Creating alpha with MARKET NEUTRAL strategies

by Sara Statman, Hedge Fund Association

Market neutral investing is perhaps the purest form of alpha as, by definition, it removes exposure to market direction and produces alpha through security selection. It usually involves the simultaneous purchase of an undervalued security and short sale of an overvalued security. Thus, the return depends on the spread between the long and short positions. A bond market neutral strategy would hedge out interest rate risk, to ensure that gains from the long position, due to upward movements in bond prices, would be roughly offset by losses from the short position. Unlike traditional investing, which concentrates on absolute returns, or returns relative to a benchmark, market neutral returns depend on the spread or relative value between the securities bought and sold regardless of movements in market direction. An equity market neutral portfolio is constructed similarly, but this time exposure to beta, the sensitivity of the portfolio's movement to the general market, is hedged. A true market neutral fund will have to balance the beta on the long and the short side to hedge out stock market risk effectively. A market neutral approach can be applied to various asset classes, such as equities, government bonds or mortgage-backed securities and forms the basis for several investment strategies: convertible arbitrage and risk/merger arbitrage.

Market neutral portfolios also hedge out residual risks. For example, with respect to equities, aside from general stock market risk, there is also risk to each specific sector (oil and gas, technology, pharmaceuticals etc.) so a fund trading in more than one sector should account for sector-specific risk. Similarly in the fixed income markets, although duration-matching can be used to hedge bond sensitivities to interest rate risk, duration measures assume that movements in interest rates cause a parallel shift in the term structure. When this is not the case, additional exposure will remain. Therefore fixed income funds must account, in addition, for yield curve risk and indeed sector risk within and between fixed income sectors (such as sovereign, corporates, emerging market, high yield). Furthermore, duration reduces as a bond approaches maturity so duration weights must be monitored and rebalanced regularly. When there are large movements in interest rates, convexity adjustments should also be taken into account.

MARKET NEUTRAL EXAMPLE ONE: MEAN REVERSION RELATIVE VALUE TRADING

Several interest rate models[1] assume that returns revert back to their mean values over time. Rich-cheap analysis based on quantitative techniques can be used to select securities. A bond trading two or more standard deviations away from its short-run mean might suggest that the bond is over or under-priced. Practitioners usually look for several signals to identify whether a security is rich or cheap. These might include in-house models; spreads against swaps; spreads with bonds in the same asset class; repo rates; supply factors as well as one-month to three-month historical trading ranges. Once a rich-cheap pair has been identified a duration-matched switch can be executed. If the spread performs according to expectations, the bonds should revert to their mean values over a two-day to two-week time frame.

MARKET NEUTRAL EXAMPLE TWO: CONVERGENCE TRADES

During the lead-up to the single currency, convergence trades became very popular: interest rates in countries such as Italy and Spain were several percentage points higher than corresponding rates in Germany. Once the single currency took effect, the European Central Bank would set one single interest rate for all member states, which meant interest rates in Italy and Spain needed to converge with those of France and Germany by falling several hundred basis points. The issue here was not if, but when the convergence would occur – the deadline being January 1, 1999. A typical convergence trade meant selling a German bond and simultaneously buying an Italian or Spanish bond; maturity was of minor importance as the over-riding factor was converging yields, but trades could be combined with yield curve plays and there was no harm in picking a relatively cheaper bond to buy and a relatively richer bond to sell. To hedge against market direction quantities traded were duration-matched. The Irish-German convergence trade produced losses for some portfolios as the Irish Central Bank waited until very late in the day before seriously cutting interest rates in the lead up to the single currency.

A RISK MINIMISING PORTFOLIO?

Market risk covers a variety of risks, including equity, interest rate, pre-payment, currency, commodity and liquidity risks. Although market neutral portfolios appear to hedge the primary risk factor, other exposures, such as liquidity risk, may remain. It is therefore the responsibility of the risk manager to ensure that portfolio risks are properly measured and managed. There is now consensus that standard correlations break down during market turmoil: bid-offer spreads may widen; funding may not be available at normal market prices; market participants may fail to deliver securities or cash on time – all of which increase the likelihood of margin calls. Fund managers may be forced to sell securities prematurely at below market prices, during illiquid markets, to cover margin calls.

Bond market strategies might hedge against interest rate risk, but ignore yield curve or event risk. Changes in the market environment or an extreme event, can lead to sharp movements in spreads between asset classes, which not only wipe out any relative value, but also leave a portfolio in negative territory. After Russia defaulted on its debt in 1998, emerging market spreads widened against treasuries and there was a flight to quality. LTCM was a heavily leveraged fund that combined global macro[2] with relative value trading. It was long high yield debt but short treasuries and the fund almost collapsed when it was wrong-footed on both sides of the trade.

Market neutral funds may employ over-the-counter derivatives to hedge market exposure. Unlike exchange-traded derivatives, where the exchange offers a clearing facility and acts as central counterparty, over-the counter derivatives exhibit counterparty risk.

Funds relying on quantitative models are also exposed to model risk. This includes anything ranging from mistakes in the underpinnings of the model, through to misapplication or wrong implementation of the model.

Relative value, as described in example one, works in a mean-reverting market environment. However, markets do not always behave in this way and may move to a new trough or plateau, where old highs become new lows. Convergence trades are assured to work but the time-frame, at least in the short-term, is uncertain.

Market neutral strategies hedge against market direction but other risks remain. Sudden and extreme events may lead to existing correlations changing. As such portfolios should be monitored regularly on a risk-return basis and risks should be stress-tested to account for rare but extreme market events.

Notes:

1. The Vasicek Model is a single factor term structure model that assumes mean reversion. It also assumes interest rate volatilities at various maturities are constant. The Cox, Ingersoll and Ross (CIR) Model is also a single factor term structure model that assumes mean reversion but the CIR model considers that interest rates at various maturities are related and their variance is proportional to the level of interest rates. A no-arbitrage term structure model that incorporates mean reversion is the Hull-White Model.
2. Global macro funds have the widest investment mandate – strategies are usually based on political/economic factors and can be implemented with any asset class in any currency.

Sara Statman is Vice President of the Hedge Fund Association and CEO of Statman Consulting Ltd.
For further information, please telephone +1 (203) 220 2307 or e-mail: sara@statmanconsulting.com