruption</i> ).
<b>“Effective Monthly Rebalancing Date”</b>	means, with respect to any Monthly Rebalancing Date, (i) if such Monthly Rebalancing Date occurs on the date originally scheduled (and is not postponed pursuant to Section 11.2 ( <i>Market disruption on a Monthly Rebalancing Date</i> )), such originally scheduled date or (ii) if such Monthly Rebalancing Date is postponed pursuant to Section 11.2, the Postponed Monthly Rebalancing Date in respect of such Monthly Rebalancing Date.
<b>“Eligible Portfolio”</b>	has the meaning given to such term in Section 8.2 ( <i>Identifying the Unique Portfolio for each Lookback Period</i> ).

<b>"ETF Material Event"</b>	has the meaning given to such term in Section 12.3 ( <i>Definitions related to Extraordinary Events</i> ).
<b>"ETF Regulatory Action"</b>	has the meaning given to such term in Section 12.3 ( <i>Definitions related to Extraordinary Events</i> ).
<b>"Exchange Act"</b>	means the United States Securities Exchange Act of 1934, as amended.
<b>"Ex-Distribution Date"</b>	has the meaning given to such term in Section 6 ( <i>The Constituents; Closing TR Levels</i> ).
<b>"Extraordinary Event"</b>	has the meaning given to such term in Section 12.3 ( <i>Definitions related to Extraordinary Events</i> ).
<b>"Final Disruption Determination Date"</b>	has the meaning given to such term in Section 11.3 ( <i>Calculation of the Index Level in respect of a Final Disruption Determination Date</i> ).
<b>"Gross Distribution Amount"</b>	has the meaning given to such term in Section 6 ( <i>The Constituents; Closing TR Levels</i> ).
<b>"Index"</b>	means the J.P. Morgan Total Return Index, as provided in Section 1 ( <i>Introduction</i> ).
<b>"Index Business Day"</b>	means a day (i) on which NYSE Arca is scheduled to open for trading for its regular trading session and (ii) that is a Dealing Day for all of the Constituents.
<b>"Index Calculation Agent"</b>	has the meaning given to such term in Section 2.1 ( <i>Index Sponsor and Index Calculation Agent; Identity and responsibilities</i> ).
<b>"Index Level"</b>	has the meaning given to such term in Section 5 ( <i>Publication of the Index Level</i> ).
<b>"Index Rules"</b>	means, as provided in Section 1 ( <i>Introduction</i> ), the rules of the J.P. Morgan Total Return Index as set out in this document, as the same may be supplemented, amended or restated from time to time.
<b>"Index Sponsor"</b>	has the meaning given to such term in Section 2.1 ( <i>Index Sponsor and Index Calculation Agent; Identity and responsibilities</i> ).
<b>"Initial Rebalancing Period"</b>	has the meaning provided in Section 7 ( <i>Initial Composition of the Index</i> ).
<b>"JPMS"</b>	has the meaning provided in Section 2.1 ( <i>Index Sponsor and Index calculation Agent; Identity and responsibilities</i> ).
<b>"Live Date"</b>	has the meaning given to such term in Section 7 ( <i>Initial Composition of the Index</i> ).
<b>"Lookback Period"</b>	has the meaning given to such term in Section 8.1 ( <i>Identifying the Lookback Periods</i> ).
<b>"Market Capitalization"</b>	means, with respect to a Constituent and a Dealing Day, the product of (a) the shares outstanding of such Constituent in respect of such Dealing Day, as reported to the Primary Listing Exchange, times (b) the Closing Level of such Constituent in respect of such Dealing Day. The Market Capitalization for each Constituent on June 7, 2017 is provided in Schedule 1.

<b>"Market Disruption Event"</b>	has the meaning given to such term in Section 11.4 ( <i>Definitions related to market disruption</i> ).
<b>"Monthly Reference Portfolio"</b>	has the meaning given to such term in Section 9.1 ( <i>The Monthly Reference Portfolios</i> ).
<b>"Monthly Rebalancing Date"</b>	has the meaning given to such term in Section 9 ( <i>Monthly Rebalancing</i> ) and is subject to the provisions of Section 11.2 ( <i>Market disruption on a Monthly Rebalancing Date</i> ).
<b>"Monthly Rebalancing Period"</b>	has the meaning given to such term in Section 9 ( <b>Monthly Rebalancing</b> ) and is subject to the provisions of Section 11.2 ( <i>Market disruption on a Monthly Rebalancing Date</i> ).
<b>"Monthly Rebalancing Selection Date"</b>	means Index Business Day immediately preceding the last Index Business Day of each calendar month.
<b>"Monthly Weight"</b>	has the meaning given to such term in Section 8 ( <i>Determining the Monthly Weights for the Constituents in the Monthly Reference Portfolio</i> ).
<b>"Next Monthly Reference Portfolio"</b>	has the meaning given to such term in Section 9 ( <i>Monthly Rebalancing</i> ).
<b>"Performance"</b>	has the meaning given to such term in Section 8.2 ( <i>Identifying the Unique Portfolio for each Lookback Period</i> ).
<b>"Postponed Monthly Rebalancing Date"</b>	has the meaning given to such term in Section 11.2 ( <i>Market disruption on a Monthly Rebalancing Date</i> ).
<b>"Primary Listing Exchange"</b>	with respect to a Constituent and a date, the U.S. securities exchange registered under the Exchange Act, on which the shares or other interests of such Constituent have their primary listing as of such date.
<b>"Prior Dealing Day"</b>	has the meaning given to such term in Section 6 ( <i>The Constituents; Closing TR Levels</i> ).
<b>"Prior Monthly Reference Portfolio"</b>	has the meaning given to such term in Section 9 ( <i>Monthly Rebalancing</i> ).
<b>"Prior Non-Disrupted Dealing Day"</b>	has the meaning given to such term in Section 6 ( <i>The Constituents; Closing TR Levels</i> ).
<b>"Realized Volatility"</b>	has the meaning given to such term in Section 8.2 ( <i>Identifying the Unique Portfolio for each Lookback Period</i> ).

<b>“Realized Volatility Constraint”</b>	means five percent (5%); provided that, such percentage is subject to increase for any Rebalancing Selection Date in accordance with the terms of Section 8.2(e).
<b>“Reference Index”</b>	means with respect to a Constituent, the index, if applicable, whose performance such Constituent attempts to track. The Reference Index for each Constituent, as of June 7, 2017 is provided in Schedule 1.
<b>“Related Exchange”</b>	means, in respect of any Constituent, each exchange or quotation system (as determined by the Index Calculation Agent) where trading has a material effect (as determined by the Index Calculation Agent) on the overall market for futures or options contracts relating to the Constituent.
<b>“Relevant Person”</b>	has the meaning given to such term in Section 2.1 ( <i>Index Sponsor and Index Calculation Agent; Identity and Responsibilities</i> ).
<b>“Relevant Underlying”</b>	has the meaning given to such term in Section 12.3 ( <i>Definitions related to Extraordinary Events</i> ).
<b>“Rebalancing Disruption Determination Date”</b>	has the meaning given to such term in Section 11.2 ( <i>Market disruption on a Monthly Rebalancing Date</i> ).
<b>“SEC”</b>	has the meaning given to such term in Section 12.3 ( <i>Definitions related to Extraordinary Events</i> ).
<b>“Starting Rebalancing Period”</b>	has the meaning given to such term in Section 7 ( <i>Initial Composition of the Index</i> ).
<b>“Starting Selection Date”</b>	has the meaning given to such term in Section 7 ( <i>Initial Composition of the Index</i> ).
<b>“Trading Day”</b>	means a day that is: <ul style="list-style-type: none"> <li>(i) an Index Business Day that (x) occurs during the period from but excluding the final Effective Monthly Rebalancing Date in a given Monthly Rebalancing Period to but excluding the first Effective Monthly Rebalancing Date in the immediately following Monthly Rebalancing Period and (y) is not a Disrupted Day for any Constituent with a non-zero Monthly Weight with respect to the relevant Monthly Reference Portfolio, or</li> <li>(ii) an Index Business Day that is an Effective Monthly Rebalancing Date.</li> </ul>
<b>“Trust Issuer”</b>	has the meaning given to such term in Section 12.3 ( <i>Definitions related to Extraordinary Events</i> ).
<b>“Unique Portfolio”</b>	has the meaning given to such term in Section 8.2 ( <i>Identifying the Unique Portfolio for each Lookback Period</i> ).
<b>“Weekday”</b>	means a calendar day that is a Monday, Tuesday, Wednesday, Thursday or Friday.
<b>“Weight Constraints”</b>	has the meaning given to such term in Section 8.2 ( <i>Identifying the Unique Portfolio for each Lookback Period</i> ).



**Schedule 1:****Constituent Name, Ticker, Reference Index, Average Daily Trading Volume and Market Capitalization  
as of June 7, 2017**

<b>i</b>	<b>Constituent Name</b>	<b>Ticker</b>	<b>Reference Index</b>	<b>Average Daily Trading Volume*</b>	<b>Market Capitalization*</b>
1	iShares 1-3 Year Treasury Bond ETF	SHY	ICE U.S. Treasury 1-3 Year Bond Index	92	11,014
2	iShares 7-10 Year Treasury Bond ETF	IEF	ICE U.S. Treasury 7-10 Year Bond Index	216	7,291
3	iShares 20+ Year Treasury Bond ETF	TLT	ICE U.S. Treasury 20+ Years Bond Index	1,124	7,533
4	iShares 1-3 Year Credit Bond ETF	CSJ	Bloomberg Barclays U.S. 1-3 Year Credit Bond Index	55	11,718
5	iShares Intermediate Credit Bond ETF	CIU	Bloomberg Barclays U.S. Intermediate Credit Bond Index	48	7,129
6	iShares 10+ Year Credit Bond ETF	CLY	Bloomberg Barclays U.S. Long Credit Index	8	839
7	iShares MBS ETF	MBB	Bloomberg Barclays U.S. Mortgage Backed Securities Index	72	10,594
8	iShares TIPS Bond ETF	TIP	Bloomberg Barclays U.S. Treasury Inflation Protected Securities (TIPS) Index (Series-L)	182	23,358
9	iShares J.P. Morgan USD Emerging Markets Bond ETF	EMB	J.P. Morgan EMBI Global Core Index	254	12,812
10	iShares iBoxx \$ High Yield Corporate Bond ETF	HYG	Markit iBoxx USD Liquid High Yield Index	942	17,980
11	iShares Floating Rate Bond ETF	FLOT	Bloomberg Barclays US Floating Rate Note < 5 Years Index	51	5,714
12	iShares U.S. Preferred Stock ETF	PFF	S&P U.S. Preferred Stock Index	112	17,971

\* In millions of U.S.\$, to the nearest U.S.\$1 million.

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