

# MANAGING PUBLIC PENSION PLANS

Decisions, Challenges, and Reforms

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## Chapter 2

### A LOGIC MODEL FRAMEWORK FOR PUBLIC PENSION MANAGEMENT

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# 2

## A LOGIC MODEL FRAMEWORK FOR PUBLIC PENSION MANAGEMENT

### Introduction

Most state and local government employees in the United States are covered by government-sponsored pension plans. As of March 2021, 92% of all state and local government workers had access to a pension plan, with 86% having access to defined benefit (DB) plans, and 75% of those participating in DB plans (CRS, 2022). Not only do employees demand pension benefits, but employers also have incentives to provide pensions to recruit, retain, motivate, and even retire workers (Clark & Schieber, 2004; Koedel et al., 2013). Given that public-sector salaries are generally less competitive than those in the private sector, pension benefits have been identified as one of the critical factors to attract workers and retain public employees with the government (Goldhaber et al., 2017; Lewis & Stoycheva, 2016). Also, pension benefits have fiscal implications for state and local governments. Many public employee retirement systems are currently underfunded – the assets accumulated are not sufficient to meet the pension liabilities over time. To shore up pension funding, government and retirement plan officials often adopt pension reforms to reduce future liabilities and increase pension assets. Despite those efforts, the accrued unfunded liabilities of state DB plans were still around \$1 trillion at the end of fiscal year 2021 (Pew Charitable Trusts, 2023).

Even though the importance of public pensions and their funding issues is widely recognized, the systems within which key decisions are made are not well understood by many policymakers and stakeholders. The governance structure, along with the institutions, constraints, processes, and

professional standards, all influence the decisions that are made. These decisions ultimately determine the outcomes of pension systems. Without understanding how these components work together, developing successful reforms and making appropriate decisions that can best fit the needs of employees in the most cost-efficient way would be more difficult.

This chapter builds on current literature to develop a framework for public pension plan management. We use a logic model approach to identify the various **inputs** that influence the decision-makers, the relevant **decisions (outputs)** that are made by pension system trustees and by officials in the administering governments, and the resulting performance **outcomes (or the aligned goals)** for the system. This comprehensive approach will assist in scholarly efforts to build and test theories related to pension systems. In addition, it will benefit practitioners who are dealing with pension issues and seeking solutions to enhance system sustainability.

### Existing framework and our model

There is a robust literature on the management of public pension plans. The central theme in the literature is the funding level of the plans, that is, the appropriate funding level and how to ensure that plans can meet those funding targets. Prior research focused on funding-related topics because many pension plans have been seriously underfunded and the sponsoring governments have faced challenges in meeting their contribution requirements. Around this theme, previous studies use frameworks from different fields to explain the contributing factors to plans' funding performance. The frameworks in prior studies include political economy (Mitchell & Hsin, 1994; Norcross & Smith, 2021), institutional theory (Matkin et al., 2019; Stalebrink, 2017; Stalebrink & Donatella, 2021), and cutback management (Chen, 2018). These frameworks generally fall under two streams of literature according to the types of contributing factors they focus on.

The first stream of literature follows the political economy perspective and focuses on the role of the political system (law, politics, governments) in determining pension funding decisions. This approach views pension funding performance as an outcome of a political process in which the laws function as the constraints while government officials and elected politicians make decisions to maximize their interests within those constraints – a central tenet of Public Choice Theory (Schneider & Damanpour, 2002). Employee unions and the general public are the interest groups in this process, in which the former are more likely to advocate and negotiate for more generous pension benefits on behalf of their union members, and the latter are more likely to be against benefit increases as they ultimately have to foot the bill to fund the pension systems through their tax dollars.

The underfunding issue is found to be caused by laws that prevent benefit decreases and self-interest-maximizing public officials who do not have a long-term vision of the sustainability of pension plans and often delay or make inadequate pension contributions to the system under fiscal stress conditions. This is best summarized in [Norcross and Smith \(2021\)](#):

With constitutional or legislative guarantees for funding their public pension, public employees lobby for increased benefits even when they might understand that the state or local government will struggle to procure the resources to meet those promises in the future. With their legal protection, they can rely on their lobbying power vis-à-vis the general public to help ensure that any future funding gaps will fall on future taxpayers at the local or federal level and not result in reduced benefits for themselves. (p. 2)

Empirical studies follow this approach and use the funded ratio or the government's contribution rate as the outcome of public pension policies. Those studies find that pension benefits are highly protected by state laws and union contracts and that government management capacity, public employee union density, legislative professionalism, political ideology, and public opinions/attention significantly influence pension funding and performance ([Cogburn & Kearney, 2010](#); [Glaeser & Ponzetto, 2014](#); [Thom & Randazzo, 2015](#)). Besides funding, prior studies find that these political-economic factors also explain investment decisions and discount rates in pension plans ([Peng & Wang, 2017](#); [Stalebrink, 2014](#); [Stalebrink & Donatella, 2021](#)).

The second stream of literature mostly derives from the field of public financial management. In this stream, researchers pay special attention to the interaction between public pension funding and the finances of the governments that sponsor these plans. The difference between this approach and the political economy approach is the focus on financial management and fiscal rules within the government. This approach assumes that public pension decisions interact with other fiscal decisions made by the government, while the government contributions to pension plans compete with other spending needs for public services. Therefore, pension plan underfunding problems will lead to great fiscal issues for the government. This is best summarized in [Peng \(2008\)](#):

The management of public pension plans has a direct impact on the overall fiscal health of government finance. Increases in pension contribution reduce the amount available for other popular government services, such as education, healthcare, and public safety, and thus, has

the potential to contribute to or exacerbate fiscal pressure on state and local governments... Therefore, understanding how pension contribution is determined and what factors will cause it to decrease or increase over time is critical to understanding the linkage between public pension plans and the rest of government finance. (p. 5)

Research in the field of public budgeting and financial management has found empirical evidence that pension underfunding, just like issuing debt, is one way to create a “fiscal illusion” so that the government can reduce the cost of public services, postpone the cost to the future, and gain public support for its current budget (Hoang & Maher, 2022; Peng, 2004). Studies also demonstrate that when facing fiscal stress, governments have a tendency to cut pension benefits, adjust their actuarial assumptions, and reduce employers’ contributions to pension plans (Chen, 2018; Eaton & Nofsinger, 2004). Fiscal constraints and the dynamic of revenue sources can also impact pension plan management practices; more stringent withdrawal rules from budget stabilization funds, or stricter balanced budget requirements and debt limits, or city fiscal autonomy and reliance on property taxes are found to be negatively associated with pension contributions and funding ratios (Gorina, 2018; St. Clair, 2013; Wang, 2017).

In this book, we aim to connect these two streams of literature and use a logic model approach (the inputs, outputs, and goals/outcomes) to explain decision making in public pension plans (see Table 2.1). The retirement system, which is divided into the categories of pension system and administering government, is the focus of this logic model framework. The retirement system has several goals and outcomes to pursue. Those goals include the sufficiency of pension benefits, the affordability of pension costs, the sustainability of pension funding, the efficiency of asset management, and the good governance of pension plans. Several key decisions are made by different decision-makers within the retirement systems, including benefits, contributions, investments, and actuarial assumptions. These decisions are influenced by the political and economic environments, as well as the stakeholder motivations, and are constrained by laws and other rules under which the pension plans operate.

The use of the logic model framework to explain the management of public pension plans overcomes several shortcomings in previous discussions. First, using the logic model, our study aims to provide a broader consideration of pension funding goals and decisions. In prior studies, the outcome of pension plan management has been too narrowly defined to only focus on the funding level (see a review in Davidyan, 2021), which leads to a series of studies looking into the determinants of the pension funding ratio, while ignoring the fact that the pension funding level might

**TABLE 2.1** The Logic Model

	<i>Inputs</i>			<i>Outputs</i>	<i>Outcomes (goals)</i>
	<b>Environment</b>	<b>Stakeholders</b>	<b>Constraints</b>	<b>Decisions</b>	<b>Performance</b>
Pension system	Capital markets	Administrators	Regulations and laws	Investments	Sufficiency
	Fiscal health of system	pension	related to investments	Actuarial practices	Affordability
	Political embeddedness	Trustees	and actuarial practices		
Administering government	Fiscal health of government	Participating employers	State laws on benefit protection	Benefits	Sustainability
	Credit ratings	Elected officials	Court rules on benefits	Contributions	Efficiency
	Political ideology	Unions/employees	Union contracts		Good governance
	Electoral politics	Retirees taxpayers			

be an interactive consequence of various stakeholders and their management or fiscal decisions. For employees or union representatives, the level of pension benefits is an even more visible or implicit criterion for them to consider in labor contracts or negotiations. For governments who are under tight fiscal austerity or fiscal stress, the fluctuation of pension contributions might attract more of their attention since those contributions directly compete with other government spending obligations. Also, the increase or decrease of the pension funding ratio is highly correlated with the ups and downs of financial markets (or external factors) and might not always precisely reflect the management and funding decisions of the plan sponsors. For instance, a decrease in pension funding level in the second quarter of 2020 and an increase in pension funding at the end of 2021 were largely affected by the fluctuation of the capital markets and do not indicate poor or good management decisions. In this case, failing to consider pension investment decisions, such as investment portfolio or asset allocations, might lead to misunderstanding the causes of pension underfunding.

Second, by presenting a comprehensive consideration of the goals of pension systems and their stakeholders, our framework illustrates the complex trade-offs or balancing act, along with varying power dynamics, in the pension decision-making process. On the one hand, public pension systems exist to meet government needs to provide employment benefits to recruit and retain employees. A competitive pension package can help governments attract a skilled workforce and keep them in the public sector. On the other hand, governments need to consider the cost of funding pension systems, in relation to other funding needs. In addition, pension stakeholders (pension beneficiaries, active employees, public-sector unions, pension administrators, elected officials, the general public, etc.) have different opinions toward public pensions, and through direct or indirect mechanisms, they want to influence pension decisions to serve their interests.

Furthermore, the constraints and resources have been studied in prior studies as contributing factors. However, the relationships between those factors and the funding performance have been in large part considered a “black box.” That is, we know that these are contributing factors, but do not clearly understand at which point, to which stakeholders, and in what decision(s) the factors are effective. Our framework enables us to overcome these shortcomings of previous studies while providing a more comprehensive understanding of pension outcomes, different pension stakeholders and their interests, the interaction of complex pension management and funding decisions, and a broader consideration of the pension’s internal and external environment.

The following section provides an overview of the major factors of the pension logic model framework. More detailed discussions of pension

goals, inputs, and decisions (benefits, contributions, investments, and actuarial practices) are presented in the following chapters.

## **Goals and outcomes**

In this section, we focus on describing the five main goals of pension systems. These include sufficiency, affordability, sustainability, efficiency, and good governance as the goals of decision making in public pension systems. The priorities among these goals may vary over time and across plans.

### ***Sufficiency of pension benefits***

Sufficiency is the goal to provide enough retirement benefits to public employees. For employees, retirees, and their union representatives who are involved with pension plan decision making, improving or maintaining the sufficiency of pension benefits is their primary goal. Political officials, depending on their ideological position, might also have an agenda to maintain a certain level of pension benefit sufficiency.

Sufficiency of pension benefits can be measured in various ways through the examination of normal cost, the replacement rate, or the lifetime take-home income. The normal cost, which is the cost to cover benefits accrued in a single year, and the cost-of-living adjustments (COLAs), are used to measure the level of pension benefits (Munnell, 2012). Two other related concepts are replacement rate and lifetime take-home income. The replacement rate is the ratio of postretirement income to preretirement income. A higher replacement rate means that pension income is able to replace a greater portion of a person's annual income before he or she retires and thus helps to maintain their quality of life. Lifetime take-home income is concerned with the long-term net income for a particular member who participates in a pension plan. Most public plans require plan members to make contributions when they are working. Lifetime take-home income considers both the contributions a member has made when they are working and the total benefits they receive after they retire, discounted to a present value.

### ***Affordability of pension costs***

Affordability of pension cost is about keeping the annual employer contribution amount at a reasonable level, especially when compared to the government's budget. Pension plans require government employers to make annual contributions that are calculated by plan actuaries, called actuarially determined contributions (ADC).<sup>1</sup> Most governments are required to fully

pay ADC, but some experience legislative constraints on the amount of ADC paid (especially in the case of increases). Some governments are able to smooth the payments from ADC over a number of years, but postponing ADC will likely reduce the funding level and lead to higher contributions in future years. The affordability of employers' costs is measured by the ADC rate (often scaled by payrolls or in some cases by general fund revenues). The higher the ratio, the more expensive it is to fund pension systems.

Since government officials have to balance their budgets while meeting other spending needs, they are mostly concerned about the affordability of pension costs. Citizens are also concerned about the pension cost because it can crowd out other public services or require extra tax dollars. Regulators from governments or elsewhere are concerned about the possibility that pension costs may lead to fiscal stress. When assessing a government's credit rating, rating agencies (such as Standard & Poor's) pay attention to the ADC, especially when the increases in ADC outpace the financial capacity to pay for those obligations.

### ***Sustainability of pension funding***

Sustainability of pension plan funding is about keeping sufficient assets to cover the plan's liabilities. Pension liabilities come from the future benefits that are promised to employees. Pension assets come from contributions from governments and members as well as investment returns. The ratio of assets to liabilities, called the funded ratio, is the measurement of sustainability of pension plan funding.

Sustainability of pension funding matters for all stakeholders of pension plans, although sustainability is more of a long-term goal than a short-term concern. When the pension funding ratio decreases, a plan will have sustainability concerns but will not experience immediate consequences as long as pension contributions and benefits are kept at the previous levels. However, when the funded ratio drops to a critical level, the sustainability issue becomes a red flag to credit rating agencies or regulators, and plans may have to adopt changes such as increasing contributions or cutting benefits. Therefore, pension board members, pension fund managers, government officials, elected politicians, and unions all share the long-term goal of maintaining the sustainability of pension funding, while their short-term goals might differ.

### ***Efficiency of asset management***

Efficiency of asset management is about getting the most net investment returns from the pension assets invested in the capital markets. Investment

returns are the largest source of income for most public pension plans. When investments are managed efficiently, returns can bring in extra income, so that pension costs can be lower and pension benefits can be higher. The efficiency of asset management is a common goal shared by most stakeholders of pension plans.

To improve asset management efficiency, pension plans establish investment policies that specify the asset classes they want to invest in and the risk tolerance level. Pension boards also hire and supervise fund managers to implement the investment policies and monitor the day-to-day operations of pension funds. Investment management is one of the most important tasks for pension boards. They review investment performance and approve major changes in investments. State laws might also set rules for pension investments, such as prohibiting investments in certain regions for geopolitical reasons or encouraging investment in certain areas for socioeconomic considerations.

### ***Good governance of pension plans***

Public pension plans can benefit from good governance practices. Different stakeholders might place emphasis on different aspects of good governance. For instance, pension trustees hold the fiduciary responsibilities to represent members of the plan and make decisions in the interest of the beneficiaries. Most plans have the so-called “prudent person rule” which requires that trustees must make decisions “with the reasonable care and skill” (OECD, 2010). Pension plans also follow sets of regulations and professional standards put forward by professional organizations such as the Governmental Accounting Standards Board (GASB) and the Society of Actuaries (SOA). Frequently mentioned good practices include transparency (timely and accurate reporting of plan financial position), stability of policies, equity, oversight, due process to avoid conflict of interest, and also to ensure the prudent principles in managing pension assets (control risks and avoid risky investment for the purposes of chasing returns).

### **Inputs**

Three primary types of input factors for the management of public pension plans may influence pension decisions: the environment, stakeholders, and constraints. Several components are included in each of these three categories. These factors also may differ for the two different groups of decision-makers: pension board trustees and administering government officials.

### Environment

Three major factors influence the decisions of *pension trustees*. First, *capital markets* are critical. Most pension systems heavily invest their assets in the capital markets, and therefore, market performance is an important component of the system's environment. Investment performance is greater when markets are strong, while declining markets may lead to investment concerns for pension systems (Brown et al., 2011; Cogburn & Kearney, 2010). During the Great Recession, many pension systems lost a significant portion of their pension assets. Market declines often result in decisions to make changes to investments and/or actuarial practices. Under the pressure of growing unfunded pension liabilities and a low market return environment, some pension systems have taken action to reduce pension benefits and/or increase pension contributions (Brainard & Brown, 2018; St. Clair & Martinez Guzman, 2018; Thom, 2017).

Second, the *overall fiscal health of the pension system* is a major consideration for pension boards of trustees. If the system is not sustainable (i.e., continual decreases in pension funding ratios), there is pressure on decision-makers to make changes. In many cases, the poor-performing capital markets go hand-in-hand with the drop in funded ratios (e.g., many pension systems experienced significant negative returns and low funded ratios during the 2007–2009 economic recession). This situation creates urgency for pension boards to initiate actions to restore pension funding sustainability.

In addition to economic, social, and institutional factors, the *political embeddedness* perspective is an important element that can influence the pension board of trustees' decisions and actions. A strong alignment between the pension board and the government can increase the flow of information and cooperation, which can help foster smoother adoption and implementation of certain pension decisions (i.e., policies or reforms) (Moe 1985; Wang & Peng, 2018). However, these close relationships between pension governance and governments can raise concerns that pension decisions are made based on political interests, instead of the best interests of pension plan participants (Andonov et al., 2018; Anzia & Moe, 2017; Brown et al., 2015; Dobra & Lubich, 2013; Eaton & Nofsinger, 2004; Stalebrink & Donatella, 2021).

Four major factors affect the decisions of the *administering government*. First, the *fiscal health of the government* is also an important factor for pension benefits and contributions (Giertz & Papke, 2007; Gorina, 2018; Peng, 2004). Governments with a more stable financial condition (i.e., having more reserve funds or operating balances) are less likely to initiate pension benefit cuts, while governments experiencing high volatility

in pension contribution payments are more likely to make changes (i.e., benefit cuts or contribution increases) to pension systems (Hoang, 2022; St. Clair & Martinez Guzman, 2018).

Second, the *credit rating* of the governments is another important factor for administering governments. Since credit rating agencies consider pension unfunded liabilities as part of governments' overall financial obligations, higher levels of unfunded liabilities might trigger a negative credit outlook or even potential downgrades. A credit rating downgrade may lead governments to reduce pension benefits or increase contributions to the system to strengthen the system's financial sustainability (Hoang, 2023; Martell et al., 2013).

Third, *political ideology* and overall perceptions of government operations also impact pension decisions. Conservatives who prefer small government are more likely to adopt actions to scale down pension benefits and overall government spending, while liberals, who are more in favor of adequate labor benefits, may be more likely to support generous pension benefits for public employees (Anzia & Moe, 2017; Thom, 2013).

Finally, *electoral politics* sometimes play a role in pension-related decisions. Some governments or groups of public employees with more political resources can exert influence on public officials to adopt certain pension reforms to support their election agenda (Frandsen, 2016; Hoang & Goodman, 2018; Schneider, 2005).

### **Stakeholders**

Multiple stakeholders also influence public pension decisions. Internally, pension systems rely on *administrators* to monitor investments and finances, pay benefits appropriately, prepare reports, etc. Administrators may have differing perspectives than trustees. The roles of pension administrators and their influence on pension decisions can vary depending on the structure of the pension system (i.e., single versus multiple employer systems). *Trustees* are the decision-makers for the pension system. Trustees may represent different constituencies, such as retirees, employers, and current employees/unions. These groups may have different agendas which may lead to disagreement among trustees. Externally, the primary external stakeholders for the pension system are the various *advisors* hired to assist the trustees. For instance, investment managers and other investment consultants are hired to advise pension trustees on asset selection and allocation, as well as broader investment strategies. Actuaries conduct and make recommendations related to actuarial policies.

The administering government also needs to consider various stakeholders in their decisions. The various *employer governments* and their *elected*

*officials* may have different preferences on pension contributions, benefit levels, or other pension policies (Albrecht & Hingorani, 2004; Mitchell & Yang, 2005; Useem & Mitchell, 2000). *Public unions*, who represent the interests of public employees, different groups of *public employees* (e.g., civilian employees, public safety, teachers), or *retirees* who receive benefits from the pension systems, might have different concerns related to investment risks, pension benefits, contribution levels, or other decisions related to earlier retirement or postretirement employment options (Kelley, 2014; Pennacchi & Rastad, 2011). Finally, *taxpayers* may have a very different perspective from the covered employees and retirees. Most private-sector employees are not covered by DB plans, so taxpayers and voters may resent having their tax dollars used to provide high retirement benefits that they themselves will not receive.

### Constraints

Pension boards and administering government officials do not have complete autonomy. They are constrained by laws, regulations and standards, court decisions, and contracts. Pension systems should follow *actuarial and financial reporting practices*. For example, accounting standards are determined by the GASB. These policies may change over time, which can affect pension decisions and outcomes; for example, GASB Statements No. 67 and 68 affected the reporting and measurement of pension data in financial statements. Systems also need to consider applicable *state and local laws* related to investments and asset allocations. Some states have restrictions on how public funds (including public pensions) invest their money.

Administering governments are also constrained in various ways. *State statutes or constitutions* can hinder governments' ability to make changes to pension benefits and contributions (Brown, 2014; Munnell & Quinby, 2012; Thom, 2017). Union contracts generally cannot be changed without negotiation and bilateral agreement. In addition, *courts* may weigh in to restrict actions of governments related to pension benefits and contributions.

### Outputs and decisions

There are four categories of pension decisions as outputs of decision making in pension plan management. Decisions related to investments and actuarial practices are generally made by pension trustees and professionals they hire, while pension benefits and employee/employer contributions are usually determined by the administering government (often in negotiation with unions). Each of these four areas will be considered in turn.

### **Investments**

Pension board trustees have fiduciary duties to prudently manage the pension fund (NASRA, 2023). One of their most important decisions involves deciding on asset allocation and investment strategy. A sound investment strategy and asset allocation decisions are critical to ensure adequate revenues for the pension fund and release the governments from the pressure of increasing pension contributions. The pension board's decisions related to investments often involve balancing the trade-off between risks and returns through the process of asset allocation or portfolio selection more broadly (Blake et al., 1999; Coronado et al., 2003; Hoang & Nguyen, 2023).

### **Actuarial practices**

Pension boards also review and make decisions on pension actuarial practices based on actuaries' recommendations and in compliance with GASB requirements and other professional standards. The board's review of actuarial assumptions, including the discount rate, is important to determine the funding level of the plan and the pension contribution rates. The *discount rate*, arguably the most important and debated actuarial practice, is used to calculate or discount the future pension benefits to the present value. The higher the discount rate, the lower the liabilities and the higher the funded ratio, and vice versa. Many pension boards have lowered the discount rate in recent years. This has been due to factors such as low investment returns as well as the implementation of GASB Statements No. 67/68 with the requirement of lower blended discount rates. Pension boards also make decisions about actuarial cost methods, the amortization period, and smoothing. Several optional *actuarial cost methods* are available that have varying effects on the calculation of normal costs over time.

*Economic assumptions* are also made to evaluate pension fund liabilities. The three main economic assumptions are salary growth rate, inflation rate, and investment return assumption. *Demographic assumptions* include retirement rates, disability rates, and mortality rates. These assumptions can be determined using actuarial professional standards and the SOA mortality table and studies. Experience studies are usually conducted every few years to determine the pension plan's actual demographic trends and can be used to adjust the assumptions. These assumptions are important for the calculation of future benefits and liabilities.

### **Benefits**

Pension benefits are contractual agreements between governments and their employees, and these benefits are protected by laws or in some cases

by the state constitution. The defined pension benefit is typically calculated based on three factors: (a) the number of years of service of the employee, (b) the final average salary of the employee, and (c) a benefit multiplier. Changes in any of these factors can affect the benefit levels. In some governments, contracts that determine compensation and pension benefits are negotiated with employee unions. Decisions related to pension benefits include the requirements for normal (full) retirement eligibility (retirement age, years of service, and vesting period), the level of benefit generosity (benefit multiplier, calculation of pensionable salaries, COLA, and period used to calculate final average salary) as well as any earlier retirement benefits.

One unique aspect of public pension benefits is whether the governments opt-in to the Social Security system for their employees. Federal law allows state and local governments to exclude employees from Social Security coverage if the employees are provided with a sufficiently generous pension. This is important because it can impact the generosity of pension benefits as state and local governments outside the Social Security System tend to provide larger pension benefits to compensate employees for the lack of Social Security benefits (Kelley, 2014). Concerns have been raised, though, that given the recent waves of benefit reduction and longer vesting periods, the pension benefits in those governments that do not offer Social Security benefits fall short of Social Security equivalence for noncovered workers (Aubry et al., 2022).

In addition, in many states, pension benefits for public employees are protected by state statutes and under the Contract Clause or state constitutions, such as in the state of Illinois (Munnell & Quinby, 2012; Thom, 2017). These legal standards limit the power of state and local governments to reduce pension benefits. Furthermore, increases in union collective bargaining power can lead to pension benefit growth (Anzia & Moe, 2019; Frandsen & Webb, 2019; Kearney, 2003; Zax & Ichniowski, 1988). Powerful groups such as municipal police unions or teacher unions can capitalize on their political power to influence negotiations in favor of more generous benefit packages.

### **Contributions**

To fund annual normal cost and reduce the unfunded liabilities, sponsor governments should pay the annual ADC. The financial discipline of paying full ADC is important to maintain a sustainable pension funding level. However, scholars have also observed that some governments have used pension contributions as a countercyclical budgetary tool as they delay or reduce pension contributions below required levels when faced

with budget deficits (Bifulco et al., 2012; Giertz & Papke, 2007; Hoang & Maher, 2022; Peng, 2004; Thom & Randazzo, 2015). Failure to meet those pension contribution obligations can lead to severe consequences of raising unfunded pension liabilities and threatening the financial health of both the pension fund and the government.

It is noteworthy that ADC is the required contribution recommended by the actuaries. While the majority of state policies authorize fully funded ADC, some states impose limits on annual increases of the employer contribution rate or only allow payment of a fixed percentage of compensation specified in statutes, which is often lower than the amount recommended by actuaries (Brainard & Brown, 2018; Munnell et al., 2008). In some cases, municipal codes require a substantially equal contribution between employers and employees, which implies that governments cannot unilaterally increase their pension contributions to meet ADC requirements in the case of a pension shortfall, even if they have financial resources to do so.

Recent pension reforms aim to increase employer and employee contributions to raise pension funding levels. In many cases, raising employee contributions requires labor contract negotiation and/or legislative approval. Additionally, some pension plans implement cost-sharing policies that provide a longer term approach to pension contribution issues and give plans more flexibility in making adjustments to the employee contribution rate or post-employment benefits based on the rate of investment return or funding level. These approaches can include splitting some or all of the total annual costs between the employer and the employees or adjusting the employee contribution in response to investment returns (Pew Charitable Trusts, 2017).

## Summary

Public pension management decisions are critical for the fiscal health of these systems and the sponsoring governments. Several types of decisions are made by pension trustees and by officials of the administering governments. Our model outlines those decisions, and we also explain the major inputs that influence them. Decision-makers have to consider environmental factors, agendas of various stakeholders, and the constraints that limit their authority. The decisions that they make then affect the outcomes. Also, pension systems have various goals that they have to balance. Using the framework, we identified several important ways in which the goals of pension systems are measured.

The existing literature is generally focused on narrow aspects of public pension management, such as funding level, investment decisions or reform efforts. Our framework contributes to the literature by developing

a holistic systems model that takes into consideration current issues and is centered around key pension decisions. In addition, we distinguish between decisions made by pension system trustees and those made by the administering government; these decision-makers may also be influenced by different environments, stakeholders, and constraints. This logic model will be helpful for scholars to conduct empirical tests of the relationships between the various components to build normative and positive theories.

This model can also be useful for government officials and public pension stakeholders. Many plans are dealing with underfunding issues and seeking ways to decrease pension liabilities and increase assets. Our framework provides an overview of the various levers that influence decisions, and how decisions then can affect the outcomes. Decision-makers can use this understanding to devise reforms that may be successfully implemented to improve the fiscal health of public pension systems. More discussions on the goals, environments, stakeholders, constraints, and decisions are presented in the following chapters.

## Note

- 1 The actuarially determined contribution (ADC) was formally referred to as ARC (annual or actuarially required contribution) prior to 2014. Some scholars and reports used the terms actuarially determined employer contribution (ADEC) to refer to the ADC.

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