HOW CURRENCY HEDGING SIGNALS CAN IMPACT RETURNS

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WisdomTree has suggested that the baseline allocation for international equities should be considered from a standpoint of being fully currency hedged—that is, a strategic starting point that focuses on assuming just equity market risk without a secondary currency bet or component added to returns. There will be times when being fully currency hedged will enhance returns over unhedged alternatives (i.e., when the dollar is strengthening versus foreign currencies) and times when fully currency-hedged strategies will not participate in the currency gains of unhedged strategies (i.e., when the dollar is weakening). If an investor wishes to be more tactical and seeks to adjust the level of currency hedging over time, how can this be done without simply taking a discretionary and subjective view on the future performance of each currency against the dollar? To help answer the question of how much to hedge and for what currencies, WisdomTree developed a line of currency-hedged Indexes that dynamically determine when it is more attractive and less attractive to adopt a hedged position. This is done with a rules-based, quantitative approach that looks at three signals to determine currency hedge ratio: interest rate differentials, momentum and value. Each signal contributes one-third to the overall hedge ratio—the interest rate and momentum signals each will provide a signal either to hedge or not hedge, so will add 33% or 0% to the overall hedge ratio. The value signal will provide a signal either to hedge, half hedge or not hedge, so will add 33%, 17% or 0% to the overall hedge ratio. Thus, the overall hedge ratio for a currency can be 100%, 83%, 67%, 50%, 33%, 17% or 0%. Research supported by our partner—Record Currency Management Limited ("Record")[1]— on the dynamic signals for these Indexes shows that for broad international benchmarks, each of these factors has added value (or provided higher returns) compared to being fully unhedged or fully hedged. What is interesting though is that, for any given currency, the strength of each signal can vary. Below we'll discuss the merits of each signal and implications for how these dynamically hedged Indexes are positioned today. In short, our research suggests that the current environment supports tactically hedging a majority of currency exposures. **Diversifying Signals and Time Horizon** In creating an overall tactical hedging strategy for the broad international markets, the goal was to diversify the time horizon of these signals and have a consistent process across all developed world currencies, so as not to cherry-pick what signals worked for a given currency. The analysis below was conducted from December 31, 1988, to December 31, 2015 ("the period"), to illustrate the effectiveness of dynamic hedging that has been seen.[2] • **The interest rate signal**: Tended to be the strongest signal for the broad international benchmarks, and worked over the medium term • **The momentum signal:** Tended to be one of the strongest signals for many individual currencies and second strongest for broad international benchmarks, and worked best over the short term • **The value signal:** Tended to be the weakest signal from a pure value-added standpoint, but it has helped diversify signals and worked over the medium to long term For a broad developed international benchmark, the current hedge ratios suggest being approximately 75% hedged in the aggregate (reflecting the weighted average of the respective hedge ratios for each currency in the benchmark). For the euro, the signals suggest being 83% hedged and for the yen being 50% hedged.[3] **Effectiveness and Current Hedge Ratios of the Signals**

Average Annual Value Added for Signals Measured against Passively Hedging 100% of Currency Exposure			
Signal	Euro	Yen	Developed International Currencies*
Interest Rates	2.68%	1.13%	1.98%
Momentum	2.40%	1.58%	1.56%
Value	1.41%	-0.26%	0.84%
Combined (Signal Overlay)	2.25%	0.92%	1.52%
Current Hedge Ratios as of December 29, 2015			
Signal	Euro	Yen	Developed International Currencies**
Interest Rates	33.33%	33.33%	27.32%
Momentum	33.33%	0.00%	25.69%
Value	16.67%	16.67%	16.73%
Combined (Signal Overlay)	83.33%	50.00%	71.05%

*Aggregate hedge ratio that reflects the weighted average of the respective hedge ratios for each currency in the benchmark, in this case the MSCI EAFE Index.

**Aggregate hedge ratio that reflects the weighted average of the respective hedge ratios for each currency in the benchmark, in this case the WisdomTree International Equity Index.

Sources: WisdomTree, Record Currency Management, with data as of 12/29/15. You cannot invest directly in an Index.

It is useful to look at the efficacy of each signal in the context of what the hedge ratios are suggesting should be hedged today. **Interest Rate Signal: Clear Direction and Biggest Impact** The most powerful signal over the period analyzed (nearly 30 years) has been the interest rate signal, which provided returns that were nearly 2% per year better compared to a fully hedged strategy for a broad developed international benchmark[4]. For the euro alone, the interest rate signal provided returns that were 2.68% per year better than a fully hedged strategy. In the current environment, in which the U.S. Federal Reserve just raised interest rates and the European Central Bank (ECB) took its rates further into negative territory, this signal argues for being hedged and will likely continue to suggest this for some time. The same can be said for the yen. Taken by itself, the most impactful long-run signal overall would suggest staying hedged in the euro and yen and for many of the other developed international currencies. **Signals Suggesting 50% Hedging the Yen Yen Weakness Losing Momentum:** The momentum signal was the second most powerful signal for the broad international markets, adding 1.56% per year over a fully hedged strategy over the period, and was the most effective signal for hedging the yen on its own. The yen's momentum signal did turn at the end of December 2015 and went from suggesting being hedged on the momentum signal to suggesting being unhedged. What caused this? In 2015, there was a lack of a persistent weakness in the yen. The WisdomTree Dynamic Currency Hedged Japan Equity Index thus adjusted the hedge ratio from 83% as of the end of November to 50% as of the end of December. Qualitatively speaking, we think the market is waiting to see more action from the Bank of Japan before the yen weakens meaningfully, in which case the momentum signal would follow another initial downward move, likely increasing the hedge ratio. For now we think the case to add meaningful unhedged yen exposure must be balanced by the still strong *negative* correlations between currency and equity markets. That is to say, if an investor were extra bullish on the yen, this would likely be a negative factor for this export-oriented equity market. The momentum signal for the euro continues to signal being hedged. **Value Signals on Euro and Yen Close to 20% Undervalued Band** WisdomTree's dynamic hedge on the value signal is fully hedged if a currency is 20% or more overvalued compared to purchasing power parity (PPP), until it reaches PPP; unhedged if 20% or more undervalued until it reaches PPP; and half hedged otherwise. The euro and yen are within 3% to 6% of crossing the 20% undervalued threshold, which would lower the hedge ratio for each of these currencies by 17%. Some believe the fact that the euro and yen are already undervalued versus PPP metrics is less of a reason to hedge these currencies. It's important to note that undervalued currencies can and have in the past weakened further, which is why this signal uses a 20% threshold. Others may note that for the yen, the value signal actually detracted value from a fully hedged strategy. Why then still keep the value signal in the dynamic offering? As we said before, the three signals were chosen to diversify efficacy over multiple time horizons and to have a consistent process across all developed world currencies. The value signal can work over longer periods, and it has worked for most of the developed world currencies outside the yen. For those lowering their hedge ratio on the yen—and the euro as well—just because they think it is already undervalued, we'd note that this undervaluation could increase further, and that the interest rates and momentum signals are at least as important, but also have been more impactful, in the long run.

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investing in any WisdomTree Fund. [2]Sources: WisdomTree, Record Currency Management, with data as of 12/29/15. You cannot invest directly in an Index. [3]Sources: WisdomTree, Record Currency Management, with data as of 12/29/15. [4]Refers to the MSCI EAFE Index. [5]Source: Press conference for the European Central Bank, referring specifically to the interest rate on the deposit facility, 12/3/15.

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DEFINITIONS

Currency hedging : Strategies designed to mitigate the impact of currency performance on investment returns.

Risk : Also standard deviation, which measures the spread of actual returns around an average return during a specific period. Higher risk indicates greater potential for returns to be farther away from this average.

Unhedged : Strategy that includes the performance of both the underlying asset as well as the currency in which it is denominated. The performance of the currency can either help or hurt the total return experienced.

Dynamic Hedge : Strategy in which a currency hedge can be varied (as opposed to targeting a constant level) and change over the course of time.

Hedge Ratio : The specified percentage of currency exposure being hedged, with 0% indicating that none of the currency exposure is being hedged and 100% indicating that all of the currency exposure is being hedged.

Interest Rate Differentials : The Difference between the 2 Year interest rate swaps of the United Kingdom vs. the United States.

Value : Characterized by lower price levels relative to fundamentals, such as earnings or dividends. Prices are lower because investors are less certain of the performance of these fundamentals in the future. This term is also related to the Value Factor, which associates these stock characteristics with excess returns vs the market over tim.

Interest rates : The rate at which interest is paid by a borrower for the use of money.

Correlation : Statistical measure of how two sets of returns move in relation to each other. Correlation coefficients range from -1 to 1. A correlation of 1 means the two subjects of analysis move in lockstep with each other. A correlation of -1 means the two subjects of analysis have moved in exactly the opposite direction.

Bullish : a position that benefits when asset prices rise.

Purchasing power parity : Academic concept stating that exchange rates should adjust so that equivalent goods and services cost the same across countries, after accounting for exchange-rate differences.