

## **Index Description**

### **The Morgan Stanley High Yield Plus Index**

This document summarizes the methodology and rules used to construct, calculate and maintain the Morgan Stanley High Yield Plus Index (the “**Index**”).

#### **Contents**

<b>Section</b>	<b>Page</b>
1. Overview	2
2. Risk Factors and Investment Considerations	4
3. Index Calculation	7
4. Definitions	15

The Index has been developed by Morgan Stanley & Co. LLC. (the “**Index Sponsor**”) and is calculated, published and rebalanced by Morgan Stanley & Co. LLC. (the “**Index Calculation Agent**”).

Neither the Index Sponsor nor the Index Calculation Agent guarantee the accuracy and/or the completeness of any data included in the Index nor do they make any express or implied representation, warranty or advice as to the suitability of Index (or any data included therein) for a particular purpose. The Index Sponsor and the Index Calculation Agent shall not be liable to any person for any errors, omissions or interruptions in relation to the Index.

In no circumstances shall the Index Sponsor or the Index Calculation Agent have any liability to any person for any losses (whether or not they are foreseeable) in connection with such person’s use of the Index or any investment related thereto.

The Index is a Morgan Stanley propriety index. Any use of the Index or its name is prohibited without the prior consent of Index Sponsor.

## 1. Overview

The Morgan Stanley High Yield Plus Index (the “**Index**”) is a rules-based asset allocation strategy that provides exposure to the Underlying Assets based on momentum of Risk Indicators. The strategy switches between an US Treasury bond ETF (the “Defensive Asset”) and a corporate Bond ETF (the “High Yield Asset”). When the High Yield Asset trends down or when the Volatility Asset trends up, the Index will invest in the Defensive Asset; in all other cases, the Index will invest in the High Yield Asset.

The inputs to decide the asset allocation are based on the historical prices of the High Yield Asset and the Volatility Asset. The participation to the return of the High Yield Asset or the Defensive Asset is the relevant Investment Indicator multiplied by the Adjusted Exposure of the relevant asset (the “Allocated Underlying Asset”) from the volatility control mechanism. In most instances, the Index participates in the return of the Allocated Underlying Asset, however when there is a change in the Investment Indicator, the Index participates in the return of a basket of Allocated Underlying Asset and Unallocated Underlying Asset during the 5 day index rebalancing period until the Index is completely switched over to the new Allocated Underlying Asset.

**Please see Section 2 (Risk Factors and Investment Considerations) for a discussion of certain factors that should be considered in connection with an investment linked to the Index.**

Capitalized terms used herein but not defined have the meaning given to them in Section 4 (*Definitions*).

Index	Bloomberg Ticker
Morgan Stanley High Yield Plus Index	MSUSHP5T Index

The Index Level for the Index will be calculated by the Index Sponsor on each Index Business Day following the Index Live Date and made available on the above Bloomberg screen, as further described in section 3.6 below

### Index Sponsor

The Index Sponsor is responsible for the construction, constitution and publication of the Index. The Index Sponsor has the right to change the methods of index calculation or publication, and to cease the calculation or publication of the Index at any time.

### Index Calculation Agent

The Index Calculation Agent is responsible for compiling and calculating the Index in accordance with its rules.

### Underlying Assets

The Index invest in total return of the High Yield Asset or the Defensive Asset (together the “**Underlying Assets**”) based on trend observed during the calculation window. The Underlying Assets are as defined in the table below:

Underlying Asset	Asset Name	Bloomberg Ticker
High Yield Asset	iShares iBoxx H/Y Corporate Bond Fund	HYG UP Equity
Defensive Asset	iShares Barclays 20+ Year Treasury Bond Fund	TLT UP Equity

### Risk Indicators

To determine the allocation of the Underlying Assets, the Index will observe on trend of the High Yield Asset and Volatility Asset (the “**Risk Indicators**”). The Risk Indicators are defined in the table below:

Risk Indicators	Asset Name	Bloomberg Ticker
High Yield Asset	iShares iBoxx H/Y Corporate Bond Fund	HYG UP Equity
Volatility Asset	CBOE SPX Volatility Index	VIX Index

### **Index Base Date and Index Base Value**

The Index was constituted by the Index Sponsor, with an Initial Index Level of 1,000 as of September 4, 2012 (the “**Index Live Date**”). The Index Sponsor has retrospectively rebalanced and calculated the Index Level based on the historical simulated data from 2 Oct 2002 (the “**Index Base Date**”). Index Calculation Agent will calculate and rebalance the Index from the Index Live Date in order to determine the exposures, as described in Section 3.

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

### **Index Rebalancing**

The Index Calculation Agent shall determine the allocation to the Underlying Asset on the 1<sup>st</sup> Business Day of each month. The Initial Rebalancing Selection Date is October 1, 2002 (the “**Initial Rebalancing Selection Date**”).

Index rebalances over 5 Index Business Days starting on one Index Business Day following the Rebalancing Selection Date. If there is a switch of the Investment Indicator, i.e. strategy rebalances from one Underlying Asset to the other, then on the close of each k-th Rebalancing Date (“**Rebalancing Dates**”), for  $k=1, 2, \dots, 5$ , the effective weight of the Allocated Underlying Asset will increase such that its effective weight becomes  $k/5$  while the effective weight of the Unallocated Underlying Asset will be reduced to  $1-k/5$ . The asset reallocation is effective for Index Level calculation on the next Index Business Day immediately following each Rebalancing Date. The initial Rebalancing Date is October 2, 2002 (the “**Initial Rebalancing Date**”).

### **Index Level**

Index level is calculated based on the return of the Underlying Assets from the monthly asset allocation (as described in Section 3.2),. The exposure (the “**Adjusted Exposure**”) to the Underlying Assets is adjusted by the volatility control mechanism as described in Section 3.4 to maintain the volatility level of the Index within the Volatility Target.

The inputs for the Morgan Stanley High Yield Plus Index are:

- (i) Historical prices and dividends of the Underlying Assets and Volatility Asset during the relevant Calculation Window prior to a Rebalancing Date; and
- (ii) Historical returns and historical volatilities of Underlying Assets
- (iii) Volatility Target

## **2. Risk Factors and Investment Considerations**

Prior to making an investment decision on products, the return on which are linked to the performance of the Index, prospective investors should carefully consider all of the information set out in this document, including these risk factors and investment considerations. The risk factors set out below are not exhaustive. There may be other risks that a prospective investor should consider that are relevant to its particular circumstances or generally.

### *Proprietary and Rules-Based Index*

The Index follows a rules-based proprietary strategy that operates on the basis of pre-determined rules. Accordingly, potential investors in products which are linked to the performance of the Index should determine whether those rules are appropriate in light of their individual circumstances and investment objectives and ensure that they understand the mechanics of the Index. Potential investors should consult with their legal, business and tax advisers to determine the consequences of investing in a product linked to the Index.

### *Index Performance Consideration.*

Prospective investors should be aware that the Index performance is not only related to the composition of assets, but also related to the application of the strategy and rules and the weighting given to each Underlying Asset. The parameters deployed by the rules influence the Index performance. Prospective investors should note that certain specifications of the Index including, but not limited to, Volatility Target, Calculation Window, interval between Rebalancing Dates and maximum exposure are pre-determined parameters.

As a result, the performance of the Index may not reflect the performance of each of the Underlying Assets and the Index Level could be lower than a weighted investment in each of the Underlying Assets.

Prospective investors should be aware that the performance of the Index and its Underlying Assets in any future period may not mirror its past performance when assessing the historical performance of the Index.

### *Index Calculation Agent and Index Sponsor*

The Index Sponsor and the Index Calculation Agent are the same entity but performing different roles. The Index Calculation Agent is responsible for compiling and calculating the Index pursuant to the rules. Index Sponsor retains the discretion to appoint an alternative Index Calculation Agent. Index Sponsor retains the final discretion as to the manner in which the Index is calculated and constructed. Furthermore, Index Sponsor has the final authority on the Index and the interpretation and application of the rules. The Index Calculation Agent also has certain discretions relating to the Index including (but not limited to) determining the prevailing foreign exchange rate to convert non-USD denominated assets into USD.

In exercising such discretions, the Index Sponsor and the Index Calculation Agent have no obligations to consider the interests of any other person including (but not limited) investors in products linked to the Index. Such actions may be adverse to the interests of such investors.

### *Servicing and Rebalancing Costs*

Servicing and rebalancing costs are deducted when calculating the performance of the Index. The Index Sponsor has the discretion, acting in a commercially reasonable manner, to change the amount of rebalancing and carry costs deducted.

Each deduction of servicing, rebalancing costs will mean the Index Level is less than would otherwise be the case.

### *Adjustment to Methodology*

The application of the methodology described herein by the Index Sponsor shall be conclusive and binding. The Index Sponsor may supplement, amend (in whole or in part), revise or withdraw these rules at any time. Such a supplement, amendment, revision or withdrawal may lead to a change in the way the Index is calculated or constructed and may affect the Index in other ways. Without prejudice to the generality of the foregoing, the Index Sponsor may determine that a change to the rules is required or desirable (for reasons

amongst others) in order to update the rules or to address an error, ambiguity or omission or to take into account any prevailing regulatory, judicial, economic or other circumstance. Such changes, for example, may include changes to eligibility requirements or construction and weighting rules. The rules may change without prior notice. All of the above may affect the Index Level. The Index Sponsor and Index Calculation Agent have no obligation to take into account the considerations of any other person when making any such adjustments and have no obligation to inform any person of such modification or change.

#### *Index Publication*

The Index Sponsor will use reasonable efforts to publish the Index Level in respect of each Index Business Day as soon as reasonably practicable thereafter. A published Index Level will not be altered or amended unless it is necessary to correct a manifest error.

The Index Sponsor accepts no liability to any person for any publication, suspension of publication or non-publication of the Index Level for any period of time or in any place.

#### *Volatility and Volatility Target*

Volatility refers to the actual and anticipated frequency and magnitude of changes of the market price with respect to the Underlying Assets. Volatility is affected by a number of factors including but not limited to macroeconomic factors.

The Index Calculation Agent will adjust the exposure of the Index to the Underlying Assets daily in an attempt to keep volatility within the Volatility Target. No assurances can be made that such Volatility Target will be met.

#### *Effective Weightings*

The weighting of each Underlying Asset in the Underlying Asset Portfolio is set on each Rebalancing Date. However, the effective weight of each of the Underlying Assets of the Index may fluctuate during the period from one Rebalancing Date to the next following Rebalancing Date, due to movements in the value of the Underlying Assets.

#### *Lack of Operating History*

The Index is only recently established and therefore has no history to evaluate its likely performance. Any back-testing or similar analysis performed by any person in respect of the Index must be considered illustrative only and may be based on estimates or assumptions not used by the Index Calculation Agent when determining the Index Level.

Past performance should not be considered indicative of future performance.

#### *Market Factors*

The Underlying Assets are traded on the relevant exchanges and markets. The prices and liquidity of the assets may vary over time and may increase or decrease by reference to a variety of factors which may include (but not limited to) political policies, change in law and regulation, corporate actions, macro economic factors and speculation. Such changes may have a negative effect on the Index Level.

#### *Research*

Morgan Stanley may issue research reports on securities that are, or may become, constituents of the Index. These reports are entirely independent of the Index Calculation Agent's obligations hereunder.

#### *Conflicts of Interest*

Morgan Stanley and its affiliates (including the Index Calculation Agent and the Index Sponsor) may have existing positions in the underlying assets, may from time to time engage in transactions involving underlying

shares for their proprietary accounts and/or for accounts of their clients, may act as market-maker in such shares and/or be providing underwriting, banking, advisory or other services to the issuers of such shares. Such activities may not be for the benefit of the holders of investments related to the Index and may have a positive or negative effect on the value of the underlying shares and consequently on the value of the Index. In addition, Morgan Stanley and its affiliates may from time to time act in other capacities, such as the issuer of investments or the advisor thereof. Morgan Stanley and its affiliates may also issue derivative instruments in respect of such investments and/or the underlying shares and the use of such derivatives may affect the value of the underlying shares or the Index.

In its role in relation to investments linked to the Index, Morgan Stanley or its affiliates may enter into hedging transactions in respect of the underlying shares or related instruments which may or may not affect the value of such shares or instruments. In addition, the unwinding of such hedging transactions may also affect the value of such shares or instruments, which may in turn affect the value of the Index.

Such activities may present conflicts of interest which may affect the level of the Index. In acting in any of these capacities, Morgan Stanley or its affiliates are not obliged to take into account the interests of any person including (but not limited to) investors in products linked to the Index.

#### *Retrospective Index Calculation*

The Index has been retrospectively calculated by the Index Sponsor on a hypothetical basis from October 2, 2002, using the same methodology as described herein. The Index is live on September 4, 2012. All prospective investors should be aware that a retrospective calculation means that no actual investment which allowed a tracking of the performance of an Index existed at any time during the period of the retrospective calculation and that as a result the comparison is purely hypothetical. The methodology and the strategy used for the calculation and retrospective calculation of the Index have been developed with the advantage of hindsight. In reality it is not possible to invest with the advantage of hindsight and therefore this performance comparison is purely theoretical.

#### *Index Market Disruption Event*

The Index Sponsor has the discretion (acting in a commercially reasonable manner) to determine an Index Market Disruption Event. If it determines that an Index Market Disruption Event has occurred, it has the discretion to adjust the provisions of the Index including, but not limited to, replacing the Underlying Assets, as it deems appropriate to take into account such Index Market Disruption Event. The Index Sponsor has no obligation to any person when determining what adjustments or modifications to make to the Index. Any adjustment or modification to the provisions of the Index may have a negative effect on the Index Level.

#### *Notional Exposure*

The Index comprises notional assets. The exposure to the Underlying Assets are purely notional and will exist solely in the records maintained by or on behalf of the Index Calculation Agent. Consequently, no person will have any claim against any of the reference assets that comprise the Index.

### 3. Index Calculation

This section outlines the key steps in constructing the Index, including the timing and methodology of the Index calculation and adjustment.

On the Index Base Date, the Index assigns allocation on an Underlying Asset based on Investment Indicator as determined on the Initial Rebalancing Selection Date, and effective as of the Initial Rebalancing Date.

The Rebalancing Dates are set to be the five consecutive Index Business Days after the relevant Rebalancing Selection Date. The rebalancing will be based on the Investment Indicator as determined on the Rebalancing Selection Date. Each rebalancing will occur at the close of the Index Business Day on the Rebalancing Date and will therefore be effective on the next Index Business Day.

#### Underlying Assets

The Index invest in total return of the High Yield Asset or the Defensive Asset (together the “**Underlying Assets**”) based on trend observed during the calculation window.

Underlying Assets	Asset Name	Bloomberg Ticker
High Yield Asset	iShares iBoxx H/Y Corporate Bond Fund	HYG UP Equity
Defensive Asset	iShares Barclays 20+ Year Treasury Bond Fund	TLT UP Equity

#### Risk Indicators

To determine the allocation of the Underlying Assets, the Index will observe trend of the High Yield Asset and Volatility Asset (the “**Risk Indicators**”). The Risk Indicators are defined in the table below:

Risk Indicators	Asset Name	Bloomberg Ticker
High Yield Asset	iShares iBoxx H/Y Corporate Bond Fund	HYG UP Equity
Volatility Asset	CBOE SPX Volatility Index	VIX Index

#### Cash

Any cash component of the Index, (the “**Cash**”), will accrue at Federal Funds Effective Rate compounded daily using the ACT/360 day count fraction convention as defined in the 2006 ISDA Definition.

#### 3.1 Calculating the Underlying Asset Level

The Index Calculation Agent calculates the total return level (the “**Total Return Level**”) of each Underlying Asset on each Index Business Day, which will subsequently be used to calculate the Index Level as described in section 3.5

On an Index Business Day  $t$ , the Total Return Level of a dividend paying Underlying Asset reflects the performance of the asset calculated as the product of a) and b);

Where

- a) equals the Total return Level on Index Business Day  $t-1$ ; and
- b) equals the Closing Level of the Underlying Asset plus ETF Dividend on  $t$ , divided by Closing Level of the Underlying Asset on previous Index Business Day  $t-1$

As a formula:

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

Where

Closing Level<sub>t</sub> means the Closing Level of Underlying Asset on Index Business Day *t*

Closing Level<sub>t-1</sub> means the Closing Level of Underlying Asset on the Index Business Day *t-1*

Level<sub>t-1</sub> means Level of Underlying Asset on Index Business Day *t-1*

Level<sub>0</sub> is set to be 1

“**ETF Dividend**” on any day of an Underlying Asset *i* is defined as the product of a) and b), where:

- a) equals the Share Dividend, if such Underlying Asset goes ex-dividend on that day, otherwise zero
- b) equals the Dividend Adjustment Factor

As a formula:

$$\text{ETF Dividend}_t^i = \text{Share Dividend}_t^i \times \text{Dividend Adjustment Factor}^i$$

The Share Dividend means the dividend amount per share of Underlying Asset that goes ex-dividend on the Index Business Day *t*

The Dividend Adjustment Factor for each Underlying Asset is 100%. The Dividend Adjustment Factor might be modified to reflect a change in dividend tax treatment.

### 3.2 Calculating the Underlying Asset Historical Volatilities and Correlations

The Index Calculation Agent calculates the Historical Volatility of each Underlying Asset and Historical Correlation between the two assets for the purpose of calculating Daily Exposure Adjustment. Historical Volatility and Correlation are both calculated on an annualized basis over the relevant calculation window, *N*, where *N* = 10 and 20 Index Business Days for the calculation of the short term and long term Historical Volatility, respectively (please refer to Section 3.4).

#### 3.2.1 Calculating Historical Volatility for Underlying Assets

On Index Business Day *t*, the Historical Volatility (the “**Historical Volatility**”) for an Underlying Asset ( $\sigma_t$ ) is calculated as square root of the product of a) and b);

Where

- a) Equals the sum of the square of: the daily log returns during *N* Index Business Days.
- b) Equals 252 divided by *N*

As a formula:

$$\sigma_t = \sqrt{\frac{252}{N} \times \sum_{k=1}^N \left( \ln \left( \frac{\text{Level}_{t-k+1}}{\text{Level}_{t-k}} \right)^2 \right)}$$

#### 3.2.2 Calculating Historical Correlation for Underlying Assets



On Index Business Day t, the Historical Correlation between the Underlying Assets i and j is calculated as a) multiplied by b) and divided by c);

where

- a) equals sum of the product of i) and ii) on each day during calculation window N ( $1 \leq k \leq N$ ).
  - i) daily log return of Underlying Asset i
  - ii) daily log return of Underlying Asset j
- b) equals 252 divided by N
- c) product of  $\sigma_t^i$  and  $\sigma_t^j$

As a formula:

$$\rho_t^{i,j} = \frac{252}{N} \times \sum_{k=1}^N \left( \ln \left( \frac{\text{Level}_{t-k+1}^i}{\text{Level}_{t-k}^i} \right) \times \ln \left( \frac{\text{Level}_{t-k+1}^j}{\text{Level}_{t-k}^j} \right) \right) / (\sigma_t^i \times \sigma_t^j)$$

### 3.3 Index Rebalancing and Investment Indicator

On the Index Base Date, the Index comprised notional holdings of long position in either of the Underlying Asset determined on the Initial Rebalancing Selection Date, and effective as of the Initial Rebalancing Date. References in the calculation methodology to the Rebalancing Date or the Rebalancing Selection Date, respectively, shall be deemed to include references to the Initial Rebalancing Date or the Initial Rebalancing Selection Date, respectively.

On a monthly Rebalancing Selection Date j, the Investment Indicator (the “**Investment Indicator**”) for an Underlying Asset is adjusted based on trend of the High Yield Asset and the Volatility Asset.

(1) Determine the High Yield Asset trend

On an Index Business Day t,

$$MA_H^t = 1, \text{ if } H_{Short}^t > H_{Long}^t; \text{ else } MA_H^t = -1$$

On a monthly Rebalance Selection Date j, if

$$\begin{cases} \sum_{t=j}^{j-N+1} MA_H^t = -N, \text{ High Yield Asset trend} = \text{Down} \\ \text{Otherwise, High Yield Asset trend} = \text{Not Down} \end{cases}$$

where N is set to be 15 to determine the High Yield Asset trend.

$H_{Short}^t$  = arithmetic average of High Yield Asset historical Level over 10 Index Business Days from t to t+1-10

$$H_{Long}^t = \max(H_{Long\_1}^t, H_{Long\_2}^t), \text{ where}$$

$H_{Long\_1}^t$  = arithmetic average of High Yield Asset historical Level over 20 Index Business Days from t to t+1-20

$H_{Long\_2}^t$  = arithmetic average of High Yield Asset historical Level over 25 Index Business Days from t to t+1-25

(2) Determine the Volatility Asset trend

On an Index Business Day t,

$$MA_V^t = 1, \text{ if } V_{Short}^t > V_{Long}^t; \text{ else } MA_V^t = -1$$

On a monthly Rebalance Selection Date j, if

$$\begin{cases} \sum_{t=j}^{j-N+1} MA_V^t = N, \text{ Volatility Asset trend} = \text{Up} \\ \text{Otherwise, Volatility Asset trend} = \text{Not Up} \end{cases}$$

where N is set to be 15 to determine the Volatility Asset trend.

$V_{Short}^t$  = arithmetic average of Volatility Asset historical Level over 15 Index Business Days from t to t+1-15

$$V_{Long}^t = \max(V_{Long\_1}^t, V_{Long\_2}^t), \text{ where}$$

$V_{Long\_1}^t$  = arithmetic average of Volatility Asset historical Level over 20 Index Business Days from t to t+1-20

$V_{Long\_2}^t$  = arithmetic average of Volatility Asset historical Level over 25 Index Business Days from t to t+1-25

The Underlying Asset used to calculate the Index Level (the “**Allocated Underlying Asset**”) is determined by the trend of High Yield Asset and Volatility Asset as specified in the table below.

Allocated Underlying Asset		Volatility Asset (VIX) trend	
		Up	Not Up
High Yield Asset (HYG) trend	Down	TLT UP Equity	TLT UP Equity
	Not Down	TLT UP Equity	HYG UP Equity

On any Rebalancing Selection Date t, the Investment Indicator ( $I_t$ ) is set to 1 for the Allocated Underlying Asset; and 0 for the other Asset.

$(x_t^i, x_t^j)$  represent the effective weights for the two Underlying Assets i and j. Effective weights on Initial Rebalancing Date are 100% in HYG and 0% in TLT based on the Initial Investment Indicator of 1 for HYG and 0 for TLT, as determined on Initial Rebalancing Selection Date.

For each of the k-th Rebalancing Date following the Rebalancing Selection Date t, where k = 1, 2, ..., 5, the effective weights,  $(x_{t+k}^i, x_{t+k}^j)$ , are calculated as:

$$\left( \frac{5-k}{5} \times (I_{t-1}^i, I_{t-1}^j) + \frac{k}{5} \times (I_t^i, I_t^j) \right),$$

where  $(I_t^i, I_t^j)$  represents the Investment Indicators determined on the most recent Rebalancing Selection Date;  $(I_{t-1}^i, I_{t-1}^j)$  represents the Investment Indicator on the Rebalancing Selection Date immediately prior to the most recent Rebalancing Selection Date;

For any other Index Business Day  $t$ ,  $(x_t^i, x_t^j)$  represent the Investment Indicators for the two assets as determined on the most Rebalancing Selection Date.

### 3.4 Calculation of the Daily Exposure Adjustment

The Index has a daily volatility control feature. This feature aims at controlling the Index realized volatility at a level not exceeding the Volatility Target by adjusting the exposure (the “**Adjusted Exposure**”) to the effective weights of the two Underlying Assets,  $(x_t^i, x_t^j)$  on a daily basis. Lower exposure has the effect of reducing the Index volatility and higher exposure has the effect of increasing the Index volatility.

For the purpose of calculating Daily Exposure Adjustment, the volatility of the Underlying Asset portfolio is calculated as the maximum value of its long-term Historical Volatility and short-term Historical Volatility.

As a formula:

$$\sigma_t = \max(\sigma_{t \text{ Long-term}}, \sigma_{t \text{ Short-term}})$$

Where

If the effective weights of the two Underlying Assets,  $(x_t^i, x_t^j)$  are not zero, i.e., the Underlying Asset portfolio on date  $t$  consists of both Underlying Assets, then the long-term and short-term Historical Volatility of the Underlying Asset portfolio are calculated as follows:

$$\sigma_{t \text{ Long-term}} = \sqrt{\sum_{i=1}^2 \sum_{j=1}^2 \rho_t^{i,j} x_t^i x_t^j \sigma_t^i \sigma_t^j}$$

is the Historical Volatility calculated over 20 Index Business Days;

$$\sigma_{t \text{ Short-term}} = \sqrt{\sum_{i=1}^2 \sum_{j=1}^2 \rho_t^{i,j} x_t^i x_t^j \sigma_t^i \sigma_t^j}$$

is the Historical Volatility calculated over 10 Index Business Days

If the effective weight for one of the two Underlying Assets,  $(x_t^i, x_t^j)$  is zero, i.e., the Underlying Asset portfolio on date  $t$  consists of only one Underlying Asset, then the Historical Volatility of the Underlying Asset portfolio is calculated using the formula from Section 3.2.1, where  $N = 20$  and  $N=10$  for Long-Term and Short-Term Historical Volatility calculation, respectively.

The Adjusted Exposure for the Index is set equal to Theoretical Exposure at  $t=0$  (the Index Base Date).

The “Theoretical Exposure” on any Index Business Day  $t$  is calculated as the lower of a) and b):

Where

- a) equals the maximum exposure level, set at 150%
- b) equals the ratio of i) and ii)
  - i) Volatility Target
  - ii) the Historical Volatility of the Underlying Asset portfolio on  $t-1$  as is calculated above.

For the avoidance of doubt, Theoretical Exposure is floored at 0.

As a formula:

$$\text{Theoretical Exposure}_t = \text{Max} \left( 0, \text{Min} \left( 150\%, \frac{\text{Volatility Target}}{\sigma_t} \right) \right),$$

where Volatility Target is set to be 5%.

The **Adjusted Exposure** on an Index Business Day  $t$  is equal to the Adjusted Exposure of the previous Business Day (i.e. Adjusted Exposure $_{t-1}$ ), provided the volatility of the Index is less than 0.5% away from the Volatility Target. Otherwise the Adjusted Exposure is equal to the Theoretical Exposure.

$$\text{Adjusted Exposure}_t = \begin{cases} \text{Adjusted Exposure}_{t-1} & \left\{ \begin{array}{l} 4.5\% < \text{Adjusted Exposure}_{t-1} \times \sigma_t < 5.5\% \\ \text{otherwise} \end{array} \right. \\ \text{Theoretical Exposure}_t & \end{cases}$$

On any of the 5 Rebalancing Dates,, the Adjusted Exposure is always reset to the Theoretical Exposure calculated on each of those 5 days.

The reset Adjusted Exposure calculated on a particular Rebalancing Date will be effective as of the close of one Index Business Day after such Rebalancing Date and will be used for Index Level calculation on the 2<sup>nd</sup> Index Business Day after such Rebalancing Date.

### 3.5 Calculation of the Index Level

Unless an Index Market Disruption Event has occurred and is continuing, the Index Level will be calculated by the Index Calculation Agent for each Index Business Day. The Index Level will be reported to two decimal places (with 0.005 being rounded up to 0.01).

The calculation of the Index is designed to provide the total return of the monthly rebalanced allocated asset with dividend reinvested, less the associated pro-rata relevant cost..

On each Index Business Day  $t$ , the “Index Level” will be calculated as the product of a) and b);

Where

- a) Equals the Index Level on Index Business Day  $t-1$
- b) Equals one plus i) multiplied by ii), minus Rebalancing Cost and Management Fee
  - i) Adjusted Exposure of the Underlying Asset portfolio as determined on Index Business Day  $t-2$
  - ii) Return of the Underlying Asset portfolio minus cost

As a formula:

$$\text{Index}_t = \text{Index}_{t-1} \times \left[ 1 + \text{Adjusted Exposure}_{t-2} \times (\text{Return}_t - \text{Carry Cost}_t) \right. \\ \left. + (1 - \text{Adjusted Exposure}_{t-2}) \times \text{MMRat}_{\text{USD}}^{t-1} \times \frac{\text{Days}_{t,t-1}}{360} - \text{Rebalancing Cost}_t - \text{Servicing Fee} \times \frac{\text{Days}_{t,t-1}}{360} \right]$$

Where:

$$\text{Return}_t = \frac{\text{Underlying Asset Portfolio}_t}{\text{Underlying Asset Portfolio}_{t-1}} - 1,$$

$\text{Underlying Asset Portfolio}_t = \sum_{i=1}^2 \text{NbShare}_{t-1}^i \times \text{Level}_t^i$  determined on the two Underlying Assets.

If  $t$  is Initial Rebalancing Date,  $t=0$ ,  $\text{NbShare}_0^i = \frac{416.18}{\text{Level}_0} \times I_0^i$ , where  $\text{Level}_0$  and  $I_0^i$  are the

initial Level and the initial Investment Indicator of an Underlying Asset  $i$ , as determined on the Initial Rebalancing Selection Date

On any subsequent Rebalancing Date  $t$ ,  $t>0$ ,

$$\text{NbShare}_t^i = x_t^i \times \frac{\text{Underlying Asset Portfolio}_t}{\text{Level}_t^i}$$

$\text{Days}_{t,t-1}$  means the number of calendar days from but excluding Index Business Day  $t$  and to but excluding Index Business Day  $t-1$

$$\text{Carry Cost}_t = \sum_{i=1}^2 k_t^i \times \text{Carry Cost}_t^i \times \frac{\text{Days}_{t,t-1}}{360}$$

$\text{MMRat}_{\text{USD}}^{t-1}$  means the prevailing Federal Funds Effective Rate on Index Business Day  $t-1$  as determined by the Index Calculation Agent

$\text{Rebalancing Cost}_t$  is calculated as:

If  $t-1$  or  $t-2$  is a Rebalancing Date,

$$\text{Rebalancing Cost}_t = \sum_{i=1}^2 \text{Absolute}(\text{Adjusted Exposure}_{t-2}^i \times k_t^i - \text{Adjusted Exposure}_{t-1}^i \times p_t^i) \times \text{Rebalancing Cost}^i$$

Else,

$$\text{Rebalancing Cost}_t = \sum_{i=1}^2 \text{Absolute}(\text{Adjusted Exposure}_{t-2}^i - \text{Adjusted Exposure}_{t-1}^i) \times k_t^i \times \text{Rebalancing Cost}^i$$

Where

$\text{Adjusted Exposure}^i$ ,  $I^i$ , and  $\text{Rebalancing Cost}^i$  represents the corresponding Adjusted Exposure, Investment Indicator and rebalancing cost for an Underlying Asset  $i$ .

$p_t^i$  is the effective weight calculated as:

$$p_t^i = NbShare_t^i \frac{Level_t^i}{\text{Underlying Asset Portfolio}_t}$$

$k_t^i$  is the pre-close effective weight calculated as:

$$k_t^i = NbShare_{t-1}^i \frac{Level_t^i}{\text{Underlying Asset Portfolio}_t}$$

Servicing Fee means 0.5% p.a.

The current levels for rebalancing costs and carry cost are specified in the below table. The Index Sponsor has the discretion to revise these levels according to market conditions in a commercially reasonable manner to reflect the legitimate costs incurred either in any rebalancing of the Underlying Assets or as a consequence of having to hold positions in any of the Underlying Assets.

i	Underlying Assets	Bloomberg Ticker	Rebalancing Cost (per rebalancing)	Carry Cost (per annum)
1	iShares iBoxx H/Y Corporate Bond Fund	HYG UP Equity	0.02%	0.65%
2	iShares Barclays 20+ Year Treasury Bond Fund	TLT UP Equity	0.02%	0.65%

### 3.6 Publication of the Index Level

Subject to market condition, the Index Sponsor will use reasonable efforts to publish the Index Level in respect of each Index Business Day as soon as reasonably practicable thereafter on Bloomberg Screen MSUSHP5T Index or such other publicly available source determined by the Index Sponsor. A published Index Level will not be altered or amended unless it is necessary to correct a manifest error.

The Index Sponsor accepts no liability to any person for any publication, suspension of publication or non-publication of the Index Level for any period of time or in any place.

### 3.7 Index Market Disruption Event

Upon the occurrence of an Index Market Disruption Event on any day, the Index Sponsor may (acting in a commercially reasonable manner):

- (i) make such adjustments to the provisions of the Index as it determines appropriate to account for such Index Market Disruption Event;
- (ii) delay the application of any procedures or requirements of the Index including, but not limited to, the publication of any Index Level; and/or
- (iii) replace the Disrupted Underlying Asset with a successor Underlying Asset.

### 3.8 Changes to Index methodology

The Index Sponsor may supplement, amend (in whole or in part), revise or withdraw the provisions of this Index at any time. The Index Sponsor may determine that a change to the rules is required or desirable (for reasons amongst others) in order to update the rules or to address an error, ambiguity or omission or to take into account any prevailing regulatory, judicial, economic or other circumstances. The Index Sponsor may also determine to suspend or to cease calculating the Index.

The Index Sponsor and Index Calculation Agent have no obligation to take into account the considerations of any other person when making any such adjustments and have no obligation to inform any person of such modification or change.

#### 4. Definitions

**“Adjusted Exposure”** means the actual allocation of the Index to the Allocated Underlying Asset calculated based on the Theoretical Exposure as described in Section 3.4

**“Allocated Underlying Asset”** means the Underlying Asset used to calculate the Index Level. It is determined by the trend of High Yield Asset and Volatility Asset as described in Section 3.3

**“Cash”** is an asset, which accrues interest at Federal Funds Effective Rate compounded daily using the ACT/360 day count fraction convention as defined in the 2006 ISDA Definition

**“Closing Level”** means, in relation to an asset, the last available price on the relevant Exchange on such day as determined by the Index Calculation Agent (or, if not available on such day, the last available price on such date as the Index Calculation Agent deems appropriate).

**“Historical Volatility”** is calculated, as detailed in section 3.2.1, based on the daily log return for the Underlying Asset during the Calculation Window.

**“Index”** means the Morgan Stanley High Yield Plus Index

**“Index Base Date”** means October 2, 2002

**“Index Business Day”** means any day on which the primary exchanges of the Underlying Assets and Volatility Asset are open for business. References in these rules to Index Business Day t-1 means the Index Business Day immediately preceding Index Business Day t.

**“Index Calculation Agent”** means Morgan Stanley & Co, LLC, who calculates, publishes and rebalances the Index

**“Index Live Date”** means September 4, 2012

**“Index Market Disruption Event”** means a determination by the Index Sponsor, acting in a commercially reasonable manner, that:

- (i) it is not possible or reasonably practicable for the Index Calculation Agent to determine the Closing Level of any Underlying Asset;
- (ii) the issuer or service provider of the Underlying Asset makes a material change to the objective of the relevant fund or otherwise materially modifies the constituents of such fund;
- (iii) the issuer or the service provider of the Underlying Asset ceases to exist in its original form or becomes subject to any insolvency or other legal proceedings; and/or
- (iv) the Closing Level of any Underlying Asset is inaccurate.

**“Index Sponsor”** means Morgan Stanley & Co. LLC, the Index strategy creator

**“Initial Index Level”** is 1,000.

**“Index Level”** has the meaning given to it in Section 3.5.

**“Initial Rebalancing Date”** means October 2, 2002

**“Initial Rebalancing Selection Date”** means October 1, 2002

**“Investment Indicator”** is detailed in Section 3.3. On an Index Rebalancing Selection Day t, the Investment Indicator is set to 1 for the Allocated Underlying Asset; for the Underlying Asset that is not used to calculate the Index Level, it is set to 0.

**“Rebalancing Selection Date”** means (i) the Initial Rebalancing Selection Date; and (ii) following the Initial Selection Date, which falls on the 1<sup>st</sup> Index Business Day of each month

**“Rebalancing Date”** means (i) the Initial Rebalancing Date; and (ii) following the Initial Rebalancing Date, each of the 5 Index Business Days immediately after a Rebalancing Selection Date

**“Theoretical Exposure”** means the theoretical allocation to the Allocated Underlying Asset, determined as the ratio of the Volatility Target and the Historical Volatility of such asset, subject to Maximum Exposure as detailed in Section 3.4

**“Volatility Target”** is set at 5%