Portable Alpha & Post Modern Asset Allocation
What is Portable Alpha?

- Separate alpha from beta and transport the alpha to another portfolio
- Passive beta strategy: index fund
- Active beta strategy: market timing
- Alpha: skills not related to market timing
## Alpha vs. Active Beta
### January 1997 - December 1999

<table>
<thead>
<tr>
<th>Manager/Index</th>
<th>RETURN</th>
<th>Beta vs. Market</th>
<th>Alpha vs. Market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth Manager</td>
<td>40.70</td>
<td>1.26</td>
<td>-2.09</td>
</tr>
<tr>
<td>Growth Index</td>
<td>35.00</td>
<td>1.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Value Manager</td>
<td>9.30</td>
<td>0.76</td>
<td>3.24</td>
</tr>
<tr>
<td>Value Index</td>
<td>11.32</td>
<td>1.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>
## Transition to Portable Alpha

<table>
<thead>
<tr>
<th></th>
<th>EQUITY MANAGERS</th>
<th>FIXED INCOME MANAGERS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>60%</strong></td>
<td>BETA &amp; ALPHA COMBINED</td>
<td>BETA &amp; ALPHA COMBINED</td>
</tr>
</tbody>
</table>

| **40%**              |                      |                        |

100% ASSET/STYLE ALLOCATION

- Returns are a combination of alpha and beta
- Strategic allocations can be tactically inefficient
- Fees are inefficient

**TRADITIONAL APPROACH**

Strategic Allocations of Assets and Style

- Strategic Allocations of Assets and Style
- Beta & Alpha Combined
- Equity Managers
- Fixed Income Managers
### Transition to Portable Alpha

#### NEXT GENERATION
Tactical Allocation of Sources of Return

<table>
<thead>
<tr>
<th>EQUITY BETA</th>
<th>ALPHA MANAGERS</th>
<th>PORTABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>60%</td>
<td>Futures, Swaps, ETFs, Index Funds</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FIXED INCOME BETA</th>
<th>40%</th>
<th>Futures, Swaps, ETFs, Index Funds</th>
</tr>
</thead>
</table>

#### Disability
- Separation of market exposure (beta) from selection skill (alpha)
- More control over return attribution and risk budgeting
- No disruption to manager structure or strategic asset allocation
- Better alignment of fees with products
Characteristics of Portable Alpha

- Low correlation with indices
- Low hedgeable market exposure
- Attractive risk characteristics
## Sources of Portable Alpha I Hedge Fund

### Median Manager Alpha & Active Risk
1994 - April, 2003

<table>
<thead>
<tr>
<th>Fund</th>
<th>RETURN</th>
<th>STD. DEVIATION</th>
<th>SHARPE RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSFB Hedge Fund Index</td>
<td>11.87%</td>
<td>8.58</td>
<td>0.85</td>
</tr>
<tr>
<td>CSFB Multi Strategy</td>
<td>9.27%</td>
<td>4.65</td>
<td>1.01</td>
</tr>
<tr>
<td>CSFB Emerging Market</td>
<td>5.03%</td>
<td>18.13</td>
<td>0.02</td>
</tr>
<tr>
<td>CSFB Fixed Income Arb Index</td>
<td>7.35%</td>
<td>3.93</td>
<td>0.71</td>
</tr>
<tr>
<td>CSFB Global Macro</td>
<td>15.92%</td>
<td>12.32</td>
<td>0.92</td>
</tr>
<tr>
<td>CSFB Managed Futures</td>
<td>6.64%</td>
<td>12.42</td>
<td>0.17</td>
</tr>
<tr>
<td>CSFB Short Bias</td>
<td>-1.09%</td>
<td>18.31</td>
<td>-0.31</td>
</tr>
<tr>
<td>CSFB Market Neutral Index</td>
<td>11.19%</td>
<td>3.14</td>
<td>2.11</td>
</tr>
<tr>
<td>CSFB Convertible Arb Index</td>
<td>11.00%</td>
<td>4.86</td>
<td>1.32</td>
</tr>
<tr>
<td>CSFB Event Driven</td>
<td>10.89%</td>
<td>6.17</td>
<td>1.02</td>
</tr>
<tr>
<td>CSFB Hedged Long Short Index</td>
<td>12.46%</td>
<td>11.31</td>
<td>0.70</td>
</tr>
</tbody>
</table>

Source: CSFB
## Sources of Portable Alpha I

### Hedge Fund

<table>
<thead>
<tr>
<th>Sources</th>
<th>S&amp;P 500</th>
<th>LEHMAN AGG</th>
<th>CASH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSFB Hedge Fund Index</td>
<td>0.46</td>
<td>0.14</td>
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<td>0.04</td>
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<td>-0.76</td>
<td>0.10</td>
<td>0.05</td>
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<tr>
<td>CSFB Market Neutral Index</td>
<td>0.40</td>
<td>0.06</td>
<td>0.25</td>
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<td>0.11</td>
<td>0.07</td>
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<td>CSFB Event Driven</td>
<td>0.54</td>
<td>-0.05</td>
<td>0.10</td>
</tr>
<tr>
<td>CSFB Hedged Long Short Index</td>
<td>0.57</td>
<td>0.05</td>
<td>0.10</td>
</tr>
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**Source:** CSFB
Sources of Portable Alpha I Hedge Fund

- Drawbacks
  - Transparency
  - Track record
  - Difficult to separate alpha and beta
## Sources of Portable Alpha II
### Long-Only Strategies

**Median Manager Alpha & Active Risk**

<table>
<thead>
<tr>
<th>Category</th>
<th>Alpha</th>
<th>Active Risk</th>
<th>Information Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Cap Core</td>
<td>0.58</td>
<td>3.94</td>
<td>0.23</td>
</tr>
<tr>
<td>Large Cap Growth</td>
<td>-0.03</td>
<td>7.25</td>
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</tr>
<tr>
<td>Large Cap Value</td>
<td>1.96</td>
<td>5.94</td>
<td>0.29</td>
</tr>
<tr>
<td>Small Cap Core</td>
<td>3.78</td>
<td>7.87</td>
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<tr>
<td>Small Cap Value</td>
<td>1.89</td>
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<tr>
<td>High Yield</td>
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<td>3.29</td>
<td>0.29</td>
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<tr>
<td>Emerging Market</td>
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<td>0.30</td>
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<tr>
<td>Non-US Equity</td>
<td>3.18</td>
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<tr>
<td>Real Estate</td>
<td>1.83</td>
<td>3.48</td>
<td>0.52</td>
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Source: PSN
Sources of Portable Alpha II
Long-Only Strategies

Benefits

- Greater transparency
- Longer track records
- Easier to separate alpha & beta
## Case Study

### Median Manager Alpha & Active Risk

1994 - April, 2003

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Source: PSN
Implementation I - Equitization

Maintain plan's strategic asset allocation
Portable Alpha in Up Market
April 1997 - March 2000

$100,000,000
Long S&P 500
Index Futures

$100,000,000
Long Small Cap
Portfolio

$95,000,000
Long Small Cap
Portfolio
18% + 4% alpha = 22%
Gain $20,900,000

-$95,000,000
Short Russell
2000 Futures

Short Futures
-18%
Loss $17,100,000

$5,000,000
Margin
Requirement

Large Cap
Asset Class
Return
27% Gain
$27,000,000

S&P 500
+27%

Total
Return
27% + 4% = 31%
Gain $30,800,000

Small Cap
Alpha
22% - 18% = 4%
Gain $3,800,000

Interest Earned
on Margin

Portable Alpha

PanAgora Asset Management
Challenges

- Derivative issues
- Investment guidelines
- Funding decision/Board hurdles
- Operational & Implementational
Benefits of Using Portable Alpha

- Maintain strategic asset allocation
- No changes to the existing manager structure
- Clearly measure performance
- Overlay with minimal amount of capital
Part II - Beyond Portable Alpha
Post Modern Asset Allocation

- What is the traditional Asset Allocation approach?
- Is this the optimal approach?
- What is the role of Policy portfolio?
- The separate Alpha + Beta framework
Traditional Investment Process

- Setting mission and governance parameters
- Defining and allocating risk budgets
- Establishing strategic asset allocation targets
- Selecting benchmarks
- Developing manager structure and selecting managers
- Monitoring performance and implementing changes
What are the roles for Policy Portfolio?

- Hedge Liability at plan termination (long term)
- Hedge ongoing economic impact (short term)
- Maximize Alpha (growth) in a narrow risk budget
- Outperform pension peers
- All in a single, traditional Alpha & Beta bundled product structure
The 6 “inefficiencies”

- Alpha & beta vs. Asset allocation
- Alpha selection vs. asset allocation
- Alpha generating vs. Beta exposure
- Risk Budgeting
- Policy Benchmark
- Fees
The Separate Pure Beta + Alpha Framework

Policy Portfolio (Liability Hedge)

- Pure Beta (index) Portfolios
  - Index Futures
  - Swaps
  - ETFs/Index Funds
  - Beta Risk
  - Budgeting
  - Optimize

Alpha Generation

- Pure Alpha Portfolios
  - Absolute Return Strategies
  - Portable Alpha
  - Alpha Overlay
  - Alpha Risk
  - Budgeting
  - Optimize

Policy Portfolio or Liability Benchmark

Breadth

Fund

Skill
Rational & Theory

- Beta is a necessity
- Alpha is a luxury
- Investors sophistication
- The broader the investment universe, the better chance…
Efficient Frontiers
Alpha & Beta Purchased Separately vs. Traditional Alpha & Beta Bundled Approach

Alpha & Beta Purchased Separately
100% Equity Manager’s Total Return
or 100% Equity Alpha + Beta

Traditional Alpha & Beta Bundled Approach
100% FI Manager’s Total Return
or 100% FI Alpha + Beta

Note: managers’ returns were derived from the PSN database from 1979-6/2003. Survivorship bias is a non-issues here since we are not concerned about the level of alpha, but rather the breadth of combining alpha and beta.
Constrained vs. Unconstrained Efficient Frontiers (Separate alpha + Beta)

Constrained vs. Unconstrained Pure Alpha + Beta portfolios
All physicals

- 60/40
- Unconstrained
- 25% Beta + 75% Alpha
- 50% Beta + 50% Alpha
- 75% Beta + 25% Alpha

Expected Risk (%)

Expected Return (%)
Physicals vs. Index Futures

Efficient Frontiers
Physicals vs. Index Futures

- Match Liability Index Risk
- 100% Alpha+100%Beta (uses Index Futures)
- Match 60/40 Risk
- Match Liability Index Risk
- Match Liability Index Risk
- Match 60/40 Risk
- Liability Index
- Unconstrained (uses physicals)

Expanded Frontier

Expected Return (%) vs. Expected Risk (%) graph
Why the new framework?

- Clearly identify distinct objectives for alpha and for beta portfolios
- Extricate alpha selection from the asset allocation decision
- Separate the alpha from the Policy decision
- Dedicate the Policy portfolio to hedge against liabilities
- Precisely measure active vs. passive management
- Clearly understand the performance & risk contribution from the Policy (beta portfolio) and non-Policy (pure alpha) portfolio
Challenge

- The accuracy of using long run forecasts for asset classes as the basis for asset allocation
- The quantity and quality of absolute return strategies’ information
- Pure beta & alpha asset allocation will put a capacity constraint on pursuing alphas
- Radical departures from the traditional approach are unlikely to be widespread in the short run
Q&A

Working Papers
By
PanAgora Asset Management

“Portable Alpha – Philosophy, Process & Performance”
&
“Post Modern Asset Allocation – an Alpha + Beta Framework”