Public Pension Fund Governance and Investment: Update and Critique Comparing Japan’s GPIF with Foreign Peers

Sadayuki Horie

This paper is available online at www.gsb.columbia.edu/cjeb/research
Public Pension Fund Governance and Investment: 
Update and Critique Comparing Japan’s GPIF with Foreign Peers

Sadayuki Horie 
Nomura Research Institute

Abstract

Public pension fund management has undergone major changes globally over the past two decades. Pension fund management mainly involves (1) institutional design, (2) governance and (3) investment. Approaches to institutional design, the main focus of which is pension finance, differ internationally. The two main models of public pension finance are prefunding and pay-as-you-go. Japan has adopted a predominantly pay-as-you-go model, where current labor force participants essentially fund retirees’ pension benefits. However, in anticipation of changing demographics, namely the change in the elderly dependency ratio, Japanese public pension plans have prefunded reserves to cover benefit payments in excess of contributions. Pension financing models differ internationally, reflecting differences in individual countries’ attributes such as population composition, social solidarity and national attitudes toward risk-sharing, social insurance programs and entitlement to retirement income. This report will leave the issue of institutional design to other papers, and mainly examines public pension plan governance and investment, two areas in which global consensus on best practices exist to at least some extent.
Introduction

Public pension fund management has undergone major changes globally over the past two decades. Pension fund management mainly involves (1) institutional design, (2) governance, and (3) investment. Approaches to institutional design, the main focus of which is pension finance, differ internationally. The two main models of public pension finance are prefunding and pay-as-you-go. Japan has adopted a predominantly pay-as-you-go model, where current labor force participants essentially fund retirees’ pension benefits. However, in anticipation of changing demographics, namely the change in the elderly-dependency ratio, Japanese public pension plans have prefunded reserves to cover benefit payments in excess of contributions. Pension financing models differ internationally, reflecting differences in individual countries’ attributes such as population composition, social solidarity and national attitudes toward risk-sharing, social insurance programs, and entitlement to retirement income. This report will leave the issue of institutional design to other papers, and mainly examines public pension plan governance and investment, two areas in which global consensus on best practices exist to at least some extent.

Globally, governance reform of public pension funds dates back to 1997, when the Canada Pension Plan Investment Board (CPPIB) radically restructured its governance arrangements into what is now known as the “Canadian model.” The Canadian model’s fundamental governance precepts include establishment of a governing board that is largely independent from the government, and which possesses a high degree of specialized expertise. These precepts are now regarded as key prerequisites for well-managed pension funds.

Meanwhile, both public and private pension funds have been reforming their investment practices, primarily by upgrading risk management. This trend began in the latter half of the 1990s, when Canada’s Ontario Teachers’ Pension Plan (OTPP) adopted risk budgeting. The OTPP reconfigured its portfolio investment process into a risk allocation process with the aim of maximizing returns within specified risk constraints. Another early adopter of risk budgeting was the Danish public pension fund Arbejdsmarkedets Tillægspension (ATP). ATP’s reforms, which also included splitting its portfolio into two sub-portfolios, have catalyzed major changes in public pension funds’ investment strategies and asset management techniques, even in Asia, where the likes of Japan’s Government Pension Investment Fund (GPIF) and South Korea’s National Pension Service (NPS) have followed ATP’s example.

The first half of this report provides an overview of the governance models and investment strategies of public pension funds around the world, with a focus on those pension reserve funds (PRFs), like Japan’s GPIF, set up by national governments to partially pre-fund future pension benefits. The second half of the report discusses the GPIF’s governance and investment management reforms since 2014 from the standpoint of global trends.

I. Overview of public pension funds’ governance structures
I.1. Purpose of governance

The term “governance” is nowadays often heard in various contexts. In Japan, corporate governance once strongly connoted regulatory compliance; however, since the advent of Japan’s Corporate Governance Code in 2015, it has been re-construed as a decision-making framework for increasing companies’ long-term value. Governance has thus come to be associated with value enhancement.
Empirical research has found that funds’ governance structures have a major impact on investment performance, even in the pension world. Pension fund governance can be summed up as an organizational framework to ensure that pension funds fulfill their core mission of stably paying out promised retirement benefits over the long term. From an institutional design standpoint, pension plan sponsors need flexible risk-sharing mechanisms to ensure their pension plans’ long-term sustainability in the aim of fulfilling the plans’ purpose. One such risk-sharing mechanism is a pension plan’s governance structure. Before discussing governance in an asset management context, I want to first expand upon its significance with respect to pension funds in particular.

I.2. Two levels of governance
Competing interests among stakeholders are an unavoidable reality for public pension funds regardless of their choice of funding model. As an example, Figure 1 depicts competing and conflicting interests likely to be faced by defined-benefit (DB) pension plans that are pre-funded with contributions from participants and obligated to pay predetermined benefits with those contributions augmented by investment returns earned on their accumulated reserves, irrespective of how high or low those returns prove to be. To better deal with such competing or conflicting interests, pension funds are advised to have two levels of governance: one concerned with pension plan design, and the other with the investment of pension fund assets.

The former mainly involves reconciling stakeholders’ competing interests with respect to matters within the discretionary purview of plan sponsors or regulators, such as the plan’s design as a DB, DC (defined contribution), or hybrid DB/DC plan, vesting of benefits and mechanisms for sharing risk between plan sponsors and beneficiaries. The key to facilitating decision-making on such matters is explicitly identifying stakeholders’ interests.

Taking these plan design elements as a given, the second level of governance (governance over investment of pension fund assets) clarifies who is responsible for operational processes in the aim of maximizing the fund’s investment returns under predetermined risk policies.

The two levels of governance are sometimes distinguished from each other as “pension governance” (first level) versus “pension fund governance” (second level). As noted above, international comparison of how public pension funds operate reveals a high degree of country-specific idiosyncrasy stemming from international differences in factors such as social solidarity and attitudes toward retirement income entitlements. In contrast, a pension fund governance’s aims are largely uniform across different countries as described in the next section.

I.3. Pension fund governance considerations
A number of international organizations have published pension fund governance guidelines, all similar in content.

The most prominent example is the OECD Guidelines for Pension Fund Governance first issued in July 2002 and most recently updated in 2009. In April 2007, the International Corporate Governance Network (ICGN) issued similar governance guidelines for institutional investors, including pension funds and asset management companies. The ICGN’s guidelines have become progressively more detailed over the years since their initial publication, ultimately splitting into two documents, ICGN Global Governance Principles and ICGN Global Stewardship Principles, in 2016.
Oxford University Professor Gordon L. Clark also has published papers on best-practice governance based on his research on the organizational design, governance structures and operations of PRFs like Japan’s GPIF. A PRF is a government-established reserve fund with a mission of partially, not fully, pre-funding future pension benefits. Many countries have PRFs. In addition to the GPIF, other prominent examples include Korea’s NPS, Canada’s CPPIB, Norway’s Government Pension Fund Global (GPFG), Sweden’s AP Funds, and Australia’s Future Fund. Figures 2 and 3 present an overview of the OECD’s governance guidelines and Clark & Monk (2011)’s recommended PRF design and governance principles and PRF management and implementation policies. The OECD governance principles listed below are similar in content to Clark & Monk (2011) and the ICGN’s.

- Adopt a clear-cut framework for division of pension fund responsibilities
- Establish a governing body (e.g., board of directors) with oversight responsibility
- Delegate authority from the governing body to specialists in accord with expertise
- Establish a code of conduct for the governing body
- Obtain requisite expertise
- Ensure governance structure’s transparency and accountability
- Regularly monitor and report on operations

Following are several noteworthy points with respect to the OECD guidelines and PRF governance principles.

I.3.1. Governance structure with clear separation of oversight and executive authority

The starting point in terms of governance is developing a governance structure with a clear separation between oversight responsibilities and executive authority (this point corresponds to the first two OECD guidelines listed above). In corporate governance, there are two major models for boards of directors (analogous to a pension fund’s governing board): the managing board model and monitoring board model. Under the former model, the board has both oversight and executive authority. Under the latter model, oversight and executive functions are explicitly separated from each other, with the board responsible for oversight alone. The monitoring board model is considered the governance structure best suited to pension funds.

The monitoring board model is considered a better fit for pension funds because operating a pension fund requires diverse expertise. Formulating investment policies requires pension plan design knowledge while actual investing requires portfolio management skills and knowledge of various asset classes’ characteristics. It is unrealistic to expect a single entity to possess all of the skills required to fulfill such diverse roles. Splitting these functions among two or more entities that possess the requisite skill sets for their respective functions is therefore regarded as a more efficient way to run a pension fund. Additionally, pension funds’ operational success or failure affects not only the plan sponsor but large numbers of plan participants. Pension funds’ operations consequently need to be closely monitored.

Separation of oversight and executive authority is important in terms of managing conflicts of interest also. Even today, some pension funds’ boards still have executive authority to hire external asset managers. The concern in such cases is that board members may preferentially hire asset management companies with which they have some sort of relationship. Incidents involving such conflicts of interest are not uncommon overseas.
I.3.2. Expertise-based delegation of authority

Given the breadth of governing boards’ oversight authority, separation of oversight and executive authority between a governing board and executive team alone is not enough to effectively operate a pension fund. Governing boards are therefore advised to delegate authority to various subcommittees, often including an investment committee, nominating committee, compensation committee and audit committee, similar to a standard corporate board committee configuration. These subcommittees are usually chaired by governing board members but staffed with pension fund officers and/or executives, who typically do most of the subcommittees’ actual work.

Every pension fund has an investment committee, the role of which is to formulate specific investment strategies. Investment committees often include all governing board members and generally meet at least every other month, usually monthly. They typically set model portfolio asset allocations, perform risk budgeting and develop and monitor investment processes. Nominating committees’ main function is to appoint pension fund executives such as the CEO and CIO (chief investment officer). In many cases, the nominating committee functions as a compensation committee also, setting compensation levels for the pension fund’s executives and senior staff. Combining the nominating and compensation committee functions into a single committee is expedient in terms of recruiting highly qualified candidates because the committee can discuss compensation with candidates during the selection process.

I.3.3. Explicit code of conduct for governing board

Another important point in terms of governance structure is establishing an explicit code of conduct for governing board members. As noted above, pension fund stakeholders tend to have competing interests. Of particular concern is the possibility of a governing board giving precedence to certain stakeholders’ interests when making important investment-related decisions such as setting model portfolio asset allocations. Such preferential treatment would be contrary to appropriate pension fund operation. Governing board members often include individuals nominated by pension plan participants/beneficiaries and others nominated by the plan sponsor(s). Even if nominated by, for example, plan participants, governing board members have a duty to make decisions conducive to the pension plan’s long-term sustainability instead of solely representing the plan participants’ interests. It is therefore important for governing board members to be subject to a code of conduct mandating that they take the pension plan’s overall sustainability and financial health into consideration when making decisions, enabling them to make investment decisions as objectively as possible.

I.3.4. Expertise sufficient to fulfill delegated responsibilities

Explicitly delineating organizational subunits’ functions and authority is a necessary but not sufficient condition to successfully operate a pension fund. The organizational subunits must also possess sufficient expertise and skills to fulfill their delegated functions. This requirement, however, is not easily met.

A typical case in point is selection of governing board members. Individuals nominated by stakeholders are not necessarily sufficiently knowledgeable about pension fund management and their ability to make appropriate investment decisions as a governing board member is unknown. Some pension funds therefore specify required qualifications for appointees to their governing boards and committees subordinate thereto. Candidates proposed by the nominating committee are rigorously vetted against the specified qualifications to ensure they possess the expertise required to fulfill their roles. Specifying required qualifications alone is not sufficient to obtain needed expertise. A pension fund would be hard-pressed to actually hire the best-qualified candidates unless it offers compensation commensurate with
the candidates’ expertise. Pension funds may inevitably be at a competitive disadvantage in recruiting highly qualified personnel, but it is important for them to offer adequate compensation or other enticements to secure sufficient expertise.

I.3.5. Tradeoff between expertise and representation
While the importance of upgrading pension funds’ in-house expertise is widely recognized, some pension fund stakeholders object to the appointment of governing board members who themselves are not a stakeholder (plan sponsor or participant) or representative thereof. The rationale behind this objection is that appointing non-stakeholders to the governing board of a pension fund run pursuant to an agreement between the plan sponsor(s) and plan participants is contrary to the principle of self-governance. In Japan, this argument was raised by labor representatives serving on a Social Security Council working group on PRF governance during the working group’s 2014-16 discussions on establishing a new GPIF Management Committee (governing board). The same argument was raised in the context of corporate pension fund directors’ expertise during a Ministry of Health, Labor and Welfare (MHLW) subcommittee’s discussions since 2015 on improving DB pension plans’ governance.

The underlying issue is how to properly balance expertise and representation on pension funds’ governing boards. This issue is theoretically resolvable if pension funds adopt a framework that incorporates a nominating committee, as the CPPIB has done. The first step is to form a committee comprising representatives of the pension plan sponsor(s) and participants to nominate board members. The process of selecting board members involves stipulating rigorous qualifications for nominees, screening candidates, and then nominating those who best meet the required qualifications. By establishing a code of conduct mandating that board members make decisions solely from the standpoint of pension plan sustainability as discussed above, pension funds should be able to adequately ensure that their board members act representatively even if they do not include direct representatives of the plan sponsor(s) or participants. This nominating committee approach has unfortunately yet to be widely adopted by pension funds outside of Canada.

I.3.6. Importance of stakeholder disclosure, reporting and audits
While surmounting the operational challenges they face, pension funds must broadly disclose information to their stakeholders regarding their operations, organization, and governance. Reporting to stakeholders in writing and at meetings is essential for pension funds to gain trust. Specifically, they should report on how they delineate authority as discussed above, the results of such delineation, and how well their governing board and its subcommittees are actually fulfilling their assigned responsibilities. Such disclosure aimed at gaining trust is particularly crucial for public pension funds, given that their main stakeholder constituency is the general public. It is therefore important for public pension funds to not only disclose information about their operations, but also to establish a routine of periodically reporting in easily understandable formats, soliciting feedback from concerned parties, and improving their operations. In addition to reader-friendly disclosures to stakeholders, public pension funds must also periodically release formal reports, including audited financial statements and annual reports.

II. Case study of pension fund governance structure
There is a largely unanimous international consensus on the pension fund governance issues discussed above and substantial agreement on the direction in which pension fund governance should evolve going forward. The challenge is how to best put this consensus into practice. This chapter looks at the CPPIB and how it has implemented the framework discussed in the previous chapter. As mentioned
above, in 1997 the CPPIB became the first public pension fund to adopt a governance structure that has since been implemented by many pension funds.

II.1. CPPIB case study
II.1.1. Overview of CPPIB
The CPPIB manages the Canada Pension Plan’s (CPP) reserve fund. The CPP is a public pension plan within Canada’s pension system. It is funded with payroll deductions. The CPPIB is accountable to the Canadian Parliament, provincial finance ministers, and the federal finance minister. Although the CPPIB is a Crown (i.e., federally owned) corporation, its founding legislation, the Canada Pension Plan Investment Board Act, ensures its independence from the government, enabling it to single-mindedly pursue its sole long-term objective of maximizing returns without undue risk of loss. The CPPIB’s mandate is to earn a real (after-inflation) compound annual return of +4.0% over the next 75 years, assuming an unchanged 9.9% contribution rate based on calculations by Canada’s Chief Actuary (it exceeded this target from 1998 through March 2016 with a real compound annual return of +5.1%).

The CPP Fund ended March 2016 with assets of C$278.9 billion (approx. ¥23.8 trillion). Its assets are projected to grow to C$500 billion by 2030. The CPPIB has a global staff of 1,266 personnel (up from 164 as of 2006). In addition to Toronto, it has offices in London (102 personnel), Hong Kong (65), São Paulo (14), New York (13), Mumbai (6) and Luxembourg (4). Its Board of Directors has 12 members, all part-time. One is an economist (university professor); another, a lawyer (law firm partner). The other ten, including the chairperson, currently serve as corporate CEOs or directors. Two of these ten are chartered accountants also.

The CPPIB’s roles are prescribed in the CPPIB Act. Its core mission is to invest its assets in the best interests of CPP participants in the aim of achieving a maximum rate of return without undue risk of loss. When making investment decisions, the CPPIB is required to take into account the CPP’s funded status and other factors (e.g., inflation rate) that may affect the CPP’s promised benefit level.

II.1.2. Board of Directors’ composition and main roles
The CPPIB’s 12-member Board meets six times annually. Its main roles are management and oversight of the CPPIB’s business affairs. Its specific functions include:
- Formulating investment policies, investment standards, investment procedures, and risk policies;
- Formulating procedures for identifying potential conflicts of interest and managing conflicts of interest;
- Formulating a Code of Conduct for Board members and CPPIB executive officers and staff;
- Appointing a committee to monitor compliance with the Code of Conduct and conflict-of-interest management procedures;
- Establishing Board committees and appointing chairpersons and members to staff them;
- Approving annual reports and other financial reports;
- Overseeing CPPIB executive officers and staff; and
- Appointing CPPIB executive officers and setting their compensation.

While the Board of Directors is empowered to appoint the CPPIB’s CEO and other executive officers, its members are barred from serving as executive officers themselves. The Board of Directors and executive officer team are thus explicitly separate from each other, with the former vested with oversight authority and the latter with executive authority.
Directors are appointed by Canada’s federal Governor in Council pursuant to the federal finance minister’s recommendations. Directors are appointed to three-year terms and can be reappointed a maximum of twice (maximum term limit of nine years). Candidates qualified to serve as directors are selected by a nominating committee that reports to the federal finance minister. This nominating committee is staffed by appointees of the federal and provincial finance ministers. It selects director nominees by vetting candidates based on two main criteria. The first is whether candidates possess the requisite skills and experience to serve as directors. The second is a geographic diversity criterion to ensure that the Board’s membership is representative of Canada in its entirety.

In addition to being required to possess the requisite knowledge and skills for their respective positions, CPPIB directors and executive officers are charged with a fiduciary duty known as the prudent person rule.

II.1.3. Committees with authority delegated by Board of Directors
The Board of Directors may delegate authority to its committees, its chairperson, or CPPIB executive officers or staff for any function except:

- Adopting, revising, or rescinding regulations;
- Formulating investment policies, standards, and procedures;
- Filling vacant auditor positions and vacancies on Board committees;
- Appointing executive officers and modifying executive officer compensation; and
- Approving annual reports and other financial reports.

The Board has established the four committees below as entities subordinate to itself. Their respective functions are listed in Figure 4. The Board was required by the CPPIB Act to establish the Audit Committee and Investment Committee. It established the Human Resources and Compensation Committee and Governance Committee out of necessity.

- Investment Committee (staffed by all 12 directors)
- Audit committee (nine members)
- Human Resources and Compensation Committee (eight members)
- Governance Committee (six members)

The committees are required to meet a minimum number of times annually, but they actually meet more frequently than required. In FY2015, the committees collectively met a total of 45 times, including teleconferences. Directors attend an average of 33 Board and committee meetings annually. The Board chairperson’s annual compensation is C$160,000; other directors are paid C$35,000 annually. All directors are paid an extra C$1,500 per meeting attended in person. Directors who chair committees receive an additional C$12,500 annually.

II.1.4. Process of setting executive officers’ compensation
The Board of Directors appoints the CPPIB’s executive officers and sets their compensation. The government has absolutely no say in this process. To recruit highly qualified personnel, the CPPIB’s Board sets executive officers and staff’s compensation commensurate with private-sector asset management companies’ compensation levels. It does so by an extremely clear-cut method that entails setting compensation high enough to recruit and retain high-caliber investment professionals and senior executives. Additionally, compensation is linked to performance to align staff’s interests with CPP
participants and beneficiaries’ long-term interests. In its annual reports, the CPPIB notes that it competes for human resources with Canadian asset management companies, investment banks, and commercial banks, and must offer compensation high enough to successfully recruit and retain highly qualified personnel. The CPPIB considers its compensation scheme to be highly instrumental to achieving its objective of earning a maximum rate of return without undue risk of loss.

Meanwhile, high compensation is prone to induce substantial envy among pensioners and the general public. The CPPIB’s compensation scheme therefore must be highly transparent and justifiable, as it indeed is in numerous respects. First, performance-based compensation is payable only if realized returns exceed a predetermined benchmark. Second, the returns are measured on a long-term basis. Third, the performance-based compensation varies as a function of excess returns’ magnitude and is capped, not open-ended. Fourth, the benchmarks used to determine performance-based compensation are risk-adjusted in deference to CPP participants’ interests. Fifth, the CPPIB imposes risk limits on portfolio managers. Sixth, performance-based compensation paid based on interim returns are subject to a clawback provision pending the final returns’ outcome.

II.1.5. Accountability to Canadian public
While the CPPIB maintains independence from the government and a high level of expertise, its Board of Directors is responsible for oversight of the CPPIB’s executive team from the CEO down, and is heavily accountable to the public. In FY2008, when the CPPIB’s overall rate of return was -18.6%, its highly compensated staff and Board, the latter of which had approved the staff’s compensation, naturally came under harsh scrutiny.

The CPPIB’s chairperson and CEO are legally required to visit all Canadian provinces (normally nine cities) twice annually to meet directly with CPP participants and beneficiaries\(^{8}\). At these meetings, they explain that the CPPIB’s compensation scheme has reportedly sometimes received blunt feedback. However, by virtue of its governance model that combines independence from the government with accountability, the CPPIB seems to have earned the Canadian public’s confidence as an amply competent investor of Canadians’ pension reserves. The CPPIB’s duly authorized Board of Directors and executive team are ensuring that this governance model functions as intended by fulfilling their duty of public accountability with respect to how well the CPPIB is fulfilling its responsibilities.

II.2. Pension fund governance deficiencies
Unlike the CPPIB, not all pension funds have consensus best-practice governance structures. Indeed, many pension funds still have governance deficiencies.

II.2.1. Governing board expertise issues
One major challenge that many pension funds face in terms of improving their fund governance is ensuring that their governing board (e.g., board of directors) possesses sufficient expertise. Such expertise is not the same as a professional portfolio manager’s practical investment skills. “Expertise” in the context of a pension fund’s governing board means being able to responsibly supervise the executive functions delegated to the pension fund staff. If such expertise is lacking, the pension fund, its consultants, and external asset managers may not be able to perform up to their full potential.

To reiterate, a pension fund governing board’s role is oversight of the pension fund’s operations, including its investment activities, based on the pension plan design parameters, including contribution and benefit policies, set by the plan sponsor. Hardly any pension funds, including the CPPIB, have a governing board staffed with full-time personnel. Nearly all pension fund governing board members
serve in that capacity on a part-time basis while holding another full-time job (primary occupation). As stipulated in the OECD’s guidelines, a governing board’s proper role is to delegate authority to various entities, including the pension fund’s executive team, and oversee operations.

While a governing board may delegate authority, it cannot transfer its operational responsibilities to any other party. It must appropriately select entities capable of fulfilling their delegated functions and monitor how well they do so. Governing board members therefore need sufficient expertise to fulfill their oversight responsibilities and an adequate understanding of any functions delegated to other entities.

The challenge is ensuring that a governing board both has ample expertise and is sufficiently representative of stakeholders. The CPPIB and OTPP, which the CPPIB used as a governance model, appoint experts from outside their organizations as not only executive officers but directors also. They appoint directors based on rigorous qualification criteria and have codes of conduct with which their personnel must comply.

Globally, however, such practices are rare. In many countries, the prime consideration in appointing governing board members is representation. Pension funds in such countries face strong resistance to setting up nominating committees and hiring outside experts. In many countries, the plan sponsor(s) and participants/beneficiaries each select half of their pension fund’s governing board members. The board’s chairperson is often chosen by agreement between the two sides. With governing board members thus selected by stakeholders, pension funds in such countries are predominantly run by nonprofessionals.

A 2011 NRI survey found that hardly any of the surveyed public pension funds and public employee pension funds in European countries such as the Netherlands, UK, Denmark, Sweden, and Finland had nominating committees or appointed outside experts to their governing boards. The survey revealed that upgrading governing boards’ expertise is a big challenge for public-sector pension funds throughout Europe.

Even the Danish public pension fund ATP, which diligently practices risk budgeting and deftly navigated the global financial crisis, acknowledged that increasing its Board of Representatives’ expertise poses a major challenge. It also emphasized the need for steady efforts to patiently educate Board members and augment training programs for them. Increasing governing board members’ understanding of pension fund management is an important issue in not only Japan but nearly every country.

II.2.2. Importance of investment beliefs
Overseas, governing board members are appointed for 2-3 year terms in most cases. Even if pension funds are successful in educating their governing board members, the periodic turnover of board seats makes it difficult to maintain gains in board expertise. Many pension funds consider investment beliefs to be instrumental to effectively maintaining their governing boards’ expertise and increasing the consistency of their boards’ investment policies. An investment belief is an expression of a governing board’s fundamental view of capital markets. One common investment belief is that portfolio diversification is an effective means of increasing returns without assuming additional risk. Another is that the equity markets remain somewhat inefficient. Even in Japan, pension funds’ investment policies are often shaped by the personality of individual governing board members who play leadership roles on their boards. By formulating investment beliefs that encapsulate a fundamental philosophy about the sources of returns that the fund should preferentially pursue, a governing board can keep its investment
policies from drifting as a result of turnover of board seats. Additionally, investment beliefs are considered an effective way to educate new board members about the board’s basic investment policies.

II.2.3. Pension fund compensation issues

In addition to the issue of how to ensure sufficient board expertise, another important operational issue for pension funds is how to ensure that the executives who actually manage the pension fund’s investments have sufficient expertise. Given the direct correlation between pension fund executives’ expertise and investment returns, pension funds need to work on upgrading their executive expertise through various means. One major determinant of a pension fund’s executive expertise is its compensation scheme.

Figure 5 tabulates by region the average compensation of the five highest-paid executives or portfolio managers at 37 pension funds around the world. The five highest-paid individuals at each fund typically include the CEO, CIO and head(s) of equity and/or fixed-income investment. Salary levels differ substantially among the 37 pension funds as a function of the funds’ size, independence from their respective pension plan sponsors, ratio of assets managed in-house to assets managed externally and the extent of any internally managed investments in non-exchange-traded asset classes with relatively high management fees (e.g., private equity, real estate). The average salaries in Figure 5 range from over ¥30 million at the low-end to around ¥90 million in Canada. One reason that average salaries were higher in Canada than elsewhere is that Canadian pension funds have a strong tendency to compensate their officers on a par with comparable private-sector positions. Another likely contributing factor is that performance-based pay accounts for a large share of compensation and many of the funds had surpassed their return targets over several preceding years, boosting the performance-based component of compensation.

I once attended a panel discussion featuring CEOs and directors of major Canadian, US and Dutch pension funds. One of the topics of discussion was the funds’ strategies for recruiting personnel who are a good fit for their organizations. All of the panelists cited the importance of having a clearly defined organizational culture and investment strategies as a prerequisite for recruiting top-notch personnel. They said it is important to hire people compatible with their organizations’ objectives and culture. In this respect, pension funds are no different from most other employers. When recruiting younger personnel, the pension funds offer jobs comparable to investment banking positions in terms of compensation and working conditions. For recruiting senior personnel, however, all of the panelists agreed that non-compensation differentiators such as a stable work environment and the value of contributing to society by working at a pension fund are more important than compensation.

One point on which the panelists distinctly disagreed was how high salaries need to be and the extent to which compensation should be linked to performance. While a Canadian pension fund executive stressed the importance of compensation linked to investment returns, a Dutch pension fund CEO said that high salaries and performance-based compensation do not matter much in recruiting top-notch personnel because the Netherlands has an ample pool of qualified personnel who would rather work at a pension fund than in vastly higher-paying jobs at asset management companies or investment banks. Cross-border differences in work culture and national character thus seem to be another factor behind international variations in pension fund compensation.

III. Public pension funds’ investment reforms
The global pension fund governance trends discussed above have been accompanied by major changes in pension investment practices since the latter half of the 1990s. Following is a discussion of important governance-related investment reforms, specifically reforms related to risk management and portfolio construction methods.

The adverse investment environment facing pension funds globally is not a recent development or limited to Japan that experienced the bursting of asset price bubble in the 1990s. Since 2000, even pension funds in countries whose equity markets have performed better than Japan’s have been hit by repeated equity market drawdowns, most notably the 2008-09 global financial crisis, and seen their funded ratios worsen in the wake of interest rate declines. Meanwhile, on the regulatory front, pension funds have been hard hit by increasingly stringent pension actuarial standards, including fair valuation of pension liabilities. Overseas pension funds, like their Japanese counterparts, have consequently been forced to undertake operational reforms. In response to such challenges, pension funds have made major strides in terms of risk management and portfolio construction.

Risk management and portfolio construction are related in that risk management reforms have driven major advances in portfolio construction methods. Tightening of pension actuarial standards and advances in investment technology have catalyzed three paradigm shifts in terms of portfolio management (Figure 6). The first is a shift from asset allocation to risk allocation; the second, a shift from management of assets in isolation to management of assets in the context of pension liabilities; the third, a shift from asset classes to sources of return. The key concepts behind these three paradigm shifts are risk allocation, liability-driven investment and sources of return, respectively.

III.1. Shift from asset allocation to risk allocation (advent of risk budgeting)
The first of these paradigm shifts to occur was a shift from asset allocation to risk allocation. Portfolio management based on risk allocation is called risk budgeting. Risk budgeting has been widely adopted by pension funds throughout the world since the turn of the millennium.

III.1.1. Basic concept of risk budgeting
The difference between risk budgeting and conventional asset allocation is illustrated in Figure 7. Before risk budgeting’s advent, pension funds managed their portfolios using asset allocations. Figure 7’s upper-left pie chart depicts a portfolio managed based on an asset allocation across four asset classes. The rationale behind using asset-class allocations as a portfolio management metric was the belief that portfolio returns were almost entirely determined by such allocations. However, whether adequate portfolio diversification can be realized by managing the portfolio’s asset-class allocations is debatable. While Figure 7’s upper-left portfolio, for example, appears at first blush to be well-diversified based on its asset allocations, its returns’ variability is actually largely identical to equity returns’ variability. That such a portfolio’s performance would be disproportionately governed by equities’ performance which can be shown empirically. Constructing a portfolio that is truly diversified, not solely at the mercy of equity returns’ variability, requires a portfolio management metric other than asset-class allocations.

Once such method devised to better diversify portfolios is risk budgeting. The metric most often used to construct portfolios through risk budgeting is risk contribution, defined as a given asset or asset class’s share of a portfolio’s total risk (measured by, e.g., returns’ standard deviation). By calculating risk contributions, a portfolio manager can ascertain the extent to which a given asset (or asset class) is responsible for changes in portfolio returns. Additionally, risk contributions are intuitively easy to understand by virtue of being additive, meaning that the sum of all of a portfolio’s constituent asset classes’ risk contributions is exactly equal to the overall portfolio’s risk.
For example, Figure 7’s upper-right pie chart shows the risk contributions of the four asset classes that constitute the portfolio in the upper-left pie chart. It is immediately apparent from this pie chart that the portfolio’s risk is almost entirely attributable to the two (domestic and foreign) equity asset classes’ return variability.

In Figure 7’s bottom-right portfolio, the four asset classes’ respective risk contributions are equalized. Such a portfolio is called a risk parity portfolio. Put differently, risk contribution represents degree of loss origin. Equalizing risk contributions across a portfolio’s constituent asset classes can limit portfolio drawdowns, even when all of the asset classes’ returns are negative. By appropriately controlling risk contributions, risk parity portfolios are robust against both the upside and downside variability in any of their constituent assets’ returns.

The process of constructing a portfolio based on risk contributions or some other risk measure as described above can be called risk budgeting. The innovation encapsulated by risk budgeting is the use of risk as the basic portfolio construction metric instead of conventional portfolio allocations based on assets’ monetary value.

In the example above, risk was quantified in terms of portfolio returns’ variability, but risk budgeting has several variants that use alternative risk metrics such as value-at-risk (VaR), which factors in portfolio-level losses also, and expected shortfall (ES) of a pension fund’s surplus (assets net of pension liabilities). Whichever metric is used, what all risk budgeting approaches have in common is that they construct portfolios based on a risk metric of some sort. Use of risk budgeting has been growing, partly by virtue of development of various quantitative risk-management methods and markets for derivatives for controlling risk.

III.1.2. OTPP and ATP were first public pension funds to adopt risk budgeting in earnest
Long used by investment banks, risk budgeting started to be adopted in earnest by pension funds and hedge funds from the latter half of the 1990s. The first pension fund to adopt risk budgeting was Canada’s OTPP in 1997. The OTPP is well known for assigning each of its investment strategy teams an inviolable risk budget (expressed in VaR terms) and using risk management methods that maximize returns.

The Danish public pension fund ATP’s Board of Representatives decided in the mid-2000’s to switch from conventional asset allocation to risk allocation. ATP gained widespread renown for effectively managing its risk allocations during the 2008 financial crisis, when it limited its fund’s drawdown to less than 5%. In addition to managing risk allocations, ATP is well-known for also managing the daily VaR of its pension fund surplus and dynamically adjusting its risk allocations to ensure that the surplus remains above a certain minimum threshold. ATP is famous among public pension funds for its meticulous risk management.

Outside of the pension fund world, the hedge fund Bridgewater Associates, well known as a diversified beta fund pioneer, unveiled the concept of a risk parity portfolio, in which asset classes are equally weighted by risk as described above, in the 1990s. Bridgewater currently manages over ¥10 trillion of assets.

III.2. Shift from management of assets in isolation to management of assets in context of liabilities (advent of LDI)
The second paradigm shift was a shift from management of assets in isolation to management of assets in the context of pension liabilities. Historically, many pension funds fulfilled the role of investing pension contributions to fund predetermined benefits. This role naturally entails awareness of pension liabilities. In 20th century pension plans, however, pension liabilities were typically accounted for at book value. Pension funds consequently tended to manage their assets with a focus on their assigned expected return but without much cognizance of their liabilities.

However, pension funds’ regulatory environment has changed dramatically over the past two decades. Fair valuation of pension liabilities has become the norm in both corporate accounting standards and pension actuarial standards for prefunded public pension funds (but not applicable to a pay-as-you-go public pension funds like Japan’s GPIF). Additionally, newly imposed regulatory standards require accurate reporting of pension assets as a percentage of pension liabilities. Pension funds have consequently had to become diligent practitioners of asset liability management (ALM). In other words, pension liabilities now figure more prominently in pension asset management for many pension funds. Amid such changes in the regulatory environment, liability-focused investment strategies have emerged. Such strategies are collectively referred to as liability-driven investment (LDI). In contrast to conventional pension fund management predominantly focused on pension assets, LDI was conceived as an investment framework aimed at modulating risk and increasing the pension fund surplus. This surplus and changes in it are key management metrics in LDI. LDI first gained popularity among European DB pension plans as an asset management technique. It has since gained widespread prevalence in the US also. It is now used by many DB pension plans.

III.2.1. Risk-minimization strategies and their role
One category of LDI is risk-minimization strategies, defined as strategies designed to generate cash inflows that match projected future pension benefit outflows as closely as possible. Such an approach is called risk minimization in the sense that it can reduce any gap between pension assets and liabilities by realizing cash flows that closely mirror benefit outflows. Pension benefits generally must be paid for as long as pension plan participants/beneficiaries’ remain alive. Such extremely long-term cash flows could be replicated with a portfolio of bonds with very long-term residual maturities. Such a portfolio is the simplest example of a risk-minimization strategy.

The difficulty is that most pension plans’ pension benefit formulas assume a higher rate of return on pension assets than the yield currently available from even ultra-long-term bond portfolios. Some pension funds, mainly in Europe, are obligated to pay inflation-indexed benefits. Such pension funds have set their assumed rates of return above the inflation rate. Additionally, in light of the risk of pensioners outliving their actuarial lifespan, pension funds typically set their expected rates of returns high enough to factor in a sizable longevity risk premium in addition to the expected inflation rate. This practice results in assumed rates of return in excess of long-term bond yields. Portfolios constructed with risk-minimization strategies using only ultra-long-term bonds would consequently not be able to generate returns high enough to fund promised benefits.

To be able to pay out promised pension benefits, pension plans using a risk-minimization strategy have two options: raise their contribution rate or adopt another investment strategy capable of delivering returns that equal or exceed their assumed rates of return do not coincide with their pension liabilities’ cash flows (alternatively, both options could be chosen in combination). Pension plans that do not have the option of their raising contribution rate must adopt an investment strategy other than a risk minimization strategy.
III.2.2. Example of barbell portfolio strategy
Many pension funds combine risk-minimization strategies with other investment strategies because their risk-minimization strategies alone are insufficient to meet their benefit obligations. As one example, the OTPP splits its pension assets between two strategies: risk-minimization and growth. Such a division of assets is called a barbell portfolio strategy. One advantage of a barbell strategy is that it can help pension funds think in terms of the balance between pension contributions and investment returns, as illustrated by the OTPP’s specific case.

The OTPP needs to earn a real return of +2.75% on its pension assets to pay its pension benefit obligations. However, long-term Canadian government bonds are currently yielding +0.3% in real terms (1.6% nominal yield net of 1.3% inflation rate), some 240bp below the OTPP’s required real return. The OTPP thus cannot meet its benefit obligations by using a risk-minimization strategy alone. To cover the long-term government bond yield’s 240bp shortfall relative to the OTPP’s required real return, the contribution rate would need to increase substantially (nearly 50%). Given the magnitude of the contribution rate hike that would be required if the OTPP employed a risk-minimization strategy alone, the OTPP realized that it needed a separate growth strategy also. To achieve returns high enough to avoid a contribution rate increase, the OTPP decided to construct a broadly diversified growth-strategy portfolio that includes illiquid asset classes such as equities, real estate, infrastructure and commodities.

Although the growth-strategy portfolio is highly diversified, its returns are presumably more variable than the risk-minimization strategy’s. If the growth strategy can deliver high average returns as expected, the OTPP may be able to lower its contribution rate. Conversely, if the growth strategy’s returns are worse than expected, the OTPP may have to raise its contribution rate even higher than it would have if its assets were invested entirely in the risk-minimization strategy. The trade-off between the possibility of reducing the contribution rate and the risk of raising the contribution rate, both as a result of adding the growth strategy, can be explicitly quantified.

The risk of having to raise the contribution rate should factor into the decision of how much risk to take with pension assets invested in the growth strategy. This decision is made by the OTPP’s Board. The Board decides how much risk of duration mismatches between pension assets and liabilities is tolerable to achieve growth-strategy returns in excess of the OTPP’s assumed rate of return. In doing so, it takes the pension plan sponsors’ wishes into account.

III.2.3. ATP’s barbell portfolio strategy
Denmark’s ATP adopted a barbell portfolio strategy in the early 2000s in response to tightening of pension regulatory standards and the switch to fair valuation of not only assets but pension liabilities also (incidentally, ATP is a prefunded public pension plan). As a risk-minimization strategy, ATP hedges with swaps and other derivatives to offset fluctuations in its liabilities’ valuations. If it were to construct its risk-minimization portfolio entirely of cash-market assets such as ultra-long-term bonds, it would have hardly any pension assets remaining to deploy in its growth strategy. To circumvent this constraint, ATP uses swaps and other derivatives. Even without sufficient investable assets to fully hedge its liabilities, ATP can construct a liability-hedging portfolio with a small amount of cash by using derivatives and then invest any leftover funds in its growth strategy. By using derivatives, ATP increases the assets allocated to the growth strategy in Figure 8 by a factor of lambda ($\lambda$) in the equation below (where $\lambda > 1$).

\[\text{Pension assets} = \text{risk-minimization strategy} + \lambda(\text{growth strategy})\]
Growth portfolios are usually thoroughly diversified in the aim of maximizing returns subject to a given risk constraint. ATP’s growth portfolio comprises a broad range of illiquid asset classes, including real estate, private equity, credit-risk products, infrastructure and timber, thereby capitalizing on ATP’s long-term investment horizon.

Incidentally, ATP is able to almost perfectly hedge downside interest rate risk with its risk-minimization strategy (i.e., liability-hedging portfolio). However, its growth portfolio’ equity and other asset holdings still pose downside risk but when risk allocations are set through risk budgeting like ATP does, equities’ downside risk can be controlled to some extent by limiting the portfolio allocation to equities with highly volatile returns. When ATP hedges its equity holdings’ downside risk, it purchases 30-40% out-of-the-money put options instead of fully hedging the risk.

III.3. Shift in portfolio management from asset classes to sources of return
The third paradigm shift was a shift in portfolio management from asset classes to sources of return. It was triggered by the 2008 financial crisis. Even after the first two paradigm shifts discussed above, asset classes remained the basic building blocks of portfolio construction. The drawdowns experienced during the financial crisis led to the realization that portfolios constructed with asset classes as the basic unit of portfolio management cannot be adequately diversified. This realization in turn led to an elemental rethink of portfolio management from the standpoint of sources of return. Asset-class diversification’s inadequate effectiveness prompted experiments to realize more effective diversification through such means as redefining asset classes and adopting alternative metrics. In broad terms, these experiments were based on two approaches: risk classification and risk factors.

III.3.1. Risk classification
Risk classification is based on the idea that the basic unit of portfolio diversification should be fundamental risks that give rise to price movements, not conventional asset classes. For example, the fixed-income asset class includes both government and corporate bonds, the latter of which, unlike the former, entails credit risk. Although classified in the same asset class as government bonds, corporate bonds sometimes perform price-wise more like equities than government bonds. In particular, they tend to fall sharply in price when credit risk becomes a concern. During the 2008 financial crisis, corporate bonds (particularly sub-investment-grade bonds) plunged in price like equities.

This experience led to the development of risk classification, where assets are grouped into risk classes based on the similarity of their risk characteristics, and portfolio allocations (quantified in terms of either assets or risk) are set based on risk classes in the aim of truer diversification. In the preceding example, corporate bonds might be classified, together with equities, as economically sensitive assets instead of fixed-income assets.

The risk classes into which assets are classified based on their inherent risk characteristics might include, for example, “growth,” “income,” “inflation” and “liquidity.” The intent behind risk classification is to identify in advance not only assets that should perform well in a normal economic scenario but also assets that can hedge against extreme market risk or runaway inflation. Risk classification is also conducive to limiting a pension fund surplus’s variability to a predetermined range. Given risk and return’s mutually inextricable relationship, risk classes are sometimes also called investment classes.

However, there is no standard methodology for classifying risks (Figure 9 shows how a number of major pension funds define risk classes). For example, real estate, regarded as an inflation hedge, is often classified in the same risk class as infrastructure and inflation-linked bonds but is sometimes treated as a
separate risk class of its own. Private equity is likewise variously classified. For example, it may be classified together with public equity in the equity class or separately from public equity in the “alternative” class, together with assets such as real estate. Hedge funds also are typically classified as alternative assets, though they are sometimes classified individually based on their investment strategies. For example, long/short funds pursuing relative value strategies are sometimes classified in the “alpha” or “absolute return” class because they universally depend on their managers’ skill as their sole source of returns (risk) whether they trade currencies, bonds, equities, derivatives or whatever.

Risk classification methods sometimes take liabilities into account also. Many overseas pension funds have pension liabilities whose value varies as a function of the inflation rate. Such funds consequently often have a risk class (e.g., “real assets,” “inflation”) in which asset prices vary in parallel with their liability valuations. Japanese corporate pension funds, by contrast, may have little need for such a “real assets” or “inflation” class because few of them have inflation-indexed benefit obligations. Conversely, heavily export-dependent companies’ pension funds should perhaps have a “forex” risk class to compensate for their sponsors’ earnings sensitivity to exchange rate movements.

Such risk classifications must clearly distinguish between asset classes based on their respective sources of return. Risk classes consequently tend to be more narrowly defined than conventional asset classes. Bonds, for example, tend to be classified into multiple classes specific to their individual risk characteristics (e.g., government bonds, industrial bonds, inflation-linked bonds, high-yield bonds). Denmark’s ATP classifies its investments into 13 different asset classes encompassed within five risk classes (Figure 9). Risk classification gives pension funds substantial latitude to creatively define their own risk classes to match their liabilities’ characteristics. To maximally benefit from risk diversification, classifying investment holdings in the manner most relevant to an individual pension fund makes more sense than constructing portfolios from one-size-fits-all asset classes.

III.3.2. Risk factor approach

The risk factor approach traces sources of return back to even more fundamental drivers of returns’ variability. Although risk classification is similarly derived from the idea that fundamental risks drive asset price movements as explained above, risks classes could be considered merely a rehash of conventional asset classes. With the risk factor approach, by contrast, the basic building blocks of portfolio construction are fundamental risk factors that drive asset-class price movements. ATP adopted the risk factor approach in 2016. It had previously been classifying its portfolios’ 13 constituent asset classes into five risk classes: interest rates, credit, equities, inflation and commodities (Figures 9, 10). Each of these asset classes were assigned to a single risk class, with no overlap across risk classes. However, returns within any given asset class are obviously influenced by multiple macro factors. For example, rents from real estate holdings are economically sensitive, partly linked to the inflation rate and strongly correlated with equity returns.

Specifically, ATP decided to switch to portfolio construction based on a recognition that individual assets often comprise multiple risk factors (Figure 11). For example, ATP classifies real estate as an “other illiquid asset” in Figure 11, but it considers real estate returns to encompass four risk factors: the equity, interest-rate, inflation and “other” (e.g., liquidity risk) factors. Meanwhile, corporate bond returns encompass not only the interest-rate factor but the equity factor also, the latter reflecting that corporate bonds tend to become increasingly equity-like as they descend the credit rating scale. Relationships between asset returns and macro factors can be quantified by asset class with quantitative techniques such as multiple regression. For real estate, for example, multiple regression can estimate returns’ sensitivity to changes in various macro factors (e.g., inflation rate, global equity returns, long-
term interest rates). Each of the resultant sensitivity estimates would constitute real estate’s beta vis-à-vis the macro factor in question.

Until 2015, ATP’s Board of Representatives set risk allocations for the five risk classes in Figure 10. Going forward, it will set portfolio allocations for the risk factors in Figure 11. As of 2016, ATP’s long-term risk-factor allocations are set at 35% for the interest factor, 35% for the equity factor, 15% for the inflation factor and 15% for other factors.

III.4. Rethinking benchmarks

While portfolio management methods have drastically changed in the wake of the three paradigm shifts discussed above, traditional benchmark indexes’ appropriateness as a proxy of their respective asset classes is being reassessed from the standpoint of boosting returns. For example, some major institutional investors have recently switched from market indexes to benchmarks better suited to long-term investors in the aim of achieving higher risk-adjusted, medium/long-term returns.

Equity benchmarks commonly used in Japan include the TOPIX for Japanese equities and MSCI Kokusai (MSCI World ex Japan) Index for foreign equities. These market benchmarks consist predominantly of stocks within institutional investors’ investment universe. In other words, liquidity is a major factor in the selection of the indexes’ constituent companies. Investors that, like pension funds, have the luxury of a long-term investment horizon need not use such conventional benchmarks in unmodified form. For example, a young pension fund with no major benefit obligations to meet anytime soon could consider broadening its investment universe to include illiquid stocks. Alternatively, it could adopt a so-called smart beta index (an index constructed with long-term factor tilts) as a benchmark.

A growing number of institutional investors are benchmarking their performance against customized indexes that differ from market benchmarks in terms of their investment characteristics. One example is Norway’s Government Pension Fund Global (GPFG).

With NOK7,475 billion (approx. ¥102 trillion) of assets at year-end 2015, the GPFG is one of the world’s largest pension funds. The GPFG has historically invested the vast majority of its assets passively based on popular benchmark indexes (see (a) below) in accord with a reference portfolio’s asset allocations dictated by the Norwegian Ministry of Finance (see (b)).

(a) Benchmark indexes for reference portfolio’s asset classes: FTSE Global All Cap Index for equities; Barclays Global Treasury Index (GDP weighted by country), Barclays Global Inflation-Linked Index and Barclays Global Aggregate Index for bonds; and IPD Global Property Index for real estate.

(b) Strategic asset allocations: 60% equities, 35-40% bonds and up to 5% real estate

In 2014, the GPFG drastically changed its investment policies, constructing a portfolio that deviated substantially from the reference portfolio. First, the GPFG used numerous customized benchmarks that differ from market indexes to construct what it calls an operational reference portfolio (ORP) in the aim of outperforming the reference portfolio. The GPFG has since been pursuing incremental returns through active management based on the ORP. This approach was subsequently adopted by Japan’s GPIF in 2015 (discussed below).

As an example of such active management, Taiwanese government bonds are not included in the Barclays GDP-weighted government bond index because most institutional investors are prohibited from investing in Taiwanese government bonds by their own investment regulations. In the equity asset class, by contrast, Taiwan is included in the FTSE Global All Cap Index. There was no good reason for the
GPFG to not invest in Taiwanese government bonds when it was already invested in Taiwanese equities. It therefore modified its government bond benchmark to include Taiwanese government bonds, thereby adding them to its investable universe. Being largely unconcerned about short-term liquidity, the GPFG likewise modified its equity benchmark by adding African and other frontier markets, typically excluded from emerging-market equity benchmarks. Additionally, emerging market equities’ share of the GPFG’s global equity allocation is nearly 20%, almost double their roughly 10% weighting in market equity indexes. Despite emerging market equities’ relative illiquidity, the GPFG considers an overweight allocation to emerging markets with promising economic growth prospects to be smart investing. It therefore created an index with a heavier-than-usual emerging-market weighting and adopted it as a benchmark.

The GPFG’s customized indexes include smart beta indexes also. Research has found that active managers’ excess returns can be largely explained by a small number of systematic factors, enabling such factors to be incorporated into benchmark indexes. Lastly, the GPFG treats large-cap equities and small/mid-cap equities as separate asset sub-classes in light of major differences in liquidity and price performance between the two.

The CPPIB has disaggregated the sources of its returns into a four-tier pyramid as shown in Figure 12. The return represented by the pyramid’s bottom tier can be realized by passively investing in a combination of individual asset classes’ market benchmarks. The second tier from the bottom of the CPPIB’s pyramid is analogous to the GPFG’s ORP. The GPFG and CPPIB examples illustrate that pension funds have opportunities to capture excess returns in various forms by innovatively devising custom benchmarks. Incidentally, Japan’s GPIF has started to follow the CPPIB’s example as discussed in Chapter V below.

III.5. Governance implications of portfolio construction based on sources of returns
The major changes in portfolio construction fundamentals discussed above, specifically the new methods of constructing portfolios based on sources of return, have prompted a reassessment of how authority is delegated in the context of pension fund governance. In the wake of these portfolio construction methods’ development, pension funds are increasingly re-delegating authority for setting portfolio allocations by asset class. This authority has hitherto typically been vested in pension funds’ governing boards. In response to adoption of portfolio construction methods based on sources of return, pension funds’ governing boards have in many cases partially ceded authority for setting actual portfolio allocations by risk class or risk factor. Decisions on mapping asset classes to risk classes and setting portfolio allocations by asset class in practice are being delegated to the pension fund’s executive staff or external asset managers instead of being made by the fund’s governing board.

Under such shared decision-making arrangements, the governing board focuses exclusively on strategic matters involving the pension fund as a whole. Such matters include identifying factors that materially affect the pension fund’s investment returns (expressed in terms of risk classes or risk factors) and determining the size of the fund’s exposures to these factors. Responsibility for practical implementation of investment strategies for improving returns in accord with the risk policies set by the governing board resides with a separate entity (or entities) possessing the requisite expertise. In sum, authority can be explicitly delineated such that the governing body sets investment strategies’ broad parameters and the strategies are implemented in practice by one or more other entities.

Such new arrangements for sharing authority have in fact become more common since the global financial crisis. Pension funds that have adopted such arrangements include US public employee pension
funds and European corporate and industry pension funds. Before the crisis, pension funds’ governing boards normally updated strategic asset allocations once every 3-5 years while their staff performed executive tasks such as hiring and replacing external asset managers. Meanwhile, funds continually rebalanced their portfolios to realign them with strategic asset allocations. However, this approach proved dysfunctional during the global financial crisis because staff were obligated to rebalance portfolios to existing target asset allocations even when they would have preferred to revise the target allocations in response to changes in the market environment. This experience gave rise to the recent trend toward limiting governing boards’ authority to setting portfolio allocations by the overall pension fund’s broad sources of return instead of setting target asset allocations by asset class. Based on the portfolio allocations by source of return set by the governing board, pension funds’ executive staff can freely change portfolio allocations among the asset classes encompassed within any given source of return. Such latitude enables staff to flexibly adapt to changes in the investment environment instantaneously. Pension funds in Europe and elsewhere have started to delegate authority in such a manner since the global financial crisis.

Incidentally, even certain Japanese corporate pension funds similarly limit their governing boards’ authority with respect to asset allocation. Specifically, such funds divide their assets into tranches by investment objective (e.g., liability matching, return enhancement, absolute returns) and grant their governing boards authority to only set broad portfolio allocation parameters for each tranche. Although these funds do not allocate assets based on sources of return, some of them delegate to their portfolio managers de facto investment decision-making authority on matters such as mapping asset classes to investment objectives and setting portfolio allocations by asset class.

Managing investments solely by asset class through portfolio construction is already a thing of the past. Techniques for constructing portfolios more efficiently are emerging in the wake of advances in investment technologies and changes in both the regulatory and investment environment. In response to such changes, delegation of organizational authority also is changing. Pension funds’ mission is to continuously improve portfolio construction methods in preparation for potential future developments.

IV. GPIF’s investment and governance reforms: current status and pending issues
In October 2013, an expert panel convened by the Japanese government released a set of recommendations on upgrading Japanese public and quasi-public pension funds’ portfolio and risk management practices. In response, the GPIF has embarked in earnest on a wide-ranging reform agenda. After describing the GPIF organizationally, I will discuss its policy asset mix changes, other investment reforms and governance reforms while at times referring back to the preceding discussion of overseas pension funds’ governance reforms.

IV.1. Profile of GPIF
IV.1.1. GPIF’s role
As I mentioned at the outset, Japan has adopted the pay-as-you-go (PAYG) model of pension finance, meaning that current pensioners’ benefits are basically funded with pension insurance premiums deducted from the current labor force’s wages. PAYG is a sustainable model in countries with a broad-based population pyramid and rapidly growing economy, like Japan in its early postwar era. Today, however, Japan’s population is rapidly aging. The pension insurance premiums paid by its working-age population are no longer sufficient to fully fund current pension benefits. Japan’s current pension finance strategy is to ride out rapid societal aging by drawing down some ¥180 trillion of pension reserves to cover net benefit outflows.
Accordingly, accretion of pension reserves through appropriate investment of existing reserves is crucially important to sustaining Japan’s public pension system, even though investment returns earned on the pension reserves would not be sufficient to fully fund benefits. The GPIF was established to fulfill this investment management function. Its mandate is to realize returns sufficient to meet the pension system’s actuarial return requirements (target) while minimizing risk under the MHLW’s oversight, thereby enhancing retirement income security.

The GPIF’s Medium-Term Plans shed instructive light on the GPIF’s role. A Medium-Term Plan consists of operational procedures and targets issued to the GPIF by the Minister of Health, Labor and Welfare pursuant to statutory provisions applicable to all independent administrative entities. As an example, a portion of the GPIF’s latest Medium-Term Plan is excerpted in Figure 13. The “investment objectives” in the left-hand column explain the GPIF’s basic role. The “basic investment policies” in the right-hand column state that the GPIF must formulate and implement specific investment policies and manage and invest pension reserves in accord with separate guidelines in the aim of safely and efficiently managing its assets from a long-term perspective.

**IV.1.2. GPIF’s investment targets**
The GPIF’s specific target rate of return is set as a function of the amount of public pension benefits payable. The amount of public pension benefits to which beneficiaries are entitled Japan is determined as follows. First, the amount of benefits that current labor force participants are scheduled to receive upon retirement increases in approximate proportion to the wage inflation rate until their retirement. Actual pension benefits receivable after retirement increase in proportion to the annual consumer price inflation rate. Because people are typically in the labor force longer than they are retired, a simplified rule of thumb is that pension benefits generally increase in proportion to the wage inflation rate. The GPIF therefore must earn investment returns in excess of the wage inflation rate.

The GPIF’s target rate of return is currently set at the equivalent of the wage inflation rate plus 170bp. This target was set by the MHLW based on the results of an actuarial valuation of public pension plans. The GPIF is charged with a duty to achieve its target rate of return while minimizing risk in the process. The GPIF’s target rate of return was previously fairly low because nominal wages had been deflating for much of the past decade. Given a wage deflation rate of -0.5%, for example, a target rate of return of 170bp above the wage inflation rate would equate to 1.2% in nominal terms. When long-term JGB’s were yielding 1.2% before 2015, the GPIF could have achieved its target rate of return by investing exclusively in JGBs. Currently (September 2016), the 10-year JGB yield is in the vicinity of 0% under the BOJ’s latest policy framework. Meanwhile, with the wage inflation rate now in the +1-2% range, the GPIF’s target rate of return is virtually no longer attainable by investing solely in JGBs. A target return of 170bp above the wage inflation rate now poses a much bigger hurdle than a few years ago, when such return could be realized with a 100% JGB portfolio.

**IV.2. Reference portfolio changes**
The GPIF’s target rate of return is generally updated once every five years. Public pension plans undergo an actuarial valuation once every five years to evaluate their actuarial soundness. At that time, long-term economic growth projections and underlying actuarial inputs (e.g., birthrate) are updated. The target rate of return on investment of pension reserves is reset based on these actuarial valuations’ results. Shortly after the target rate of return was last reset, the GPIF revised its long-term asset mix, also known as its reference portfolio, in October 2014. Reference portfolio revisions are based on expected returns set based on actuarial valuation results. Authority for determining expected returns
resides with the MHLW, not the GPIF itself. The reference portfolio revision process is explained as follows.

IV.2.1. New reference portfolio adopted in October 2014
In April 2014, the GPIF’s target rate of return was reset at its current level equivalent to the wage inflation rate plus 170bp\textsuperscript{iv}. I served on the GPIF’s Investment Advisory Committee from April 2014. Investment Advisory Committee members’ responsibilities included determining an asset mix (reference portfolio) to achieve this target rate of return\textsuperscript{v}. I will explain based on publicly disclosed data the process by which the GPIF’s asset mix is determined. The policy asset mix announced in October 2014 is tabulated in Figure 14’s bottom panel. The new asset mix is most notably distinguished by a much larger equity allocation than previously. In the previous policy asset mix, Japanese and foreign equities’ allocations were set at 12% apiece. In the new policy asset mix, the total equity allocation more than doubled from 24% to 50%. What was the imperative behind such a drastic change in asset mix? One major reason that the policy mix changed so much was that domestic bonds’ expected returns were estimated on a forward-looking basis (explained below) based on contemporaneous low interest rates. The following sections explain the policy mix revision process step by step.

IV.2.2. Assumed economic scenarios
First, the MHLW used economic scenarios formulated by the Cabinet Office to estimate expected returns. The actuarial valuation results published on June 3, 2014, factored in the Cabinet Office’s January 2014 Fiscal Projections for Medium- to Long-Term Analysis, which extended through FY2022. For the period from FY2023 onward, the MHLW supplemented the Cabinet Office’s projections with multiple sub-scenarios based on broadly varying total factor productivity (TFP) growth rates (reflecting varying rates of technological progress, etc.), a key input in long-term economic forecasts. Figure 15 plots projected TFP growth rates over time as assumed by the Cabinet Office’s two economic scenarios (the “Economic Revival Scenario” and “Reference Scenario” in the Cabinet Office’s terminology) and the eight sub-scenarios appended thereto. TFP is a measure of national productivity and an important determinant of an economy’s growth rate. The MLHW estimated expected returns based on the economic scenarios and sub-scenarios’ underlying assumptions. TFP growth was +0.5% in FY2012 (the most recent fiscal year for which the TFP growth rate was available at the time of the fiscal projections’ publication). The MLHW chose two of the sub-scenarios shown in Figure 15. One was Sub-scenario E, which assumed that the TFP growth rate would drop to a constant +1.0% from FY2023 after rising to a peak of +1.8% over the preceding 10 years. The second was Sub-scenario G, which assumed that the TFP growth rate would drop to a constant +0.7% from FY2023 after rising to a shallower peak of +1.0% over the preceding 10 years. Sub-scenarios E and G can respectively be described as optimistic and pessimistic scenarios.

The Cabinet Office’s Economic Revival Scenario, the more optimistic of the two, had five associated sub-scenarios, of which the MLHW selected the one with the lowest TFP growth rate (Sub-scenario E). The Cabinet Office’s Reference Scenario, the less optimistic of the two, had three sub-scenarios, of which the GPIF chose the one with the median TFP growth rate (Sub-scenario G). In other words, of the available economic sub-scenarios, the MLHW used the bottom-ranked optimistic sub-scenario and middle-ranked pessimistic sub-scenario.

While the GPIF conceivably could have used economic scenarios other than the Cabinet Office’s, it would have had difficulty justifying the use of economic assumptions completely different from the government’s. Additionally, the MHLW used the Cabinet Office’s economic projections in its actuarial
valuing of public pension plans also. By doing so, the GPIF maintained quantitative consistency between the actuarial valuation and expected return estimates.

**IV.2.3. Risk of negative real returns for GPIF**

Based on such economic assumptions, the GPIF was tasked with the aforementioned return target equivalent to the wage inflation rate plus 170bp. Figure 16 elaborates on the GPIF’s return target in more detail per the Minister of Health, Welfare and Labor’s directive. A rate of return of 170bp over the wage inflation rate is explicitly designated as the return target. As noted above, a real return of +1.7% is virtually unattainable by investing in domestic bonds alone. With 10-year JGBs yielding around 0%, a held-to-maturity 100% domestic bond portfolio’s compound annual return over the next 10 years would be in the vicinity of 0%. The GPIF therefore must invest in assets other than domestic bonds to achieve a +1.7% real return.

Meanwhile, the GPIF must also take risk into consideration when investing. A portfolio that includes equities poses more risk that a 100% domestic bond portfolio, even after diversification’s risk-mitigating benefits are taken into account. Risk in an investment context is generally defined as returns’ variability, but this definition does not suffice in the context of investment of pension reserves. When determining its reference portfolio, the GPIF was instructed by the Minister of Health, Labor and Welfare to quantify the portfolio’s risk relative to the risk of a portfolio entirely invested in domestic bonds. This risk could be quantified by a number of metrics, one of which is the probability of the GPIF’s returns falling short of the wage inflation rate.

With Japanese public pension benefits indexed to the wage inflation rate, the return on investment of public pension assets must exceed the wage inflation rate. If the GPIF’s investment returns fall short of the wage inflation rate, public pension plans may be rendered unable to pay benefits as promised to the public. Failure to earn investment returns above the wage inflation rate is therefore arguably the biggest risk facing the GPIF. While the risk of large short-term drawdowns warrants concern, the risk of which the GPIF must beware most is failing to earn returns in excess of the wage inflation rate over a long-term horizon of 10 or more years. The GPIF decided to make such a long-term negative real return scenario a key risk benchmark. It calculated the risk of its returns falling short of the wage inflation rate if its portfolio were hypothetically invested entirely in domestic bonds and decided upon a policy asset mix with a lower probability of underperforming the wage inflation rate than this hypothetical 100% domestic bond portfolio.

**IV.2.4. Expected return estimation method**

A particularly notable aspect of the latest policy asset mix reset process was how expected returns were estimated by asset class. Specifically, domestic bonds’ expected returns were estimated based on future economic scenarios given interest rates’ initial levels, whereas domestic equities, foreign equities and foreign bonds’ expected returns were estimated based on long-term historical data.

When the policy asset mix was updated previously (in 2009), domestic bonds’ expected returns were estimated based on interest rates’ ultra-long-term (100-year) equilibrium levels. Over such a long horizon, interest rates’ initial levels do not have much influence on expected returns. Consequently, bonds’ expected average rate of return was previously set at +3.0%, higher than the latest estimate.

Meanwhile, the aforementioned expert panel’s October 2014 report recommended estimating domestic bonds’ expected returns on a “forward-looking” basis, meaning based on forecasts of future interest rates. Depending on one’s investment horizon, bond returns are widely considered easier to forecast on
a forward-looking basis than equity returns. Assuming that bonds are held to maturity, for example, bond investors can earn nominal returns roughly equivalent to the weighted average of their bonds’ current yields at the time of purchase. With 10-year JGBs currently yielding around 0%, the nominal return from buying 10-year JGBs and holding them to maturity would be roughly zero, barring a sovereign default by Japan. The significance of forward-looking estimates of expected bond returns is that they incorporate assumptions about interest rates 10-25 years in the future, given an initial 10-year JGB yield of about 0.3% at the time of the policy asset mix reset.

Given TFP’s assumed growth path over the next decade as mentioned earlier, the 10-year JGB yield could plausibly rise from its initial 0.3% level in the wake of economic growth driven by productivity growth. In actuality, interest rates have declined further as of 2016. Over a 10-year horizon, however, the MLHW estimated expected bond returns on the assumption that interest rates would rise back to 2-3% in tandem with TFP growth. It assumed that such a backup in interest rates would lead to negative bond returns.

For asset classes other than domestic bonds—namely, domestic equities, foreign equities and foreign bonds—the MLHW estimated expected returns in much the same manner as many other institutional investors. Specifically, it estimated these asset classes’ expected returns as their realized risk premia (i.e., their historical returns’ average spread over a short-term domestic interest rate) over the past 30-40 years. Risk premia have historically varied internationally and across different timeframes, but equities, for example, have usually returned 400-600bp in excess of short-term risk-free rates. Using historical data, the MLHW estimated Japanese equities’ risk premium at the equivalent of the wage inflation rate plus approximately 300bp.

Estimates of expected equity returns can differ substantially depending on the length of the look-back period used as the data sample. For example, Japanese equities’ compound annual return over the 26 years from 1990 through 2016 to date was roughly 0%, even inclusive of dividends. The MLHW’s estimate of Japanese equities’ expected returns was depressed somewhat by such poor recent returns.

IV.2.5. Asset allocation reset based on 25-year investment horizon
Another important issue is how long of an assumed investment horizon to use. According to the most recent actuarial valuation, Japan’s public pension schemes are in a state of a fiscal equilibrium that will last around 100 years. The public pension schemes hold a certain amount of reserves because a purely pay-as-you-go model would impose too onerous a burden on the current labor force amid ongoing societal aging. The reserves are being drawn down to cover net benefit outflows. Once the fiscal equilibrium period ends, the public pension schemes are slated to hold reserves equivalent to one year’s worth of benefits. Those reserves have been earmarked to fund future generations’ pension benefits. While the actuarial valuation assumes a 100-year horizon, 100 years is too long of a forecasting horizon for investment purposes. In its 2014 reset of its policy asset mix, the GPIF decided to use an investment horizon of 25 years for the following reasons.

According to the actuarial valuation results, public pension reserves’ projected future path differs somewhat among economic scenarios but, trend-wise, reserves are projected to continue being drawn down for a while longer and then resume growing until peaking in about 25 years, whereupon they will roll over into a terminal drawdown. Once this terminal drawdown phase arrives, the GPIF’s investment parameters would change. For example, the GPIF would have to place priority on ensuring sufficient liquidity because its reserves would be in continuous drawdown mode from that point onward. The GPIF
therefore decided to set its assumed investment horizon at 25 years, the timeframe until its reserves are projected to peak just before they enter their terminal drawdown phase.

An assumed investment horizon longer than 25 years would not have been realistic because pension reserves are projected to enter this terminal drawdown phase in about 25 years. The balance between contributions and benefits has a big influence on investment strategy. If benefits substantially exceed contributions and pension reserves are consequently being rapidly drawn down, the GPIF could not afford to take much risk. Simple pension simulations\textsuperscript{11} have shown that if such a progressive drawdown in pension reserves were suddenly and sharply exacerbated by, say, a financial crisis, rebuilding reserves to their pre-crisis level would be virtually impossible even if the pension fund subsequently earned high returns. Conversely, if contribution inflows exceed benefit outflows, even in the event of a large drawdown in reserves due to a financial crisis, a pension fund able to subsequently earn high returns could rebuild its reserves by virtue of the combination of high returns and net contribution inflows. The amount of risk that a pension fund is able to assume differs greatly depending on whether its reserves are in a drawdown phase or growth phase. The GPIF has a 25-year window during which it can assume sufficient risk to earn high enough returns to increase its reserves. It accordingly constructed a reference portfolio predicated on a 25-year investment horizon.

### IV.2.6. Estimated returns by asset class and key risk metrics

Figure 17 tabulates the MLHW’s estimates of expected returns by asset class based on the assumptions assumed above. Of the economic scenarios shown in Figure 15, the estimates are based on Sub-scenarios E (“Middling Economic Scenario”) and G (“Market Base-case Scenario”). Instead of resetting asset allocations based solely on an optimistic scenario, the GPIF optimized its new policy asset mix across two economic scenarios, one optimistic, the other pessimistic (“optimized” here means the most risk-efficient asset mix that meets the return target).

In the table below, bonds’ real returns (nominal returns net of the wage inflation rate) assume that interest rates will rise from their recently low levels. Domestic bonds’ real rate of return is consequently negative over the 25-year investment horizon.

Net of the wage inflation rate, the GPIF’s target rate of return is +1.7% on a real basis. To achieve its target return, the GPIF needed to reduce its bond allocation and increase its equity allocation. It adjusted its policy asset mix accordingly. Potential policy asset mixes were evaluated based on two criteria: the probability of their returns falling short of the wage inflation rate and, given such a shortfall, the shortfall’s expected (i.e., probability-weighted average) magnitude in percentage terms (Figure 17).

In Figure 17, the percentages in the third column from the right (labeled “shortfall probability”) are probabilities of the policy asset mix delivering returns that fall short of the wage inflation rate. More specifically, shortfall probability is defined as the probability of the new policy asset mix (i.e., portfolio with 50% equity allocation) delivering a compound annual return below the wage inflation rate over the 25-year investment horizon. For reference, Figure 17’s two bottom rows present corresponding data for a hypothetical portfolio invested entirely in domestic bonds. The MHLW directed the GPIF to formulate a new policy asset mix with a lower shortfall probability than a portfolio invested entirely in domestic bonds. The data in Figure 17’s bottom two rows are accordingly included for comparison.

To reiterate, the GPIF’s top priority in formulating its new policy asset mix was to reduce the probability of its investment portfolio underperforming the wage inflation rate. Minimizing this probability is important because the Employees’ Pension Insurance program has promised to pay pension benefits
indexed to the wage inflation rate. Additionally, the GPIF was directed to adopt a new policy asset mix with a lower shortfall probability than that of 100% domestic bond portfolio. The shortfall probabilities in Figure 17 indicate that the GPIF’s new policy asset mix is less risky than a portfolio invested entirely in domestic bonds.

Another metric that was used to evaluate potential asset mixes is the conditional expected shortfall, defined as the shortfall’s probability-weighted average over the portion of the policy asset mix’s return distribution where its rate of return falls short of the wage inflation rate. Figure 17 includes two versions of the conditional expected shortfall. The first assumes that returns are normally distributed; the second, that the return distribution coincides with that of actual returns over the previous 20 years.

These conditional expected shortfalls’ values indicate that when portfolio returns fall short of the wage inflation rate, they would be expected to do so by about 10% of the wage inflation rate on average. For a portfolio invested entirely in domestic bonds, the corresponding values are below 4%, implying that in an adverse investment environment, investment returns on pension reserves would be at risk of falling substantially short of the wage inflation rate.

**IV.2.7. Key pension reserve level in terms of public pension sustainability**

Figure 18 plots ranges of pension reserves’ projected future path, assuming that the reserves are invested in the new policy asset mix for 25 years. Figure 18 plots median, 25th-percentile and 75th-percentile data series for both each of the two economic scenarios. The bold line is the average of the other three data series, meaning that pension reserves’ actual growth path has a 50% probability of being above the bold line under each scenario.

A key point to note is how pension reserves’ growth paths differ between the new policy asset mix and the hypothetical 100% domestic bond allocation. Under the assumptions used for this simulation, pension reserves would not grow if they were invested entirely in domestic bonds. The new asset mix thus has a high probability of outperforming a 100% domestic bond allocation over the long term, thereby driving growth in pension reserves. The projections plotted in Figure 18 confirm that the new policy asset mix is necessary to keep public pension schemes financially sound going forward.

The GPIF publicly disclosed the graphs in Figure 18 in October 2014. Although its new asset mix’s increased equity allocation was criticized by some commentators as too risky, such criticism is refuted by Figure 18. The GPIF is obligated to pay benefits indexed to the wage inflation rate to public pensioners. To pay benefits as promised, it must at least earn returns higher than the wage inflation rate. Doing so is the GPIF’s biggest responsibility. The GPIF recognizes that fulfilling this responsibility entails a risk of large, short-term drawdowns. The biggest risk facing the GPIF is the specter of underperforming the wage inflation rate over a long span of one or two decades. The GPIF adopted its new policy asset mix to avert such a risk.

**IV.3. Equity investment reforms**

In addition to increasing its equity allocation to 50% (split evenly between Japanese and foreign equities) in its new policy asset mix adopted in late October 2014 as discussed above, the GPIF has also been proceeding with various equity investment reforms since 2014. While these reforms are still a work in progress and yet to be finalized, their gist and objectives are explained below. These explanations are my personal opinions based on GPIF data.
The GPIF’s equity investment reforms date back to March 2014, when the GPIF revampped its Japanese equity portfolio. Its equity investment reforms through September 2016 can be broadly classified as reforms to increase beta returns and reforms to capture more alpha (Figure 19). The reforms aim to generate high returns on equity investments in the form of both beta and alpha. Beta is the return derived from being invested in the overall equity market. The GPIF’s initiatives to increase beta returns are focused exclusively on the Japanese equity market. Before 2014, the GPIF had taken almost no action to increase its beta returns. Since 2014, however, it has been ramping up activities to increase the overall equity market’s returns in recognition of its responsibility as a large-scale equity investor.

Alpha, on the other hand, is excess returns over benchmark. The GPIF is endeavoring to increase such excess returns across all of the asset classes in which it invests. For the decade through FY2015, the GPIF’s realized 10-year excess returns over benchmark were negative in all four of the asset classes that constitute its policy asset mix. Its record of annual performance against benchmark over these 10 fiscal years is tabulated by asset class in win-loss format the far right column of Figure 20.

With a massive asset hoard that is predominantly passively managed, the GPIF has little potential to earn excess returns to begin with. Negative excess returns, however, mean that net of passively managed assets’ returns, which should roughly coincide with benchmark returns, active managers’ excess returns are negative. Negative active excess returns suggest that the GPIF’s equity investment process is somehow deficient. The GPIF’s initiatives to boost both beta and alpha are described as follows.

IV.3.1. Initiatives related to increasing beta returns
Helping to increase beta returns is an important role of mega-sized equity investors like the GPIF. The GPIF is the Japanese equity market’s biggest investor. Its Japanese equity investments exceed ¥30 trillion. The GPIF can play a role in boosting the Japanese equity market’s long-term returns by variously helping its investee companies enhance their value through the asset management companies to which it outsources portfolio management.

IV.3.1.1. Fulfillment of stewardship responsibilities
Initiatives related to increasing beta returns chiefly revolve around fulfilling stewardship responsibilities more effectively. Stewardship initiatives have been one of the biggest parts of the GPIF’s investment reforms since 2014. In May 2014, the GPIF announced that it had adopted Japan’s Stewardship Code and publicly disclosed its Policy for Fulfilling Stewardship Responsibilities. Stewardship responsibilities mean institutional investors’ responsibility to constructively engage with investee companies based on in-depth knowledge of the companies and their business environments in the aim of helping them enhance their value and achieve sustained growth. Such stewardship activities’ ultimate aim is to improve medium/long-term investment returns for the benefit of the institutional investors’ clients and beneficiaries (including ultimate beneficiaries).

With the GPIF is currently required by law to entirely outsource management of its equity investments to external asset managers, fulfillment of its stewardship responsibilities as of 2016 presumably means strongly supporting its external asset managers’ value-additive engagement with investee companies. One key form of such support is to change how it evaluates external managers to incentivize them to constructively engage with investees.

The GPIF’s Policy for Fulfilling Stewardship Responsibilities in fact clarifies its intentions in this regard. For example, the Policy states that, considering that asset managers with different investment styles
may differ in how they fulfill their stewardship responsibilities, the GPIF will individually inform external asset managers in advance of what it expects from them in terms of engagement activities. Managers of passive mandates cannot realistically engage with all of their investee companies, given the low management fees they charge. The GPIF intends to encourage its passive managers to engage in activities potentially conducive to improving equity market returns (e.g., engaging with only large companies with low ROE) and reward such efforts with better qualitative evaluations.

In evaluating external managers’ engagement activities, the GPIF says it will place priority on the substance of interactions with investee companies instead of superficial metrics (e.g., number of meetings with management). Asset managers that perfunctorily meet with investee companies to fulfill superficially standards are missing the point of stewardship. The GPIF wants its external managers to exclusively conduct effective engagement in order to increase corporate values of the invested companies. Examples of specific engagement topics suggested by the GPIF include (1) business models that increase corporate values (e.g., management philosophy/vision, specific business strategies), (2) governance (e.g., board oversight of executive functions), (3) long-term capital productivity, (4) risk management (including societal/environmental risk management) and (5) safeguards against antisocial forces.

In terms of specific criteria for evaluating external asset managers, the GPIF’s Policy states that, all else equal, the GPIF would rate asset managers that better fulfill their stewardship responsibilities more highly than those that do not. Stewardship is now clearly an important consideration in the GPIF’s manager selection process. For example, the GPIF has updated its qualitative criteria for evaluating prospective asset managers to include the managers’ own governance arrangements and conflict-of-interest controls. The GPIF recommends that asset management companies upgrade their own governance.

The GPIF has revised its manager selection process also. In addition to adding stewardship as a qualitative evaluation criteria, the GPIF has disclosed that it will weight this criterion more heavily than any of its other qualitative criteria. Another newly added qualitative evaluation criterion is value-added services. For example, an asset manager that makes meaningful recommendations to investee companies in the course of fulfilling its stewardship responsibilities would be rated more highly by virtue of doing so.

The GPIF’s attempts to incentivize asset managers to help investee companies enhance their long-term value could be instrumental in boosting overall Japanese equity market returns.

In September 2015, the GPIF became a signatory of the United Nations’ Principles for Responsible Investment (UNPRI) and hired a stewardship specialist. In April 2016, the GPIF released the results of its first survey of publicly traded companies to ascertain the state of asset management companies’ engagement and evaluate their stewardship activities. Together with Japanese publicly traded companies, the GPIF newly launched a series of Business and Asset Owners Forums in September 2016. The forums, which will involve direct conversations between the GPIF and its investee companies, should yield various benefits. For example, by gaining in-depth knowledge of investee companies, the GPIF should better understand why its asset managers hold the companies in their portfolios and, in turn, could gain insight into its asset managers’ investment processes also.

As a second-order effect, the GPIF’s conversations with Japanese companies should be beneficial in terms of its global equity investments also. By engaging with Japanese companies, the GPIF could learn
about their global competitors and, by extension, gain a better understanding of its foreign equity managers’ portfolio holdings.

Additionally, the GPIF announced it will team up with overseas pension funds to hold Global Asset Owners Forums also. Through these global forums, the GPIF could broaden its knowledge of its foreign counterparts’ equity investment strategies in overseas markets, among other matters, including valuation of overseas companies. Such knowledge could also lead to better stewardship in overseas equity markets.

**IV.3.1.2. Adoption of diverse benchmarks**

The second of the GPIF’s initiatives to increase Japanese equities’ returns involves adoption of equity benchmarks besides the TOPIX, most notably the JPX-Nikkei Index 400. The GPIF newly adopted the JPX-Nikkei 400 and MSCI Japan Index as TOPIX-alternative benchmarks in March 2014. Like the TOPIX, the JPX-Nikkei 400 is a capitalization-weighted index, but it is distinguished from other Japanese equity indexes by its use of ROE as a metric for selecting its constituent companies. The GPIF’s adoption of the JPX-Nikkei 400 as a benchmark should positively influence investee companies’ management, thereby potentially helping to boost beta returns.

For a fund of the GPIF’s size, active management of all of its over ¥30 trillion of equity holdings is a virtual impossibility. Its equity holdings are so exceedingly vast that the trading entailed by active management would have an enormous market impact that could entirely negate any excess returns derived from active management. To invest so much money in equities, the GPIF has no realistic choice but predominantly passive management. In other words, its portfolio weightings of individual stocks must mirror the stocks’ capitalization-based weightings in the benchmark indexes.

However, if the GPIF used only the TOPIX and other such capitalization-weighted benchmarks essentially encompassing the entire universe of publicly traded companies, it would have to invest in low-ROE companies in proportion to their capitalization-based index weightings. Such an approach would result in long-term, autopilot investment of ¥30 trillion in marginally profitable companies, also known as value-destroying companies from a shareholder’s perspective. From the standpoint of such companies’ management, such an autopilot investor would be regarded as a dream shareholder that can be counted on to uncomplainingly keep holding the stock no matter how much profitability deteriorates. Put differently, continued passive investment in the TOPIX alone could induce investee companies to slacken their management discipline.

If the GPIF switches from the TOPIX to an ROE-cognizant benchmark like the JPX-Nikkei 400, it would end up selling low-ROE stocks because low-ROE companies are generally excluded from the JPX-Nikkei 400. The GPIF would thus be able to sell low-ROE stocks while keeping its equity holdings under passive management. The GPIF’s selling of low-ROE stocks in conjunction with the benchmark switch could serve as a wake-up call for corporate management, prompting renewed consciousness of ROE and capital productivity in general. By switching benchmarks, even a passive investor can spur investee companies toward better management discipline. The giant GPIF’s decision to adopt a benchmark index whose constituent companies are selected partly on the basis of capital productivity could indeed lead to improved management discipline throughout Corporate Japan.

As of March 31, 2016, however, the GPIF had a mere ¥2 trillion, less than 7% of its total Japanese equity holdings, invested in the JPX-Nikkei 400. An investment of ¥20-30 trillion would be preferable in terms of incentivizing greater management discipline, but given equity market liquidity constraints, the GPIF
presumably has to proceed gradually in reallocating assets between equity benchmarks. The extent to which benchmarks such as the JPX-Nikkei 400 gain prevalence going forward remains to be seen, but reallocating assets among benchmarks while remaining passively invested could very well prove an effective way for the GPIF to enhance overall equity market returns.

The MSCI Japan Index includes J-REITs, meaning that the GPIF has started indirectly investing in real estate by adopting the MSCI Japan Index as a benchmark. The MSCI Japan Index may accordingly offer incremental diversification benefits.

IV.3.2. Initiatives to capture more alpha
The GPIF’s initiatives aimed at increasing beta returns capitalize on the GPIF’s considerable heft in terms of AUM, but they could take quite a while to bear fruit. The GPIF’s initiatives to capture more alpha, by contrast, should pay off sooner. The most interesting of these initiatives are discussed below.

IV.3.2.1. Adoption of manager benchmarks
While the GPIF’s main Japanese equity benchmark is the TOPIX (inclusive of dividends), its main foreign equity benchmarks are the MSCI Kokusai Index (in yen terms; including after-tax dividends) and the MSCI All Cap World Index (ACWI) (ex Japan; in yen terms). By combining passive management in pursuit of benchmark returns with active management in pursuit of excess returns in both equity and bond asset classes, the GPIF aims to earn excess returns over benchmark across all asset classes in its portfolio. Before 2014, the GPIF was using the TOPIX as its Japanese equity benchmark and the MSCI Kokusai Index as its foreign equity benchmark. Nearly all of the GPIF’s external equity managers also were benchmarked against these two indexes. Except for some ¥800 billion benchmarked against style (e.g., value, growth, small-cap) indexes, the GPIF’s entire Japanese equity allocation was benchmarked against the TOPIX prior to 2014. In other words, the TOPIX was the designated benchmark for over 95% of the GPIF’s Japanese equity holdings by value. The GPIF’s foreign equity allocation was similarly almost entirely benchmarked against the MSCI Kokusai Index.

The GPIF’s approach to benchmarking has since changed dramatically. External asset managers are now permitted to designate their own benchmark (called a “manager benchmark”) irrespective of the GPIF’s benchmark for the asset class in question. Additionally, managers can choose between tracking their manager benchmark or pursuing excess returns over benchmark. The GPIF defines the former as passive management, the latter as active management.

Figure 21 presents graphically the origin of excess returns over the GPIF’s asset-class benchmark disaggregated into their constituent components. The GPIF has identified two sources of excess returns. The first is the difference between its asset-class benchmark and the manager benchmark. The second is any excess return over the manager benchmark. The first source, the difference between the two benchmarks (i.e., the GPIF’s asset class benchmark and all manager benchmarks in aggregate), is an excess return the GPIF can intentionally capture by assuming benchmark misfit risk (i.e., the risk of returns deviating from the GPIF’s asset-class benchmarks).

For example, an external manager can earn a liquidity premium by selecting a manager benchmark that includes illiquid stocks. Instead of merely allowing the asset manager to select this benchmark, the GPIF conceivably could impose such a benchmark on the manager.

In addition to a liquidity premium, the manager may be able to earn even more excess returns by selecting a factor index likely to outperform the GPIF’s asset class benchmark over the long term. One example is smart beta indexes like those adopted as benchmarks when the GPIF reshuffled its lineup of
Japanese equity managers in March 2014. A smart beta index is constructed by assembling a group of stocks that possess selected attributes and weighting them on a basis other than market cap, in contrast to broad, capitalization-weighted market indexes like the TOPIX. Popular types of smart beta indexes include fundamental indexes and low-volatility indexes. In most cases, smart beta indexes are designed to capture specific risk premia confirmed to systematically exist to some extent. Many smart beta indexes outperform market indexes in long-term back tests (in-sample tests). Smart beta indexes are gaining prevalence by virtue of a confluence of factors, including a growing body of empirical evidence of conventional market indexes’ efficiency and investor skepticism of active management’s prospects of outperformance.

Why the GPIF decided to adopt smart beta indexes is unknown, but it may have done so for two reasons. One is that the traditional active managers that the GPIF had been using failed to deliver sufficient excess returns. The other possible reason is that the GPIF saw smart beta indexes as a potential substitute for traditional active managers’ excess returns. The GPIF’s 10-year excess returns tabulated in Figure 20 include passive managers’ returns also, but given how low the tabulated returns are, the active managers presumably underperformed the GPIF’s expectations. Additionally, traditional active managers are known to be highly sensitive to certain factors, including value and growth. Smart beta indexes could serve as a proxy for such factors. In other words, hiring low-fee passive managers that track smart beta indexes may improve after-cost returns. These two reasons would constitute ample justification to consider replacing traditional active managers with passive managers tracking smart beta indexes.

While use of numerous manager benchmarks could increase misfit risk, the GPIF may at some point in the future be able to hedge away (using, e.g., futures) the risk of misfit active returns being negative over a long timeframe. If so, the GPIF would then be able to capture excess returns by intentionally assuming misfit risk as a long-term investor.

Another advantage of allowing managers to use their own choice of benchmark that differs from the GPIF’s asset-class benchmark is that it increases the probability of the manager delivering excess returns because the manager benchmark should be representative of an investment strategy in which the manager excels. The GPIF previously imposed one-size-fits-all benchmarks on its managers, likely forcing at least some managers to invest beyond the purview of their primary expertise, thereby detracting from their excess returns. Allowing managers to designate their own benchmarks and focus on their respective forte should increase the probability of positive excess returns.

**IV.3.2.2. Hiring of purely active managers**

In addition to capturing excess returns through use of manager benchmarks that differ from the GPIF’s asset-class benchmarks, another important, not to mention more elementary, point is to hire managers capable of outperforming their asset-class benchmark. In other words, it is important to hire active managers with the potential to earn excess returns independent of factors.

Once such active investment strategy is concentrated investment, where a manager owns a portfolio of relatively few companies valued substantially below their long-term intrinsic value in the manager’s opinion. Concentrated fund managers are benchmark-agnostic and pursue absolute returns. Another example is activist funds that invest in concentrated portfolios of companies with the potential for long-term valuation gains driven by improvement in, say, management strategy. Activist funds lobby their investee companies’ management to catalyze such improvements. The GPIF began investing in such concentrated and activist strategies in March 2014. Nearly all its mandates for such strategies were
awarded to asset managers that broadly invest in not only Japanese but also global equities and do not have any portfolio management operations based in Japanviii.

The GPIF’s commitment of assets to such investment strategies is highly significant. While the GPIF invested in such strategies to capture alpha (excess returns over its asset-class benchmark), its doing so is conducive to increasing beta returns also. Improvement in the Japanese equity market’s overall returns is essential for the GPIF to grow the assets it manages on behalf of the Japanese public. Improvement in Japanese equity market returns would in turn require long-term improvement in Japanese companies’ profitability. Managers that employ concentrated investment or activist strategies diligently assess companies’ long-term intrinsic value and repeatedly discuss value enhancement initiatives with management. An increase in the number of such managers would mean more occasions for engagement between them and management and could lead to acceleration of value-additive management initiatives. The mandates the GPIF awarded to these active managers are collectively small in comparison to its total equity investments. In absolute terms, however, they may total several trillion yen. The GPIF’s active equity mandates’ influence on corporate management is thus by no means insignificant. Growth in assets invested in these strategies would be conducive to an increase in constructive dialogue between investors and corporate management and could lead to long-term growth in Japanese equity market returns.

IV.3.2.3. Adoption of asset manager registry
To capture excess returns over its asset-class benchmarks, the GPIF has made several technological upgrades to its asset manager selection methodology since 2015. One such innovation is an asset manager registry. The GPIF previously made changes to its external manager lineups once every 3-4 years. In doing so, it evaluated managers based on their returns by asset class over the previous 3-5 years in addition to qualitative considerations (e.g., investment process). When selecting new managers, the GPIF would first solicit applications from interested asset managers and then choose managers through a three-step process. First, it screened the submitted application packages. Next, it interviewed selected applicants’ executives. Lastly, it interviewed selected portfolio managers. Unlike many other Japanese pension funds, the GPIF has rarely if ever used pension consultants in its manager selection process.

This selection process had a number of shortcomings. First, due to staffing constraints, the GPIF had a strong tendency to place priority on past returns during the initial application screening step. The GPIF wanted to hire asset managers likely to deliver high excess returns going forward, but because it interviewed only a small subset of the applicants, it had to narrow down a large applicant pool to a manageable number of interview candidates. In doing so, it naturally focused most heavily on past performance given its severe manpower limitations. However, past performance’s correlation with future performance varies greatly across asset classes. Past performance is often a poor predictor of future performance. Asset managers with favorable prospects of delivering high future returns presumably were often eliminated during the initial application screening step because the investment environment over the preceding several years happened to be inhospitable to their investment strategies, resulting in subpar returns. In sum, staffing deficiencies limited the GPIF’s ability to identify the best-qualified applicants.

Another shortcoming is that the GPIF may not have been able to hire top-notch managers in a timely enough manner. When the GPIF replaced managers, its manager selection process often took longer than a year to complete. Underperforming managers were consequently replaced only about once every four years. When the GPIF had the opportunity to hire a manager with an outstanding but short
performance record, it could not immediately do so with its previous time-consuming selection process. It therefore could have incurred major opportunity losses.

To rectify such shortcomings, the GPIF officially adopted a manager registry in 2016, when it reopened hiring of foreign equity managers, to enable it to better select managers capable of delivering high future returns. The new registry system changed the GPIF’s previous practice of accepting applications from managers only during designated timeframes. Managers can now register at any time and update their performance records and other information on a monthly basis. The registry aims to enhance the GPIF’s investment returns by promoting competition among asset managers through even-handed comparisons between existing and prospective managers.

Specifically, the GPIF now evaluates asset managers’ individual investment strategies based on both quantitative criteria (e.g., information ratio, excess returns net of fees over the past five years,) and qualitative criteria (e.g., investment policies, investment processes, organizational and human resources, stewardship, proxy voting policies and procedures, value-added services) without distinguishing between existing and prospective managers. The GPIF plans to redeem assets invested in strategies with low evaluation scores and reinvest them in highly rated strategies whenever it chooses to do so.

Although better than the previous manager selection process, the new manager registry has shortcomings of its own. One particularly acute concern among asset managers is that the new decision-making process may lack transparency. While at-will dismissal of existing managers is advantageous to both the GPIF and the pool of registered asset managers, the basis of the GPIF’s decisions to replace managers will likely be opaque in many cases. Other pension funds that have adopted similar registries reportedly sometimes conduct interviews of multiple asset managers for the sake of formality after having already decided to hire another manager. To ensure its ability to hire the best-qualified asset managers on an ongoing basis and prevent its selection process from becoming arbitrary, the GPIF must explicitly disclose its manager replacement criteria and inform asset managers of the rationale behind its manager hiring and firing decisions.

**IV.3.2.4. Performance-linked compensation for external managers**

The GPIF began awarding asset management mandates with performance-linked compensation when it reshuffled its lineup of foreign bond managers in October 2015. It had previously been compensating its external managers with fixed-rate fees. The GPIF’s fixed management fee rates are lower than overseas pension funds’. Its low fee rates had deterred many high-caliber asset managers from seeking GPIF mandates. Recognizing that adopting new compensation arrangements mutually advantageous to both itself and asset managers could be instrumental in hiring the best possible asset managers, the GPIF adopted performance-based compensation arrangements designed to align managers’ interests with its own.

When seeking to hire foreign bond managers most recently, the GPIF switched to performance-based compensation to attract the broadest possible interest from the world’s top asset managers, taking into account overseas pension funds’ compensation arrangements for external managers. It will presumably offer performance-based compensation to the new foreign equity managers it is slated to hire in 2016 and subsequently continue to do so as standard practice for all newly awarded mandates.

**IV.3.3. Other investment reforms**

**IV.3.3.1. Diversification into alternative investments**
In addition to governance reforms, the aforementioned expert panel recommended that public pension funds upgrade their investment processes also, including risk management. The GPIF has implemented this recommendation in various forms as of September 2016. For example, it has started investing in alternative assets. There are certain risks that the GPIF is well advised to take as a long-term investor with ¥140 trillion of AUM. One such risk is liquidity risk. The GPIF has over 35% of its total assets invested in domestic bonds as of 2016. These bonds’ coupon payments and redemption proceeds are more than sufficient to fund current pension benefit obligations. The GPIF can therefore pursue long-term investment of its non-domestic-bond asset allocations without much concern about having to liquidate assets to meet benefit obligations. There are two main reasons for investing in alternative assets. One is that they offer favorable prospects of high returns in exchange for assuming liquidity risk. The second is that they enable broader portfolio diversification, thereby reducing risk, through inclusion of assets with attributes that differ from equities and bonds.

When revising its reference portfolio in October 2014, the GPIF decided to newly allocate a maximum of 5% of its portfolio to alternative assets. In value terms, this seemingly modest 5% equates to a huge allocation of over ¥7 trillion, a sum not easily investable within a short timeframe. Alternative investments include illiquid assets such as infrastructure (e.g., airports, marine ports), other real estate and private equity. Reallocating assets to such income-producing investments is crucially important to earn stable returns within given risk constraints. The GPIF would be well advised to gradually increase its investments in alternative assets over the long term.

IV.3.3.2. Use of derivatives
Additionally, a proposed legislative amendment currently under parliamentary deliberation would permit the GPIF to utilize derivatives as set forth in Figure 22.

Put more simply, the proposal would enable the GPIF to trade derivatives that it is currently prohibited from using (e.g., exchange-traded forex futures, equity index futures), but only for risk-management purposes. For example, if the GPIF were to instruct its external asset managers to alter their portfolio allocations, the resultant trading activity would likely have significant market impacts if conducted in cash markets within a short timeframe. To avoid such market impacts, the GPIF could use a so-called asset overlay strategy by first adjusting its exposures through long and/or short positions in futures markets and then gradually reallocating assets through cash market trading to align its portfolio composition with the new target allocations.

Such trading activity takes place whenever the GPIF changes its asset allocations or replaces an asset manager. The GPIF’s has hitherto been replacing numerous managers simultaneously with its quadrennial manager reshuffles, but under its management registry system adopted in 2016, trading activity incidental to replacement of managers could occur more frequently on a smaller scale. Though smaller in scale than previously, such trading activity would still be sizable in the context of Japanese equity market liquidity and therefore inevitably have market impacts. Use of derivatives could reduce market impact costs stemming from manager replacement, which is likely to occur more frequently going forward. Incidentally, the GPIF uses transition managers to facilitate replacement of managers.

To prevent speculative use of derivatives, the GPIF’s derivative trading would be statutorily limited to risk-management purposes and subject to safeguards to be imposed by the Minister of Health, Labor and Welfare, including restrictions on usage scenarios/frequency and requirements in terms of Management Committee involvement. In any case, diversification of risk management tools is desirable
from the public’s standpoint. Pending reforms of the GPIF’s governance structure could be followed by further risk management upgrades, including ones involving use of derivatives.

**IV.4. GPIF governance reforms’ current status**

It bears highlighting that the various investment reforms discussed above, particularly the equity allocation enlargement, have taken place against the backdrop of GPIF’s current governance structure. The biggest criticism of the GPIF’s existing governance structure is that all decision-making authority is concentrated in the GPIF president’s hands. The latest Medium-Term Plan states that the Investment Advisory Committee’s risk management duties include deliberating on and appropriately monitoring decisions on a number of important matters, including determining the reference portfolio’s composition, but final decision-making authority still resides entirely with the president. An MHLW Pension Subcommittee working group on PRF governance recommended transferring decision-making authority from a single chief executive to a deliberative body comprising multiple directors to better ensure appropriate internal controls while reducing the risk of arbitrary political interference (e.g., politically motivated market intervention) in the management of public pension reserves that should be managed solely in the interests of pension beneficiaries. The working group said that governance reform’s foremost aim is internal oversight to reduce the risk of such political meddling and prevent mismanagement of pension assets. It further warned that the existing concentration of all decision-making authority in one person’s hands may pose a risk of political meddling under certain circumstances.

Another of the expert panel’s recommendations is that investment reforms and governance reforms should be integrated with each other. Upgrading governance to accommodate increasingly sophisticated investment strategies is an urgent task for the GPIF. This section discusses governance reforms currently being implemented by the GPIF itself, prospective legislative amendments under consideration by the Japanese government, and the likely future course of GPIF governance reforms.

**IV.4.1. Governance reform under existing laws**

**IV.4.1.1. Investment Principles and Code of Conduct**

A legislative bill that would transfer decision-making authority from the GPIF’s president to a Management Committee is scheduled for deliberation during a 2016 special session of the National Diet, but even if the bill is passed by the Diet, the transfer of decision-making authority to the Management Committee would not take effect until October 2017 at the earliest. In the interim, proceeding with further investment reforms under the existing governance structure would not be advisable given the potential for political meddling. Against such a backdrop, the GPIF’s Investment Advisory Committee (IAC) established a Governance Council subordinate to itself in October 2014 as one measure to strengthen the GPIF’s internal controls. At the same time, the IAC decided to formulate Investment Principles and a Code of Conduct for the GPIF and monitor compliance therewith. It also proposed upgrades to internal controls, risk management and in-house human resources to the GPIF’s president in conjunction with the most recent reference portfolio revision.

The GPIF’s Investment Principles summarize its basic investment approach as a pension fund. They are analogous to an asset management company’s investment philosophy. The current Investment Principles are the GPIF’s first ever. The GPIF had never previously codified its basic investment approach. The IAC established the Governance Council as a subordinate body to formulate the Investment Principles. Staffed with five IAC members, the Governance Council met a number of times to hash out the Investment Principles, which were approved by the full IAC on March 26, 2015. When the new reference portfolio was unveiled, the increase in its equity allocation to 50% (from 24% previously)
elicted public concerns about increased risk of equity investment losses. It is very important for the GPIF, when making major changes in its reference portfolio, to publicly explain in easily understandable terms the purpose of the changes and how it plans to invest prospectively.

The GPIF’s Investment Principles are equivalent to the investment beliefs mentioned in Chapter 1. As explained in Chapter 1, having investment beliefs is regarded as one way to effectively maintain a public pension fund’s governing board’s expertise and increase the consistency of the governing boards’ investment policies. By documenting its Investment Principles, the GPIF will likewise be better able to maintain the consistency of its investment program despite turnover of key personnel such as its president, CIO and/or IAC members. Additionally, its Investment Principles could be a useful tool for clearly conveying its investment policies to incoming personnel. In addition to preserving institutional expertise and enhancing consistency in investment activities, the GPIF’s Investment Principles could be an effective means of broadly promoting understanding of the GPIF’s investment approach.

The GPIF’s Investment Principles consists of four fundamental principles that express the GPIF’s basic approach to investing (Figure 23). The GPIF has published the four principles in an annotated format to clarify them. While the annotations do not explain everything, they do explain the intent behind the principles in simple terms (see annotated version of first principle in Figure 23).

The first principle is tantamount to the GPIF’s mission statement vis-à-vis investment. While Japan’s public pension system operates based on the principle of intergenerational support, the government formulates fiscal forecasts that assume that the pension reserves managed by GPIF will be used to fund future generations’ pension benefits. The GPIF’s mission is to contribute to stabilizing public pension programs’ operations by earning the investment returns required to maintain sound pension finances in accord with the government’s fiscal forecasts. Put differently, the GPIF’s biggest risk is that of failing to earn this required rate of return over the long term.

The recently revised reference portfolio’s increased equity allocation does indeed pose greater short-term downside risk from the standpoint of assets alone. However, the GPIF is charged with a mandate to achieve its assigned target return equivalent to the wage inflation rate plus 170bp while minimizing risk. When its policy asset mix was last revised, 10-year JGBs were yielding a mere 0.3%. If the GPIF were to keep its portfolio invested predominantly in JGBs, it faced a high risk of underperforming its target rate of return as explained above. While equities may pose a substantial risk of short-term price volatility, the first Investment Principle’s annotation makes clear that the GPIF’s role is to stably support payment of promised pension benefits on a long-term basis by generating equity investment returns sufficient to exceed its target rate of return.

One common misunderstanding is that the GPIF’s October 2014 decision to increase its reference portfolio’s equity allocation means that the GPIF intends to pursue high returns. The GPIF’s investment objective is to achieve its target rate of return equivalent to the wage inflation rate plus 170bp. The GPIF is not imprudently pursuing high returns. It invests pension reserves to fund predetermined benefits and therefore must minimize the probability of long-term underperformance of its target rate of return.

The GPIF has a number of other characteristics that set it apart from most other pension funds. One is its size. It has some ¥135 trillion of assets as of March 31, 2016. Investment-wise, the GPIF’s large size is both a blessing and a curse in different respects. Its first Investment Principle’s annotation states that the GPIF places utmost priority on pension beneficiaries’ interests, seeks to preserve pension assets’ value and takes market size into consideration its investment activities. Its size dictates that it must
construct a predominantly passive, not active, portfolio, albeit to varying degrees in different asset classes. When the GPIF adjusts its portfolio allocations, its resultant trading activity tends to exacerbate price volatility, making rapid portfolio adjustments unfeasible.

While large size has drawbacks, it also confers advantages. For example, a sizable amount of investable capital is required to gain entry to illiquid asset classes such as real estate and infrastructure. Large institutional investors are often approached first with real estate or infrastructure investment opportunities, giving them a higher probability of landing such deals. Additionally, when market liquidity dries up during financial crises, large institutional investors typically have more opportunities than usual to capture high returns by leveraging their large size to supply liquidity as a long-term investor. The Investment Principles’ annotation mentions market size because the GPIF believes that, when investing, it must consider the issue of its size from various angles, as in the current discussion herein.

Also important in terms of maintaining investment policies’ consistency is the GPIF’s recently adopted Code of Conduct (Figure 24). At overseas pension funds, fund directors often advocate for and cast votes in favor of the interests of the stakeholder constituency that appointed them to their position. Governmental or corporate pension plan sponsors and the workers enrolled in their pension plans usually have opposing interests. If a pension fund’s directors invariably represent the interests of their respective stakeholder constituencies, its governing board could become deadlocked.

To prevent such dysfunction, a pension fund can establish a code of conduct that imposes fiduciary responsibilities on its directors and investment committee members and prohibits them from representing the interests of their respective stakeholder constituencies in decision-making processes. The GPIF’s Code of Conduct prohibits IAC members from favoring the interests of any organization with which they are personally affiliated in fulfilling their fiduciary responsibilities. When competing interests exist, GPIF IAC members are required to make decisions solely in the interests of pension plan participants and beneficiaries.

In Chapter 1, one of the recommendations for improving pension fund governance globally was to establish a code of conduct for funds’ governing body. The GPIF’s Code of Conduct expressly states that personnel within the Code’s purview must act solely in the interests of pension plan participants and beneficiaries when making decisions on matters where competing interests tend to come into play. This rule should facilitate smoother investment decision-making going forward.

IV.4.1.2. Current governance structure’s shortcomings
The GPIF’s president officially possesses sole decision-making authority as mentioned above, but the IAC has been granted de facto decision-making authority over various matters by recent reforms related to organizational authority within the GPIF. The specific matters over which IAC currently has authority are (1) deliberation on medium-term plans and operating procedures and (2) oversight of the GPIF’s management and investment of pension reserves. Medium-term plans and operating procedures encompass important matters, including formulation of the GPIF’s policy asset mix. The IAC has thus effectively assumed an important decision-making role.

However, my personal opinion as a former IAC member for two years until April 2016 is that the current IAC has done a woefully inadequate job of fulfilling its oversight role with respect to pension reserves’ management and investment. There are a number of reasons for the IAC’s poor performance in its oversight role. One reason is that the GPIF’s executive staff sets IAC meeting agendas. Another is that
IAC members are appointed to two-year terms and serve in a part-time capacity. A third is that the IAC generally meets only once monthly for two hours.

The worst of these shortcomings is that authority for setting meeting agendas effectively resides with the GPIF staff. Moreover, pre-meeting information available to the IAC members is limited to cursory briefings, the content of which is determined by the executive staff. IAC members are permitted to propose agenda items but being part-timers, they generally lack sufficient nuts-and-bolts operational knowledge to appropriately shape meeting agendas. One IAC member once asked, based on information gleaned from market participants, whether a large-scale replacement of asset managers by the GPIF had engendered major market impacts, but the topic never appeared on the IAC’s meeting agenda and was never discussed in depth by the IAC. Ideally, the GPIF should have full-time IAC members who appropriately monitor operations in communication with GPIF executive staff and are able to set IAC meeting agendas in consultation with their part-time IAC colleagues, directors and other concerned parties. At a publicly traded company, independent outside directors who have no say in setting board meeting agendas would normally be unheard of. The IAC’s oversight function is less robust than that of publicly traded companies’ boards of directors.

Even if IAC members had authority to set their meeting agendas, the next question is whether they would be granted adequate access to information they would need to meaningfully discuss their agenda items. With IAC members serving in a part-time capacity and receiving only once-monthly pre-meeting briefings lasting only about an hour, their ability to conduct detailed oversight of GPIF operations is questionable. To rectify this deficiency, the GPIF needs to rethink the content and length of pre-meeting briefings for IAC members. For example, the pre-meeting briefings may require detailed explanations of not only the content of agenda items but also the reasons for their inclusion on the agenda.

Additionally, IAC members’ two-year terms may be too short. If IAC members were appointed to a term of, say, five years, they would be better able to make decisions solely and truly in the public interest without deferring to the executive staff’s wishes. With their current short term of office, IAC members may side with the executive staff because they want to be reappointed to another term (though the executive staff has no authority over appointment or dismissal of IAC members). The typical Japanese seeks to avoid conflict as much as possible. Such a mentality could hold IAC members back from making decisions solely in the interests of pension plan participants and beneficiaries in accord with the GPIF’s Code of Conduct.

IV.4.2. Governance reforms under prospective laws

While various governance reforms have been implemented within the GPIF as described above, these reforms do not seem adequate to enable the IAC to adequately fulfill its role of making investment decisions solely in the interests of pension plan participants and beneficiaries and exercising oversight of the GPIF’s executive staff. In light of such, the Cabinet in March 2016 approved a legislative bill to partially amend the National Pension Act in the aim of better ensuring the public pension system’s sustainability. The bill includes reforms of the GPIF’s governance structure. Figure 25’s right panel depicts what the GPIF’s governance structure would look like if the proposed reforms were to take effect.

The left panel shows the GPIF’s governance structure as of 2016. The GPIF’s executive staff previously consisted of a president and executive managing director but now includes a CIO also. As mentioned above, authority over certain important matters, including setting the policy asset mix, has been
transferred from the president to the IAC, but the IAC is not yet adequately fulfilling its oversight function.

**IV.4.2.1. Three proposed governance reforms**
The aforementioned proposed amendment of the National Pension Act includes three major governance reforms. The first is transferring decision-making authority over important matters from the president to the IAC both nominally and effectively. The second is establishing a Management Committee in the aim of separating executive authority from oversight authority. The Management Committee would be responsible for oversight; GPIF staff, for executive functions. The third reform is to appoint a full-time Management Committee member, who would serve on the Audit Committee also, to strengthen the Management Committee’s oversight function. If the proposed amendment is passed into law, these three reforms would take effect from October 2017. The proposed reforms conform to the global pension fund governance guidelines mentioned above, most notably by explicitly separating oversight and executive roles. The addition of a full-time appointee serving on both the Audit and Management Committee could largely rectify the current deficiency in the IAC’s oversight.

**IV.4.2.2. Shortcomings yet to be addressed**
The three proposed reforms discussed above would commendably upgrade the GPIF’s governance structure into better conformity with best-practice governance, but they fail to address a number of other shortcomings. One such shortcoming is that the GPIF president is, and prospective Management Committee members would be, appointed by the Minister of Health, Labor and Welfare. Ideally, the authority to make such appointments should reside with a nominating committee à la the CPPIB. By establishing a nominating committee and authorizing it to make such appointments, the GPIF could appoint and, if necessary, dismiss certain personnel more transparently than it does now. One possible arrangement would be for the Minister of Health, Labor and Welfare to appoint the nominating committee’s members. The nominating committee would then determine the qualifications that the president and Management Committee members should possess and select qualified candidates based on its selection criteria. Through such an approach, the GPIF could amply fulfill its accountability to the public.

Another, related, issue is that the template for the proposed governance reforms is a corporate governance model, one of three such models legally available for Japanese companies to choose from. The specific corporate governance model in question involves executive oversight by an audit committee staffed by directors in lieu of a board of auditors independent of the board of directors. In other words, the GPIF would be adopting a governance model where one Management Committee member (analogous to a director in a corporate context) would serve as an Audit Committee member also. A better approach, in my opinion, would be to establish several committees, including a nominating committee, subordinate to the Management Committee. I believe this committee-based governance model would result in more effective governance through appropriate delegation of authority by the Management Committee. The MHLW’s Pension Subcommittee, however, feared that such a large-scale governance model would be too unwieldy for a pension fund staffed with barely over 100 personnel and could consequently undermine the Management Committee’s functionality. The government apparently settled on the pending reform proposal as a compromise. Given the GPIF’s current organizational scale, the Pension Subcommittee’s concerns were not entirely unfounded. If the GPIF eventually grows into a large organization like the CPPIB, however, doubts would persist about the adequacy of the checks and balances provided for by a governance structure like the one that would result from the proposed reforms.
A final concern is selection of Management Committee members. Management Committee candidates selected by the Minister of Health, Labor and Welfare are slated to have their qualifications vetted by a review board subordinate to the MHLW’s Pension Subcommittee. Whether the Minister of Health, Labor and Welfare will select these candidates based on predetermined qualifications is not yet known. Another unknown is the extent to which the review board would be capable of verifying that candidates are indeed sufficiently qualified to fulfill the Management Committee’s oversight responsibilities.

Despite such lingering concerns, the proposed governance structure is vastly superior to the existing one in terms of its separation of oversight and executive functions. The new governance structure’s benefits should manifest over time. The GPIF is charged with a mandate to deliver stable investment returns that meet the public’s expectations. While improving process transparency is of course essential, ensuring that such improvements pay off in the form of satisfactory investment returns is equally imperative. Much is riding on the GPIF’s efforts going forward.

V. Future outlook
The preceding four chapters discussed governance and investment reforms at selected overseas pension funds and the GPIF’s current status. Discussions in Japan surrounding the GPIF’s governance reforms have much in common with Canadian public discussions leading up to the CPPIB’s inception. Aside from governance, issues discussed back then in Canada included whether to invest in foreign assets and whether to allow pension reserves to be used to fund domestic development or fiscal spending. Although the consensus in terms of governance is that public pension funds should be charged with a fiduciary duty equivalent to that of a private pension fund and operate independently of the government, there was apparently discussion in Canada of CPPIB directors possibly being appointed by the federal and provincial governments. Similarly, GPIF Management Committee members would be appointed by the Minister of Health, Labor and Welfare under the reform bill now under deliberation in Japan’s Diet. The similarity between the proposed GPIF reforms and the discussions surrounding the CPPIB’s establishment is an interesting coincidence. With the GPIF reforms barely underway, it is far too early to evaluate their outcome, but I want to highlight several points from a medium- to long-term perspective.

The three pillars of pension fund management–governance, risk management and portfolio construction–have undergone dramatic change since the turn of the millennium as discussed in this report. While pension funds are growing in size globally, all are severely challenged by a dearth of investment opportunities, including globally low interest rates.

Amid such an environment, several large pension funds are pursuing investment opportunities by proactively partnering with other pension funds or asset management companies and adroitly resolving conflicts of interest that tend to arise in the investment world. Joint investments in real estate and infrastructure assets, for example, have long been common among pension funds. In recent years, however, pension funds are seeking novel cooperative relationships by partnering with asset management companies also. Like in strategic partnerships, pension funds are starting to build relationships that enable them to acquire portfolio management know-how from external managers. In some cases, pension funds partner with an external asset manager that manages a portfolio identical to the pension fund’s model portfolio and reveals its investment processes to the pension fund while hopefully outperforming the model portfolio. With competition intensifying, globally building a variety of cooperative relationships that adeptly capitalize on the advantages of being a long-term investor could very well become increasingly important to enhancing pension fund returns.
In such an environment where competition and cooperation coexist alongside each other, pension funds require not only sufficient scale but also globally top-notch business processes to fully leverage their respective advantages. The investment world is one of give and take. You cannot gain partners’ trust without business processes that not only collect information but also share information with others. The GPIF’s headcount in 2016 is about the same as the CPPIB’s in 2006. Just as the CPPIB succeeded in its investment reforms under a best-practice governance structure with a clear-cut separation between oversight and executive functions, I hope the GPIF makes similarly impressive progress after upgrading its governance.

References
OECD (2009), “OECD Guidelines for Pension Fund Governance”

i The OTPP is well known for having a governance structure that is modeled after the CPPIB’s.
ii For example, see Chapter 19 of Ambachtsheer (2007b) and Chapter 10 of Ambachtsheer (2016).
iii The Guidelines were revised twice since their issuance, first in April 2005 and again in June 2009.
iv Founded in 1995, the ICGN is an international nonprofit organization whose members manage over US$9 trillion of assets.
For example, see Clark and Monk (2011), in which the authors analyzed the current state of PRFs' design, governance and management based on case studies of four PRFs: the CPPIB, Australian Future Fund, Irish National Pension Reserve Fund and New Zealand Superannuation Fund.

Under Japan's Companies Act, the monitoring board model corresponds to a governance structure where a company's board of directors delegates authority to committees (e.g., nominating committee) subordinate to itself.

For example, the California Public Employees' Retirement System (CalPERS) invested in a company affiliated with one of its board members in 2010. The board member was subsequently sued on conflict-of-interest grounds and lost the lawsuit.

The prudent person rule is a standard of conduct imposed on fiduciaries by the US Employee Retirement Income Security Act (ERISA). A prudent person is defined as a diligent, sensible person with sufficient expertise. The rule is based on the idea that a fiduciary's judgment and actions should meet a standard of prudence that would be expected of professionals in their field.

In addition to holding face-to-face meetings, the CPPIB's chairperson and CEO participate in online question-and-answer sessions also.

The 37 funds are located in seven countries: Australia, New Zealand, Canada, Sweden and the US, Netherlands and UK. They manage US$2.2 trillion collectively and, on average, about US$59.5 billion apiece.

More precisely, they are weighted by risk contribution.

The expert panel was convened by the economic revitalization minister to provide recommendations on public and quasi-public funds' investment practices (e.g., diversification), governance (e.g., risk management) and measures to improve returns from long-term equity investments, taking into consideration each fund's size and attributes. The panel was convened pursuant to the Japan Revitalization Strategy (approved by the Cabinet on June 14, 2013), formulated as a growth strategy designed to spur private investment. This growth strategy is Abenomics' third plank ("third arrow").

Both basic pension and employee pension (kosei nenkin) benefits.

The process by which the target rate of return was set is beyond this report's scope.

I headed the Investment Advisory Committee working group that formulated the new policy asset mix. The working group's proposed asset mix was ultimately approved by the Investment Advisory Committee and publicly announced as the GPIF's new asset mix in October 2014.

The MHLW was responsible for calculation of conditional expected shortfalls.

There are a number of possible reasons that the selected managers did not include any with Japan-based portfolio management operations. One reason is that global comparative analysis now plays an important role in selection of longer-term equity holdings. Another reason is that having an on-the-ground presence in Japan is no longer necessarily an advantage in terms of stock selection. Nearly all of the asset managers recently hired by the GPIF invest in not only Japanese but also global equities. Their global equity investment teams have been investing in rigorously screened Japanese companies capable of successfully competing with global rivals. They make investment decisions based on analysis of the international competitive landscape transcending their respective home countries. They also regularly compare notes with colleagues that invest exclusively in Japanese equities, improving each other's ability to identify companies capable of longer-term earnings growth from a global perspective. Such asset managers are consequently highly skilled even at investing solely in Japanese stocks. Having a physical presence in Japan confers little if any advantage. CEOs of over 200 Japanese companies now visit London and/or New York every quarter to meet with investors. Many overseas investors have more opportunities to meet with top Japanese executives in their home countries than in Tokyo, where their access is typically limited to the director in charge of investor relations. One reason that top Japanese executives cater to overseas investors is that foreigners' shareholdings in Japanese companies have grown. Another, perhaps even more important, reason is that the executives can obtain valuable information by talking with overseas investors. For example, a certain Japanese CEO said that of the investors he has met that are able to deeply discuss his company's long-term value, including capital structure optimization, 80% are foreign and 20% are Japanese. He went on to say that Japanese investors never share opinions that are helpful in managing his company, so he now talks about business strategy and other such matters with overseas investors only. Overseas asset managers invest in not only Japanese companies but many foreign companies that Japanese CEOs view as competitors. They thus share the same vantage point as Japanese CEOs and often have valuable insights regarding business...
strategy. For long-term investors, another advantage of not being present in Japan is freedom from distraction by information that is merely short-term noise. With quantitative investment strategies now executable from anywhere in terms of both analysis and trading, being located in Japan no longer offers any particular advantage.

xx The GPIF has now designated several asset managers as reserve managers in the event of early redemption of assets managed by an existing manager. However, the GPIF has at times unexpectedly experienced more such early redemptions than the number of reserve managers it had on standby.

xx Its transition managers for Japanese equities are Nomura Securities and BlackRock.

xxi For more details, see Nomura (2007).
Figure 1: Potentially competing/conflicting interests among pension plan stakeholders

- **Plan sponsor** (Gov't/Co.):
  - Balance between benefits & contributions
    - Plan sponsor wants to minimize its contributions but plan participants & pensioners want it to increase benefits
    - What investment risk/return levels are appropriate?
    - High investment returns are required to reduce contributions but investment losses pose risk of having to increase contributions
  - Balance between contributions/benefits & investment of pension assets

- **Pension fund**:
  - Balance between fund’s returns & asset managers’ revenues
  - Asset managers’ pursuit of AUM growth may detract from pension fund’s returns

- **Asset managers**:
  - Balance between fund’s returns & commissions
  - Growth in brokers’ commission revenues invariably reduces pension fund’s returns

- **Pensioners/plan participants**:
  - Balance between short- & long-term horizons
  - What investment risk/return levels are appropriate?
  - High investment returns are required to reduce contributions but investment losses pose risk of having to increase contributions

- **Securities brokers**:
  - Growth in brokers’ commission revenues invariably reduces pension fund’s returns

---

Source: NRI
### Figure 2: OECD Guidelines for Pension Fund Governance

<table>
<thead>
<tr>
<th>Governance structure</th>
<th>Governance mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overview</strong></td>
<td><strong>Overview</strong></td>
</tr>
<tr>
<td>Guidelines’ topics: ① identification of responsibilities, ② governing body, ③ accountability, ④ suitability, ⑤ delegation and expert advice, ⑥ auditor, ⑦ actuary and ⑧ custody</td>
<td>Guidelines’ topics: ⑨ risk-based internal controls, ⑩ reporting and ⑪ disclosure</td>
</tr>
<tr>
<td><strong>Crux</strong></td>
<td><strong>Crux</strong></td>
</tr>
<tr>
<td>A best-practice governance structure is risk-based, clearly separates operational and oversight responsibilities, ensures accountability and suitability of those charged with said responsibilities, delegates authority as warranted and assesses delegation outcomes.</td>
<td>Pension funds should have adequate internal controls, reporting and disclosure to ensure appropriate and timely decision-making by personnel with operational and oversight responsibilities.</td>
</tr>
<tr>
<td><strong>Main content</strong></td>
<td><strong>Main content</strong></td>
</tr>
<tr>
<td>✓ Pension funds should have clear framework for sharing operational and oversight responsibilities; internal governance structure and management objectives should be documented if not statutorily codified.</td>
<td>✓ Internal controls are necessary to ensure that personnel with operational or oversight responsibilities fulfill their roles.</td>
</tr>
<tr>
<td>✓ All pension funds should establish a governing body responsible for their operation.</td>
<td>✓ Internal controls should include performance assessments, compensation mechanisms, information systems and risk management procedures. The governing body should prescribe a code of conduct and conflict-of-interest policy to ensure independence and impartiality of personnel with operational or oversight responsibilities.</td>
</tr>
<tr>
<td>✓ The governing body is accountable to pension plan participants and bears legal responsibility commensurate with its authority.</td>
<td>✓ Pension funds should appropriately report and otherwise disclose information to pension plan participants and regulatory authorities.</td>
</tr>
<tr>
<td>✓ The governing body should possess minimum qualifications to ensure expertise required for pension fund operations and may delegate authority to subcommittees or staff.</td>
<td></td>
</tr>
<tr>
<td>✓ The governing body should periodically subject fund operations to external scrutiny by at least auditor and actuary.</td>
<td></td>
</tr>
</tbody>
</table>

Source: NRI, based on OECD Guidelines
Figure 3: Recommended principles and policies for PRFs

<table>
<thead>
<tr>
<th>Organizational design &amp; governance principles</th>
<th>Management &amp; implementation policies</th>
</tr>
</thead>
<tbody>
<tr>
<td>① Legitimate purpose</td>
<td>① Symmetrical knowledge</td>
</tr>
<tr>
<td>② Organizational mandate</td>
<td>② Board appointments</td>
</tr>
<tr>
<td>③ Mission clarity</td>
<td>③ Management hiring</td>
</tr>
<tr>
<td>④ Fund withdrawals</td>
<td>④ Fund leadership</td>
</tr>
<tr>
<td>⑤ Organizational boundaries</td>
<td>⑤ Staff expertise</td>
</tr>
<tr>
<td>⑥ Sponsor authority</td>
<td>⑥ Staff compensation</td>
</tr>
<tr>
<td>⑦ Board authority</td>
<td>⑦ Code of conduct</td>
</tr>
<tr>
<td>⑧ Accountability</td>
<td>⑧ Risk management</td>
</tr>
<tr>
<td></td>
<td>⑨ Force majeure rules</td>
</tr>
</tbody>
</table>

Source: Clark & Monk (2011)
<table>
<thead>
<tr>
<th>Committee</th>
<th>Main roles</th>
<th>Other</th>
</tr>
</thead>
</table>
| **Investment Committee**          | ➢ Approves engagement of investment managers  
➤ Meets with executive officers and staff to discuss investment policies' effectiveness and achievement of investment objectives  
➤ Monitors compliance with investment policies, standards and procedures; oversees implementation of appropriate procedures to verify agents' compliance with CPPIB Act and investment policies  
➤ Reviews, evaluates and approves investment procedures | Required to meet at least four times annually (met six times in FY2015). Staffed by full Board of Directors.                                                                                                                                                                                                                                                                                                                                                         |
| **Audit Committee**               | ➢ Confirms implementation and maintenance of appropriate internal audit procedures with executive officers  
➤ Reviews, evaluates and approves internal audit procedures  
➤ Evaluates and approves annual financial statements  
➤ Meets with external auditor regarding annual financial statements and auditor’s reports  
➤ Evaluates all investments and trades that detract from returns  
➤ Meets with chief internal auditor and executive officers to assess internal audit procedures' effectiveness | Required to meet at least four times annually (met five times in FY2015). Staffed by nine Board members (required to have at least three as members). Internal and/or external auditors also may attend committee meetings.                                                                                                                                                                                                 |
| **Human Resources & Compensation Committee** | ➢ Reviews and recommends CEO and other officers’ compensation levels  
➤ Develops and oversees CEO/officer performance evaluation processes  
➤ Reviews and recommends compensation policies, plans and practices; recommends and approves benchmarks applicable to incentive-based compensation  
➤ Annually reviews CEO’s officer succession plans and reviews and recommends officer appointments  
➤ Oversees disclosure of directors and officers’ compensation in annual reports  
➤ Oversees employees’ benefits and pension plans | Required to meet at least five times annually (met six times in FY2015). Staffed by seven Board members (required to have at least four as members).                                                                                                                                                                                                                                                                   |
| **Governance Committee**          | ➢ Reviews actual state of CPPIB’s governance  
➤ Evaluates Board’s effectiveness through reviews of Board evaluations, succession plans, new director selection criteria and new directors’ qualifications and ongoing director appointment planning  
➤ Monitors Governance Manual, Code of Conduct and conflict-of-interest management policies’ content/application and approves revisions thereof  
➤ Approves proxy voting principles and guidelines | Required to meet at least four times annually (met six times in FY2015). Staffed by seven Board members (including Board Chairperson; required to have at least three members).                                                                                                                                                                                                                                              |
Figure 5: Global pension fund staff compensation by region (5 highest-paid staff per fund)

<table>
<thead>
<tr>
<th></th>
<th>Oz/NZ¹</th>
<th>US</th>
<th>NE²/UK</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maximum</strong></td>
<td>15,259</td>
<td>8,636</td>
<td>5,947</td>
<td>22,144</td>
</tr>
<tr>
<td>75th%tile</td>
<td>5,002</td>
<td>3,707</td>
<td>3,878</td>
<td>15,846</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>4,139</td>
<td>3,503</td>
<td>3,381</td>
<td>5,263</td>
</tr>
<tr>
<td>25th%tile</td>
<td>3,169</td>
<td>2,558</td>
<td>2,990</td>
<td>3,357</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td>2,379</td>
<td>1,540</td>
<td>1,442</td>
<td>2,354</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>5,255</td>
<td>3,797</td>
<td>3,454</td>
<td>9,247</td>
</tr>
<tr>
<td><strong>n =</strong></td>
<td>9</td>
<td>10</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

1. Oz: Australia; NZ: New Zealand
2. NE: Northern Europe
3. n = number of funds
4. Units: ¥10,000, converted at 2010 year-end exchange rates

Source: Keith Ambachtsheer, “How Pension Funds Actually Pay Their People,” May 2011, Rotman International Centre for Pension Management
Figure 6: Overview of pension funds’ 21st century investment reforms

- Tightening of pension actuarial standards (e.g., fair valuation of liabilities)
- Investment innovations (e.g., risk attribution)
- Pension fund investment reforms

Shift from asset to risk allocation (risk budgeting)
- Shift to asset management in context of liabilities (LDI)
- Shift from asset classes to sources of return

Source: NRI
Figure 7: Risk budgeting vs. traditional asset allocation

(1) Traditional approach: set (manage) asset allocations (risk contributions are observed on ex-post basis)

(2) Risk budgeting: set (manage) risk contributions first (asset allocations are determined as function of risk contributions)

Source: NRI
Figure 8: OTPP’s barbell portfolios (example)

Pension assets = risk minimization strategy + growth strategy

1. Strategy minimizes variability of pension fund surplus (assets - liabilities)
2. Expected returns are typically lower than liabilities' discount rate
   → Shortfall would lead to certain increase in contribution rate
3. Quantify size of contribution rate increase that would be required if this strategy were adopted

1. Adopt high expected-return strategy to avert certain contribution rate increase
2. Quantify extent to which adoption of this strategy would mitigate contribution rate increase on average and size of worst-case contribution rate increase

Pension assets = risk minimization strategy + λ(growth strategy)

Source: NRI
**Figure 9: Comparison of major pension funds’ risk class definitions**

<table>
<thead>
<tr>
<th>Fund</th>
<th>Risk classes</th>
<th>Asset classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGGM</td>
<td>Equities, Rates, Real assets (includes equity), Inflation, Commodities, Other</td>
<td>13</td>
</tr>
<tr>
<td>ABP</td>
<td>Fixed income, Real assets, Overlay, Other</td>
<td>15</td>
</tr>
<tr>
<td>ATP</td>
<td>Equities, Rates, Inflation, Commodities, Credit</td>
<td>13</td>
</tr>
<tr>
<td>AP3</td>
<td>Equities, Fixed income, Inflation, Credit, Absolute return, Currency, other</td>
<td>9</td>
</tr>
<tr>
<td>RAILPEN</td>
<td>Growth, Gov’t bonds, Liability platform, Illiquid growth</td>
<td>10</td>
</tr>
<tr>
<td>CalPERS</td>
<td>Growth, Income, Real assets, Inflation, Liquidity</td>
<td>17</td>
</tr>
<tr>
<td>OTPP</td>
<td>Equities, Debt, Real assets, Liability hedges, Commodities</td>
<td>9</td>
</tr>
<tr>
<td>APF</td>
<td>Company exposure, Rates, Real assets, Special opportunities, Cash</td>
<td>9</td>
</tr>
<tr>
<td>Towers Watson</td>
<td>Equities, Term, Illiquidity, Inflation, Currency, Credit, Skill, Insurance</td>
<td>8</td>
</tr>
</tbody>
</table>

Source: NRI, based on above funds’ annual reports
Figure 10: ATP’s asset and risk allocations by risk class

<table>
<thead>
<tr>
<th>Risk class</th>
<th>Investment vehicles</th>
<th>Mkt value (DKKbn)</th>
<th>Portfolio allocation</th>
<th>Risk allocation (2015)</th>
<th>ES at 1% level* (3mo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total portfolio</td>
<td></td>
<td>254.7</td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Interest rates</td>
<td>Investments in bonds with interest rate risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Bonds (global bonds): 52.0</td>
<td>52.0</td>
<td>20%</td>
<td>14%</td>
<td>5.0</td>
</tr>
<tr>
<td>Credit</td>
<td>Investments in debt with credit risk</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Loans: 12.7</td>
<td>29.1</td>
<td>11%</td>
<td>8%</td>
<td>2.9</td>
</tr>
<tr>
<td></td>
<td>• High-yield bonds: 16.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equities</td>
<td>Investments in broad universe of equities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Public equity: 21.6 domestic; 18.0 foreign</td>
<td>74.4</td>
<td>29%</td>
<td>52%</td>
<td>19.0</td>
</tr>
<tr>
<td></td>
<td>• Private equity: 34.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>Inflation-linked investments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Inflation-linked bonds: 0.7; inflation-linked other: 5.5</td>
<td>94.8</td>
<td>37%</td>
<td>24%</td>
<td>8.8</td>
</tr>
<tr>
<td></td>
<td>• Real estate: 34.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Infrastructure, timber, etc.: 14.6; hedging strategies: 39.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commodities</td>
<td>Commodity investments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Commodity futures (oil-linked bonds): 4.4</td>
<td>4.4</td>
<td>2%</td>
<td>3%</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>• Oil interests, hedging strategies: 0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note: ES at 1% level is each risk class’s expected shortfall over a 3mo timeframe at the 1% level (i.e., worst-percentile of risk class’s 3mo return distribution). For example, in the event of worst-percentile 3mo returns in the interest rate class, ATP would incur a roughly DKK400 million drawdown on its holdings of bonds with interest rate risk.

Source: ATP’s Annual Report 2015
Figure 11: ATP’s risk factor framework

Source: ATP’s Annual Report 2015
Figure 12: CPPIB’s sources of return

Source: NRI, based on CPPIB’s annual report
Investment objectives

- Japan’s public pension system (Employees’ Pension and National Pension programs) operates based on the principle of intergenerational support, not 100% prefunding of benefits. In other words, retirees’ benefits are largely funded by pension insurance premiums paid by current labor force. However, with Japan’s population rapidly aging, if pension benefits were funded solely by current labor force’s premium contributions, a sharp increase in the contribution rate or drastic reduction in benefits would be unavoidable. The public pension system therefore holds reserves, the investment returns on which are used to partially fund benefits under the government’s pension funding plan.
- The GPIF’s role is to contribute to the stable operation of the Employees’ Pension Insurance and National Pension programs by managing and investing pension reserves entrusted to it by the Minister of Health, Labor and Welfare and remitting its investment returns to the government’s Pension Special Account.
- Over the 10 years from its FY2006 inception through FY2015, the GPIF earned a compound annual return of 2.85% in real terms (nominal rate of return - nominal wage inflation rate), outperforming the MHLW’s assumed rate of return. Its investment performance has improved Japan’s public pension finances.

Basic investment policy

- The GPIF is keenly aware that the pension reserves it manages represent a portion of the pension insurance premiums collected from pension plan participants and are a precious source of funding for future benefits. It has formulated specific policies for managing and investing pension reserves in the aim of long contributing to public pension programs’ stable operation by safely and efficiently investing from a long-term perspective solely in the interests of pension plan participants.
- Additionally, the GPIF manages and invests pension assets in accord with the Specific Guidelines for Safe and Efficient Long-Term Management and Investment of Pension Assets in effect since October 1, 2015.

Source: NRI, based on GPIF disclosure documents
Figure 14: Comparison of GPIF’s old and new policy asset mixes

<table>
<thead>
<tr>
<th></th>
<th>Domestic bonds</th>
<th>Domestic equities</th>
<th>Foreign bonds</th>
<th>Foreign equities</th>
<th>Short-term assets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Old target allocation</strong></td>
<td>60%</td>
<td>12%</td>
<td>11%</td>
<td>12%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Old permissible deviation</strong></td>
<td>±8%</td>
<td>±6%</td>
<td>±5%</td>
<td>±5%</td>
<td>-</td>
</tr>
<tr>
<td><strong>New target allocation</strong></td>
<td>35%(39%)</td>
<td>25%(23%)</td>
<td>15%(14%)</td>
<td>25%(23%)</td>
<td>(as of Mar 31, 2016)</td>
</tr>
<tr>
<td><strong>New permissible deviation</strong></td>
<td>±10%</td>
<td>±9%</td>
<td>±4%</td>
<td>±8%</td>
<td>(1%)</td>
</tr>
</tbody>
</table>

Source: GPIF
Figure 15: Economic scenarios used to estimate expected returns

Source: NRI, based on GPIF data
### Figure 16: Expected returns by asset class

<table>
<thead>
<tr>
<th>Expected returns (real)</th>
<th>Domestic bonds</th>
<th>Domestic equities</th>
<th>Foreign bonds</th>
<th>Foreign equities</th>
<th>Short-term assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME Scenario</td>
<td>-0.2%</td>
<td>3.2%</td>
<td>0.9%</td>
<td>3.6%</td>
<td>-1.7%</td>
</tr>
<tr>
<td>MBC Scenario</td>
<td>-0.1%</td>
<td>3.1%</td>
<td>1.4%</td>
<td>4.1%</td>
<td>-1.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expected returns (nominal: real return + nominal wage inflation rate)</th>
<th>Wage inflation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME Scenario</td>
<td>2.6%</td>
</tr>
<tr>
<td>MBC Scenario</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

Note: ME Scenario: Middling Economic Scenario; MBC Scenario: Market Base-case Scenario

Source: NRI, based on GPIF data
**Figure 17: New reference portfolio’s expected returns and downside risk**

<table>
<thead>
<tr>
<th>ME Scenario</th>
<th>Real return</th>
<th>Nominal return</th>
<th>Standard deviation</th>
<th>Shortfall probability&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Conditional ES-1&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Conditional ES-2&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.20%</td>
<td>2.60%</td>
<td>4.7%</td>
<td>51.7%</td>
<td>3.86%</td>
<td>3.52%</td>
<td></td>
</tr>
<tr>
<td>-0.10%</td>
<td>2.00%</td>
<td>4.7%</td>
<td>50.0%</td>
<td>3.83%</td>
<td>3.48%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MBC Scenario</th>
<th>Real return</th>
<th>Nominal return</th>
<th>Standard deviation</th>
<th>Shortfall probability&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Conditional ES-1&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Conditional ES-2&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.77%</td>
<td>4.57%</td>
<td>12.8%</td>
<td>44.4%</td>
<td>9.45%</td>
<td>11.2%</td>
<td></td>
</tr>
<tr>
<td>1.98%</td>
<td>4.08%</td>
<td>12.8%</td>
<td>43.8%</td>
<td>9.38%</td>
<td>11.2%</td>
<td></td>
</tr>
</tbody>
</table>

Reference: Corresponding values for 100% domestic bond portfolio

1. Shortfall probability: Probability of portfolio's nominal return falling short of wage inflation rate
2. Conditional ES-1: Expected shortfall when portfolio's nominal return falls short of wage inflation rate, assuming normally distributed returns
3. Conditional ES-2: Expected shortfall when portfolio's nominal return falls short of wage inflation rate, assuming empirically distributed returns (based on actual returns over previous 20 years)
4. ME Scenario: Middling Economic Scenario; MBC Scenario: Market Base-case Scenario

Source: NRI, based on GPIF data
Figure 18: Projections of pension reserves' growth path (in real terms) with new policy asset mix

Source: GPIF
Figure 19: GPIF’s equity investment reforms

- Enhancement of beta returns
  - Benchmark diversification
  - Adoption of manager benchmarks
  - Hiring of purely active managers
  - Asset manager registry
  - Performance-linked compensation of external managers

- Pursuit of more alpha
  - Fulfillment of stewardship responsibilities
  - Revised external manager evaluation criteria
  - Signed UNPRI

- Equity investment reforms

Source: NRI
Figure 20: Annualized excess returns over benchmark and annual win-loss record by asset class over decade through March 2016

Note: Of total excess returns by asset class, the above excess returns are those attributable to individual asset factors, regarded as a proxy for asset managers’ excess returns.
Source: NRI, based on data in GPIF’s Annual Report Fiscal Year 2015

<table>
<thead>
<tr>
<th>Asset class</th>
<th>10-yr excess return</th>
<th>W-L record</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic bonds</td>
<td>-0.00%</td>
<td>4W-6L</td>
</tr>
<tr>
<td>Domestic equities</td>
<td>-0.00%</td>
<td>5W-5L</td>
</tr>
<tr>
<td>Foreign bonds</td>
<td>-0.00%</td>
<td>5W-5L</td>
</tr>
<tr>
<td>Foreign equities</td>
<td>-0.01%</td>
<td>5W-5L</td>
</tr>
</tbody>
</table>
Figure 21: Disaggregation of excess return over asset-class benchmark

<table>
<thead>
<tr>
<th>Asset-class benchmark return (A)</th>
<th>Total manager-benchmark return (B)</th>
<th>Difference between A and B</th>
<th>Excess return over manager benchmark (C)</th>
</tr>
</thead>
</table>

Source: NRI, based on GPIF disclosure documents
1. The GPIF may trade derivatives such as bond options and currency futures/options only to hedge the risk of investment losses.

2. In addition to derivative trades authorized by Cabinet orders for pension reserve investment purposes (limited to trades to hedge the risk of securities investment losses), the GPIF may also trade exchange-traded currency futures.

Source: Excerpted from MHLW document
Figure 23: GPIF’s Investment Principles

1. Our overarching goal should be to achieve the investment returns required for the public pension system with minimal risks, solely for the benefit of pension recipients from a long-term perspective, thereby contributing to the stability of the system.

2. Our primary investment strategy should be diversification by asset class, region, and timeframe. While acknowledging fluctuations of market prices in the short term, we shall achieve investment returns in a more stable and efficient manner by taking full advantage of our long-term investment horizon. At the same time we shall secure sufficient liquidity to pay pension benefits.

3. We formulate the policy asset mix and manage and control risks at the levels of the overall asset portfolio, each asset class, and each investment manager. We employ both passive and active investments to attain benchmark returns (i.e., average market returns) set for each asset class, while seeking untapped profitable investment opportunities.

4. By fulfilling our stewardship responsibilities, we shall continue to maximize medium- to long-term equity investment returns for the benefit of pension recipients.

Source: GPIF’s website
(Principle 1) "Our overarching goal should be to achieve the investment returns required for the public pension system with minimal risks, solely for the benefit of pension recipients from a long-term perspective, thereby contributing to the stability of the system”

- Japan's public pension system (Employees' Pension Insurance and National Pension) is fundamentally managed as a pay-as-you-go system that incorporates the concept of intergenerational dependency, whereby contributions paid by working generations support older generations.

- In the light of a declining birthrate and an aging population, funding pension benefits solely with contributions from working generations would impose upon them an unduly excessive burden, so fiscal plan has been drawn up to use the reserve assets (GPIF) to fund benefits and achieve fiscal equilibrium within about 100 years. After the fiscal balancing period, the fund is projected to hold reserve assets equivalent to one year of benefits, and is to be used for the benefit of later generations.

- The GPIF's mission is to contribute to the stability of the pension system by achieving the investment returns required for the aforementioned pension system. In other words, the most significant risk to the GPIF is a failure to achieve such returns.

- We shall not pursue higher returns for their own sake. Our persistent goal is to secure the necessary returns required for the pension system from a long-term perspective. The GPIF assigns the highest priority to the benefits of pension recipients and makes investments upon taking into consideration the size of the market in which we invest, while maintaining the value of reserve assets. We shall never use reserve assets to influence equity markets or to implement economic policies. We are committed to making investments solely for the benefit of pension recipients.
### Figure 24: GPIF’s Code of Conduct

<table>
<thead>
<tr>
<th></th>
<th>Social responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The GPIF’s mission is to contribute to the stability of the public pension system (Employees’ Pension Insurance and National Pensions) by managing the reserve assets and distributing the proceeds to the government.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Fiduciary duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>We fully understand that the reserve assets are instrumental for future pension benefits payments, act solely for the benefit of pension recipients, and pledge to pay due attention as prudent experts in exercising our fiduciary responsibilities. The Committee members of the Investment Advisory Committee shall by no means be motivated by benefiting the organizations to which they belong.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Compliance with laws and maintaining highest professional ethics and integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>We shall comply with laws and social norms, remain fully cognizant of our social responsibilities associated with pension reserve management, and act with the highest professional ethics and integrity to avoid any distrust or suspicion of the public.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Duty of confidentiality and protecting the GPIF’s asset</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>We shall strictly control confidential information that we come to access through our businesses, such as non-public information related to investment policies and investment activities, and never use such information privately or illegally.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Prohibition of pursuing interests other than those of GPIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>We shall never use our occupations or positions for the interests of ourselves, relatives, or third parties.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Fairness of business transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.</td>
<td>We shall respect fair business practices at home and abroad, and treat all counterparties impartially.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Improving information disclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>We shall continue to improve our public information disclosure and public relations activities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Developing human resources and respect in the workplace</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>We are committed to the GPIF’s mission by improving our professional skills and expertise, promoting communication and teamwork and nurturing a diversity of talents and capabilities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Self-surveillance of illegal or inappropriate activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.</td>
<td>Whenever an illegal or inappropriate activity is (or is expected to be) perpetrated by Committee members, executives, staff, or other related personnel, such activity shall be immediately reported to the GPIF through various channels including our whistleblowing system.</td>
</tr>
</tbody>
</table>

Source: GPIF’s website
Figure 25: Proposed reforms of GPIF’s governance structure (transfer of decision-making authority from president to Management Committee)

- **New Council** built to deliberate Medium-Term Plan etc.

- **Conversion from Single Judge System to Panel System**

- **Separation of Decision-Making and Supervision from Execution**

- **Strengthening Audit and Supervision**

---

**Minister of Health, Labour and Welfare**
- Design of Public Pension Schemes
- Actuarial Valuation of Public Pension Schemes
  - Instruction of Medium-Term Objectives (inc. Target Return)
  - Approval of Medium-Term Plan (inc. Policy Asset Mix)
  - Performance Evaluation

**GPIF**
- **President**
  - Determination of Policy Asset Mix and other important policies
  - Execution
- **Auditor**
- **Investment Advisory Committee**
  - Experts in Finance, Economy and Relevant Fields
  - Deliberation and Approval of Policy Asset Mix and other important policies

**Management Board**
- Consist of President and Experts in Finance, Economy, Investment and Business Management (9)
- Attendance of CIO possible if necessary

**Determination of Policy Asset Mix and other important policies**

**Audit Committee**
- Appointed out of Management Board Members

**Executive Office**
- (President, CIO, etc.)
- Execution

**Source:** MHLW