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Pension Fund Benchmarking and Performance Insights

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Insights are derived from the CEM global databases and our benchmarking work with pension funds.

<table>
<thead>
<tr>
<th>Year</th>
<th>Can</th>
<th>Euro</th>
<th>U.S.</th>
<th>Other</th>
<th>DB</th>
<th>DC</th>
<th>90th</th>
<th>75th</th>
<th>50th</th>
<th>25th</th>
<th>10th</th>
<th>Avg.</th>
<th>Total</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 - 2015¹</td>
<td>104</td>
<td>167</td>
<td>394</td>
<td>24</td>
<td>505</td>
<td>184</td>
<td>33.6</td>
<td>12.0</td>
<td>3.8</td>
<td>1.6</td>
<td>0.7</td>
<td>16.0</td>
<td>10,991</td>
<td>689</td>
</tr>
</tbody>
</table>

1. Results are based on all unique funds that participated in the 3-year period ending December 31, 2015.

Source: Output database
The CEM pension benchmarking model assesses operational efficiency and value delivered.

**Investment Management Operations**
- External management
- Internal management
- Investment consulting fees
- Performance measurement fees
- Custody
- Investment accounting

**Member Service Operations**
- Member transactions / service
- Contribution collection and data maintenance
- Pensioner payroll
- Finance (exc. investment accounting)
- Communication
- Quality, technical, etc.

Cost in the context of performance and risk:
- Total returns
- Policy returns
- Value added
- Asset risk
- Asset liability mismatch risk

Cost in the context of member service:
- Channels
- Timeliness
- Flexibility
- Content
- Capability

**Governance and Oversight costs are split between the Investment and Member Service Operations:**

- Head of pensions / secretariat
- Trustee fees and expenses
- Actuarial, legal, audit fees
Member Service efficiency is measured in terms of cost per member. Member service levels are a key measure of value:

- **Metrics**: Volume, Timeliness, Choice, Content, Flexibility, Personalisation, Satisfaction
- **Services**: Enrolment, Estimates, Transfers, Counselling, Annuity Inceptions, Death claims
- **Channels**: Paper, Face-to-face, Telephone, Digital
- **Members**: Actives, Inactive, Annuitant

**Member Service Score - out of 100**
The average Dutch total pension fund cost in 2015 was 66 bps.

- Dutch pension funds must report all costs in their annual financial statements using standard cost definitions.
- In the CEM global universe, estimated total pension fund costs vary widely: from about 15 bps to 200 bps.
- Fund size, asset mix, and asset class implementation decisions are the primary drivers of cost differences.

<table>
<thead>
<tr>
<th>Dutch Fund Total Costs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(2015 average)</td>
<td></td>
</tr>
<tr>
<td>Investments</td>
<td>58.5 bps</td>
</tr>
<tr>
<td>Member Service</td>
<td>7.5 bps</td>
</tr>
<tr>
<td>Total Fund Cost</td>
<td>66.0 bps</td>
</tr>
</tbody>
</table>
Full disclosure of investment costs is a challenging goal.

- Cost components are multi-layered and complex. Costs include: base manager fees, performance fees, fund-of-fund manager fees, transaction costs, consulting, custody, internal oversight and management.

- Costs that are netted from the fund NAV need to be reported (often they are not).

- It is very difficult to obtain full private equity costs due to inconsistent and incomplete reporting by General Partners (GPs) to Limited Partners (LPs). The new Institutional Limited Partnership Association (ILPA) cost template is the best solution. It needs to become the industry standard.

- Transaction costs include both explicit costs (e.g. brokerage commission), which are easy to measure and implicit ‘market impact’ costs (e.g. bid-ask spreads, trade delay and opportunity costs) which are difficult to measure.

- Accounting standards often are vague or permit netted costs and costs that are ‘difficult’ to collect to be excluded from financial statements.
Performance benchmarking best practices and challenges:

- Returns should be reported net of all costs.
- Reference portfolios that show the asset mix that each fund believes most likely to optimize risk and return should be used. The reference portfolio should include investable benchmarks for all asset classes.
- Net value added relative to benchmarks should be measured to assess the effectiveness of implementation decisions.
- ‘Good’ benchmarks should be used for every asset class.
Good benchmarks are essential in evaluating value for money from active management.

• Benchmarks should be investable. An investable benchmark is “what you could have had”, a real alternative that was possible, and ideally implementable at low cost.

• Benchmarks should fairly reflect available returns. Benchmarks that are too easy or too hard to beat may give undue credit for investment skill, or not give credit where it is due.

• Benchmarks should be correlated to the assets they are being used to assess. A high degree of correlation indicates that a benchmark is both fair and a useful risk proxy.

• Market indices that cover major markets (e.g. S&P 500) generally provide good benchmarks. However, in some regions passive indices are less than ideal due to thin markets and lack of liquidity.
Better benchmarks are possible for illiquid asset classes.

- Most existing benchmarks used by funds are flawed. They generate noise rather than signal:
  - Timing mismatches due to lagged reporting. The two charts on the right vividly illustrate the lag effect.
  - Un-investable peer-based benchmarks
  - Aspirational premiums (e.g. S&P 500 + 3%)

- Investable benchmarks exist with high correlations to performance:
  - Private equity: 84% correlation to PE returns in the CEM database using lagged small cap stock
  - Infrastructure: 79% correlation to returns in the CEM database using lagged, de-levered, listed infrastructure indices
Returns pay pensions.

<table>
<thead>
<tr>
<th>Global Pension Fund Universe</th>
<th>25 - year annual average performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Return</td>
<td>9.41%</td>
</tr>
<tr>
<td>Less Policy/Reference</td>
<td>8.81%</td>
</tr>
<tr>
<td>Portfolio Return</td>
<td></td>
</tr>
<tr>
<td>= Gross Value Added</td>
<td>0.60%</td>
</tr>
<tr>
<td>Less Costs</td>
<td>0.43%</td>
</tr>
<tr>
<td>= Net Value Added</td>
<td>0.17%</td>
</tr>
</tbody>
</table>

Asset mix is by far the most important driver of total returns.

Costs consumed almost 75% of gross value added.

Active management has added modest value added, net of costs.
Costs matter - Internal management performed better on a net of cost basis. Bigger funds performed better.

**Performance advantage**

Private equity
- Internal versus fund of funds: 5.52%
- Internal versus direct LPs: 3.24%

Public markets
- Internal versus external: 0.22%
- Size $100 Bn vs $1 Bn: 0.16%

- CEM believes that these performance differences are primarily due to related cost differences.
- For example, average total cost for private equity implemented via fund of funds is about 5% higher than for internally implemented private equity.
Private markets are not a panacea.

- Diversification benefit is either minimal (private equity, hedge funds) or much lower than advertised (real estate, infrastructure) after adjusting for reporting lags and smoothing.
- Investable alternatives are available with high correlations to performance.
- The illiquidity risk premium is minimal if implemented externally.

* Benchmarks consist of regionally-blended small cap equity indices with a lag as constructed by CEM. These annual benchmarks are then selected, compounded and annualized alongside actual returns.
Benchmarking of Private Pensions in Latin America

- Nine-month Investment Benchmarking pilot with AIOS
- Worked directly with pension regulators in each country
- Data years: 2012-2014
- Benchmarking reports with across and within country comparisons of:
  - Plan costs (including netted fees)
  - Returns
  - Value added versus benchmarks
  - Cost effectiveness - value for money
- Analysis showing reasons why total returns and costs differ
- Global comparisons and insights into best practices

- 9 countries, 10 regulators
- 47 fund providers (avg. = 5)
- 15% 3rd party managed
- 15% foreign assets (simple avg.)
- 82% fixed-income and cash (simple avg.)
- 3 to 5 ‘Multifund’ options in 4 countries
- USD $470 billion AUM
- USD $1k avg. contribution
- USD $6k avg. account balance
- 82 million participants (47% active)
- 82 million participants (47% active)
- 15% foreign assets (simple avg.)
Opportunities for Improvement

• Reference portfolios
• Investable benchmarks for all asset classes
• Time-weighted returns by asset class per GIPS standards
• Full cost disclosure
  – Third party fees including performance fees
  – Transaction costs

Key Takeaways

• Overall costs trending down
• External investment costs trending up
• As compared to CEM Global Benchmark costs:
  – Lower costs from implementation style choices and record keeping
  – Higher ‘other’ costs related to marketing, sales, and profit margins of providers.
• Lower investment diversification than global plans
• Strong overall net returns with neutral value add
Helpful Websites:

- http://www.cembenchmarking.com/
- http://www.icpmnetwork.com/
- http://www.iadb.org/
- http://www.fiapinternacional.org/
- http://www.pensioenfederatie.nl/english/Pages/default.aspx
- http://www.oecd.org/
- http://a iosfp.org/
- https://ilpa.org/
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