



An Introduction to Global Carry

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Campbell White Paper Series

January 2016



Introduction

An investor (let's call her Carrie) purchases an investment property for \$1 million. A year later, she sells the property for the same \$1 million price. Since there was no price appreciation, why might Carrie be happy with such an outcome?

The answer is that price appreciation (or depreciation) is not the only potential source of return. Other factors that can impact Carrie's return on investment may include mortgage interest payments, rental income from lessees, and any other costs or benefits from holding the property for a year. In this particular case, if the rental income exceeds the mortgage interest, this will be a profitable investment for Carrie despite the fact that the property did not change in value.¹ Holding, or "carrying" this asset provided a net benefit beyond price movements; a trader would call this "positive carry."

The example above, though simple, is intended to demonstrate that every investment has *two* potential sources of return:

- Price appreciation/depreciation;
- The costs and benefits associated with holding an investment.²

Directional investment strategies tend to focus on the first component: they seek returns from price appreciation (or depreciation in the case of short positions). For example, trend following strategies seek to identify price trends, both upwards and downwards, and take long or short positions to profit (or lose) from further price moves in the same direction.³

Carry strategies aim to maximize exposure to the second component: they seek returns from the net benefit or cost of holding an asset (in excess of the potential for price appreciation/depreciation). Carry strategies will take long positions in markets with a positive net benefit and short positions in markets with a negative net benefit (i.e., net cost). *Carry* is an asset's expected total return⁴ assuming its price is unchanged. (This definition is intended to capture the "spirit" of carry; however, a more precise way to express this concept is that carry is an asset's expected total return assuming the relevant "market conditions" remain unchanged. For fixed income, the relevant market condition may be the term structure of bond yields, while for commodities it may be the futures term structure. For foreign exchange and equity indices, it may be the spot price of the underlying.)

In general, if the benefits from holding an investment exceed the costs,⁵ it is considered "positive carry." This means that, in effect, the investor is being compensated for holding the asset. Conversely, if the costs exceed the benefits, it is "negative carry" and the investor is compensated for shorting the asset. In this way, carry strategies seek to earn what is often termed the "carry risk premium."

In this paper, we seek to provide a high-level introduction to carry, demonstrate how it can be generalized across asset classes, and explore the significant synergies between carry and directional investments, such as trend following and traditional asset portfolios.⁶

Carry strategies seek returns from the net benefit (or cost) of holding an investment, in excess of price appreciation/depreciation.

Generalized Carry

To determine the carry in each asset class, the costs and benefits of holding the relevant asset must be estimated.

Though carry is often linked with foreign exchange, the example on the prior page demonstrates that the concept can be generalized far beyond currencies. Let's start by exploring the implementation of carry within the four major asset classes – foreign exchange, fixed income, equity and commodity. In each case, the costs and benefits of holding the relevant underlying asset must be estimated. In general, the *benefit* of holding the asset corresponds to the cash flows received, while the *cost* corresponds to the financing expense.⁷ In commodities, there will also be additional non-cash items to consider.

Exhibit A summarizes the key costs and benefits for each asset class. We will consider each one in turn.

Exhibit A: Costs and Benefits of Holding an Asset, by Asset Class

Asset	Benefits of Holding	Costs of Holding
Fixed Income	Yield-to-Maturity ⁸	Financing Rate
Foreign Exchange	Foreign Short Rate	Local Short Rate
Commodity	Convenience Yield	Financing Rate, Storage, Transport, Insurance
Equity	Dividend Yield	Financing Rate

Fixed Income Carry

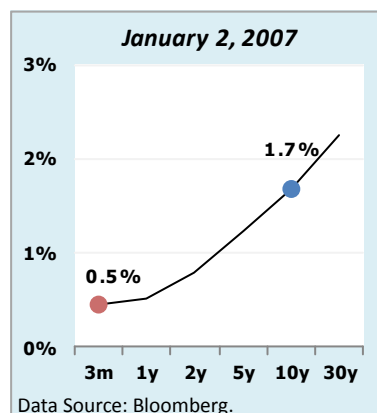
Fixed income carry is based on the relationship between the yield-to-maturity⁸ and the short rate. In this case, the *benefit* of holding the investment is the yield-to-maturity, while the *cost* of financing is based on the short rate. These rates are reflected in the yield curve – for example, if the benefit (yield-to-maturity) is higher than the financing rate (short rate), the yield curve will be positively sloped to the relevant maturity and the carry signal will be positive.⁹ This was the case in Japan in early 2007, as shown in Exhibit B.

On January 2, 2007, 10-year Japanese bonds were yielding 1.7%, while the 3m rate was 0.5%. The carry in this case was +1.2%; a carry strategy would have held a long position in Japanese 10-year bonds.

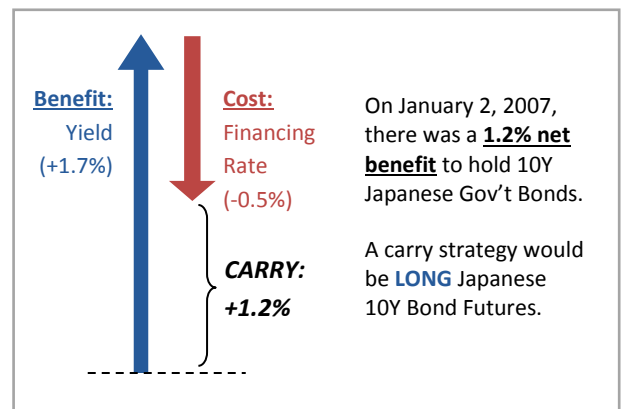
Fixed income carry:
Seeks returns from the difference between a bond's yield and the cost to finance its purchase.

Exhibit B: Fixed Income Carry Trade Example – Japanese 10Y Government Bonds

Yield Curve: Japan



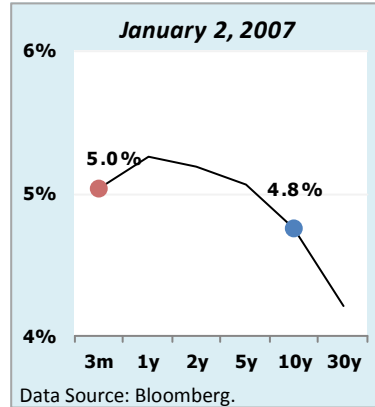
Carry Position: Japanese 10Y Bonds on Jan 2, 2007



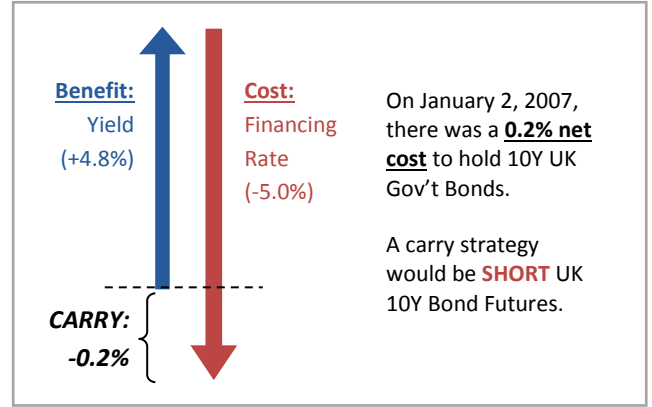
If the financing rate is higher than the bond yield, the yield curve will be negatively sloped and the carry is negative. That was the case in the UK in early 2007, when 10-year bonds were yielding 4.8% while the financing rate was 5.0%. The carry was negative (-0.2%), so a carry strategy would have held a short position in UK 10-year bonds.

Exhibit C: Fixed Income Carry Trade Example – UK 10Y Government Bonds

Yield Curve: UK



Carry Position: UK 10Y Gov't Bonds on Jan 2, 2007



If the yield of the bond remains unchanged, the total gain/loss will correspond to the carry resulting from the difference between the bond yield and the financing rate. Shifts in the yield curve may either enhance or reduce returns.

Foreign Exchange Carry

The asset class most commonly linked with carry strategies is foreign exchange. In this case, a carry strategy seeks returns from the difference in short-term rates between two countries. In the spot market, this involves borrowing a low-yielding currency, and then converting it to a high-yielding currency and lending it out at a higher rate.

To illustrate a potential FX carry trade, let's assume we seek to exploit the difference in short-term interest rates between the US and Australia. In the spot market, this transaction could be executed as follows:

1. Borrow USD at the prevailing US interest rate.
2. Convert USD into AUD at the prevailing exchange rate.
3. Lend AUD proceeds at the prevailing Australian interest rate.

This transaction can also be executed in the futures/forward market by simply purchasing the desired currency pair, which is equivalent to buying one currency and selling the other. Buying AUD/USD (i.e., the cost of 1 AUD in USD), on an unfunded basis, for instance, is in effect borrowing USD and lending AUD. To measure the carry opportunity, the cost (short rate in the US) and the benefit (short rate in AUD) must be compared.

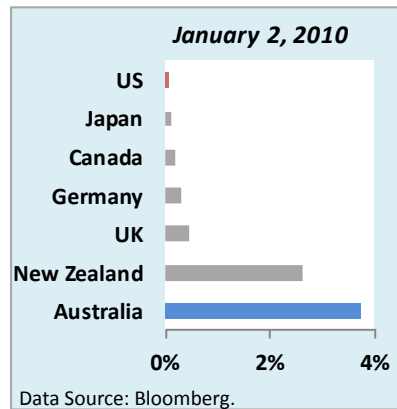
Let's consider an example with real market data:

On January 2, 2010, the 3m interest rate in Australia was 3.7%, while the 3m rate in the US was 0.1%. An investor who borrowed USD at 0.1% and invested the proceeds in AUD debt yielding 3.7% would have been left with profits of 3.6% (assuming the exchange rate was unchanged during the investment).

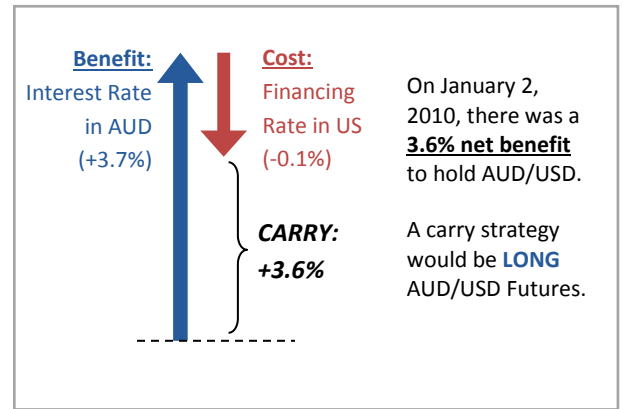
Foreign exchange carry:
Seeks returns from the difference in short-term rates between two countries.

Exhibit D: Foreign Exchange Carry Trade Example – AUD/USD

3M Interest Rates, by country



Carry Position: AUD/USD on January 2, 2010



Because the benefit less the cost was positive, this was a positive carry trade and a carry strategy would take a long position in AUD/USD futures (or forwards).

If the exchange rate was unchanged during the life of the investment, the total gain/loss would correspond to the carry resulting from the difference in short-term rates. However, changes in the exchange rate may either enhance or reduce returns.

Equity Carry

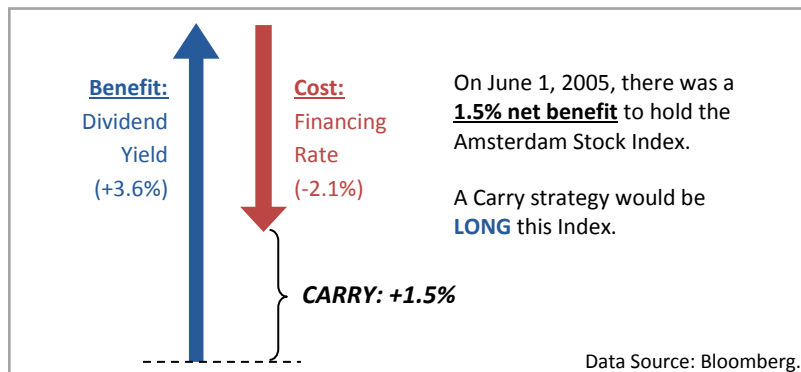
In equities, the relationship between the dividend yield and the short rate determines the carry opportunity. The dividend yield represents the benefit of holding the asset, while the risk-free rate represents the cost to finance it. A carry strategy will buy equity indices whose dividend yield is greater than the local short rate, and vice versa.

Let's take a look at two examples:

On June 1, 2005, the Amsterdam Stock Index had a trailing 12-month dividend yield of +3.6%. A representative local short rate was 2.1% at that time. The carry was thus positive, equaling +1.5%. A carry strategy would have held a long position in the Amsterdam Stock Index.

Exhibit E: Equity Carry Trade Example – Amsterdam Stock Index

Carry Position: Amsterdam Stock Index on June 1, 2005

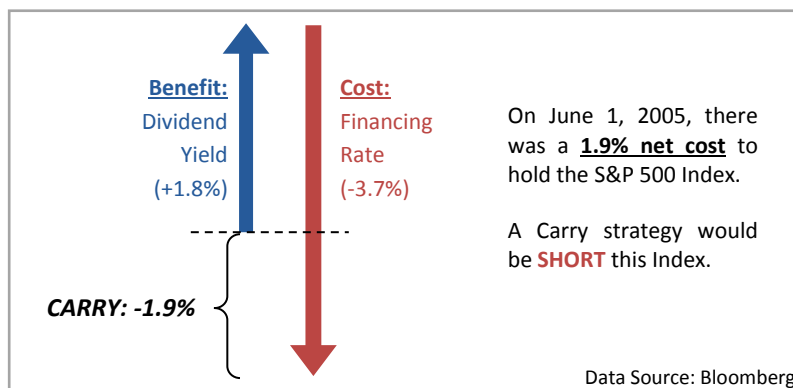


On the same date, the S&P 500 Index had a trailing 12-month dividend yield of 1.8%, while a representative local short rate was +3.7%. Since the cost to finance this investment was 1.9% more than the yield, the carry was negative, equaling -1.9%. A carry strategy would have held a short position in the S&P 500 Index.

Equity carry:
Seeks returns from the difference between the dividend yield of an equity index and the cost to finance its purchase.

Exhibit F: Equity Carry Trade Example – S&P 500 Index

Carry Position: S&P 500 Index on June 1, 2005



In both examples, if the spot price of the equity index was unchanged during the investment, the total gain/loss would correspond to the carry resulting from the difference between the dividend yield and the financing rate. Changes in the equity index price may either enhance or reduce returns.

Commodity Carry

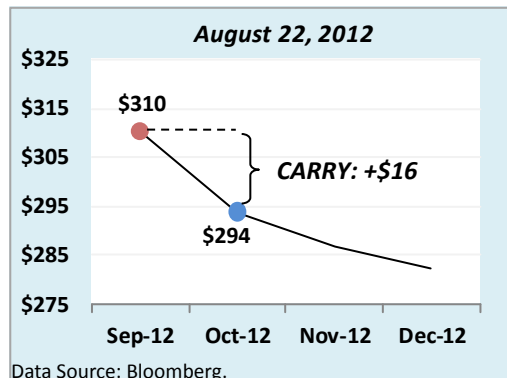
There are a few additional complexities involved with carry in commodities. Specifically, there are *non-cash* flow items to consider. The benefit of holding a physical commodity is captured with the “convenience yield.” The convenience yield seeks to account for all non-cash benefits of maintaining inventory in a physical commodity – things like the ability to accommodate an increase in demand, or take advantage of a rise in prices. The costs of maintaining inventory include financing, as well as storage, insurance and transport.

If the convenience yield exceeds the costs, the carry is positive. However, the convenience yield cannot (easily) be observed directly. Instead, the futures contract will be priced such that purchasing it and holding it to expiration will be economically equivalent (based on the average utility function for all investors) to buying the physical commodity in the spot market, holding it for the duration of the contract (and incurring associated costs and benefits during the period) and selling it at contract expiration. Let’s consider two examples:

The futures term structure for RBOB Gasoline on August 22, 2012 is shown in Exhibit G. The Oct-12 futures contract was priced at \$294, \$16 below spot (for the next two examples, we use the “near” futures contract to approximate the spot price), meaning that RBOB was in “backwardation.” Backwardation implies that the benefit of holding the commodity (i.e., the convenience yield) was greater than the cost, signaling that the asset was positive carry.¹⁰

Exhibit G: Commodity Carry Trade Example – RBOB

Futures Term Structure: RBOB



Carry Position: RBOB on Aug 22, 2012

On August 22, 2012, there was a **\$16 net benefit** to hold RBOB.

A carry strategy would be **LONG** RBOB.

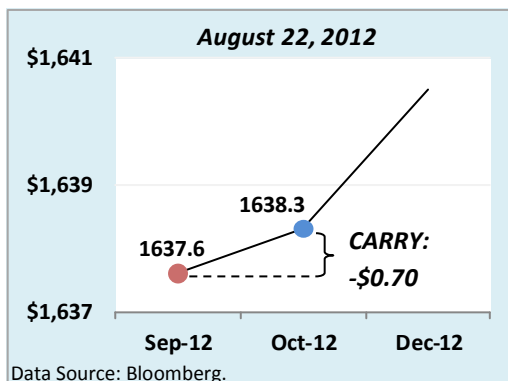
Commodity carry:
Seeks returns from the difference between the convenience yield and the cost of holding an asset.

To better understand why this situation is positive carry, consider that as the Oct-12 contract approaches expiration, its price will gradually converge with the prevailing spot price (or there would be an arbitrage opportunity). Assuming that the spot price is unchanged, the Oct-12 contract will gradually appreciate, rising from \$294 to \$310.¹¹ Thus, the net benefit to holding the asset in excess of the spot price movement is \$16 over the period, and a carry strategy would hold a long position.

On the same date, the futures term structure for Gold was positively sloped. The Oct-12 futures contract was priced \$0.70 *higher* than the spot price, meaning that Gold was in “contango.” Contango implies that the cost of holding Gold was higher than the convenience yield, i.e., it was negative carry.

Exhibit H: Commodity Carry Trade Example – Gold

Futures Term Structure: Gold



Carry Position: Gold on Aug 22, 2012

On August 22, 2012, there was a **\$0.70 net cost** to hold Gold.

A carry strategy would be **SHORT** Gold.

To see why the asset has negative carry, note that as the Oct-12 contract approaches expiration, its price will converge with the prevailing spot price. If the spot price remained unchanged, the price of the contract would fall \$0.70, which is the amount by which the costs exceed the benefits (in excess of spot price movements). Accordingly, a carry strategy would hold a short position in the contract.

Benefits of the Multi-Asset Approach

Now that we have a basic idea of what carry represents for different asset types, let’s revisit the definition of carry introduced at the start of this paper: *carry is an asset’s expected total return assuming its price is unchanged*. In the real world, of course, this will rarely be the case. Prices tend to appreciate and depreciate over time and to varying degrees, depending on the underlying asset. Thus, a risk inherent to all carry strategies is that the asset price will change in an adverse way, eroding profits.¹² If the spot price moves enough in the wrong direction, it can completely eliminate the benefit of holding the asset, leading to losses.

An effective way to address the risk of adverse spot price movements is through diversification across a wide range of markets and asset classes. This approach has tended to be effective at mitigating tail risk because of the very low historical correlation between carry returns across asset classes. This can be demonstrated using a Hypothetical Global Carry Strategy¹³ as a benchmark for performance.

Several different publicly available indices were considered for this analysis (i.e., JP Morgan Commodity Carry USD Index, JP Morgan Global Bond Carry USD Index, etc.), but each was ruled out due to either a lack of adequate history or limited diversification across asset classes. Consequently, we constructed our own rules-based Hypothetical Global Carry Strategy, using actual futures data since January 1992, with a universe of 61 markets spanning Equity, Fixed Income, Foreign Exchange and Commodities. Assumptions include equal risk weighting by asset class, constant capital, a 10% annualized volatility target and a 1% flat fee structure.¹⁴

A risk inherent to all carry strategies is that the asset price will change in an adverse way, eroding profits.

The multi-asset approach to carry trading has tended to mitigate tail risk because of the very low historical correlation between carry returns across asset classes.

Please note that construction of the Hypothetical Global Carry Strategy was intended to be as generic as possible, and does not rely on methodologies used by Campbell. Please see the disclosures for a detailed description of Strategy construction methodology and some of the inherent limitations of hypothetical data. Strategy returns are shown net of a 1% fee, except where noted as gross.

The correlations of carry returns across asset classes are shown in Exhibit I, using monthly returns from within the Hypothetical Global Carry Strategy since January 1992.

Exhibit I: Hypothetical Global Carry Strategy - Correlation of Carry Returns by Asset Class

The uncorrelated nature of carry performance by asset class can lead to a powerful portfolio effect when the asset classes are combined.

	Fixed Income	Equity	FX	Commodities
Fixed Income	100%	-16%	-4%	14%
Equity		100%	9%	-13%
FX			100%	-15%
Commodities				100%

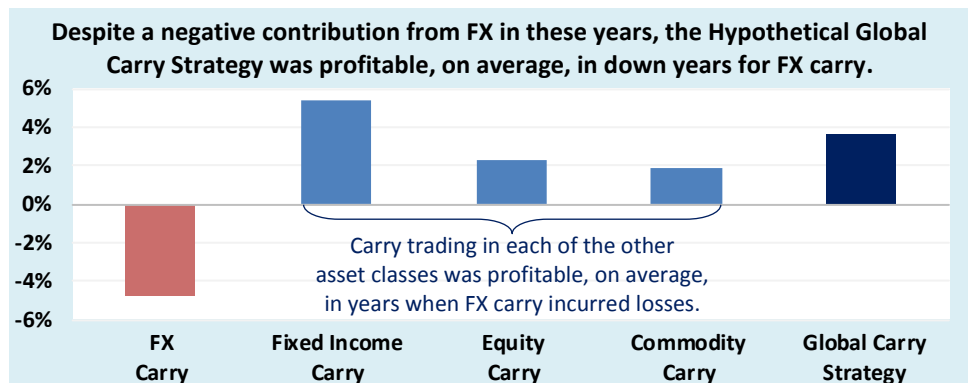
Source: Bloomberg, Campbell. Monthly correlations from Jan-92 to Nov-15. Hypothetical Global Carry Strategy construction and inherent limitations of hypothetical data described in Disclosures.

The diversification inherent in the multi-asset class approach is immediately visible in the chart. The correlations of carry returns across asset classes were not just low – they were actually *negative* in several instances. Using foreign exchange as an example, the correlation to fixed income carry was -4%, while the correlation to commodity carry was even lower, at -15%. The highest correlation was observed with equity carry, at +9%.

The foreign exchange example is an important one, as FX carry trading is known to have historically experienced significant drawdowns during periods of unusually high market stress. However, because of the portfolio effect of combining carry signals across asset classes, the Hypothetical Global Carry Strategy did not historically exhibit the same tendency.

Exhibit J shows the average performance of the Hypothetical Global Carry Strategy in negative years for its FX carry component. Though FX carry posted an average loss of 4.7% in years it was down, carry in each of the other asset classes had positive average returns in those years. As a result, the Hypothetical Global Carry Strategy was actually *profitable* in down years for FX carry, with +3.7% average gains. Of the nine negative years for FX carry, the Hypothetical Global Carry Strategy was profitable in six of them. (Please note that the overall Hypothetical Global Carry Strategy was net of a flat 1% fee, while individual sector returns are gross).

Exhibit J: Hypothetical Global Carry Strategy – Average Returns in DOWN Years for FX Carry



Source: Bloomberg, Campbell. Data from Jan-92 to Nov-15. Hypothetical Global Carry Strategy and inherent limitations of hypothetical data described in Disclosures. Sector returns are gross, while Strategy is net of a 1% fee.

The correlations of carry returns across asset classes were not just low – they were actually negative in several instances.

Multi-asset carry has historically behaved very differently than FX carry alone.

Carry trading in each of the other asset classes was profitable, on average, in down years for FX carry.

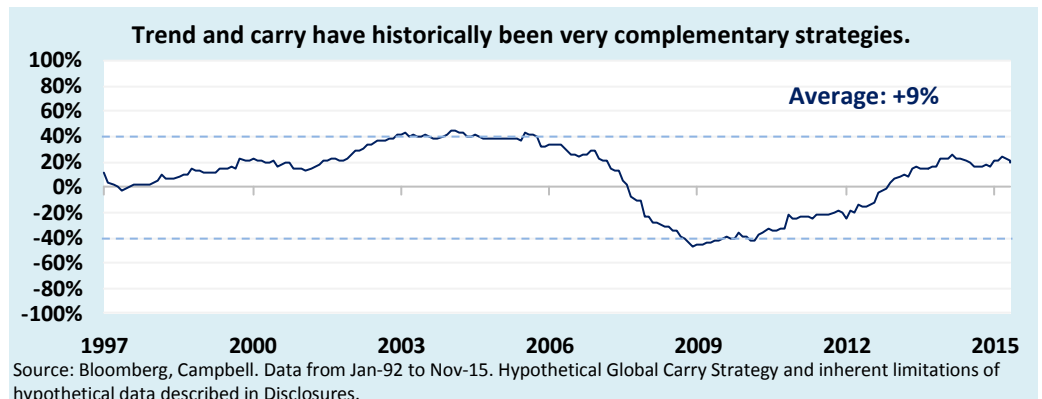
Synergies with Directional Strategies

In the Managed Futures space, many of the larger diversified trend following programs include a satellite allocation to carry. While the actual implementation may vary quite a bit by program, the natural synergy between directional and carry strategies tends to lead to a strong portfolio effect when they are combined.

To illustrate the complementary nature of carry and trend following, we can use the Barclay CTA Index as a benchmark for trend and the Hypothetical Global Carry Strategy.

First, we can measure the historical correlation between the two return streams. Over the full period, the rolling 5-year correlation (monthly) varied between approximately +40% and -40%, with an average of +9%. This very low average correlation indicates that the tendency of the two indices to rise or fall in parallel is quite limited.

Exhibit K: Monthly Correlation (5-year) of CTA Index to Hypothetical Global Carry Strategy

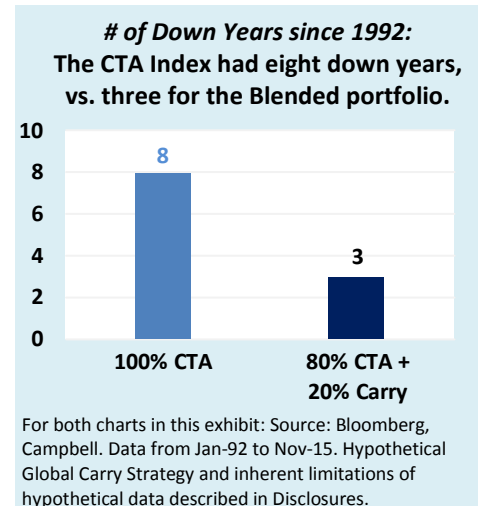
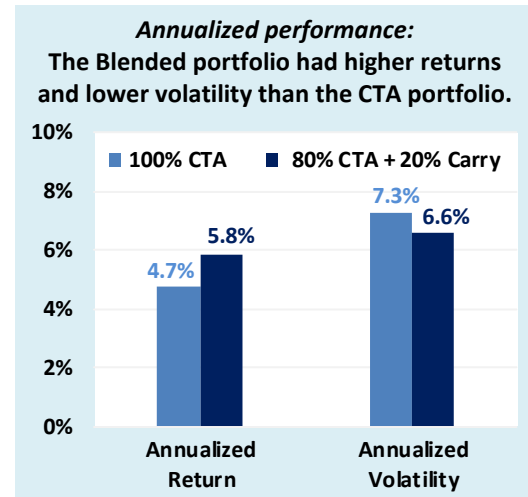


This is further supported by the fact that the Hypothetical Global Carry Strategy was profitable, on average, during negative months for the CTA Index. It gained an average of +0.4% during down months for the Barclay CTA Index going all the way back to 1992.

We can also take a look at the historical result of blending carry and trend following directly. Exhibit L shows the impact of adding a 20% carry allocation (as proxied by the aforementioned Hypothetical Global Carry Strategy) to the Barclay CTA Index since 1992, assuming monthly rebalancing.

Exhibit L: Impact of Adding Carry to a CTA Portfolio

100% CTA Index versus 80% CTA Index/20% Hypothetical Global Carry Strategy



The very low average correlation between carry and trend indicates that the tendency of the two indices to rise or fall in parallel has historically been quite limited.

The Hypothetical Global Carry Strategy was profitable, on average, during negative months for the Barclay CTA Index since 1992.

The combination of higher returns and lower volatility led to a large increase in the Return/Risk ratio, which rose from 0.65 for the CTA portfolio to 0.89 for the Blended portfolio.

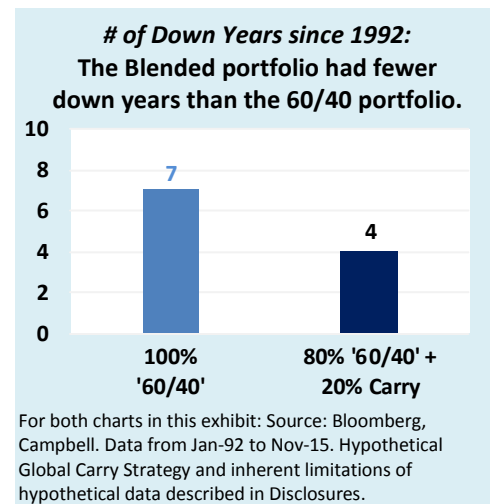
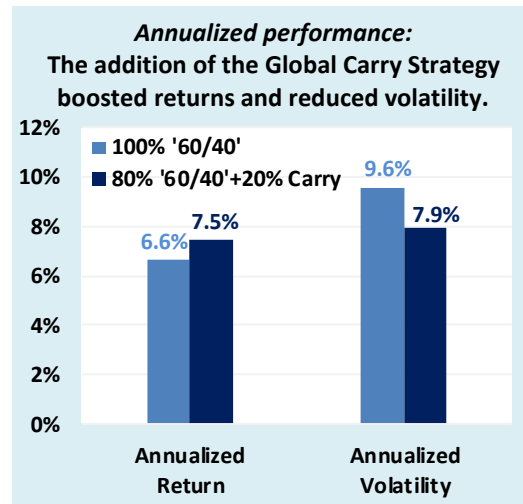
During the 24-year period, the Barclay CTA Index (light blue) returned 4.7% per annum with volatility of 7.3%. Blending the CTA Index with a 20% allocation to carry (dark blue) would have increased the annualized return by 24% (i.e., from 4.7% to 5.8% per annum) and reduced volatility by 10% (i.e., from 7.3% to 6.6% per annum). *The combination of higher returns and lower volatility led to a large increase in the Return/Risk ratio, which rose from 0.65 to 0.89.* Furthermore, the number of negative years would have dropped from eight to three.

Similar synergies can be demonstrated with traditional portfolios, such as those with a 60% allocation to global equities and a 40% allocation to global bonds. Using the MSCI World and JP Morgan Global Bond Indices to approximate performance for equities and bonds, respectively, we can calculate the historical impact of adding a 20% carry allocation to a traditional 60/40 portfolio.

The annualized performance of the Blended portfolio would have been significantly enhanced, with returns increasing and volatility declining. The Return/Risk ratio would have increased by approximately 35%, from 0.69 to 0.94 over the 24-year period. The number of down years would have also declined: the 60/40 portfolio experienced seven negative years since 1992, while the Blended portfolio had four negative years.

Exhibit M: Impact of Adding Carry to a '60/40' Portfolio

100% '60/40' Portfolio versus 80% '60/40'/20% Hypothetical Global Carry Strategy



The reason why an allocation to carry would have led to such a dramatic improvement in risk-adjusted performance is because of the low average correlation between carry and the 60/40 portfolio during the sample period. The rolling 5-year correlation averaged -11%, with a fairly wide range of approximately -60% to +40%.

Concluding Thoughts

In this paper, we provided a broad overview of carry and explored some of its unique characteristics. To summarize the key points:

- Carry is an asset’s expected total return⁴ assuming its price is unchanged (please see page 1 for a more precise definition). Carry strategies seek to maximize exposure to the net cost or benefit of holding an asset, in excess of the potential for price appreciation/depreciation.
- Although carry strategies are typically associated with foreign exchange, the concept of carry can be generalized across all asset classes. Implementation will vary, but in each

The '60/40' portfolio had seven down years since 1992, while the Blended portfolio had four.

The rolling 5-year correlation between the Hypothetical Global Carry Strategy and the 60/40 portfolio averaged -11% since 1992.

case, the costs and benefits of holding the asset must be estimated, including both cash and non-cash items.

- An approach spanning multiple asset classes can mitigate the risk of adverse spot price movements. The historical correlations between asset class returns within a Hypothetical Global Carry Strategy were extremely low, and often negative.
- Blending carry with directional strategies can lead to a powerful portfolio effect, resulting in superior long-term risk-adjusted returns. A Hypothetical Global Carry Strategy had a +9% average correlation (rolling 5-year) to the Barclay CTA Index and a -11% average correlation to a traditional 60/40 portfolio since 1992. For both a CTA portfolio and a 60/40 portfolio, a 20% allocation to a Hypothetical Global Carry Strategy from 1992 to 2015 would have reduced volatility, increased returns and lowered the number of down years.

Endnotes:

¹ This assumes that rental income and mortgage payments are the only costs or benefits impacting Carrie's investment.

² This excludes the potential cost/benefit resulting directly from price changes.

³ To be precise, trend following strategies use past total returns to forecast future total returns. For longer-term momentum strategies, total return will include a carry component.

⁴ For the purposes of this paper, "total return" also includes financing costs.

⁵ Costs and benefits may include both cash flow and non-cash flow items.

⁶ For additional information on carry and other related concepts such as roll yield, please see "Deconstructing Futures Returns: The Role of Roll Yield"; Campbell White Paper Series, February 2014.

⁷ Benefits and costs to fixed income instruments also include the convergence to par and yield curve rolldown, which occurs over time as bond cash flows experience different points on the yield curve.

⁸ Yield-to-maturity represents the internal rate of return of the bond assuming it is held to maturity.

⁹ This is one way to define fixed income carry. While this is the most accessible definition, there are more precise methods that account for yield curve rolldown.

¹⁰ More sophisticated approaches incorporate the effects of commodity seasonality.

¹¹ It is important to note that this is not a risk-free trade; the profitability will be impacted by any change to the spot price or shift in the futures term structure.

¹² Although it would be nice to be able to hedge out the spot risk, it is not possible to do so and still capture the carry risk premium. This type of hedged trade, sometimes known as spot-futures arbitrage, captures a different type of inefficiency and is beyond the scope of this paper.

¹³ Please see disclosures for a full description of the Hypothetical Global Carry Strategy construction methodology.

¹⁴ Please note that we do not include interest on cash or trading costs, which is somewhat conservative, as the interest income would on average have exceeded the trading costs over the period considered.

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Hypothetical Global Carry Strategy: Calculated using a universe of 61 futures markets:

Commodities (21 markets): Aluminum, Coffee, Copper (LME), Copper (COMEX), Corn, Cotton, Gold, KC Wheat, Heating Oil, London Brent Crude, Natural Gas, Nickel, RBOB Gasoline, Silver, Soybeans, Sugar #11, Wheat, WTI Crude, Zinc, Soybean Oil, Soybean Meal

Currencies (9 markets): Australian Dollar, British Pound, Canadian Dollar, Japanese Yen, N.Z. Dollar, Norwegian Krone, Swedish Krona, Swiss Franc, Euro

Equity Indices (15 markets): Amsterdam Exchange Index, CAC 40 Stock Index (France), DAX (Germany), DJ Euro Stoxx 50, FTSE Index (UK), Hang Seng Index (Hong Kong), IBEX 35 Stock Index, MSCI Taiwan Index, NASDAQ 100 Index (USA), Nikkei (Japan), OMX Stock Index (Stockholm), S&P 500 Volatility Index, Mini S & P 500 Index, S&P Canada 60 Index, SPI 200 Index (Australia)

Fixed Income (16 markets): Australian 3-Year Bond, Australian 10-Year Bond, Bobl (Germany), Bund (Germany), Canadian 10-Year Bond, Canadian Bank Bill, Euribor (Europe), Eurodollar (USA), Japanese 10-Year Bond, Long Gilt (UK), Short Sterling (UK), Treasury Note/2-Year (USA), Treasury Note/5-Year (USA), Treasury Note/10-Year (USA), Treasury Bond/ (USA), Euro-Schatz Future

The Hypothetical Global Carry Strategy uses the futures term structure to estimate the net benefit/cost of owning the asset (in excess of the spot price movements). The slope of the term structure is measured at regular intervals (i.e. on “roll dates” in which there is good liquidity in the first two contracts), and the strategy goes long markets in backwardation and short those in contango (see the commodity section for more insight into this interpretation of carry.) Each market is given an equal risk budget inside of its asset class, and each of the four asset classes is given an equal risk budget within the portfolio, and the overall portfolio is targeted to 10% annual volatility. This performance is simulated (see below for information on Simulated and Hypothetical Performance) and is not the actual performance of a Campbell strategy. The simulated performance shown does not include interest on cash or trading costs, includes equal risk weighting by asset class, constant capital, a 10% annualized volatility target and a 1% flat fee structure.

The **60/40 Portfolio** performance shown was prepared by Campbell & Company and contains historical trading results of two representative indices, shown in a hypothetically blended portfolio. The portfolio includes a 60% allocation to the MSCI World Index (total return) and a 40% allocation to JP Morgan Global Bond Indices, rebalanced monthly. These indices are unmanaged and are not subject to fees and expenses typically associated with managed accounts or investment funds. Investments cannot be made directly in an index.

The hypothetical portfolio allocations discussed in this material are not suitable for all investors. Investors should determine the portfolio allocations appropriate to them, based on their specific financial situation and risk tolerance. Only the risk capital portion of the investor’s portfolio should be allocated to alternative investments, such as Managed Futures.

Simulated Performance is not based on actual trading results and costs are simulated based on estimates. Simulated performance is “hypothetical” and has inherent limitations.

HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM. ONE OF THE LIMITATIONS OF HYPOTHETICAL PERFORMANCE RESULTS IS THAT THEY ARE GENERALLY PREPARED WITH THE BENEFIT OF HINDSIGHT. IN ADDITION, HYPOTHETICAL TRADING DOES NOT INVOLVE FINANCIAL RISK, AND NO HYPOTHETICAL TRADING RECORD CAN COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FOR EXAMPLE, THE ABILITY TO WITHSTAND LOSSES OR TO ADHERE TO A PARTICULAR TRADING PROGRAM IN SPITE OF TRADING LOSSES ARE MATERIAL POINTS WHICH CAN ALSO ADVERSELY AFFECT ACTUAL TRADING RESULTS. THERE ARE NUMEROUS OTHER FACTORS RELATED TO THE MARKETS IN GENERAL OR TO THE IMPLEMENTATION OF ANY SPECIFIC TRADING PROGRAM WHICH CANNOT BE FULLY ACCOUNTED FOR IN THE PREPARATION OF HYPOTHETICAL PERFORMANCE RESULTS AND ALL OF WHICH CAN ADVERSELY AFFECT ACTUAL TRADING RESULTS.

Barclay CTA Index: The Barclay CTA Index is utilized as a broad measure of overall managed futures returns, as compared to other indices that measure the overall returns of stocks and bonds as separate asset classes. The Barclay CTA Index is not the same as an investment in the Trust, and the Trust may perform quite differently than the Index, just as an individual stock may perform quite differently than the S&P 500 Index. The Index is unmanaged and not available for direct investment.

MSCI World Total Return Index: The MSCI World Total Return Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets. As of May 27, 2010 the Index consisted of the following 24 developed market country indices: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Total return indices measure the market performance, including both price performance and income from dividend payments. The MSCI World Total Return Index assumes the reinvestment of dividends.

J.P. Morgan (JPM) Global Aggregate Bond Index: A U.S. dollar denominated, investment-grade index spanning asset classes from developed to emerging markets. The Index is unmanaged and not available for direct investment.

Trading in commodities, futures, options, derivatives and other financial instruments (“Managed Futures”) involves speculation, is subject to a significant amount of market risk and is not appropriate for all investors.

The Risks of Managed Futures

- ❖ Alternative investments, such as managed futures, are speculative, involve a high degree of risk, have substantial charges and are suitable only for the investment of the risk capital portion of an investor’s portfolio.
- ❖ Some or all managed futures products may not be suitable for certain investors. Some products may have strict eligibility requirements.
- ❖ Managed Futures are speculative and can be leveraged.
- ❖ Past results are not indicative of the future performance, and performance of managed futures can be volatile.
- ❖ You could lose all or a substantial amount of your investment.
- ❖ There can be liquidity restrictions in managed futures products.
- ❖ Substantial expenses of managed futures products must be offset by trading profits and interest income.
- ❖ Trades executed on foreign exchanges can be risky. No U.S. regulatory authority or exchange has the power to compel the enforcement of the rules of a foreign board of trade or any applicable foreign laws.



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