

From portable alpha to alpha overlay



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Developed in the 90's, the so-called portable alpha concept has received a lot of attention recently. Initially conceived by traditional long-only asset managers, the concept is now increasingly applied by hedge funds and funds of hedge funds. It enables investors to maximize their alpha through investments with skilful hedge fund managers while at the same time maintaining their targeted beta exposure.

Institutional investors such as pension funds and insurance companies are facing important challenges: On the one hand, higher returns have to be generated in order to compensate for lower contributions and higher benefits (eg because of increasing longevity). On the other hand, capital markets are thought to be delivering lower returns going forward because of lower long term economic growth potential.

In order to avoid sustained shortfalls, investors are now highly encouraged to utilize all potential return sources: traditional risk premia through equity and fixed income

investments; alternative risk premia through exposure to commodities, to credit risk, to liquidity risk, to volatility risk; and alpha, the specific return associated with a portfolio without market exposure.

Portable alpha in long-only funds ...

For long-only funds, the benchmark typically defines the investment universe where the asset manager may select securities or time the market for the purpose of generating alpha. For a typical institutional investor with a 60% allocation to bonds and a 40% allocation to equities, this results in two restrictions: 1) alpha can only be generated in the two assets classes bonds and equities; and 2) because of the defined asset allocation, a larger amount of money can be managed actively only in bonds although the alpha potential in equities may probably be higher.

The portable alpha concept enables the long-only manager to generate alpha independent from the investor's asset allocation. So, for example, a skilled equity manager can add value by managing an equity portfolio. By using futures or swaps, the equity market exposure is hedged out of the portfolio and, vice versa, an exposure to the targeted bond market is built up.

Long-only portable alpha concept:

Portable alpha bond portfolio = actively managed equity portfolio - equity index swap/future + bond index swap/future

... and in hedge funds

Each actively managed long-only portfolio can be decomposed into a component which replicates the index, and into a hedge fund component. This is demonstrated in figure 1 on the basis of an actively managed equity portfolio with the Dow Jones STOXX 50 Index as the benchmark. Based on the assessment of the manager and compared to the benchmark index, each stock in the actively managed portfolio is either underweighted, equal weighted or overweighted. Each underweighted position corresponds with a short position in the hedge fund component while each overweighted position corresponds with a long position.¹ Because a hedge fund usually is not self financing, it holds a certain amount of money in cash.

Based on the decomposition of an actively managed portfolio, it is possible to implement the portable alpha concept by combining a hedge fund with a total return swap, thereby exchanging a money market return against an index return.²

Hedge fund portable alpha concept:

Portable alpha bond portfolio = Hedge fund + bond index swap/future

The two main differences between an actively managed long-only portfolio and a hedge fund are that the hedge fund is allowed to 1) sell securities short, and to 2) apply leverage. If the hedge fund has a view on a security, he is not limited by the benchmark weight of that security to express this view. In addition, a hedge fund might combine short- and long positions which add up to more than 100% gross exposure if he sees a compelling reason to do so. In contrast, a long-only manager always maintains a gross exposure of 100%.

Finally, a hedge fund can also express his view on the market by having either a long net exposure (i.e. the sum of long positions is larger than sum of short positions) or a short net exposure, and therefore not be market neutral. Pending manager skill, these are all reasons why a hedge fund environment is more conducive to alpha generation than a traditional long-only fund.

The example shown in figure 1 also highlights the fact that

Figure 1 | Decomposing an actively managed DJ STOXX 50 portfolio

| Security Name | Active Portfolio Weight | Index Component | Hedge Fund Component |
|------------------------|-------------------------|-----------------|----------------------|
| BP | 1.67% | 6.57% | -4.90% |
| HSBC | 0.44% | 5.18% | -4.74% |
| GLAXOSMITHKLINE | 2.61% | 4.20% | -1.59% |
| TOTAL | 3.94% | 4.10% | -0.16% |
| VODAFONE GROUP | 3.87% | 3.79% | 0.08% |
| NOVARTIS | 4.20% | 3.71% | 0.49% |
| ROYAL DUTCH SHELL | 0.00% | 3.47% | -3.47% |
| NESTLE | 1.78% | 3.44% | -1.66% |
| ROCHE | 3.78% | 3.01% | 0.77% |
| ROYAL BANK OF SCOTLAND | 0.61% | 2.74% | -2.13% |
| UNILEVER | 0.33% | 1.11% | -0.78% |
| PHILIPS ELECTRONICS | 1.15% | 1.10% | 0.05% |
| SAP | 0.00% | 1.10% | -1.10% |
| ASSICURAZIONI GENERALI | 1.57% | 1.09% | 0.48% |
| SUEZ | 2.13% | 1.02% | 1.11% |
| BT GROUP | 2.24% | 0.94% | 1.30% |
| TELECOM ITALIA | 1.64% | 0.91% | 0.73% |
| CARREFOUR SUPERMARCHÉ | 4.32% | 0.78% | 3.54% |
| AVIVA | 0.00% | 0.77% | -0.77% |
| L'OREAL | 1.25% | 0.64% | 0.61% |
| TOTAL | 100.00% | 100.00% | 0.00% |

Source: Bloomberg, Harcourt (the list is for illustrative purposes and not complete)

a substantial part of an actively managed long-only portfolio is more or less replicating the index, whereas only 20 to 30% of the portfolio is effectively managed actively. Since the fund investor pays active fees (typically between 0.5% and 1.0% pa) on 100% of his investment, and since the index can be replicated at low cost (typically between 0.1% and 0.2% pa), the investor ultimately pays three to four times the nominal active fee for the part of the portfolio which is truly managed actively.

Paradoxically and crucially, the long-only investor pays similar or even higher fees for the actively managed part of the long-only funds as for hedge funds although he receives less alpha. Consequently, decomposing the pure active part of the portfolio and the index replicating part leads - in addition to the superior performance - to a much more cost efficient solution.

Portable alpha as alpha overlay

So far, we discussed the traditional portable alpha concept. It stipulates that the alpha generated by either traditional

¹ It should be noticed here that the tracking error (ie the volatility of the excess return compared to the benchmark) of the actively managed portfolio is equal to the volatility of the hedge fund component.

² An investor can also invest his money in the bond index and than exchange the money market return for the hedge fund return. This might be an interesting alternative for investors who are already invested in the bond index and who would like to prevent transaction costs.

long-only managers or hedge funds is transposed to the targeted asset class. But the portable alpha concept can also be used on top of a multi-asset class portfolio, and then essentially becomes an alpha overlay.

Again, refer to the 60/40 portfolio mentioned earlier. Assume that the investor strives for 5% alpha with a maximum tracking error of 3%. All else being equal, the investor can implement both his 60/40 targeted beta allocation as well as his alpha target by structurally proceeding as follows: First, 100% of the available capital is invested in a beta neutral hedge fund portfolio with a target return of Libor plus 5% and a maximum volatility of 3%.³ In a second step, he implements two swaps: one swap exchanges Libor for a bond index return and has a notional of 60% of the investment amount; the other swap exchanges Libor for an equity index return and has a notional of 40% of the investment amount. If the investor has lower alpha targets, he can reduce his investment in the hedge fund portfolio and choose to either hold the money in cash, or reduce one of the two swaps and invest the money physically in stocks or bonds.

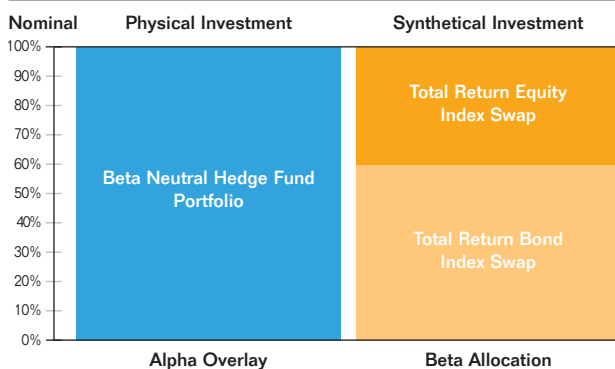
Portable alpha and leverage

As mentioned, hedge funds may apply short selling and leverage. This causes the question whether combining hedge funds with a swap or with a future in a portable alpha structure is not the same as using or even unwittingly increasing leverage. At first sight, this point has some merit.

But to understand the real risk inherent with this concept, one has to assess the impact of gross and net exposure separately. The gross exposure of a hedge fund is always linked to its volatility and – in the case of a portable alpha portfolio

³ Because hedge fund returns usually are not normally distributed, the investor should also set targets for skewness and kurtosis.

Figure 2 | Building an alpha overlay portfolio



Source: Harcourt



lio – to the tracking error. All else being equal, that means the hedge fund manager can increase the volatility of his portfolio – and the tracking error of the portable alpha portfolio – by increasing his gross exposure. Therefore, an argument can be made that gross exposure is less a question of leverage but more a question of managing the targeted volatility and tracking error.

If the hedge fund has a long net exposure and the investor superimposes a total return swap with 100% notional, then we definitely end up with market exposure of more than 100%. Therefore: if the hedge fund contains some market sensitivity, the investor should consider this fact by reducing the notional of the total return swap or even hedge out the undesired beta exposure. We will demonstrate this with an example.

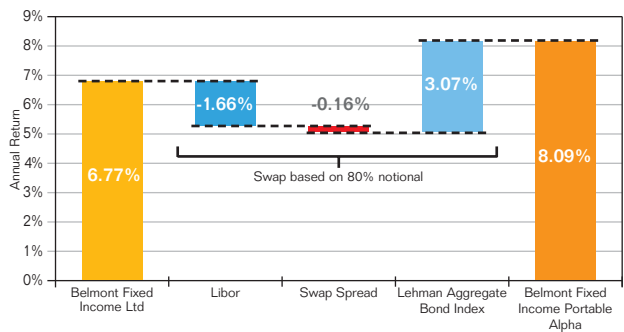
By using regression analysis we have examined the net exposure of the Belmont Fixed Income fund, a fund of funds focussing on fixed income strategies managed by Harcourt. The regression indicates a small but significant exposure of 0.17 to the Lehman High Yield Credit Bond Index.⁴

While building a portable alpha portfolio based on the Belmont Fixed Income fund, we take the exposure to the fixed income market into account by reducing the notional swap to the Lehman Global Aggregate Index to 80%. Figure 3 shows the return components of that portable alpha portfolio. The Belmont Fixed Income fund realized a net return of 6.77% p.a. since inception (ie October 2002 December 2005). In the same time the USD 1 month libor returned 1.98% p.a. and the Lehman Global Aggregate Index 3.84% p.a. Because our swap covers only 80% of the notional money invested in the hedge fund portfolio, we detract only 80% of the Libor return and add 80% of the index return. In addition, we detract a swap spread. Compared to the Lehman Aggregate Index, the portfolio has realized an average excess return of 4.28% p.a. with a tracking error of 1.92% p.a. This corresponds with an information ratio of 2.2, a ratio rarely found with long-only bond portfolios.

Suitable hedge fund strategies

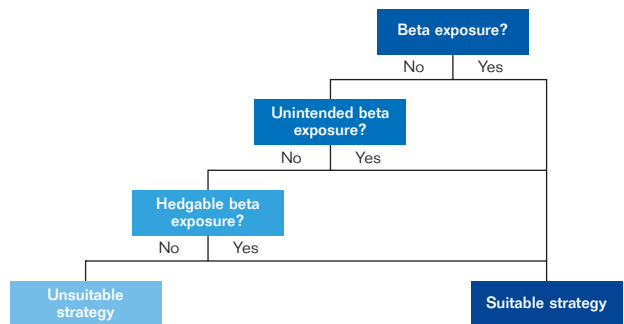
As the above example demonstrates, a hedge fund portfolio is suitable for a portable alpha portfolio if it's beta exposure is in line with the investor's targeted asset allocation. Obviously, hedge fund portfolios displaying no beta exposure are suitable as well. Likewise, hedge fund portfolios with unintended beta exposure which can be hedged

Figure 3 | Decomposing portable alpha return



Source: Harcourt, Bloomberg

Figure 4 | Criteria for hedge fund strategies suitable for portable alpha portfolios.



Source: Harcourt

away would qualify for a portable alpha portfolio. Hedge funds displaying unintended beta exposure that cannot be hedged away do not suit a portable alpha portfolio. An example for such exposure which can not be hedged is liquidity risk. Hedging volatility and correlation risk, both frequently inherent in a hedge fund, can be quite difficult. These challenges are exacerbated further since beta exposure can change quite substantially over time. So what are the key decisions facing an investor intending to adopt portable alpha? Crucially, beta exposures to be addressed by the portfolio must be clearly defined. Equally important, as soon as the portable alpha solution is implemented, it requires sophisticated risk management capabilities. The investor has to analyse which beta exposure effectively goes along with his portable alpha portfolio. If he detects unintended beta exposure, he has to take appropriate actions. This can mean increasing a certain hedge but also eliminating the hedge fund which contains the unintended and not hedgeble beta exposure.

⁴ We conducted the regression analysis for the time period October 2002 to December 2005. The Lehman High Yield Credit Bond Index was the only factor which explained a part of the return of the Belmont Fixed Income fund with sufficient significance. The regression involves a R square of 0.30.



While being conceptually quite easy, the portable alpha concept requires sophisticated investors with a clear understanding about the risks that they are prepared to take. A thorough understanding of derivatives is equally indispensable. This may perhaps explain why the portable alpha concept so far has mainly been implemented by a few pension funds and insurance companies in the United States.⁵

Conclusions

The portable alpha concept enables investors to maximize alpha through investments with skilful hedge fund managers, while at the same time maintaining a targeted beta exposure. This is an attractive alternative to traditional long-only management since hedge funds are more flexible and therefore better suited to generate alpha. In addition, the portable alpha concept with hedge funds is much more cost efficient than with long-only funds because the investor pays active fees only for the actively managed portfolio, whereas a substantial part of long-only funds is typically managed in line with a passive benchmark which can be cheaply replicated.

Finally, the portable alpha concept is very flexible and can also be implemented as an alpha overlay to an overall portfolio.

We believe that the dynamic nature of the alternative investment industry will result in increasing proliferation and acceptance of the concept. Whether we will «10 years from now, use portable alpha as easily as we use the term asset allocation today»⁶ remains to be seen, but 2006 will certainly see more investors adapting portable alpha.

⁵ For case studies see for example O'Hara (2005), InvestHedge (2005).

⁶ Roger Urwin, Global Head of Investment Consulting, Watson Wyatt, «Portable Alpha 2005» Conference, London, 5-7 December 2005

Readings:

- › Amenc, Noël, Philippe Malaise and Lionel Martellini, From Delivering to the Packaging of Alpha, EDHEC Working Paper, 2005.
- › Arnott, Robert D., Risk Budgeting and Portable Alpha, The Journal of Investing, Summer 2002, 15-22.
- › InvestHedge Roundtable Discussion, Portable Alpha: The Answer to Institutional Investors' Needs?, June 2005.
- › Invest Hedge, Mosers Opts for Diversified Separation of Alpha & Beta, InvestHedge, November 2005, 14-15.
- › O'Hara, Neil, Portable Alpha and Hedge Funds - A Case Study, Futures Industry, Sep/Oct 2005, 24-27.