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## Portable Alpha ... Redefined

Portable Alpha has become the hottest trend in asset management throughout the world. If done correctly, this is truly the most prudent and effective way to manage assets versus any **liability driven objective**. The problem, as usual, is the finance industry clings to **asset driven** strategies and ends up with the wrong risk/reward behavior due to the wrong objective (index).

### Alpha

Alpha is defined as the excess return above a benchmark. Unfortunately, the finance industry is using the wrong benchmarks for liability driven objectives. As Confucius once said :

*Given the wrong benchmark index ... you will get the wrong risk/reward !*

How true these words now haunt pension funds and other liability driven objectives. **The objective of a pension is to fund the liabilities at the lowest cost to the plan taking prudent risks**. It follows that if you outperform any generic index but lose to liabilities ... **you lose !** Generic indexes help you understand the risk/reward behavior of a specific asset class but have no relationship to the unique liability structure of a pension plan. Pension liabilities are like snowflakes, no two are alike. Each pension has a distinct labor force with different mortality, salary structure, plan amendments, etc.. The duration and term structure of a pension is unique to the plan, You will never find a generic index with the cash flow structure of any pension or liability. Generic indexes may, in fact, force you into a contradictory risk/reward behavior versus the behavior of liabilities. The correction period of 2000 – 2002 for equities was a frightening example of the disconnect between the S&P 500 and liabilities. In those three years, the S&P 500 underperformed Liabilities by 92% to 100% using the **Ryan Liability Index** and the **Ryan 15-year STRIP Indexes**. Based upon our 20 year history of STRIP Indexes, the S&P 500 consistently behaves (volatility) like a 15 to 20 year STRIP :

<u>Index</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>Cumulative</u>
S&P 500	-9.09	-11.86	-22.08	- 37.57%
Ryan Liability	25.96	3.08	19.47	55.12
Ryan 15 year STRIP	28.24	1.22	24.04	61.01
Ryan 20 year STRIP	32.54	0.66	22.77	63.79

Just like the scoreboard in sports regulates your strategy, so should the pension scoreboard. If you are way behind (deficit) you will behave differently than if you are way ahead (surplus). Without a **Custom Liability Index** to accurately measure the growth rate and volatility of liabilities, you can't understand the score ... you can't play the pension game efficiently.

**Alpha needs to be redefined as ... the excess return above the client true objective (i.e. liabilities). Based upon a Custom Liability Index (CLI) as the best representation of the client objective, Alpha is the excess return of asset growth above the CLI (liability growth).** Since liabilities are bond-like, in order to earn Alpha this portfolio should be primarily if not exclusively non-bond assets (exception high yield bonds since they are more equity-like in their behavior). All Alpha portfolios must be monitored vs. liabilities closely. The correction period of 2000-2002 is too vivid a reminder. Investment grade bonds usually have little or **NO Alpha** (especially after fees) vs. the Treasury STRIP yield curve. **Bonds are best as the Beta or Liability matching portfolio.**

### Beta

It follows that if Alpha is the excess return above liabilities (as measured by a Custom Liability Index) then the **Beta portfolio is the portfolio that matches liabilities. By definition, the Beta portfolio for pensions (and all liability driven objectives) is a Liability Index Fund.** Many practitioners use Beta in Portable Alpha strategies as a generic index fund. This is not Beta ! There is no generic index that matches the risk and reward behavior of any pension liability (as measured by the Ryan STRIP yield curve indexes). Pension liabilities are like snowflakes, no two plans are alike ... different labor force, different mortality, different salary structure, etc..

**To build and maintain a proper and accurate Beta structured portfolio requires a Custom Liability Index.** This true Beta portfolio is where investment grade bonds go in Asset Allocation. I designed most of the Lehman bond indexes as their former Director of Research in the 1970's and 1980's. These indexes are the best representation of the investment grade bond markets but they have nothing to do with liabilities. The Lehman Aggregate behaves like its average duration (@ 5 years). Although heavily skewed to non-Treasury securities, the Lehman Aggregate has underperformed the 5-year Ryan STRIP Index for the last 10 and 20 years with a tracking error of 42 basis points per month (i.e. does not track liabilities well) :

	12/31/95 to 12/31/05	12/31/85 to 12/31/05
	<u>Annual Return</u>	<u>Annual Return</u>
Lehman Aggregate	6.16%	7.88
Ryan 5 year STRIP	6.28	8.28
Difference	- 0.12	- 0.40

As mentioned earlier, a **Liability Index Fund** is a valuable Asset Allocation strategy. It can be the temporary allocation during **Transition Management (Liability neutral portfolio)** or when a **market seems overvalued** and you need to put assets in limbo for awhile. Those that saw the equity correction coming in 2000 – 2002 would have been wise to move this allocation

to a Liability Index Fund (Beta portfolio) that matched the behavior of the liabilities the equity market was targeted to fund (i.e. long liabilities) waiting for the correction period to finish. Then go back into equities when they seem properly valued. In that sense, asset allocation should **not** be static or Strategic but more Tactical.

A liability matched zero-coupon bond portfolio should be the permanent Beta portfolio and Core portfolio for Liability Driven Investments (LDI)). The allocation to Beta is based upon the pension plan's Funded Ratio. The bigger the deficit, the greater the allocation to the Alpha portfolio and vice versa. Contributions should be included as a future asset in the calculation of this Funded Ratio. As a result, **assets should fund net liabilities (after Contributions).**

### **Portable Alpha**

Asset Allocation's intent was to create a synergy among asset classes that meets and beats the client objective with prudent risk. This is still ideal. What was missing was the client objective as a custom index and the discipline to shift funds to a less risky allocation when you won the game (Surplus). Portable Alpha can now solve this deficiency if it is based on liabilities.

Once a Custom Liability Index (CLI) is installed as the true client objective and benchmark for all asset classes, Portable Alpha can begin. **The CLI will determine the true economic funded ratio of the pension and the accurate measurement of the deficit or surplus. It will also determine the growth rate that the Alpha portfolio must beat to earn Alpha.** Based upon the size of the deficit (or surplus) will determine the allocation to Beta and Alpha. A prudent deficit reduction strategy is to BUY TIME by moving the deficit to longer liabilities. The way to buy time is to allocate to the Beta portfolio equal to the time needed. A 30% deficit may be viewed as needing 10 years to cure. By building a Beta Portfolio that matches the first 10 years of liabilities you have moved the deficit out past 10 years. This allows the Alpha portfolio time to perform. Most non-bond asset classes outperform bonds if given time.

Now comes Portable Alpha. As the Alpha portfolio performs by outgrowing liabilities on a cumulative return basis, this excess return (Alpha) should be "ported over" to the Beta portfolio on a timely basis (monthly). The Beta portfolio will reinvest these proceeds chronologically to match the next liability (i.e. 11th year). Through time as the Alpha portfolio wins (cumulative returns) and excess returns are ported, the Beta portfolio grows thereby reducing the costs of the pension plan (Contributions) and the interest rate risks as the asset portfolio (Beta) will now match and track the liability portfolio. This coordination and synergy of the Alpha and Beta portfolios is what Asset Allocation was intended to do. Portable Alpha now accomplishes the Asset Allocation mission. **Portable Alpha is best redefined as the synergy of transferring funds from the Alpha portfolio to a liability matching Beta portfolio based upon the excess returns of the Alpha portfolio versus a Custom Liability Index.**

Las Vegas has built a profitable empire based upon the human behavior principle that most people ... play till they lose. Unfortunately, pensions are guilty of such a behavior. They had the game won in the late 1990's with large surpluses but didn't change their asset allocation to a more prudent Asset/Liability matching structure to secure the victory (Surplus). They didn't port Alpha !

**PALS (Portable Alpha Liability System)**

Ryan ALM is unique as an Asset Manager in providing an ALM turnkey system of :

1. Custom Liability Index
2. Liability Index Fund (Beta portfolio)
3. Series of Alpha funds

We call our proprietary and unique product line ... **PALS (Portable Alpha Liability System)** where we integrate all three products into a synergistic system of Liability Driven Investments (LDI). After two years of development and six years of historical returns back testing ...

**PALS is our Solution to curing Pension deficits.**

PALS targets a certain area of liabilities to cure the deficit (i.e. 15 to 20 years). Based upon the CLI, we know the true economic deficit and the growth rate to earn Alpha. The initial PALS **Alpha portfolio is a Multicap Equity portfolio**. The PALS **Beta portfolio is a Government zero-coupon bond portfolio** whose mission is to fully fund the target area of liabilities. As the Alpha portfolio wins and outgrows liabilities, the excess returns are “ported over” to the Beta portfolio chronologically so the 15<sup>th</sup> year of liabilities is fully funded first, then the 16<sup>th</sup> year, etc.. This discipline of porting over to the Beta portfolio the excess returns above liabilities assures a disciplined strategic pattern that will reduce costs (Contributions) and reduce risks (Hedges Interest Rate Risk of Liabilities).

PALS can accommodate any asset class into its framework. This allows for asset allocation to work efficiently on the entire Alpha asset class(s) distribution. Portable Alpha is the effective way to handle tactical Asset Allocation especially within a PALS structure.

**Please email us with any questions or inquiry regarding PALS at :**

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