Best practices in Pension Funds investment process
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research focus</td>
<td>5</td>
</tr>
<tr>
<td>Drivers of asset allocation</td>
<td>12</td>
</tr>
<tr>
<td>Governance and risk</td>
<td>15</td>
</tr>
<tr>
<td>Outsourcing vs. In-house management</td>
<td>22</td>
</tr>
<tr>
<td>Conclusion</td>
<td>34</td>
</tr>
</tbody>
</table>
Bomb Squad
The pension bomb

Proportion of people ages 65 and older (2010 vs. 2050)

Old-age dependency ratios (2010 vs. 2050)

Source: United Nations, Department of Economic and Social Affairs
Research focus
The pension funds industry has been growing at 5.8% CAGR since 2004

Evolution of global Pension Funds' assets in USD tn

2004: 21.3
2007: 29.4
2013: 36.4
2014: 39.1
2015: 39.3
2020: 49.9

Source: PwC Market Research Centre, 2016
A move towards alternatives

Evolution of asset allocation of pension funds

- Equity
- Fixed Income
- Money Market
- Alternatives

Source: PwC Market Research Centre, Beyond their Borders, 2015
Investing in alternatives in North America and Europe is a common practice

Proportion of alternatives in total assets by region (2008 vs. 2014)

Source: PwC Market Research Centre, Beyond their Borders, 2015
An extensive research analysis...

In depth analysis:
- More than 30 world leading pension funds,
- Split across 8 countries,
- With more than USD 4 trillion of combined AuM.

Balanced sample:
- Size mix from AuM of USD 10 bn to USD 853 bn
- USD 663 bn combined investments in alternatives
- Different organizational structures
- Both public and private pension funds

North America
- 13 pension funds
- USD 1,892 bn AuM

Europe
- 11 pension funds
- USD 1,893 bn AuM

Asia-Pacific
- 7 pension funds
- USD 258 bn AuM

Source: PwC Market Research Centre, 2016
...with a representative coverage...

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<tbody>
<tr>
<td>1</td>
<td>USA</td>
<td>USD 24.3tn</td>
<td>5.7%</td>
<td>29%</td>
</tr>
<tr>
<td>3</td>
<td>Canada</td>
<td>USD 2.4tn</td>
<td>8.7%</td>
<td>31%</td>
</tr>
<tr>
<td>4</td>
<td>Norway</td>
<td>USD 2tn</td>
<td>7.8%*</td>
<td>9%</td>
</tr>
<tr>
<td>5</td>
<td>Australia</td>
<td>USD 1.6tn</td>
<td>8.8%</td>
<td>16%</td>
</tr>
<tr>
<td>6</td>
<td>Netherlands</td>
<td>USD 1.2tn</td>
<td>9.8%</td>
<td>16%</td>
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OECD Average

- 7 pension funds
- Average of 10.2% 5-year return
- Average of 29% alternative investments

- 6 pension funds
- Average of 10.6% 5-year return
- Average of 31% alternative investments

- 4 pension funds
- Average of 6.2% 5-year return
- Average of 12% alternative investments

- 7 pension funds
- Average of 9.3% 5-year return
- Average of 22% alternative investments

- 7 pension funds
- Average of 8.9% 5-year return
- Average of 17% alternative investments

Our Analysis includes

*Note: Denmark and Norway

Source: PwC Market Research Centre, 2016
... and strong allocation to alternatives

Proportion of alternatives in total assets in our sample (in 2015)

- Canada: 31%
- USA: 25%
- Australia: 22%
- Netherlands: 17%
- Nordics: 12%

Source: PwC Market Research Centre based on latest annual reports of studied pension funds
Drivers of asset allocation
Higher returns drive asset allocation

Main drivers of asset allocation

- **80%** Returns
- **67%** Diversification
- **60%** Asset and Liability Management
- **73%** Other

Source: PwC Market Research Centre, 2016
Why do pension funds invest in alternatives?

- **87%** Diversification
- **40%** Risk-adjusted return
- **33%** Illiquidity premium

Increase in the amount allocated to alternatives by pension funds between 2007 and 2014

Increase in the total assets of pension funds between 2007 and 2014

Source: PwC Market Research Centre, 2016
Governance and risk
Reducing regulations to empower pension funds

93% of the respondents have none to very low investment limits set by the regulator.

<table>
<thead>
<tr>
<th>Countries</th>
<th>Portfolio Investment limits</th>
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<tr>
<td>Australia</td>
<td>- Superannuation funds are not permitted to invest more than 5% of their assets in in-house assets.</td>
</tr>
<tr>
<td>Canada</td>
<td>No limit</td>
</tr>
<tr>
<td>Netherlands</td>
<td>No limit</td>
</tr>
</tbody>
</table>
| Nordics   | - Denmark: 70% in Equity; 70% in retail IFs; 10% in private IFs  
- Finland: 15% private IFs  
- Norway: 10% private IFs; 5% loans  
- Sweden: 10% Bonds issued by private sector; 10% loans |
| USA       | - Some specific investments (e.g. tobacco, firearms, etc.) |

No restrictions for developed pension fund markets

Source: PwC Market Research Centre based on OECD, Annual Survey of Investment Regulation of Pension Funds, 2015
Limits mainly used as guidelines

Limits are set internally as a matter of self-regulation and guidelines.

- 93% of respondents have target asset allocation limits.
- 7% do not have target asset allocation limits.
- 73% of respondents use a multi-asset benchmark.
- 27% do not use a multi-asset benchmark.
- 30% of those with multi-asset benchmarks have tracking error limits.

Source: PwC Market Research Centre, 2016
Longer timing for alternatives investment process

For traditional asset classes
- From weeks to months
- From weeks to months
- 1-6 months
- 1-6 months
- Ongoing

- Industry and company research
- ALM
- Asset class review
- Portfolio construction
- Manager selection
- Due diligence
- Valuation models
- Committee review and approval
- Implementation
- Ongoing monitoring
- Portfolio risk review

For alternative asset classes
- Months
- 1-6 months
- 3-12 months
- 3-12 months
- Ongoing

- Industry and company research
- ALM
- Asset class review
- Portfolio construction
- Deal/Manager selection
- Due diligence
- Valuation models
- Committee review and approval
- Implementation
- Ongoing monitoring
- Portfolio risk review

Source: PwC Market Research Centre, 2016
Investment governance

**Board of Trustees** – Controls the compliance of the process with the law and internal framework

**Executive Director** – Oversees the board

**Chief Auditor & Master Custodian** – Report to ED and provide performance reports

**External Asset Consultants** – Advisory of the Board

**Internal Staff** – Accountable to the CIO

**Chief Investment Officer** – In charge of the investment program

29% of respondents use consultants to decide on asset allocation

Source: PwC Market Research Centre, 2016
In-house risk management is preferred

- 86% of respondents have a dedicated internal risk management unit.
- 50% rely solely on internal risk models.
- 36% support internal with external models.
- 14% use only external risk models.

100% of respondents have a specific liquidity risk framework.

Source: PwC Market Research Centre, 2016
Outsourcing vs. In-house management
Decreasing outsourcing of asset management

Asset allocation - In-house vs. Outsourcing

Only Mandates

- 2 years ago: 63% externally managed, 37% internally managed
- Today: 65% externally managed, 35% internally managed

Mandates and Investment funds

- 2 years ago: 42% externally managed, 58% internally managed
- Today: 44% externally managed, 56% internally managed

Source: PwC Market Research Centre, 2016
Preferred asset classes to outsource

Asset class allocation within outsourced assets

Only Mandates

Mandates and Investment funds

Source: PwC Market Research Centre, 2016
Local expertise as a main reason of outsourcing

Main drivers of outsourcing

1. Expertise
2. Return / Performance
3. Risk
4. Fees
5. Other

Source: PwC Market Research Centre, 2016
A clear trend towards insourcing asset management

**Canada**
In 2010, HOOPP decided to rely exclusively on internal management to cut external investment manager fees.

**USA**
ERS wants to keep costs low and, therefore, manages about two-thirds of its investment portfolio in-house.

**Sweden**
Alecta’s intensive focus on keeping costs low has pushed the pension fund to make all of its investments internally, building an in-house investment team for each asset class.

**Australia**
Since 2012, AustralianSuper is focusing on building world-class in-house investment capabilities, allowing the Fund to maximise long-term returns and keep costs low through direct investment.

In-house oversight is gaining momentum as pension funds increasingly employ this method to circumvent the high cost of external asset managers.

Source: PwC Market Research Centre, 2016
In-house expertise across different alternative asset classes

Share of the number of respondents managing alternatives in-house

- **Infrastructure**
  - Green field: 47%
  - Brown field: 53%

- **Energy**
  - Green field: 40%
  - Brown field: 47%

- **Real estate**
  - Green field: 53%
  - Brown field: 60%

- **Private equity**
  - 53%

“Ability to control investment process”

“Experience in the sector”

“Skills, Relationships”

“Cost effectiveness”

Source: PwC Market Research Centre, 2016
In-house team vs. AuM

Size of the in-house team vs. total AuM

Source: PwC Market Research Centre, 2016
Building in-house expertise and experience is critical

55
Average number of in-house portfolio managers
In-house management team includes portfolios professionals, analysts and the CIO

73%
Apply the same performance risk criteria as to external managers
“In-house team subject to internal monitoring and independent review”
- Australia

32.5
Average number of employees with CFA
Professional qualifications, industry experience and relationships among the major requirements

73%
Hire legal and technical specialists internally
Key staff for due diligence, legal counsel and sectorial expertise

Source: PwC Market Research Centre, 2016
Capturing the DIY premium through direct investments

How do you normally conduct direct investments?

- Direct investments: 67%
- Outsource to external managers: 33%

Do you have in-house members represented on the boards of the companies in which you invest?

- Members on board: 62%
- No: 38%

Invest with internal teams
Outsource to external managers

Source: PwC Market Research Centre, 2016
Structuring investment teams to fit with the strategy

What’s behind this figure?

Pension funds who have a specific infrastructure to invest in alternative assets may have either one of the following or both.

1) Specific teams part of the main entity
   - General alternative assets team
   - Individual alternative asset classes teams

2) Separate entity but wholly-owned by the fund
   - A dedicated separate entity which is responsible for specific asset class investments

Source: PwC Market Research Centre, 2016
Project origination teams

Description of a typical team composition and responsibilities:

- “They are comprised of front and back office specialists relevant to the task. We do not do any engineering or operational due diligence on prospective assets. The internal project team compliments the work done by external managers”

- “Geographical (expertise in specific countries) and division by sector”
  “Investment experience related to the specific mandate”

- “We lead most organization activities with internal staff, and supplement where necessary”

- “Risk, due diligence, legal, finance”

60% of respondents have a specialized project origination team

69% of respondents do not divide responsibilities between origination and supervision teams

Source: PwC Market Research Centre, 2016
Feeding outperformers - incentives a must

Share of respondents providing performance bonus to portfolio managers

- 91%

- 73% Have long term incentive plans
- 64% Have short term incentive plans

Source: PwC Market Research Centre, 2016
Conclusion
Best practices

01 Freedom and flexibility with regards to limits and regulations
- Low regulatory limits
- Use limits as guidelines

02 Long term investment horizon
- Structured investment process
- Capitalize on illiquidity premium

03 Increase internal oversight and management
- Appropriate certification and experience
- Performance incentives

04 Structure internal teams to capture the full potential
- Specific infrastructure for asset classes
- Division and clarification of responsibilities

Conclusion
Outsourcing vs. In-house management
Governance and risk
Drivers of asset allocation
Research focus
Contents

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