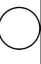
Are Hedge Funds Appropiate *for* Pension Plans?



HEDGE FUNDS

Once considered outside the mainstream of institutional investing, hedge funds have been growing in popularity. Should pension funds follow the trend?

by Frank Belvedere

Two key characteristics of pension liabilities should drive the asset allocation process for pension funds. The first is the extremely long time horizon—over 40 years based on workforce average age and life expectancy. The second is that pension benefits, either directly or indirectly, increase with inflation. The preceding implies both the need to earn high real returns to minimize pension costs and a reasonably high tolerance for risk, at least theoretically, given the long-term nature of pension liabilities.

A plan sponsor can explore several alternatives when determining asset mix. At one extreme, a fully immunized portfolio consisting of nominal and real return bonds would minimize investment risk. However, pension costs would tend to be high and, for this reason, this approach is used only under exceptional circumstances. At the other extreme, an all-equity portfolio would provide the highest real return and lowest pension costs. This approach, however, results in very high volatility of returns and has generally been considered too risky. Consequently, the typical approach among Canadian pension plans has been to diversify using bonds, with roughly 60% of assets targeted to equity.

Hedging equity risk using bonds has some negative implications. A significant amount of real return (est. 3%) is foregone over the long term by choosing bonds over equity. As well, academic research (e.g. Siegel) indicates that although the correlation of bonds to equity was low before 1970, it has increased significantly over the following three decades. Lastly, experience has demonstrated that the typical balanced portfolio is subject to "single factor risk" such as an unexpected increase in inflation or interest rates. In other words, the so-called diversified portfolio can see both equity and bond values drop concurrently, bringing into question the true extent of diversification.

Due to these shortcomings, there is a need to consider different approaches to traditional diversification. This is being increasingly recognized by major North American institutional investors.

GROWING TREND

Hedge funds are a virtually unknown asset class in the Canadian pension industry, except to a handful of the largest funds in the country. The plans that use hedge funds tend to be several billion dollars in size, have in-house investment expertise and a history of employing independent thinking in their investment decisions.

That this is the case is not surprising. The history of hedge funds is that they have been private, non-regulated investment funds that employ somewhat esoteric strategies. They have received little media attention, and when they have it has generally been when a fund

Frank Belvedere, F.C.I.A., CFA, is a principal in the investment consulting practice of William M. Mercer Limited in Montreal.

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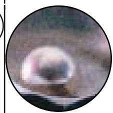
blew up, often because of excessive leverage. Coverage in the press has been vague, inaccurate, or both, fuelling misconceptions. Another factor contributing to the lack of understanding of hedge funds is that they have not been able to advertise, this being one of the conditions imposed to avoid regulation by the Securities and Exchange Commission. Consequently, hedge funds have remained far outside of the mainstream of institutional investing, used exclusively by wealthy individuals (the "smart money") and a few adventurous institutions.

This situation is expected to change dramatically in Canada over the next decade. There is evidence that there is a trend to greater use of hedge funds already underway in the United States, where hedge funds are more commonly used by large endowment and pension funds. The announcement of the intention to make a significant investment in alternative investments, including hedge funds, by CalPERS (California Public Employees Retirement System), adds further impetus to the trend. Reasons for the expected growth in this asset class in Canada include the continuing globalization of business, access to information facilitated by technology, and continuing evolution of investor sophistication. Investments which are market-neutral to varying degrees, such as many hedge funds, are particularly attractive when equity markets are trading at lofty valuation levels and the economy has begun to slow down.



A DIFFERENT ASSET CLASS

The definition of what constitutes a hedge fund has broadened significantly over the years. Generally, a hedge fund can be defined as a portfolio with a strategy of employing both long and short positions, leverage, and much less dependence on market direction than long-only portfolios of bonds or stocks. They differ from traditional investments in several key ways:

* Alternative investments such as hedge funds are "absolute return" investment strategies, as opposed to the "relative return" strategies which dominate pension funds. Under the latter, the investment manager's mandate is to manage against an asset class benchmark such as the TSE300 Composite Index, with an objective to exceed the index by a specified amount while closely controlling risk. Relative return mandates naturally motivate several aspects of the investment process. First, the manager will manage fairly close to the index, meaning that they will hold a relatively large number of securities and generally not take large security or industry bets. Portfolio construction is effectively dictated by the index. The manager wants to track the index closely, hopefully positively, and avoid any performance disasters. This acts to limit the overall return achieved as well as value added versus the market. Furthermore, relative return mandates are long-only—they will generally lose value-when the overall market declines.

Under absolute return investing, the manager invests to make as much money as possible, unconstrained by the components of any benchmark and limited only by risk objectives agreed to with the client. Hedge funds will short stocks as well as take long positions, allowing profits to accrue when securities decline. These funds employ many arbitrage strategies, including convertible security and interest rate arbitrage, merger arbitrage and other "event-driven" arbitrage. There are numerous hedge fund strategies, the common thread being that they aim to make money regardless of market direction. However, though sometimes referred to collectively as "market neutral," this is not always the case. For example, an increase in interest rates may be detrimental to net long-equity portfolios and convertible arbitrage. Pension plan sponsors need to be well informed and develop an understanding of how these strategies work.

* Hedge funds employ leverage. Like the "D" word, (derivative), this is easily misunderstood and may be considered overly risky. But leverage is generally modestly employed in hedge funds to generate additional profit. The degree of leverage varies by strategy and manager. However, leverage changes the dynamics of the investment process, and can become an issue requiring a long-term perspective when markets become illiquid.

* Hedge fund fees are higher than for traditional investing, usually in the 1% + 10% to 1% + 20%

TABLE 1

Comparison of Hedge Fund Strategies
5-year period ending September 30, 2000
(Returns in Canadian dollars)

	Advisor/ Manager	CSFB/Tremont Index	Convertible Arbitrage	Dedicated Short Bias	Equity Market Neutral	Event-Driven	Fixed Income Arbitrage
(Quarterly Cdn$ Returns)							
1Q95		1.65%	1.63%	-0.82%	4.12%	3.56%	0.23%
2Q95		0.88%	3.91%	-10.17%	2.25%	2.59%	2.60%
3Q95		6.91%	0.49%	-9.99%	-1.58%	3.42%	0.67%
4Q95		7.96%	6.83%	12.37%	3.09%	4.79%	5.68%
1Q96		3.83%	4.43%	-6.22%	5.04%	4.97%	2.91%
2Q96		7.29%	4.78%	-1.55%	3.02%	5.66%	4.07%
3Q96		0.58%	3.71%	-0.35%	3.31%	4.56%	3.77%
4Q96		9.58%	4.33%	3.20%	4.76%	6.58%	4.78%
1Q97		6.44%	4.41%	9.80%	5.07%	5.09%	4.41%
2Q97		5.83%	4.58%	-8.27%	5.23%	4.72%	2.88%
3Q97		9.87%	4.97%	-9.49%	4.17%	5.90%	3.10%
4Q97		6.20%	4.23%	14.98%	4.05%	7.43%	3.06%
1Q98		5.90%	3.15%	-10.78%	4.01%	6.11%	0.81%
2Q98		6.31%	5.00%	12.94%	5.55%	2.09%	2.05%
3Q98		-4.89%	-3.18%	25.01%	4.37%	-10.60%	-0.52%
4Q98		-0.45%	-2.48%	-20.15%	5.82%	5.10%	-3.98%
1Q99		-0.73%	3.12%	-5.09%	1.22%	2.79%	3.36%
2Q99		3.62%	2.43%	-7.85%	2.98%	5.83%	0.85%
3Q99		-1.30	2.38%	5.75%	2.66%	2.14%	0.48%
4Q99		14.72%	1.26%	-12.48%	1.70%	3.85%	1.02%
1Q00		4.51%	10.12%	-10.54%	4.89%	3.82%	1.33%
2Q00		-0.27%	9.89%	3.07%	6.96%	3.31%	4.00%
3Q00		4.70%	6.91%	7.26%	4.14%	4.45%	3.58%
Returns							
monthly		1.44%	1.31%	-0.17%	1.35%	1.27%	0.78%
quarterly		4.39%	4.00%	-0.52%	4.09%	3.86%	2.36%
annually		18.74%	16.97%	-2.07%	17.40%	16.36%	9.77%
Standard Deviation							
monthly		2.82%	1.82%	6.80%	1.30%	1.97%	1.75%
quarterly		4.62%	3.24%	11.35%	1.41%	3.70%	2.21%
annually		9.24%	6.48%	22.07%	2.82%	7.39%	4.41%
Downside volatility							
ann. below 0		5.33%	6.02%	9.01%	1.86%	10.32%	6.86%
ann. below MAR (5%)		5.59%	5.83%	10.40%	2.33%	9.44%	6.81%
Information ratio							
annually		2.03	2.62	-0.09	6.18	2.21	2.21
Correlations							
TSE300 in Cdn$		0.42	-0.20	-0.82	-0.17	0.38	-0.40
SM Univ in Cdn$		0.27	-0.12	-0.28	-0.11	0.06	-0.23
S&P500 in Cdn$		0.40	-0.18	-0.65	0.09	0.39	-0.25
MSCI EAFE in Cdn$		0.37	-0.04	-0.49	0.15	0.50	-0.11

Notes
Data taken from the CSFB/Tremont Index
Returns are net of all fees
MAR: Minimum Acceptable Return
Risk-free rate =MAR=5%
Statistics are for 5-year periods ending September 30, 2000

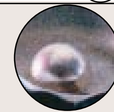
TABLE 2

Historical Impact of Hedge funds

	Benchmark Portfolio*	Portfolio +5% HF	Portfolio +10% HF	Portfolio +15% HF	Portfolio +20% HF	Portfolio +25% HF
Return	12.9%	12.9%	12.8%	12.8%	12.8%	12.8%
Volatility	10.2%	9.7%	9.2%	8.7%	8.2%	7.8%
Return ÷ volatility	1.26	1.33	1.40	1.48	1.56	1.64

*comprised of 65% equity and 35% bonds

range, with a variety of hurdle rates and high-water marks. Historically, hedge funds have been limited to fewer clients and lower asset bases than traditional institutional investing. The key to the fee structure is the performance-based fee. Hedge fund managers are highly motivated to generate consistently strong performance, and are able to use their best ideas in an unconstrained (by benchmarks and regulation) environment to do so. However, fees are not an inconsequential hurdle and must be justified by performance. Investors in hedge



Global Macro	Long/ Short Equity	Managed Futures	TSE 300	SCM Universe Bonds
3.16%	2.86%	7.72%	2.99%	5.26%
-0.73%	4.99%	-12.19%	5.59%	5.38%
10.79%	6.30%	-8.95%	0.61%	2.96%
12.06%	4.25%	4.93%	4.68%	5.65%
3.51%	4.21%	-2.07%	6.02%	-0.49%
8.79%	5.07%	1.60%	2.05%	2.11%
-1.48%	0.83%	4.00%	5.40%	5.02%
13.71%	6.58%	8.70%	12.56%	5.20%
8.91%	0.57%	4.55%	-0.84%	-0.37%
5.71%	7.26%	-3.49%	10.55%	3.84%
12.46%	14.07%	1.57%	9.76%	4.34%
10.52%	3.01%	4.99%	-4.44%	1.57%
7.17%	9.09%	0.89%	13.25%	2.82%
12.12%	6.30%	3.39%	-2.16%	1.59%
-4.07%	-3.76%	21.27%	-23.46%	2.54%
-10.55%	12.35%	2.06%	16.04%	1.92%
-7.67%	4.01%	-6.04%	2.12%	0.76%
2.33%	4.67%	-0.01%	6.65%	-0.98%
-8.05%	1.53%	0.41%	-0.36%	0.01%
14.94%	25.70%	-4.66%	21.37%	-0.97%
-0.23%	7.67%	-3.02%	12.79%	3.21%
0.16%	-3.21%	-0.80%	8.06%	1.74%
5.50%	5.12%	-2.65%	2.05%	2.06%
1.32%	1.83%	0.54%	1.53%	0.68%
4.01%	5.59%	1.63%	4.67%	2.06%
17.03%	24.30%	6.67%	20.02%	8.51%
4.42%	3.43%	3.14%	5.15%	1.31%
7.76%	6.43%	5.91%	9.41%	2.04%
15.51%	12.86%	11.82%	18.82%	4.08%
9.15%	7.88%	5.53%	15.28%	2.16%
9.64%	7.84%	5.82%	15.07%	2.41%
1.10	1.89	0.56	1.06	2.08
0.19	0.66	-0.23	1.00	0.44
0.25	0.25	0.25	0.44	1.00
0.30	0.47	-0.06	0.66	0.38
0.15	0.55	-0.03	0.57	0.13

funds are paying more to get more, and sponsors will have to acclimatize to this.

* Because of both the freedom to exploit their best investment skills in an unconstrained environment and the motivation provided by an incentive fee scale, the hedge fund industry tends to attract experienced and skilled professionals. However, as in any business, some are more skilled and successful than others, and careful manager selection is important.

* Hedge fund managers generally have significant amounts of their own capital invested. This adds tremendously to credibility and speaks for itself in indicating where the manager's interests will lie. The business model for traditional long-only investment motivates close-to-benchmark performance and asset gathering. For successful hedge fund managers, incentive fees and investment income will form most of their revenue. Excessive asset growth would often be to the detriment of hedge funds using more complicated strategies requiring nimble trading.

* Hedge funds are somewhat less liquid than publicly traded securities and employ lock-up periods of various durations. Obviously, hedge funds are not suitable to meet a pension plan's liquidity requirements. Interestingly, returns are seen to increase with longer lock-up periods (Source: UBS Warburg).

* Finally, accessibility to the details of investment processes, portfolio construction methodology and portfolio listings is more limited than for traditional investing, though this situation is improving. Due diligence is more of a challenge in the hedge fund area, but can definitely be achieved with sufficient effort.

PERFORMANCE

Hedge funds proliferated in the mid to late 1960s and 1980s, though performance data prior to 1988 is scarce. Consequently, long track records are rare. Nevertheless, a decade of performance information provides compelling evidence that hedge funds offer equity-like returns, low correlation to traditional bond and stock markets, and volatility that is generally much lower than publicly traded equity. The evidence also indicates that hedge funds perform well in bull markets and offer better downside protection than long-only portfolios when markets fall. In many ways, they are an ideal asset class for pension funds.

Table I shows some basic performance information which we typically review with clients.

Quarterly information for the five years ending September 30, 2000 is shown, which gives a feel for the pattern of returns and allows analysis of months where positive or negative events impacted markets. Some conclusions can be drawn to help shape decision-making as we proceed along the learning curve. They include:

* Dramatic differences in return among strategies: As expected, dedicated short managers had a rough ride in the current bull market, but surprisingly, so have managed futures. Annual returns range from -2% to 24% over the five-year period.

* Equity-like returns are evidenced by the overall

Due diligence is more of a ***challenge*** *in the hedge fund area, but can definitely be achieved with sufficient effort.*

index, long-short, market-neutral and event-driven funds, among others.

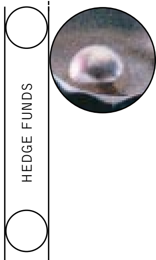
* Hedge funds show very low volatility (9.24% for the overall index) compared to historical equity volatility of 16% to 18%.

* Extremely high ratio of reward to risk, as evidenced by the ratio of return to volatility.

* Downside volatility is relatively low compared to bonds and stocks. During the emerging market liquidity crisis of Q3 1998, hedge funds significantly outperformed publicly traded securities.

EFFECT ON RISK AND REWARD

Pension fund asset mix in Canada has gravitated towards a 60% equity, 40% bond allocation. This mix is expected to generate an approximate 5% real return and exhibit annual volatility of roughly 10%. The bond allocation reduces volatility at the expense of about a 3% give-up on real return, based on historical experience. Since hedge funds as an asset class exhibit returns similar to that of equity, volatility closer to that of bonds, and low correlation to both bond and stock markets, they provide a significant advantage over bonds as a diversifier.



The final piece of the puzzle required is the impact of hedge funds on overall portfolio risk and return, shown in Table 2. To analyse this, we used actual returns for the five-year period ending June 30, 2000, and hedge fund allocations from 5% to 25%, increasing in 5% increments.

The analysis in Table 2, as well as other research, has led us to conclude that hedge funds can improve the risk-adjusted returns of portfolios in a meaningful way. However, pure optimization using quantitative analysis would lead to an extremely high allocation devoted to this asset class. The same phenomenon occurred after the real estate bull market of the 1970s, hence such models can't be followed blindly. Allocating 5% initially to hedge funds and building up over time to 10% to 15% seems reasonable.

Given the conservative culture of pension fund investing and the significant return differentials by strategy, a multiple strategy approach is one which will likely appeal to many sponsors. Such fund of funds offer the advantages of diversification and due diligence performed by the fund of funds manager.

UNIQUE RISKS

A number of significant risks are associated with hedge funds and it is imperative that these not be overlooked. Since the returns and strategies of hedge funds are based less on market direction and more on opportunity and skill, the risks tend to be largely manager and strategy-specific rather than market-related.

A key risk is a lack of understanding of the manager's strategy and the external factors which may affect the outcome. For example, some strategies may perform poorly in certain economic environments. Other risks include poor manager skill and strategy drift over time as assets under management grow. Too much leverage, rogue trading, and excessively long or short positions are all potential risks.

Poorly managed hedge funds definitely have higher potential for a disastrous outcome than other funds, due to the unconstrained environment and variety of techniques employed. Fortunately, once identified, most risks associated with hedge fund investment can be monitored and controlled. For those with fiduciary responsibility, this is of paramount importance.

CONCLUSION

Are hedge funds an appropriate investment for Canadian pension plans? I believe the answer is yes. Properly selected and managed hedge funds offer bond-like volatility, equity-like returns and low correlation to traditional asset classes.

Pension plan assets are typically subject to high levels of market risk which can simultaneously affect bond and stock holdings. Alternative investments can mitigate some of this risk. Many plan sponsors may choose to start by taking a conservative initial position of 2%-5%. But portfolio optimization, as well as a qualitative review of the hedge investing environment, easily justifies a 10% to 15% allocation, or higher. ◆