In a challenging economic environment of low returns and high volatility, the Canadian pension market continues to seek innovative strategies to minimize risk and maximize returns for plan members. To that end, alpha beta strategies, separating alpha from beta, are becoming well known in the institutional arena.

What are alpha and beta? Beta is what a portfolio can earn simply by being in the market. It can be measured using the market index that most closely corresponds to the style of investing. For example, a broadly diversified stock fund may be measured by the S&P 500 Index. Alpha is the return in excess of the capital asset pricing model (CAPM) and is usually used to evaluate an active manager’s performance.

There are various alpha beta strategies in the marketplace, including liability-driven investing (LDI), pure alpha and risk management using currency and other hedging strategies. These strategies can be implemented through products such as index funds, alpha-generating hedge funds and portable alpha offerings.

On November 18, 2008, Benefits Canada held the AlphaBeta Strategies Summit, bringing together senior representatives from Canada’s largest pension plans, as well as academics and leading providers. They discussed the merits of alpha beta strategies, the current opportunities and trends for the future. A summary of their presentations and a panel discussion follow.
Alpha and Beta: Is it all in your head?

Modern investors manage traditional, alternative and exotic betas and combine that with a portable alpha overlay. Casual observation would suggest that the profession has evolved considerably. This is not the case, however. Investors still invest in stocks, bonds and real estate and in most cases all that has changed is the terminology in which they talk about it.

Don’t hunt for alpha, optimize your beta instead! Most investors will gain a lot more from sorting out their beta exposures, or market risks, than from chasing alpha.

Some people look at risk and returns in the context of a factor model. It’s usable to a certain extent as it allows you to realize your risk. But it doesn’t add value to the extent that you don’t know what those risk factors are. For example, there’s equity risk, currency risk, volatility risk, etc., but there could very well be a lot more that you don’t know about. And if you don’t include those risks into your model, then the model is incomplete. In fact, the average variation for single strategy hedge funds explained by the factor model is not even 20%. That means 80% of hedge fund returns cannot be explained by the factor model.

Risk cannot be decomposed into elementary particles, especially in alternative investments. So, a lot of alpha that people see in their investments isn’t really there because they use highly incomplete models. Consequently, investors overpay for “fake” alphas—it’s in their heads.

Investors need to realize what they know and don’t know. They don’t know alpha—it’s made up. They do know beta, or market risk, and it’s something that can be managed.

In terms of market risk, many portfolios are seriously mismanaged and under-diversified. With smart beta management, investors can crank up the risk-return profile of a traditional portfolio a lot more than just picking up a little alpha here and there.

Let’s take a theoretical look: Assume four different asset classes with varying expected returns and volatilities, zero correlation and the same Sharpe ratio. We then implement these asset classes through four simple and different portfolio strategies: 1) buy and hold equally weighted (EW) portfolio; 2) daily rebalanced EW portfolio; 3) buy and hold “risk profile equalized” (equalizing the risks of the assets you are invested in based on their volatility—the benefit is that you spread your risk) EW portfolio; and 4) daily rebalanced “risk profile equalized” EW portfolio. Strategies 1 and 2 are what most people do; Strategies 3 and 4 are my way of doing it better. When comparing Sharpe ratio distributions, it turns out that Strategy 4 has a Sharpe ratio 74% higher than Strategy 1, and 36% higher than Strategy 2. Why is that, since all 4 strategies invest in the same asset classes? It’s because Strategies 1 and 2 spread money, but Strategies 3 and 4 spread risk.

So how do we create Strategy 4 returns that can be added to an investor’s existing portfolio, so the existing portfolio doesn’t have to be totally revamped? Our FundCreator risk management approach is a diversifier that allows one to manipulate the risk profile of an investment portfolio. It works by starting out with a given portfolio, deciding on its desired risk profile and then designing a trading strategy that changes the portfolio’s existing risk profile into the desired risk profile. For example, if we took an EW portfolio of 3M Libor, 5-year notes, 10-year notes, S&P 500, S&P Small Cap 600 and GSCI investments, the portfolio would have a correlation of 0.54 with the benchmark. Too high for a good diversifier!

However, with only a 20% allocation to the FundCreator diversifier, the overall portfolio Sharpe ratio rises to 0.64 from 0.53 and the volatility drops to 6.93% from 8.36%. We can also increase the volatility of the diversifier to produce a portfolio volatility of 8.36%, increasing the Sharpe ratio to 0.74. The diversifier corrects the risk in the portfolio so it doesn’t feel market volatility.

So when searching for alpha, investors should consider that alpha is mostly in their heads; beta is not. Most portfolios are under-diversified in beta terms and smart management of beta risk can add tremendous value.
A practical approach to creating and managing liability-driven investing

Liability-driven investing (LDI) is an investment strategy aimed at reducing pension plans’ surplus volatility. LDI first identifies and quantifies the risks embedded in pensions’ liability streams — interest rate risk, equity risk, inflation risk and demographic risk — and then invests in assets designed to mitigate these risks.

For those plans that want to dip their toes into the LDI “water” by addressing, at least partially, interest rate risk, an increase in the duration of their bond portfolios is the logical first step. Next on the LDI spectrum is an increased allocation to bonds, then the addition of new asset classes (like infrastructure or commodities) that are related to the profile of their plans’ liabilities. Finally, plans that want to eliminate the most interest rate risk possible can fully immunize their liabilities through physical assets or with synthetic assets using an overlay strategy.

A key point to remember is that even with full immunization, a plan that is not fully funded cannot eliminate all the interest rate risk of their liabilities. According to Towers Perrin, the average funding ratio of pension plans in Canada was 76% as of June 30, 2008, which means that the average plan can only hedge 76% of its interest rate risk when fully immunized.

There are two types of benchmarks for LDI: standard off-the-shelf benchmarks and customized liability benchmarks.

- Off-the-shelf benchmarks are mixes of existing indices such as the DEX Long-Term Bond Index and the DEX 20+ Strip Index. If one benchmark’s duration is six years and another’s duration is 10 years, the benchmark for a plan with a duration of liabilities of eight years would be 50-50 for each index.

- Customized liability benchmarks present a lot of advantages since they are based on a plan’s projected future liability payments. These benchmarks are practical, simple and dynamic and take into account duration, convexity and discount rate. LDI is much more than a theory. One of our customers decided in 1998 to lock in their pension solvency by selling all stocks and implementing LDI. Plan administrators were able to project liabilities until 2080 and decided to implement a customized liability benchmark by discounting their liabilities using the Government of Canada coupon curve to 2080. This plan’s investment policy statement limits Government of Canada bonds to 50% of the portfolio, provincial bonds to 80% and corporates to 20%. The IPS also allows up to 10% in portable alpha alternatives such as currencies, commodities and currency arbitrage. Since 1998, thanks to LDI, this plan has stayed fully funded with very little surplus volatility.
Investors are continually challenged by lower-than-expected returns from their equity allocation as well as lower than expected results from their investment managers. Diversification away from the asset class has generally been beneficial but it is not sufficient. One remedy to enhance returns for the remaining allocation is to allow shorting.

In recent years, concerns about lower equity returns have led investors to reduce their allocation to domestic equities while increasing their allocation to international equities (developed and emerging) and alternatives. In general, these diversification moves have aided their return and risk objectives. Two recommended strategies to further diversify their remaining equity allocation are 130/30 and portable alpha market neutral. Both of these strategies, if constructed properly, have a beta of approximately one, making them viable candidates for the traditional equity allocation. These strategies have greater return potential than a typical long-only strategy because the manager has more opportunity to take active bets (both long and short). The active risk (tracking error) of these strategies is generally comparable to active long-only mandates. As a result, these managers should show greater probability in their ability to add value.

A 130/30 strategy sells short 30% of $100 capital invested and uses the proceeds to buy an additional 30% of long exposure. The net exposure is the initial investment of $100. The additional 60% of long and short gross exposure has both return seeking and risk management roles. However, with the benchmark used in portfolio construction, the return and risk of the stock selection is not separated from the return and risk of the market.

A market neutral strategy sells 100% short and uses the proceeds to buy 100% long exposure, for a total of 200% gross exposure for $100 invested. If constructed properly, the offsetting long and short positions cancel out market return and risk. Each position is an active weight with the role of providing active return and/or reducing risk. To create a portable alpha market neutral strategy, we transport the market neutral alpha to an asset class by replicating a benchmark in that asset class using an overlay. The overlay is passive, providing the return of the underlying benchmark. The typical overlay implementation uses futures/swaps/ETFs. The overlay turns a beta neutral market neutral strategy into a portable alpha market neutral strategy with a beta of approximately one.

Investor interest in these strategies has waned given concerns about shorting and leverage as well as manager performance over the last year. This uncertain environment is an excellent opportunity to differentiate between strategies and managers. Legitimate investment managers with fundamental insights and meaningful shorting experience are capable of managing the associated risks that accompany these types of strategies. 130/30 and equity market neutral strategies use pre-specified levels of shorting and leverage. These two distinctions should provide some comfort for investors who desire greater understanding and objective measurement of the strategies they are invested in.
Setting up liability benchmarks

Plan sponsors seeking the ideal LDI strategy must first look to the challenge of setting up an accurate benchmark. Herewith an exploration innovative tools and strategies related to liability benchmarks and how plan sponsors can use them.

LDI is a framework that allows pension plans to focus on their raison d’être — providing benefits at a reasonable cost — instead of trying to outperform a market-related benchmark. It allows plans to better manage risk without sacrificing long-term potential. To do so, non-rewarding risks must be minimized or outright eliminated. A significant proportion of these unrewarded risks comes from using inappropriate benchmarks.

Within the implementation of an LDI strategy, there are several steps that must be performed by plan sponsors before selecting an appropriate liability benchmark. First, there should be a thorough understanding of the nature and the risks of the liabilities. This process often requires the use of an asset-liability study. Thereafter, plan sponsors must clearly define their objectives and their risk tolerance. Once these steps are done, the process of selecting an appropriate liability benchmark can begin.

The liability benchmark must reflect the nature of the liabilities, the plan sponsor’s objectives and risk budget, the funding level and the structure of the market. For example, a final average plan is exposed to inflation before retirement, while a flat benefit one is not. The liability benchmark has to take this into consideration.

The liability benchmark should also reflect the actuarial valuation basis that is the most preoccupying to the pension committee. In addition to the market value, there are three possibilities in Canada: solvency, going concern and accounting liability valuations. The interest rate hedging process should therefore be linked to the liabilities valuation methodology. For example, if a plan sponsor is concerned with the solvency basis, the strategy will be implemented differently than if the market-value basis was targeted. In the first case, the exposure over the yield curve will be much less smooth than for the second case, as can be seen in the graphs to the right representing the different interest rate exposures to the yield curve for a pension plan.

The reason for these discrepancies resides in the major differences existing between the actuarial valuation and the market value. Looking at these graphs, it should be evident that no market-related benchmark or combination of market indices could replicate the sensitivity of the liabilities to interest rates movements. Once the plan sponsor has decided to which valuation basis the liability benchmark will be linked, he must determine how to spend the risk budget. For all actuarial valuation methodologies, the discount rate(s) used is generally based on the risk-free curve plus some risk premium. Therefore a benchmark that would only be invested in risk-free securities would generate returns that would be insufficient to match the growth rate of the liabilities and would hence lead to an investment strategy where deficits could be expected year after year. To avoid this systematic deficit, the benchmark must include investments in provincial and corporate bonds to compensate for the risk premium.

In conclusion, establishing an appropriate liability benchmark is the cornerstone of a successful LDI strategy. Unfortunately, much more time is often devoted to the definition of the active management mandates around a market-related benchmark than to the establishment of the appropriate liability benchmark. Using an inappropriate benchmark could be the source of huge unmanaged risks resulting in potential important deficits for the plan.

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Investors often don’t understand the benefits that can come from active currency management. Not only is it an effective risk management tool, it also represents a source of added value.

Currency management has been a hot topic for the past few years in Canada because of the rapid appreciation of the Canadian dollar, which caused Canadian pension plans to suffer. Currency is an unrewarded risk. When investors move from bonds to equities, they believe in equity premium. When they move from domestic to international equities, they believe in the diversification benefits of international securities. However, they need to consider the currency impact of that decision: currency imbedded in international securities might have the same or a greater risk profile than some of their heavier-weighted stocks.

When managing currency, investors need to identify objectives such as risk reduction, value added and ease of understanding. They also need to address currency hedging: What to hedge? The U.S. dollar is often the starting point, but the other G10 currencies and emerging markets should also be considered. What’s an appropriate currency policy benchmark? How much should be hedged? The experts do not agree on how much should be hedged, but 50% has been the most favoured option in the Canadian marketplace lately.

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Currency beta can be managed by hedging the currency that represents the biggest risk in their portfolios. Along with managing beta, active currency management can also be an uncorrelated source of added value. Academic research suggests that four distinct basic strategies have added value over the past 30 years.

1. Technical: a purely momentum play that moves average crossovers with volatility filters that are introduced to address risks.
2. Carry: fund long positions in high yield currencies via short positions in low yielders. Reverse position when market conditions become risk averse.
3. Fundamental: purchasing power parity may be particularly useful as a risk measure when exchange rates move far away from “fundamental value”.
4. Volatility: uses the volatility of the currency class itself to generate returns by selling in-the-money put and call options when volatility is high, with the expectation that volatility will mean-revert.

A manager constructs a portfolio by creating a currency basket that you own. Plan board members must agree on certain points when working with a currency manager. They must define the benchmark and agree on both an asset value subject to currency risk at the beginning of each month and on respective currency weight allocations to asset value. They must also discuss use of proxies, use of monthly forward contracts and trading at the end of the month.

With so many options, tactics and strategies, it’s worth taking a look at your currency management as, in the long run, unmanaged currency volatility is an uncompensated risk.
Let’s examine both quantitative and fundamental approaches and then discuss practical application: specifically, how a plan sponsor can implement, relative to a policy benchmark.

Historically these strategies were viewed as a natural extension of quantitative investment approaches using models to predict positive and negative alphas. Today we see the emergence of uniquely qualified fundamental managers leveraging specific skill sets, namely, scale of research techniques, sound risk management and demonstrated experience in shorting. Both approaches have similarities with respect to objectives and access to information; however, differentiation occurs in the security selection process, approach to shorting and finally portfolio construction.

Security selection skill
This is the most important attribute to consider in evaluating any 130/30 or equity market neutral manager, as without skill, there is no alpha. In simple contrast, if fundamental is about depth of coverage requiring scale of fundamental research resources with a focus on valuation, quantitative is about breadth of coverage in the investable universe with an emphasis on data.

Shorting is a requisite skill
Managers must demonstrate expertise to execute short sales — an actual market exposure with a very different return profile. Fundamental managers view short sales as an extension of their research mandate. Their share price focus demands a discipline regarding stop losses on short positions. Quantitative managers forecast an alpha for all stocks in the allowed universe and view shorts as amplifications of underweights, taking numerous small short positions versus a smaller number of larger short positions.

Impacts on portfolio construction
Portfolio constraints need to reflect each underlying approach. A quantitative portfolio is constructed using optimization algorithms and risk models resulting in a large number of names, tighter individual and sector exposures, a low to moderate expected tracking error and, in the case of the 130/30 strategy, a tightly controlled beta close to one. In a fundamental 130/30 approach, a market beta of one or less is targeted, with a focus on both benchmark-relative and absolute risk. The strategies will typically have higher tracking error and will feature fewer names and somewhat broader security-level constraints.

Practical applications
130/30 and equity market neutral strategies offer improvements to the risk-adjusted outcome, but require the investor to make different decisions with respect to policy asset allocation.

A third option to both maintain policy mix while seeking to add value in a risk-controlled manner is to consider implementing a portable alpha strategy, harnessing alpha generated via an equity market neutral approach and combining it with the market return of a policy defined asset class allocation. This approach may allow the investor to enhance returns in a risk-controlled manner without impacting policy asset mix, while helping to provide diversification and downside protection. Desirable attributes of alpha sources include multiple uncorrelated sources, market and a low correlation to the underlying market it is being ported to.

As we move along the alpha beta continuum, we see that such “alternative” strategies are becoming increasingly more mainstream.

Approaches to 130/30 and equity market neutral investing

These strategies offer investors the ability to achieve a significant improvement in their risk-adjusted returns — an increasingly important consideration in a challenging capital market environment.
Implementing successful alpha beta strategies can be challenging and investors must be aware of the potential pitfalls before they can successfully utilize them.

**Alpha beta separation is a tool, not a strategy.** Theoretically speaking, CAPM is a great model for separating alpha from beta but isn’t possible in practice. But why even try to separate alpha from beta? Separating the two creates a portfolio that has more flexibility in its risk/return structure, a low correlation of alpha and beta to enhance risk-adjusted returns, diversified sources of alpha and improved asset-liability management. It also allows investors to only pay fees for exposure to alpha (active management).

Let’s look at some applications where separating alpha from beta may make some sense. For instance, if your equity manager isn’t keeping up to the benchmark, consider alternatives. We had a situation where a money market manager used tax arbitrage and equity swaps to deliver 50 basis points over the equity index. Another scenario is creating portable alpha by investing in a pooled equity fund or selected basket of stocks then hedging out the equity risk using equity swaps or short positions in futures. The residual return is alpha. The fees for this approach may be higher but still considerably less than what you would pay for a hedge fund manager.

In another application, what happens traditionally is that a policy mix is set, and then managers are selected that are best within those policy applications. This is a sub-optimal approach because you are limiting your search to the managers that are operating within these asset classes and not really taking a broad look at the talent that is out there. So what you might want to do is set your beta mix separately and then overlay managers to deliver alpha on top of that.

When looking for beta, look for attributes including high return, low portfolio correlation, high correlation to liabilities, low or negative carrying costs and high liquidity. Beta can be accessed through index funds, exchange-traded funds, futures and swaps. Your choice of beta sources is going to depend on the cost of the instrument but also your level of sophistication in resources.

When looking at beta through derivative type instruments, it is important to recognize that there are market factors affecting the pricing. For example, pricing on TSX equity swaps is quite different from that on the S&P. A number of factors drive the pricing difference, such as opportunities to take advantage of tax arbitrage, dividend arbitrage and supply/demand factors. Also, dealers have bid versus ask spreads that can affect pricing, as well as pricing for securities lending, counterparty risk and cost of capital.

When looking at alpha, look for high return, market inefficiency or demonstrable skill, a broad universe and low portfolio correlation. Sources of alpha include anything that involves tax or regulatory arbitrage, currency, equity long/short, credit long/short, market arbitrage, volatility trading and duration management.

Some of the challenges around searching for alpha include the hedge fund model. A lot of hedge funds have been weeded out, but now the survivors have the opportunity to distinguish themselves. There have always been issues around the fact that hedge funds use leverage, have capacity issues and lack of controls. You need to be sure that the alpha is due to skill versus luck and the fact that it is a zero sum game.

When trying to source alpha, understand:
- you will be using derivatives;
- it’s only viable for public markets;
- you will be leveraging;
- the risk/return tradeoffs; and
- that you need extensive due diligence.

Implementing issues around alpha beta separation in a portfolio include greater complexity, which requires stronger governance and the requirement of a risk management framework. Also be aware that separating alpha from beta may have unintended consequences. The way we are looking at it, it is a new asset class and could have a host of issues, such as illiquidity, complexity and new models for compensation.
Expert Panel Discussion

Plan sponsors are looking to alpha beta strategies to manage risk and add value. What approaches are they using? What challenges have they come across and how have they dealt with them?

MICHEL JALBERT: I’d like to share some of the conclusions we’ve reached in our research on currency. I won’t talk about approaches because it’s been covered. So, is currency a zero sum game? We’ve concluded that it is but over 10 years and beyond. For instance, over the last 30 years, the yen has appreciated at a clip of 2.5% per year. Everything happened in the first 10 years, when Japan went from a developing status to developed status. That makes the case to look at emerging market currencies in the currency mandate.

As to risk reduction, currencies typically have a negative correlation with the underlying stocks. Our conclusion is that currency is a natural diversifier, again, if you have a long horizon. Currency has a big risk. Is it a beta or not? We could debate that. If you’ve been exposed to the yen for two or three years, you would have gained 2% per year, so in a sense it’s kind of a beta, but currency is really about risk. Currency could account for 20% to 30% of the total portfolio return in a given year, so it has a big impact.

Why active currency? Very briefly, it’s a highly liquid market, it’s scalable and you can offer it with little to no leverage, it’s fully transparent and you have daily valuation. This is not an efficient market.

CLAUDE TURCOT: In an LDI framework, adding value is looked at differently. For one thing, liabilities are added into the equation, so you have to look at correlation vis-à-vis your pension liabilities.

There are ways to also add some value to your portfolio. For example, a pension fund wants to hedge a chunk of its interest rate risk but wants to add exposure to U.S equities. In the past, that could be done with derivatives. You gained exposure to the S&P 500 through...
futures and you had margin and short-term paper. You kept the margin and swapped that short-term paper against a bond portfolio in line with your liabilities, so you still got that daily exposure to the beta but you also increased your interest rate hedge. That was in the good old days before the Libor went so high. Now, that type of strategy is much less attractive.

We’ve also seen people investing in hedge funds. Basically, the promise of a hedge fund gives you Libor or T-bills plus alpha. The pension fund does not really need the T-bill return, so again you can short that T-bill and go long on a position within your structured bond portfolio in line with your liabilities.

So there are many ways that you can add value even if you are within a risk-constrained portfolio.

**LOUIS BASQUE:** When talking about alpha beta separation, we would typically look at structures with a fixed income beta matched with a variety of alpha sources. But looking at median fixed income managers in Canada, the five percent best managers have only been able to outperform the universe by 12 basis points per annum over the last five years.

Why is it so hard for managers to generate value added in a fixed income space? Our experience as an active and enhanced manager is that restrictions against shorts, combined with an over-reliance on corporate issuers, result in a suboptimal return and risk profile for portfolios.

If a manager has the skill to identify winners in a credit space, that manager also has to be able to use those skills to profit from picking the losers as well.

Now while you can overweight corporate bonds as you want in your portfolio or as will be tolerated by your investment policy, there is only limited upside associated with picking the losers, given the fact that most corporate issuers under the x universe have a fairly small weight. This asymmetry is increased by the asymmetric nature of corporate bond returns.

The implication for this, at the manager level, is that if you operate in a long-only space, and you have restrictions against shorting bonds, you should put as much emphasis as you can on identifying the losers, focus more on your underweights and maintain the greatest diversity possible on your overweights.

**DONNA WILSON:** I would like to start with a market outlook and then give some investing suggestions.

We are very bullish on equities. We also believe that marketplace conditions have created a great buying opportunity. Those conditions are: an expansionary monetary policy, a good tax policy and the market’s 52-week lows across the board. From our standpoint, these conditions say that this is a great buying opportunity.

You are in all likelihood going to benefit from putting your money to work in equities. In the U.S., we believe that stocks will outperform cash by 11% over the next year. Based on that, and knowing that plan sponsors are going to have to rebalance at some point or are already rebalancing, we would recommend allowing their skilful managers to short within their traditional equity allocation.

There is also volatility in place that will create opportunity. Skilful managers can identify long positions as well as stocks that they think will do well versus stocks that they think will do poorly. The combination of those in your portfolio actually allows you to manage your portfolio better, in terms of managing risk and also creating a better return-risk profile.

There are a number of strategies that you can employ that use some shorting techniques, and we think it’s a great opportunity to investigate those strategies and the managers who have a successful track record at employing them.

**INGRID MACINTOSH:** In terms of trends, we are seeing a focus on LDI, so bonds, longer bonds, duration extension and trying to get alpha aligned with beta.

One of the other ways that we’re seeing people applying their bond application is through their use of portable alpha strategies. Looking at pooled portable alpha solutions, there’s an ease of implementation there, and these are the types of strategies we’ve seen plans adopting against their bond allocations—their long bond and real return bond allocations.

We’re seeing plan sponsors focus on a number of things.

**Fees:** They don’t want to pay fees on beta. Within the portable alpha strategies, they were looking for managers who were charging fees only on the return delivered above and beyond the beta. And also, within that alpha return, making sure those returns weren’t layering fees.

**Transparency:** Plan committees are much more concerned with understanding the holdings in the underlying funds they are investing in. It’s far more important to them to be able to explain to their committee members or spouses what they are investing in, than getting beta plus at 6% or 7%. They are much happier to get beta plus at 2% to 3% with comfort.

**Liquidity:** If they’re making this a part of their bond allocation, they want to make sure that they can get to that allocation when they need it. Many strategies do entail large lockups; even those that didn’t originally are setting provisions going in.

These are the types of issues pension funds are looking at.

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