

# **WISDOMTREE RULES-BASED METHODOLOGY**

WisdomTree Dynamic Hedged/Unhedged Equity Indexes:

Dynamic Currency Hedged International Equity Index, International Equity Index, Dynamic Currency Hedged International Quality Dividend Growth Index, International Quality Dividend Growth Index, Dynamic Currency Hedged International SmallCap Equity Index and International SmallCap Dividend Index

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## WISDOMTREE RULES-BASED METHODOLOGY

### Methodology Guide for Dynamic Hedged/Unhedged Equity Indexes

#### 1. Index Overview and Description

The WisdomTree International Equity Index, WisdomTree Dynamic Currency Hedged International Equity Index, WisdomTree International Quality Dividend Growth Index, WisdomTree Dynamic Currency Hedged International Quality Dividend Growth Index, WisdomTree International SmallCap Dividend Index and WisdomTree Dynamic Currency Hedged International SmallCap Equity Index [referred to as “the International Equity Indexes”] were developed by WisdomTree Investments (WTI) to define their respective segments in developed markets.

The annual reconstitution for the International Equity Indexes occurs in June. The Indexes are calculated to capture price appreciation and total return, which assumes dividends are reinvested into the Indexes. The Indexes are calculated using primary market prices and are generally calculated in U.S. dollars [unless stated otherwise].

The selection and weighting methodology for the Dynamic Currency Hedged International Equity Index, Dynamic Currency Hedged International Quality Dividend Growth Index and Dynamic Currency Hedged International SmallCap Equity Index is identical to the selection and weighting methodology used for the International Equity Index, International Quality Dividend Growth Index and International SmallCap Dividend Index, respectively.

- The WisdomTree International Equity Index measures the stock performance of investable companies that pay regular cash dividends on shares of common stock and that are incorporated in Japan, the 15 European countries, Australia, New Zealand, Hong Kong and Singapore.
- The WisdomTree Dynamic Currency Hedged International Equity Index measures the stock performance of investable companies that pay regular cash dividends on shares of common stock and that are incorporated in Japan, the 15 European countries, Australia, New Zealand, Hong Kong and Singapore. The Index is designed to remove from index performance the impact of changes to the value of foreign currencies relative to U.S. dollar with a hedge ratio ranging from 0 to 100% on a monthly basis.
- The WisdomTree International Quality Dividend Growth Index comprises dividend-paying developed market companies with growth characteristics.
- The WisdomTree Dynamic Currency Hedged International Quality Dividend Growth Index comprises dividend-paying developed market companies with growth characteristics. The Index is designed to remove

from index performance the impact of changes to the value of foreign currencies relative to U.S. dollar with a hedge ratio ranging from 0 to 100% on a monthly basis.

- The WisdomTree International SmallCap Dividend Index is comprised of the dividend-paying companies from the small-capitalization segment of the WisdomTree International Equity Index.
- The WisdomTree Dynamic Currency Hedged International SmallCap Equity Index is comprised of the dividend-paying companies from the small-capitalization segment of the WisdomTree International Equity Index and is designed to remove from index performance the impact of changes to the value of foreign currencies relative to U.S. dollar with a hedge ratio ranging from 0 to 100% on a monthly basis.

For U.S. investors, international equity investments include two components of return. The first is the return attributable to stock prices in the non-U.S. market or markets in which an investment is made. The second is the return attributable to the value of non-U.S. currencies in these markets relative to U.S. dollar.

The Hedged Equity Indexes described above are designed to add a dynamic currency hedge that ranges from 0 to 100%.

On a monthly basis the hedge ratio for any individual currency can be adjusted to either 0.00%, 16.67%, 33.33%, 50%, 67.67%, 83.33% or 100.00% and are determined by the following signals<sup>1</sup>:

- **Momentum:** 33.3% of the total hedge ratio is determined by momentum. When the ten-day moving average of the currency's spot price versus U.S. dollar is weaker than the 240-day moving average (i.e. the targeted currency is depreciating), the hedge ratio of 33.3% is applied.
- **Interest Rate Differentials:** 33.3% of the total hedge ratio is determined by measuring the difference in interest rates, as implied in one month FX forwards, between each currency and U.S. dollar. If the implied interest rate in the United States is higher than that within the targeted currency, a further 33.33% hedge ratio is applied for that currency on this signal.
- **Value:** The final 33.3% of the total hedge ratio is determined by a value signal that utilizes the concept of purchasing power parity in order to define a measure of relative value for a currency against U.S. dollar.

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<sup>1</sup> Israeli Shekels (ILS) and Singapore Dollars (SGD) are hedged at 50% and Hong Kong Dollars (HKD) hedged at 0% on a monthly basis.

- The full 33.3% hedge ratio for this signal is applied from the point when a currency is greater than 20% overvalued against purchasing power parity level and until it crosses the purchasing power parity level.
- There is no hedge ratio applied for the value signal from the point when an individual currency is more than 20% undervalued (equivalent to saying the US Dollar is 20% overvalued versus this currency) against purchasing power parity level and until it crosses the purchasing power parity level.
- If a currency is between 20% overvalued and 20% undervalued and until it crosses one of these levels, the hedge ratio for the value signal is set to 16.667% (or 1/2 of the value's total hedge ratio).

The initial currency deviations versus purchasing power parity levels were measured in October 2015.

When the dynamic hedges are added, the Indexes are designed to have higher (or similar subject to costs) returns than their equivalent non-currency hedged indexes when U.S. Dollar is going up in value relative to foreign currencies. Conversely, the Indexes are designed to have lower (or similar subject to costs) returns than their equivalent non-hedged indexes when U.S. dollar is falling in value relative to foreign currencies (e.g., foreign currencies are rising relative to U.S. dollar). Calculation of the Indexes is discussed in section 2.3.

## 2. Key Features

### 2.1. Membership Criteria

To be eligible for inclusion in the Indexes component companies must be under coverage by the market management team of the third party independent index calculation agent and must meet the minimum liquidity requirements established by WisdomTree Investments. To be included in any of the International Indexes, shares of such component securities need to have traded at least 250,000 shares per month for each of the six months preceding the “International Screening Date” (after the close of trading on the last trading day in June).

WisdomTree applies a Foreign Investment Screen to exclude companies that are not available to be purchased or transacted in by foreign investors (or certain segments of foreign investors) or cannot continue to be reasonably purchased or transacted in by foreign investors (or certain segments of foreign investors) as determined by the third party independent calculation agent and a data point referred to as “Degree of Open Freedom” (DOF) or by WisdomTree based generally on the guiding principles set forth below. The first test of a stock's investability is determining whether the market is open to foreign institutions. The third party independent calculation agent determines the extent to which and the mechanisms foreign institutions can use to buy and sell shares on local exchanges and repatriate capital, capital gains, and dividend income

without undue constraint. Once determined that a market is open to foreign investors, the third party independent calculating agent then investigates each security that may be a candidate for inclusion. Each class of share is reviewed to determine whether there are any corporate bylaw, corporate charter, or industry limitations on foreign ownership of the stock. The DOF is the variable that ranges from zero to one and indicates the amount of the security foreigners may legally own (0.00 indicates that none of the stock is legally available, 1.00 indicates that 100% of the shares are available). Any company with a DOF of 0 will not be eligible for the WisdomTree Indexes.

#### WisdomTree International Equity Index

In the case of WisdomTree International Equity Index, component companies must list their shares on one of the major stock exchanges in Europe (*i.e.*, Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, or the United Kingdom), the Tokyo Stock Exchange, on the major stock exchanges in Australia, New Zealand, Hong Kong, Israel or Singapore. Companies must be incorporated in Europe, Japan, Australia, New Zealand, Hong Kong, Israel, or Singapore and have paid at least \$5 million in gross cash dividends on shares of their common stock in the annual cycle prior to the annual reconstitution. Companies must have a market capitalization of at least \$100 million on the International Screening Date and shares of such companies must have had an average daily dollar volume of at least \$100,000 for three months preceding the International Screening Date. Common stocks, REITs, tracking stocks, and holding companies are eligible for inclusion. Companies that are not incorporated in Europe, Japan, Australia, New Zealand, Hong Kong, Israel or Singapore are excluded. ADRs, GDRs and EDRs, limited partnerships, royalty trusts, passive foreign investment companies, preferred stocks, closed-end funds, exchange-traded funds, and derivative securities such as warrants and rights are not eligible. The selection and weighting methodology for the WisdomTree Dynamic Currency Hedged International Equity Index is identical to the selection and weighting methodology used for the WisdomTree International Equity Index.

#### WisdomTree International Quality Dividend Growth Index

WisdomTree International Quality Dividend Growth Index is derived from the WisdomTree International Equity Index. Component companies must list their shares on one of the major stock exchanges in Europe (*i.e.*, Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, or the United Kingdom), the Tokyo Stock Exchange, on the major stock exchanges in Australia, New Zealand, Hong Kong, Singapore or Israel. Companies must be incorporated in Europe, Japan, Australia, New Zealand, Hong

Kong, Israel, or Singapore and have paid at least \$5 million in gross cash dividends on shares of their common stock in the annual cycle prior to the annual reconstitution. Companies must have a market capitalization of at least \$1 billion on the International Screening Date, an earnings yield greater than the dividend yield and shares of such companies must have had an average daily dollar volume of at least \$100,000 for three months preceding the International Screening Date. Eligible companies are ranked using a weighted combination of three factors: 50% weighted to the rank of long-term estimated earnings growth, 25% weighted to the rank of the historical three-year average return on equity, and 25% weighted to the rank of the historical three-year average return on assets. Top 300 companies by this combined ranking will be selected for inclusion. Companies that lack long-term earnings growth estimates will be eligible for the Index but their composite rank for ultimate selection in the index will be the average ranks of their Return on Equity (ROE) and Return on Assets (ROA) for the purposes of stock ranking criteria. Common stocks, REITs, tracking stocks, and holding companies are eligible for inclusion. Companies that are not incorporated in Europe, Japan, Australia, New Zealand, Hong Kong, Israel or Singapore are excluded. ADRs, GDRs and EDRs, limited partnerships, royalty trusts, passive foreign investment companies, preferred stocks, closed-end funds, exchange-traded funds, and derivative securities such as warrants and rights are not eligible. The selection and weighting methodology for the WisdomTree Dynamic Currency Hedged International Quality Dividend Growth Index is identical to the selection and weighting methodology used for the WisdomTree International Quality Dividend Growth Index.

#### WisdomTree International SmallCap Dividend Index

The WisdomTree International SmallCap Dividend Index is based on a defined percentage of the remaining market capitalization of the WisdomTree International Equity Index, once the 300 largest companies by market capitalization have been removed. Companies that comprise the bottom 25% of the remaining market capitalization are selected for inclusion in the Index. The selection and weighting methodology for the WisdomTree Dynamic Currency Hedged International SmallCap Equity Index is identical to the selection and weighting methodology used for the WisdomTree International SmallCap Dividend Index.

For purposes of both selection and weighting (within the dividend indexes) the following definitions would apply: Gross Cash Dividends are based on dividends paid over latest annual cycle as determined by the ex-date of the dividends. In the case of Australia, gross dividends do not reflect the franking credit for Australian investors.

The currency rate used to translate the dividends to U.S. dollars is the exchange rate on the screening date. Shares outstanding for the total dividend calculation are based on the shares outstanding at the time of each dividend payment.

Liquidity and market cap screens are based on the shares outstanding of the security in question for each company.

## 2.2 Base Date and Base Value

The WisdomTree International Equity Index and the WisdomTree International SmallCap Dividend Index were established with a base value of 300 and 200, respectively, on May 31, 2006.

The WisdomTree Dynamic Currency Hedged International Equity Index and the WisdomTree Dynamic Currency Hedged International SmallCap Equity Index were established with a base value of 200 on October 30, 2015.

The WisdomTree International Quality Dividend Growth Index was established with a base value of 200 on November 29, 2013. The WisdomTree Dynamic Currency Hedged International Quality Dividend Growth Index was established with a base value of 200 on May 30, 2016.

## 2.3 Calculation and Dissemination

The following formula is used to calculate the index levels for the International Dividend Indexes, unhedged for foreign currency:

$$\frac{\sum i \{S_i P_i E_i\}}{D}$$

$S_i$  = Number of shares in the index for security  $i$ .

$P_i$  = Price of security  $i$

$E_i$  = Cross rate of currency of Security  $i$  vs. USD. If security price in USD,  $E_i = 1$

$D$  = Divisor

The Indexes use quantitative signals to determine hedge ratios on the currency exposure on a monthly basis. Hedge ratios are varied each month between 0% and 100%. The hedged indexes—when hedge ratios are 100% — are designed to approximate the investable return available to U.S. based investors that seek to neutralize currency fluctuations as a source of the international index returns.

The total returns for the Indexes are calculated once a day on a daily basis to remove the impact of currency and uses a WM/Reuters 1-month forward rate to do so. All WisdomTree Currency-Hedged Indices will be calculated using forward amounts and foreign currency weights determined one business day prior

to the month end—in accordance with the standard currency hedged calculations of WisdomTree’s independent index calculation agent. The precise calculation for the daily hedged currency index equals:

$$WT\_Hedged_1 = WT\_Hedged_0 * \left( \frac{WT\_Unhedged_1}{WT\_Unhedged_0} + HedgeRet_1 \right)$$

$$HedgeRet_1 = \frac{SpotRate_{m0}}{ForwardRate_{m0}} - \frac{SpotRate_{m0}}{SpotRate_{md} + \left( \frac{D-d}{D} \right) * (ForwardRate_{md} - SpotRate_{md})}$$

Where Forward Rate = WM/Reuters 1-month forward rate in foreign currency per U.S. dollar

Spot Rate = Spot Rate in foreign currency per U.S. dollar.

For each month  $m$ , there are  $d = 1, 2, 3, \dots, D$  calendar days so  $md$  is day  $d$  for month  $m$  and  $m0$  is one business day prior to the month end of month  $m-1$ .

$D$  = Total # days In Month

$md$  =  $d$  day of Month  $m$

$WT\_Hedged_0$  – previous month-end

$WT\_Unhedged_0$  – previous month-end

HedgeRet has a hedge ratio applied to it when determining what percentage of the currency is hedged. This is a ratio WisdomTree will send to the calculation agent every month.

The Indexes are calculated every weekday. If trading is suspended while the exchange the component company trades on is still open, the last traded price for that stock is used for all subsequent Index computations until trading resumes. If trading is suspended before the opening, the stock’s adjusted closing price from the previous day is used to calculate the Index. Until a particular stock opens, its adjusted closing price from the previous day is used in the Index computation. Index values are calculated on both a price and total-return basis, in U.S. dollars. The price Indexes are calculated and disseminated on an intra-day basis. The total return Indexes are calculated and disseminated on an end-of-day basis. Price index values are calculated and disseminated every 15 seconds to the Chicago Mercantile Exchange (CME) so that such Index Values can print to the Consolidated Tape.

## 2.4 Weighting

The International Equity Indexes are modified capitalization-weighted indices that employ a transparent weighting formula to magnify the effect that dividends play in the total return of the Indexes. The initial weight of a component in the Index at the annual reconstitution is derived by

multiplying the U.S. dollar value of the company's annual dividend per share by the number of common shares outstanding for that company, "The Cash Dividend Factor."<sup>2</sup> The Cash Dividend Factor is calculated for every component in the Index and then summed. Each component's weight, at the Weighting Date, is equal to its Cash Dividend Factor divided by the sum of all Cash Dividend Factors for all the components in that Index. The dividend stream will be adjusted for constituents with dividend yields greater than 12% at the screening date. The dividend stream of these capped securities will be their market cap multiplied by 12%.

The Weighting Date is when component weights are set and occurs immediately after the close of trading on the second Friday of June. New component weights take effect before the opening of trading on the first Monday following the third Friday of June (the "Reconstitution Date").

The following capping rules are applied to the WisdomTree International Equity Index and the WisdomTree International SmallCap Dividend Index:

- Should any country achieve a weight equal to or greater than 25% of the indexes, the weight of companies will be proportionally reduced to 25% as of the annual Screening Date.
- Should any sector achieve a weight equal to or greater than 25% of the Indexes, weight of companies will be proportionally reduced to 25% as of the annual Screening date.

The following liquidity adjustment factors will be applied to all the Indexes after top holding, country and sector caps have been applied:

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<sup>2</sup> Special Dividends are not included in the computation of Index weights.

A further volume screen requires that a calculated volume factor (the average daily dollar volume for three months preceding the Screening Date / weight of security in each index) shall be greater than \$200 million to be eligible for each index. If a security's volume factor falls below \$200 million at the annual screening, but is currently in the Index, it will remain in the Index. The securities' weight will be adjusted downwards by an adjustment factor equal to its volume factor divided by \$400 million.

In the event a security has a calculated volume factor (average daily volume traded over the preceding three months / weight in the index) that is less than \$400 million, its weight will be reduced such that weight after volume adjustment = weight before adjustment x calculated volume factor / \$400 million. The implementation of the volume factor may cause an increase in the holdings, sector and country weights above the specified caps.

The weights may fluctuate above the specified caps during the year, but will be reset at each annual rebalance date.

Note: all sector cappings are conducted based on the modified GICS sector classifications, i.e. real estate and financials are aggregated into one sector.

Should any company achieve a weighting equal to or greater than 24.0% of the Index, its weighting will be reduced to 20.0% at the close of the current calendar quarter, and all other components in the Index will be rebalanced. Moreover, should the "collective weight" of Index component securities whose individual current weights equal or exceed 5.0% of the Index, when added together, equal or exceed 50.0% of the Index, the weightings in those component securities will be reduced so that their collective weight equals 40.0% of the Index at the close of the current calendar quarter, and other components in the Index will be rebalanced to reflect their relative weights before the adjustment. Further iterations of these adjustments may occur until no company or group of companies violates these rules.

## 2.5 Dividend Treatment

Normal dividend payments are not taken into account in the price Index, whereas they are reinvested and accounted for in the total return Index.<sup>3</sup> However, special dividends that are not reinvested in the total return index require index divisor adjustments to prevent the distribution from distorting the price index.

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<sup>3</sup> For the International total return indexes, where information is available about both gross and net dividends, the Indexes assume re-investment of net dividends.

## 2.6 Multiple Share Classes

In the event a component company issues multiple classes of shares of common stock, each class of share will be included in any broad-based Index, provided that dividends are paid on that share of stock. Conversion of a share class into another share class results in the deletion of the share class being phased out and an increase in shares of the surviving share class, provided that the surviving share class is in the Index. For all mid and small cap cuts, if a security has multiple listed share classes and the total market capitalization of the listed share classes is greater than largest market capitalization cutoff of that index, the security would not be eligible for that index.

## 3. Index Maintenance

Index Maintenance includes monitoring and implementing the adjustments for company deletions, stock splits, stock dividends, spins-offs, or other corporate actions. Some corporate actions, such as stock splits, stock dividends, and rights offerings require changes in the index shares and the stock prices of the component companies in the Indexes. Some corporate actions, such as stock issuances, stock buybacks, warrant issuances, increases or decreases in dividend per share between reconstitutions, do not require changes in the index shares or the stock prices of the component companies in the Index. Other corporate actions, such as special dividends and entitlements, may require Index divisor adjustments. Any corporate action, whether it requires divisor adjustments or not, will be implemented after the close of trading on the day prior to the ex-date of such corporate actions. Whenever possible, changes to the Index's components, such as deletions as a result of corporate actions, will be announced at least two business days prior to their implementation date.

### 3.1. Component Changes

#### Additions

Additions to the Indexes are made at the annual reconstitution according to the inclusion criteria defined above. For the International Equity Indexes, changes are implemented before the opening of trading on the first Monday following the closing of trading on the third Friday in June. No additions are made to the Indexes between annual reconstitutions.

#### Deletions

Shares of companies that are de-listed or acquired by a company outside of the Indexes are deleted from the Index and the weights of the remaining components are adjusted proportionately to reflect the change in

composition of the Index. For the dividend indexes, a component company that cancels its dividend payment is deleted from the Index and the weights of the remaining components are adjusted proportionately to reflect the change in the composition of the Index. A component company that files for bankruptcy is deleted from the Index and the weights of the remaining components are adjusted proportionately to reflect the change in the composition of the Index. If a component company is acquired by another company in the Index for stock, the acquiring company's shares and weight in the Index are adjusted to reflect the transaction after the close of trading on the day prior to the execution date.<sup>4</sup> Component companies that reclassify their shares (i.e. that convert multiple share classes into a single share class) remain in the Index, although index shares are adjusted to reflect the reclassification.

### 3.2. Spin-Offs and IPOs

Should a company be spun-off from an existing component company and pay a regular cash dividend, it is not allowed into the indexes until the next annual reconstitution, provided it meets all other inclusion requirements. Spin-off shares of publicly traded companies that are included in the same indexes as their parent company are increased to reflect the spin-off and the weights of the remaining components are adjusted proportionately to reflect the change in the composition of the Index. Companies that go public in an Initial Public Offering (IPO) and that pay regular cash dividends and that meet all other Index inclusion requirements must wait until the next annual reconstitution to be included in the Index.

## 4. Index Divisor Adjustments

Changes in the Index's market capitalization due to changes in composition, weighting or corporate actions result in a divisor change to maintain the Index's continuity. By adjusting the divisor, the Index value retains its continuity before and after the event. Corporate actions that require divisor adjustments will be implemented prior to the opening of trading on the effective date. In certain instances where information is incomplete, or the completion of an event is announced too late to be implemented prior to the ex-date, the implementation will occur as of the close of the following day or as soon as practicable thereafter. For corporate actions not described herein, or combinations of different types of corporate events and other exceptional cases, WisdomTree reserves the right to determine the appropriate implementation method.

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<sup>4</sup> Companies being acquired will be deleted from the WisdomTree indexes immediately before the effective date of the acquisition or upon notice of a suspension of trading in the stock of the company that is being acquired. In cases where an effective date is not publicly announced in advance, or where a notice of suspension of trading in connection with an acquisition is not announced in advance, WisdomTree reserves the right to delete the company being acquired based on best available market information

Companies that are acquired, de-listed, file for bankruptcy, re-incorporate outside of a defined domicile or that cancel their dividends, in the intervening weeks between the Screening Date and the Reconstitution Date are not included in the Indexes, and the weights of the remaining components are adjusted accordingly.

5. Selection Parameters

Selection parameters for the Indexes are defined in section 2.1. Companies that pass these selection criteria as of the Screening Date are included in the Indexes. The component companies are assigned weights in the Indexes as defined in section 2.4., and annual reconstitution of the Indexes takes effect as defined in section 3.1.