GPIF’s ESG Investment

June 12, 2019
Norihiro Takahashi
GPIF President

Government Pension Investment Fund
## Investment Result

<table>
<thead>
<tr>
<th></th>
<th>FY2018 3Q</th>
<th>From FY2001 to FY2018 3Q</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rate of Return (Returns)</strong></td>
<td>-9.06% (Not annualized) (-14,803.9 billion JPY)</td>
<td>+2.73% (annualized) (+ 56,674.5 billion JPY)</td>
</tr>
<tr>
<td><strong>Investment Income</strong></td>
<td>846.2 billion JPY</td>
<td>33,319.5 billion JPY</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>150,663.0 billion JPY (end of 3Q, FY2018)</td>
<td></td>
</tr>
</tbody>
</table>
GPIF Asset Allocation

Inside: Policy asset mix (figures in parentheses indicate deviation limits)
Outside: as of the end of December 2018

- Domestic equities: 24.29% (23.72% ± 8%)
  36,770.6 billion JPY

- Domestic bonds: 35% (±10%)
  42,679.6 billion JPY

- Foreign equities: 25% (±9%)
  26,348.4 billion JPY

- Foreign bonds: 15% (±4%)
  9,652.0 billion JPY

- Short-term asset: 6.38% (±9%)
  35,910.1 billion JPY
Role of Reserve Fund in the Pension Finance

【Breakdown of Pension Reserve】
(Actuarial valuation of the pension scheme in FY2014)

Note: Assuming inflation rate 1.2%, wage increase rate (real) <against prices> 1.3%, real investment return target 1.7%
As a “Universal Owner” (an investor with a very large fund size and widely diversified portfolio) and "Cross-generational Investor" (designed as a part of 100 years sustainable pension scheme), GPIF is committed to promote sustainable development of the whole capital market, by minimizing negative externalities (environmental and social issues).

**【GPIF’s shareholdings (as of the end of March 2018)】**

<table>
<thead>
<tr>
<th>Number of major indices’ constituents/GPIF’s shareholdings</th>
<th>Ratio of Passive/Active investment for equities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic equities</td>
<td>Foreign equities</td>
</tr>
<tr>
<td>TOPIX</td>
<td>Passive</td>
</tr>
<tr>
<td>2,061</td>
<td>90.44</td>
</tr>
<tr>
<td>GPIF’s shareholdings</td>
<td>Active</td>
</tr>
<tr>
<td>2,321</td>
<td>9.56</td>
</tr>
<tr>
<td>MSCI ACWI Ex-Japan</td>
<td>Passive</td>
</tr>
<tr>
<td>2,174</td>
<td>86.32</td>
</tr>
<tr>
<td>GPIF’s shareholdings</td>
<td>Active</td>
</tr>
<tr>
<td>2,793</td>
<td>13.68</td>
</tr>
</tbody>
</table>

Source: GPIF Annual Report FY2017
ESG and SDGs

Investment opportunities

GPIF

ESG investment

Index providers
Asset managers

Companies

Business opportunities

Returns

Promotion of ESG

Signed in Sep 2015

Sustainable Society

Approval and adoption

CSV
(Creating Shared Value)

(Source: Created by GPIF based on information from the United Nations, etc.)

(Source: Created by GPIF based on information from the United Nations, etc.)
## List of ESG Indices GPIF Selected

<table>
<thead>
<tr>
<th>Concept</th>
<th>FTSE Blossom Japan Index</th>
<th>MSC Japan ESG Select Leaders Index</th>
<th>MSCI Japan Empowering Women Index (WIN)</th>
<th>S&amp;P/JPX Carbon Efficient Index</th>
<th>S&amp;P Global Ex-Japan Large Mid Carbon Efficient Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>• FTSE’s ESG index series.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• Utilize the globally established FTSE4Good Japan Index ESG rating methodology.</td>
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<td></td>
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</tr>
<tr>
<td>• integrated index by screening constituents with high ESG rating, and industry neutral weighting.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Integrated index constituted by MSCI’s ESG research. Reflect various ESG risks comprehensively into the market portfolio.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Include stocks with relatively high ESG rating among industry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Calculate gender diversity scores based on various information disclosed under “the Act on Promotion of Women’s Participation and Advancement in the Workplace”. Constitute index by including companies with the high score from each industry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The first index to select stocks from various perspectives in this field.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Based on carbon data provided by Trucost, one of the pioneers of environmental research companies, S&amp;P Dow Jones Indices, a leading independent provider, develops the index methodology.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The indices are designed to increase index weights of the companies within the industry which have low Carbon to Revenue Footprints (annual greenhouse gas (GHG) emissions divided by annual revenues) and actively disclose information of carbon emissions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Subject

<table>
<thead>
<tr>
<th>Subject</th>
<th>Domestic equities</th>
<th>Domestic equities</th>
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<th>Domestic equities</th>
<th>Foreign equities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universe</td>
<td>FTSE JAPAN INDEX [509 stocks]</td>
<td>Market cap top 500 in MSCI Japan IMI</td>
<td>Market cap top 500 in MSCI Japan IMI</td>
<td>TOPIX [2,103 stocks]</td>
<td>S&amp;P Global Large Mid Index (ex JP ) [2,584 stocks]</td>
</tr>
<tr>
<td># of Constituents</td>
<td>149</td>
<td>252</td>
<td>208</td>
<td>1,694</td>
<td>2,162</td>
</tr>
<tr>
<td>AUM</td>
<td>526.6 billion JPY</td>
<td>622.9 billion JPY</td>
<td>388.4 billion JPY</td>
<td>1.2 trillion JPY in total</td>
<td></td>
</tr>
</tbody>
</table>

Note: Data of three indices from the left is as of the end of March 2018. data for two indices from the right is as of the end of August, 2018.
Concept of Carbon Efficient Index

- S&P/JPX Carbon Efficient Index
- S&P Global Ex-Japan LargeMidCap Carbon Efficiency Index

Concept

① Overweight companies that have high carbon efficiency within the same industry and/or disclose the amount of carbon emissions.
② Adjust the over/underweight of companies in accordance with the damage on the environment by each industry to which the companies belong (companies which belong to industry that have more damage on the environment, are more incentivized to improve carbon efficiency and disclosure).
③ S&P/JPX Carbon Efficiency Index covers all companies that are listed on the first section of Tokyo Stock Exchange (with some illiquid stocks excluded) thus the coverage is broader than other ESG indices.

Note: Carbon efficiency indicates the ratio of company’s greenhouse gas emissions to the revenue.
Points of Global Environmental Index Selection

01 Focusing on ESG (environmental information) and Positive Screening
► Preferable for indices with positive screening as well as relative evaluation within each industry. As a universal owner, GPIF’s policy does not agree with the indices with methodology that excludes companies that have more damage on environment, such as coal or electric power companies (divestment).

02 Encouraging Disclosure & Improvement of Evaluation Method
► For the environmental index, it’d be difficult to construct index only with the completely disclosed information, because of insufficient information about the amount of gas emissions and sales amount of clean technique products.
► Our purpose can be achieved with a mechanism to incentivize disclosure (e.g. mechanism to prioritize the disclosed information), when using both disclosed/non-disclosed information.
► In order to improve the evaluation methodology, index providers should disclose evaluation result as well as its methodology.

03 Governance and Conflicts of Interest of Index Providers
► Applying the same standard as the selection of ESG indices for Japanese equities.

04 Large Universe as much as possible
► Small-cap stocks should have the opportunities for improving the sustainability of the whole market.
Among the major listed companies, a high proportion of the greenhouse gas emissions are emitted by the public utilities, material, and energy industries. However, other companies’ business may utilize the energy and materials made from these industries. Some pension funds overseas divest from companies that damage the environment. However, because there is a limitation to the amount of GHG caused by the entire supply chain that can be captured and understood, it would be more significant to reduce the climate change risks by encouraging the competition within each industry.

[Amount of GHG emission by industries that constitute S&P Global Ex-Japan Large-Mid Carbon Efficiency Index]

- Utilities: 31% (2.8% of total)
- Energy: 23% (6.5% of total)
- Materials: 23% (5.0% of total)
- Other: 14% (76.0% of total)
- Transportation: 5% (2.4% of total)
- Capital Goods: 4% (7.3% of total)
- Other: 5% (76.0% of total)

Note: Subjects are constituents of S&P Global Ex-Japan LargeMid Carbon Efficiency Index as of August 31, 2018. Source: Trucost

Note: (%) indicates the total weight based on the float adjusted market-cap in the whole index. % indicates the share of GHG emission.
While ESG providers have increased their coverage of ESG scores for companies beyond Large/Mid cap indices such as MSCI ACWI, public disclosure rate of GHG emissions by companies are still very low. Therefore it’s very difficult to construct an index based solely on disclosed information provided by companies. Among the developed countries, Japan’s disclosure rate of GHG emissions ranks the lowest.

【Disclosure Rate of Amount of GHG Emissions (15 developed countries)】

- UK: 98.9%
- France: 94.0%
- South Africa: 89.6%
- Australia: 86.4%
- Germany: 83.7%
- Sweden: 81.6%
- Brazil: 80.9%
- Canada: 75.3%
- US: 66.8%
- Japan: 59.3%
- Hong Kong: 55.6%
- South Korea: 53.6%
- Thailand: 41.3%
- Taiwan: 36.6%
- China: 26.2%

Note1: Subjects are constituents of S&P Global LargeMidCap as of August 31, 2018.
Note2: Disclosure/Non-disclosure is classified by Trucost’s assessment.
Source: Trucost
While maintaining roughly the same Risk/Return profile as the parent index, TOPIX, this index decreased their Carbon-to-Revenue footprint by 24.5%.

<table>
<thead>
<tr>
<th>Mar.31, 2009 to Aug. 31, 2018 (JPY)</th>
<th>TOPIX</th>
<th>S&amp;P/JPX Carbon Efficient Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annualized Return &lt;TR, USD&gt;</td>
<td>11.14%</td>
<td>11.12%</td>
</tr>
<tr>
<td>(Return of the last year)</td>
<td>9.58%</td>
<td>9.68%</td>
</tr>
<tr>
<td>Annualized Volatility</td>
<td>16.65%</td>
<td>16.61%</td>
</tr>
<tr>
<td>Risk-Adjusted Return</td>
<td>0.67</td>
<td>0.67</td>
</tr>
<tr>
<td>Annualized Excess Return &lt;TR, USD&gt;</td>
<td>-</td>
<td>-0.02%</td>
</tr>
<tr>
<td>Annualized Tracking Error</td>
<td>-</td>
<td>0.55%</td>
</tr>
<tr>
<td>Information Ratio</td>
<td>-</td>
<td>-0.03</td>
</tr>
<tr>
<td>Average Annual Turnover at</td>
<td>-</td>
<td>7.95%</td>
</tr>
<tr>
<td>Rebalancing &lt;one-way&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon-to-Revenue Footprint*</td>
<td>212.26</td>
<td>160.18</td>
</tr>
<tr>
<td>Carbon-to-Revenue Footprint Reduction</td>
<td></td>
<td>24.50%</td>
</tr>
</tbody>
</table>

Note: Carbon-to-Revenue Footprint is tonnes carbon emissions per Source: Created by GPIF based on information from S&P Dow Jones

Note: Performance is shown by TR.
Carbon Efficiency Index Performance

~S&P Global Ex-Japan LargeMidCap Carbon Efficient index~

► While maintaining roughly the same Risk/Return profile as the parent index, S&P Global Ex-Japan LargeMidCap Index, this index decreased their Carbon-to-Revenue footprint by 40.9%

<table>
<thead>
<tr>
<th>Mar.31, 2009 to Aug.31, 2018 (USD)</th>
<th>S&amp;P Global Ex-Japan LargeMid Cap</th>
<th>S&amp;P/JPX Ex-Japan LargeMid Cap Carbon Efficient Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annualized Return &lt;TR, USD&gt;</td>
<td>14.02%</td>
<td>14.03%</td>
</tr>
<tr>
<td>(Return of the last year)</td>
<td>12.02%</td>
<td>12.43%</td>
</tr>
<tr>
<td>Annualized Volatility</td>
<td>14.07%</td>
<td>14.08%</td>
</tr>
<tr>
<td>Risk-Adjusted Return</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Annualized Excess Return &lt;TR, USD&gt;</td>
<td>-</td>
<td>0.01%</td>
</tr>
<tr>
<td>Annualized Tracking Error</td>
<td>-</td>
<td>0.54%</td>
</tr>
<tr>
<td>Information Ratio</td>
<td>-</td>
<td>0.02</td>
</tr>
<tr>
<td>Average Annual Turnover at Rebalancing &lt;one-way&gt;</td>
<td>-</td>
<td>10.32%</td>
</tr>
<tr>
<td>Carbon-to-Revenue Footprint*</td>
<td>297.01</td>
<td>175.54</td>
</tr>
<tr>
<td>Carbon-to-Revenue Footprint Reduction</td>
<td>-</td>
<td>40.90%</td>
</tr>
</tbody>
</table>

Note: Carbon-to-Revenue Footprint is tonnes carbon emission per Source: Created by GPIF based on information from S&P Dow Jones

Note: Performance is shown by TR
Join Climate Action 100+

October 2018, GPIF announced to join Climate Action 100+ as an official supporter

Promoting constructive dialogues in consideration of ESG factors between its external asset managers and investee companies

Climate Action 100+  http://www.climateaction100.org/

► An investor initiative established in September 2017. To date, signed by 310 investors who collectively manage USD $32 trillion in AUM. Engage with companies including “systemically important emitters” to request their implementation of a strong governance network, reduction of greenhouse gas emissions, and enhancement of disclosure in line with the TCFD recommendations. Launched in December 12, 2017, at the One Planet Summit.

► Supported and coordinated by four institutional investors (AIGCC, Ceres, IGCC, IIGCC) and PRI, who request and work with companies regarding climate change risks.

► Members are joining either as a Participant or a Supporter. Participants are required to submit an official approval on the sign-on-statement, and engage with direct dialogue with companies. Supporters fully endorse the goals and objectives of the initiative, while not undertaking direct engagement with companies.
Support TCFD Recommendation

GPIF announced its support for the TCFD Recommendation in December, 2018

TCFD (Task Force on Climate-related Financial Disclosures)
https://www.fsb-tcfd.org/

Recommendations

<table>
<thead>
<tr>
<th>Recognize climate-related risks and opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamental Principles for Effective Disclosure</td>
</tr>
<tr>
<td>1. Should present relevant information</td>
</tr>
<tr>
<td>2. Should be specific and complete</td>
</tr>
<tr>
<td>3. Should be clear, balanced, and understandable</td>
</tr>
<tr>
<td>4. Should be consistent over time</td>
</tr>
<tr>
<td>5. Should be compatible among organizations within a sector, industry, or portfolio</td>
</tr>
<tr>
<td>6. Should be reliable, verifiable, and objective</td>
</tr>
<tr>
<td>7. Should be provided on a timely basis</td>
</tr>
</tbody>
</table>

Meaning of financial analysis of climate-related risks and opportunities

Core elements of recommended climate-related financial disclosure

A guidance or tools designed for specific sectors to report information in line with the TCFD recommendations

Materiality and Location of Disclosure

Scenario Analysis
## Critical ESG Issues listed by GPIF’s Asset Managers

### Passive managers for domestic equities
- 1 Climate change
- 1 Supply chain
- 1 Misconduct
- 4 Capital efficiency
- 4 Disclosure
- 5 Other (Governance)

### Active managers for domestic equities
- 1 Board structure and self-evaluation
- 2 Capital efficiency
- 2 Minority shareholder rights (cross shareholding, etc.)
- 4 Supply chain
- 5 Corporate governance
- 5 Disclosure
- 5 Misconduct
- 5 Labor standard

### Passive managers for foreign equities
- 1 Climate change
- 1 Diversity
- 1 Water stress, water security
- 1 Other (Social)
- 5 Environment opportunity
- 5 Corporate governance
- 5 Other (Governance)

### Active managers for foreign equities
- 1 Climate change
- 2 Supply chain
- 3 Environment opportunity
- 3 Other (Social)
- 3 Diversity
- 3 Board structure and self-evaluation
- 3 Corporate governance
- 5 Deforestation
- 5 Risk management
- 5 Other (Governance)
Commission Research on ESG Disclosure

► As ESG disclosure is gaining momentum, various frameworks and standard setters are found.
Commission Research on ESG Disclosure

【Proposal for disclosure by companies】

► Should understand various ESG strategies and differences of ESG disclosure required by each strategies
► Should start from “common parts” such as disclosure standards, if the company’s disclosure is not sufficiently enough

【Meaning and Purpose of ESG Disclosure by Asset Owner】

<table>
<thead>
<tr>
<th>Accountability</th>
<th>• Disclosure for beneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparency</td>
<td>• Disclosure for the society and stakeholders</td>
</tr>
<tr>
<td>Influence</td>
<td>• Disclosure for asset managers, ESG evaluators, and portfolio companies • Disclosures for institutional investors including the peer asset owners</td>
</tr>
</tbody>
</table>
Publication of “ESG REPORT 2017”

► GPIF is committed to ESG activities for all asset classes, including bonds and alternative assets.
► ESG investment makes an effect in the long run, but it is aimed at improving the sustainability of the entire capital market.
► GPIF published “ESG REPORT 2017” in August 2018 to measure how our ESG promotion activities improve the sustainability of the market, as well as risk-adjusted returns.

Contents

Chapter 1. GPIF’s ESG Activities so far
• Revision of the Investment Principles
• Joint research with the World Bank Group to incorporate ESG in fixed income portfolio
• GPIF’s engagement on ESG
• Column: Global Trends on ESG

Chapter 2. Measurements of ESG promotion
• Approach on measurement of ESG promotion
• Measurement of ESG promotion (ESG evaluation for the portfolio, the amount of greenhouse gases emission, etc.)
• Column: Integration of ESG evaluation and AI
• Conclusion: Next Tasks on ESG evaluation