NEW MODELS FOR DYNAMICALLY HEDGING CURRENCY EXPOSURE

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01/31/2023

Two questions about a portfolio's currency exposure are why hedge, and how to hedge.

1. Why should I hedge currency exposure?

Currency exposure is a non-trivial element of a global portfolio's volatility, where a typical client has between 25% and 50% of foreign equity exposure. For that volatility, historical data suggests investors are not compensated with a currency 'risk premia' for taking on currency risk.

We believe currency exposure is a directional bet—and sometimes that bet pays off and other times it does not. Not hedging means directionally betting on foreign currency not depreciating. But should the euro, yen and pound increase/not depreciate relative to the dollar—forever?

In the developed world, the U.S. generally had higher interest rates than foreign markets for most of last few decades—which rebuts a belief that currency hedging is expensive. Rather, one was paid, on average, to hedge currencies in the developed world.

In emerging markets—because interest rates tend to be quite high—currency hedging can be expensive. This is why WisdomTree never launched full currency hedged strategies in emerging markets, but rather pursued a dynamic hedging model.

Recent Evidence of Hedging

Currencies can be quite volatile, so it should not be surprising that hedging generally reduces volatility in international investments.

As the next table shows, for a U.S. investor over the last 15 years, hedging currencies provided higher returns and lower risk—with a particular benefit in 2022, when the dollar was strong:

Figure 1: Developed Market (MSCI EAFE) 0%/50%/100% Monthly Hedged Index Return and Volatility

Annualized Return			
Years to End December 2022	Index	Index + 50% Passively Hedged	Index + 100% Passively Hedged
1	-14.47%	-9.70%	-4.89%
3	0.84%	2.99%	5.04%
5	1.53%	3.59%	5.59%
10	4.66%	6.64%	8.54%
15	1.80%	3.08%	4.24%
18	4.17%	5.31%	6.34%
22.00	3.85%	4.07%	4.16%
32.00	5.20%	5.62%	5.89%

Annualized Volatility			
Years to End December 2022	Index	Index + 50% Passively Hedged	Index + 100% Passively Hedged
1	21.69%	17.85%	14.62%
3	20.25%	17.93%	16.11%
5	17.52%	15.66%	14.27%
10	14.84%	13.34%	12.42%
15	18.13%	16.04%	14.55%

Sources: WisdomTree, FactSet, as of 12/31/22. Performance is historical and does not guarantee future results. You cannot invest directly in an index.

2. How should I hedge currency exposure?

There are two broad and common hedging strategies: 100% hedged to the U.S. dollar, and 50% hedged to U.S. dollar.

We can argue in favor of being fully hedged to just get the stock diversification without any secondary currency bets. We can also argue that being 50% hedged helps minimize the possible regret of picking the wrong strategy.

But academic research shows that factors like momentum, interest rate carry, low volatility, cross asset returns and trend following signals can improve results in currency markets as well.

We have updated our dynamic hedging signal process to incorporate new research, and a composite strategy with diversifying signals.

A Multifactor Composite FX Hedge Ratio Derived from Five Components:

Broad trend in currencies: When the one-month moving average of foreign currencies' spot prices versus the U.S. dollar is weaker than the three-month moving average (foreign currencies depreciating), a hedge ratio of 50% is applied to all currencies. This is to capture the broad macro trend of the dollar as 50% of the overall hedge ratio.

Momentum: When the one-month moving average of a currency's spot price versus the U.S. dollar is weaker than the three-month moving average (a currency is depreciating), a hedge ratio of 12.5% is applied to the Index. This evaluates the momentum of individual currencies.

Interest rates: If the implied interest rate in the U.S. is higher than a targeted currency using one-month FX forward rates, a hedge ratio of 12.5% is applied to the

Index. This signal helps manage the cost to hedge currencies.

Low volatility signal: Two-thirds of the currencies with the highest volatility over the last 24 months receive a hedge ratio of 12.5%. This signal helps lower the volatility of the basket overall.

Cross asset returns: A hedge ratio of 12.5% for currencies with negative predicted returns based on the past 12-month equity index returns. Capital flows globally and generally can find dynamic relationships between equity markets and currency markets that in part are tied to capital flows dynamics of moving chasing good returns in equity markets, helping support the currencies.

Research on Currency Signals

We show the average next-month returns to MSCI EAFE currencies for various currency hedging regimes by these new currency hedging signals.

The relationship is not linear, as the hedge ratio increases from low to high for single factors, but did become more strongly linear for the multifactor composite signal.

Figure 2: Average Monthly MSCI EAFE Basket of Long USD/Short Local Currency Returns with Regimes of Hedge Ratio

	Single Factors					Composite
	Momentum	Trend	Interest Rate (*)	Cross Asset	LowVol	
Low: Hedge Ratio<20%	-0.28%	-0.29%	0.24%	0.16%	0.35%	**-0.53%**
Mid: Hedge Ratio (20%, 60%)	0.08%	0.75%	-0.27%	0.11%	0.07%	**0.07%**
High: Hedge Ratio>60%	0.36%	0.28%	0.20%	0.07%	0.34%	**0.30%**

Sources: WisdomTree, Refiniv, December 2006–November 2022. Performance is historical and does not guarantee future results. You cannot invest directly in an index. *Interest Rate signal used 30% instead of 20% low/mid hedge ratio cutoff.

These updated dynamic currency signals are now incorporated in the WisdomTree large-cap and small-cap dividend ETFs.

DDWM: WisdomTree Dynamic Currency Hedged International Equity Fund

DDLS: WisdomTree Dynamic Currency Hedged International SmallCap Equity Fund

We encourage investors to explore these Funds, especially if their portfolio has exposure to global investments and they want to move beyond simple 100% or 50% currency hedging.

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You cannot invest directly in an index.

DEFINITIONS

Volatility : A measure of the dispersion of actual returns around a particular average level. .

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

Emerging market : Characterized by greater market access and less potential for operational risks when compared to frontier markets, which leads to a larger base of potentially eligible investors.

Momentum : Characterized by assets with recent price increase trends over time. This term is also associated with the Momentum Factor which associates these stock characteristics with excess return vs the market over time.

Carry : The amount of return that accrues from investing in fixed income or currency forward contracts.

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.

Macro : Focused on issues impacting the overall economic landscape as opposed to those only impacting individual companies.

Foreign Exchange (FOREX, FX) : The exchange of one currency for another, or the conversion of one currency into another currency.

Baskets : The composition of an ETF in terms one creation/redemption unit.

MSCI EAFE Momentum : aims to reflect the performance of the Momentum factor with a simple and transparent methodology within the EAFE universe.

Large-Capitalization (Large-Cap) : A term used by the investment community to refer to companies with a market capitalization value of more than $10 billion. Large cap is an abbreviation of the term “large market capitalization”. Market capitalization is calculated by multiplying the number of a company’s shares outstanding by its stock price per share.

Small caps : new or relatively young companies that typically have a market capitalization between $200 million to $2 billion.