

When Bubbles Pop:
Pension Financing and the Time-Inconsistency Problem

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Abstract

In this paper, I argue that growing political demand for pension reform is driven neither by the generosity of benefits nor the adequacy of funding levels but rather by the *timing* of pension contributions. State and local governments are currently locked into a feast-and-famine cycle that yokes the size of pension contributions to broader macroeconomic conditions. This creates two serious time-inconsistency problems for elected officials. During periods of strong economic growth, unusually robust investment returns make public pension plans look over-funded. This allows public employees to successfully lobby plan sponsors for unaffordable benefit increases and gives elected officials an opportunity to reduce contributions and shift the savings to pay for new, permanent spending. During economic recessions, by contrast, sharp investment losses require state and local governments to increase their pension contributions at precisely the moment governments can least afford them, eroding public support and creating the perfect political context for conservative reformers who desire to roll back benefits. In my account, the timing of pension contributions creates “policy windows” that are successfully exploited by both employee interest groups and conservative reformers. Drawing on these historical lessons, I argue that new rules adopted by the Government Standards Accounting Board in 2012 ignore the political realities constraining pension financing and will, over time, only exacerbate the solvency challenges faced by public pension funds.

Keywords: public pensions, pension reform, political economy, public employees

1 Introduction

Over the past half a decade, scholars, policy analysts, and political entrepreneurs have focused increasing energy on scrutinizing the management of public pension plans and understanding the long-term impact of pension liabilities on government budgets. Their efforts have shaped a growing consensus that deferred compensation owed to public-sector workers poses a serious problem for state and local governments and that, in the absence of dramatic reform, pension burdens will eventually require public agencies to increase taxes or substantially reduce service levels as pension payments begin to squeeze out other spending priorities. Credible estimates suggest that unfunded liabilities in public pension plans are in the trillions of dollars (Munnell, Aubry, and Quinby 2011; Novy-Marx and Rauh 2009) and proposals for pension reform have come to play a growing role in political debates in many communities. In recent years, government agencies in nearly every state have undertaken aggressive efforts to reduce their pension liabilities by cutting benefits for new hires, increasing contributions from current workers, replacing traditional pensions with 401(k)-style defined-contribution plans, or restructuring liabilities through the bankruptcy process.

There is, however, an important disconnect in the political and policy discourse. For the most part, scholars and the policy community have focused on the *level* of pension liabilities, and the degree to which public agencies have set aside sufficient assets to cover future bills. For example, recent work in this literature analyzes the adequacy of actuarial assumptions used in pension accounting and the discount rates used to calculate the present value of future liabilities (e.g. Brown and Wilcox 2009; Novy-Marx and Rauh 2009; Novy-Marx and Rauh 2011). By contrast, elected officials and political reformers have been most concerned about the *flow* of public dollars into pension plans — i.e., the size of the annual contributions owed by government sponsors. While the two issues are clearly related, they are also distinct and this article focuses on the latter in an effort to unpack the political economy of public pension financing and understand the likely political implications of new pension accounting rules adopted in 2012.

My thesis is that the growing political demand for pension reform is driven neither by the generosity of benefits nor the adequacy of funding levels but rather by the *timing* of pension contributions. The current approach for financing pensions, which relies on investment returns to a much greater extent than employee and employer contributions, locks state and local governments into a feast-and-famine cycle that yokes the size of pension contributions to broader macroeconomic conditions. This creates two serious time-inconsistency problems (Williamson 1985) for elected officials. During periods of strong economic growth, unusually robust investment earnings make public pension plans look over-funded. This allows public employees to successfully lobby plan sponsors for unaffordable benefit increases. Strong earnings also create opportunities for elected officials to reduce contributions and shift the savings to pay for new, permanent spending. During economic recessions, by contrast, sharp investment losses require state and local governments to increase their pension contributions. Larger contributions come at precisely the moment governments can least afford them (Giertz and Papke 2007), eroding public support and creating the perfect political context for conservative reformers who desire to roll back benefits. In my account, the timing of pension contributions creates “policy windows” (Kingdon 1995) that are successfully exploited by both employee interest groups and conservative reformers.

I begin with a brief overview of public pensions and discuss of how they are funded. In the following section, I document long-run patterns in the financing of public pensions. Drawing on more than 45 years worth of data, I show that public employee pension costs have grown more than 55 percent over the last decade, rising from 6.6 percent of state and local government payrolls in 2001 to more than 10.2 percent in 2010. However, I also show that current contribution levels are only slightly higher than the the long-term average of approximately 9 percent of payroll. I argue that the sharp recent rise in pension contributions, as well as the equally sharp declines during the 1980s and 1990s, can be explained by changing pension fund portfolio allocation patterns and a growing reliance on riskier investments. In the next section, I describe how actuarial standards adopted in the late 1980s and early 1990s with the

intent of improving the management of public pensions also created perverse incentives that have encouraged public pensions to taken on greater investment risk. Weakening statutory and constitutional provisions governing public pension funds in the American states made it easier for fund administrators to respond to these incentives. In the final two sections, I analyze the politics of pension funding, and describe how changes in the timing of pension contributions have made managing public pension funds in a sustainable way increasingly difficult for public officials who must respond to political and electoral pressures. Drawing on the lessons, I conclude by showing how new rules adopted recently by the Government Standards Accounting Board ignore the political realities that constrain pension financing and will, over time, only exacerbate the solvency challenges faced by public pension funds.

2 Financing Public Pensions

Pensions for public employees have a long and venerable history in American government, especially at the state and local level. New York City created the first publicly funded plan in 1857 to pay out benefits for police officers injured in the line of duty (House Committee on Education and Labor 1978). Most active pension plans today were set up between the 1930s and the 1950s. When viewed through a historical lens, current concerns about the solvency of public pensions — and by extension plan sponsors — are surprising, because pensions plans today are generally under much better and more professional management than had been the case for much of the 20th century.

Prior to the 1920s, pension plans were set up without providing any accounting for projected costs or the use of sensible actuarial models to ensure that plan sponsors actually set aside sufficient funds to pay for the promised benefits. Indeed, most funds during this early period were funded on a pay-as-you-go basis. Actuarial accounting first gained widespread adoption during the 1920s, and modern pension plans, which tie benefits at retirement to salaries earned near the end of one's career, became common after World War II (Tilove

1976).

Congressional passage of the Employee Retirement Income Security Act (ERISA) in 1974, which greatly increased federal oversight of private-sector plans and set up the Pension Benefit Guarantee Corporation, also led to growing interest among federal policymakers in the management of public plans. In 1978, the House Committee on Education and Labor released the authoritative *Pension Task Force Report on Public Employee Retirement Systems*, documenting a variety of problems in state and local pension funds and noting the lack of consistent and clear accounting standards. “A realistic assessment of true pension costs is unknown for the vast majority of the public employees retirement systems at all levels of government,” the task force noted. “Nearly a quarter of all public plans operate in total actuarial darkness while many other plans, some funded on an actuarial basis, exhibit varying degrees of actuarial cost blindness” (House Committee on Education and Labor 1978, p.158). Overall, the task force concluded:

In the vast majority of public employee retirement systems, plan participants, plan sponsors, and the general public are kept in the dark with regard to a realistic assessment of true pension costs. The high degree of pension cost blindness which pervades the [retirement systems] is due to the lack of actuarial valuations, the use of unrealistic actuarial assumptions, and the general absence of actuarial standards (p. 4).

When the Financial Accounting Foundation established the Government Accounting Standards Board in 1984, for the purpose of developing independent accounting best-practices for state and local governments, the adoption of actuarial rules for public plans appeared at the top of the board’s priority. In the late 1980s and early 1990s, GASB promulgated a series of standards designed to improve pension accounting, make information about pension liabilities and assets more transparent, and allow for better comparison across plans. Although GASB standards are voluntary, they are used by most public agencies either as a result of statutory requirements or pressure from the public bond markets, which threaten to

impose higher borrowing costs on agencies that depart from generally accepted accounting practices.

Although the precise details vary across jurisdictions, there are a number of similarities across most defined-benefit plans in the public sector. Employees who retire after fulfilling some minimum years of service and/or reach the minimum retirement age receive a pension benefit in the form of an annuity. The benefit level is calculated through a formula that usually takes into account total years of service and final salary at retirement or the average salary at the end of one's career. The years of service and the final salary are multiplied by a third parameter (e.g. 2.5 percent, sometimes called the pension "multiplier") in the final step of the calculation to arrive at the benefit level.

Because pensions represent deferred compensation for work performed at the present time, the GASB accounting standards are designed to ensure that pension costs are recognized when the benefit is earned, rather than when the payments are actually made. Often, the gap between the two periods of time adds up to years or even decades. Accounting rules thus discourage elected officials, who may have short time horizons, from trying to push the cost of today's public services onto tomorrow's taxpayers. If a pension system works as intended, money should be set aside during workers' careers to ensure that pension fund has enough assets on hand to pay the promised benefits once they retire. Plans accumulate assets through regular contributions made by workers and their employers and invest these contributions to maximize the return on investment.

It is important emphasize the degree to which pension funds rely on investment earnings, and the connection between the realized rate of return on investment and the pension costs that fall on plan sponsors and thus, by extension, the taxpayers. Employees usually contribute toward their pensions on a fixed, long-term schedule that is negotiated through the collective bargaining process or set through the contract between the worker and the government agency. The actual cost borne by the employer (taxpayers) on the other hand varies year to year. Pension actuaries use projections about parameters like salary growth

and life expectancy to estimate the amount that will eventually be paid out to employees for benefits earned to date. These future liabilities are then discounted to calculate their present value, and this number is compared to the assets currently on hand. Any gap between the assets and the present value of the liabilities is called the “unfunded actuarial liability.” Unfunded actuarial liabilities are usually amortized over a period of three to four decades. Each year, employers receive a bill for the annual required contribution (ARC), which includes the amount necessary to cover the present value of the benefits accrued during the year and, if necessary, an annual payment toward eliminating the unfunded liability. Unless required by state or local law, employers need not contribute the full ARC, although they must report both the total ARC and the actual contribution made in annual financial statements.

When investments produce strong returns, the ratio of plan assets to liabilities increases, producing a smaller ARC. By contrast, when returns fall short of expectations, the gap between assets and liabilities grows, and the required employer contribution increases as a result. Thus, taxpayers bear the investment risk, because they must contribute more when investments perform poorly. However, they also internalize the gains when returns exceed expectations in the form of a smaller contribution. Put simply, the ARC is a moving target that grows and shrinks with the ebb and flow of investment performance.

3 Long-Term Trends in Pension Funding

Efforts to cut public pension costs have represented one of the most active areas of policymaking over the last five years. Since 2009, government agencies in 45 states have taken steps to reduce pension benefits for a wide range of government workers, including teachers, police officers, and fire fighters (Corkery 2012b). Press accounts usually stress “soaring” pension costs as the key factor motivating many of these policies (e.g., Corkery 2012a). In this section, I consider the extent to which public pension costs have indeed grown in recent years and place these increases within broader historical context.

Much of the analysis in this section relies on two public data sources. The first is an annual survey of state and local government retirement systems, *Employee-Retirement Systems of State and Local Governments*, published by the U.S. Census Bureau. The publication includes a detailed breakdown of pension plan finances, including information about the contributions made during the previous year and a snapshot of plan assets and investment performance. The second is an annual survey of government agency budgets, *State and Local Government Finances*, which includes information about the level of payroll spending at state and local agencies. By combining the two sources, I calculate the size of annual pension contributions as a percent of state and local government payrolls, the standard measure of pension costs or funding “burdens.” Most actuarial models aim to ensure that ARC payments stay a relatively flat percentage of annual government payroll expenditures.¹

My approach has both benefits and drawbacks. The single most important disadvantage is that I focus on aggregate pension spending, looking only at the combined pension contributions of all state and local agencies. This ignores substantial heterogeneity across plans (see Munnell, Aubry, and Quinby 2010). The advantage, however, is that I can examine broad patterns that affect all or most public pension plans in the U.S., guaranteeing that the trends documented in the paper are not driven by idiosyncratic circumstances or unusual cases.

With this important caveat in mind, Figure 1 plots the annual pension contributions made by state and local government agencies for the period between 1964 and 2010. The data confirm that public pension costs have grown dramatically over the last decade, from 6.6 percent of state and local government payroll in 2001 to nearly 10.3 percent in 2010. However, as the figure makes clear, this rapid increase tells only part of the story. One reason pension costs appear to have grown so quickly during this period is because they had reached their lowest point in decades at the turn of the millennium. Indeed, pension contributions decreased by more than 43 percent between 1985 and 2001. The recent growth,

¹Note that this means the actual ARC *amount* rises proportionately with growing payroll costs as wages or employment levels grow.

in other words, started from an unusually low baseline. Compared to the full 46-year period, pension costs in 2010 were only modestly above the long-run average of 9 percent of payroll. The central lesson from Figure 1 is that any policy narrative seeking to explain the recent run up in public pension costs must also account for the equally sharp decline witnessed during the late 1980s and throughout the 1990s.

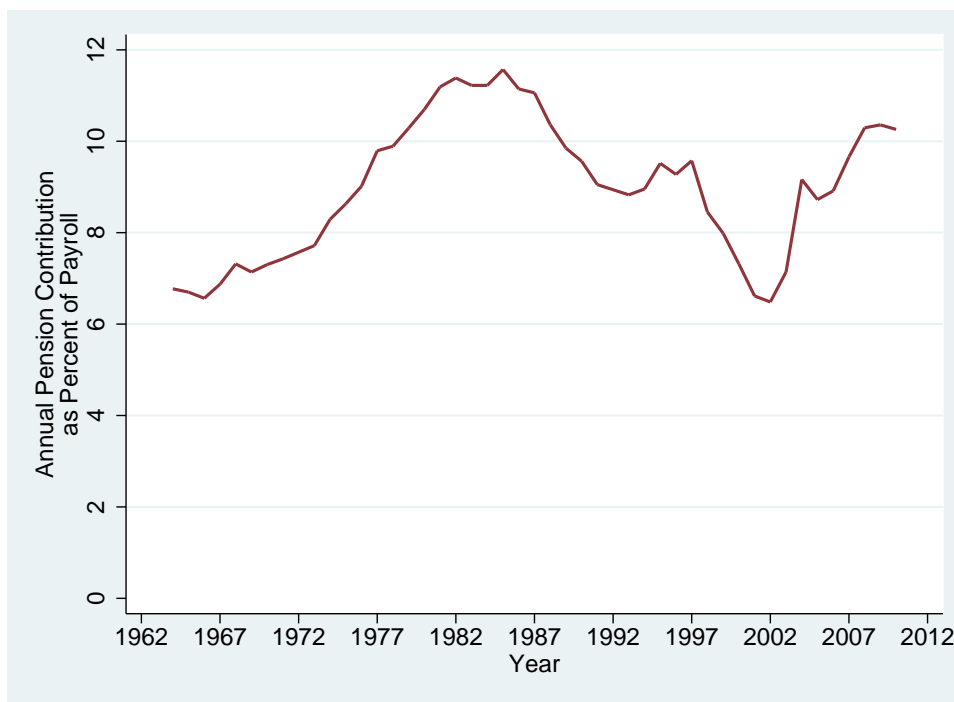


Figure 1: State and local government pension contributions as a percent of payroll.

Another striking pattern is the increase in pension costs that occurred between the late 1960s and early 1980s. According to Munnell, Aubry, and Quinby (2010), pension costs grew during the 1970s because state and local governments “got religion” about the importance of adequately funding their pension plans. It is thus tempting to interpret the decline that occurred in the late 1980s and 1990s as a return to previous, irresponsible ways by a new generation of impious elected officials and pension plan administrators. The data, however, suggest that this interpretation would not be correct.

Figure 2 tracks the total amount of new assets added into state and local pension plans.²

²Figure 2 tracks only new additions and does not account for assets withdrawn to pay beneficiaries or cover other plan costs.

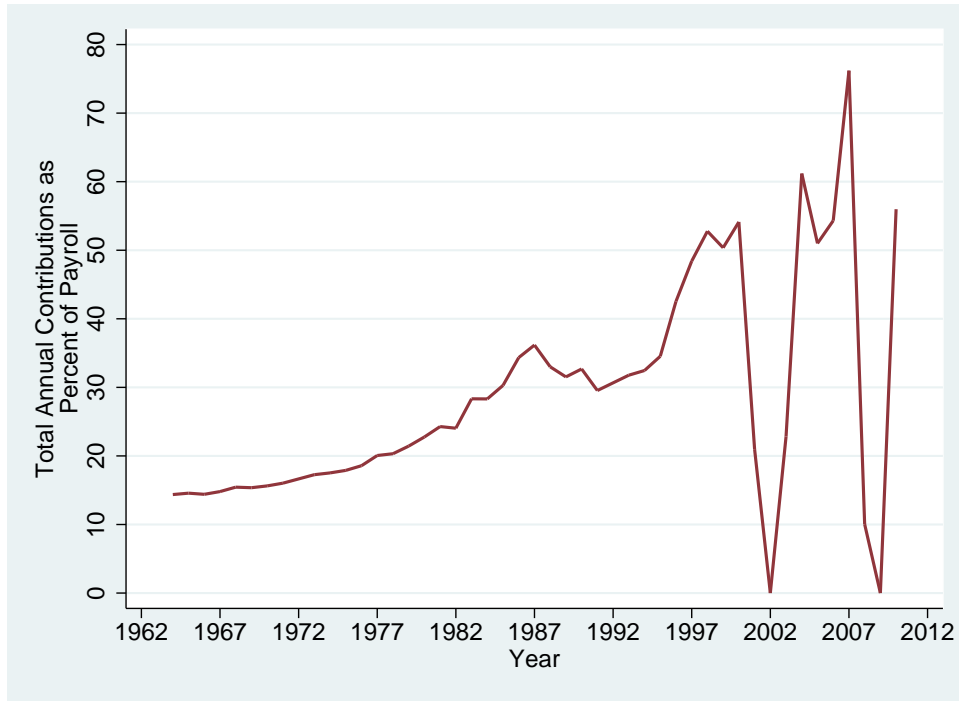


Figure 2: New receipts from employee and employer contributions and earnings on investment. Note: Figure does not include investment losses in years with negative investment returns.

This includes contributions from employees and employers in addition to the returns on investment that were recorded during the fiscal year. Despite the noticeable dip in *employer contributions* after the late 1980s documented in Figure 1, Figure 2 shows that the *total amount* of new assets deposited into public pension plans did not decline during this period. Indeed, by the mid-1990s, annual receipts exceeded 50 percent of payroll, more than double the total contribution levels prior to 1990. Employer contribution rates declined during this period not because public agencies resumed their previous practice of under-funding pensions but rather because pension funds shifted toward a different mix of revenue sources.

Throughout the 1960s, pension funds relied primarily on annual contributions made by workers and their government employers for funding. Together, employee and employer contributions accounted for almost 80 percent of new assets added into the pension plans during this decade. Yet, as documented Figure 3, investment earnings took on increasing prominence in the latter half of the 20th century. By the mid-1980s, asset growth due to

investment earnings exceeded the combined contributions made by workers and taxpayers each fiscal year. A decade later, investment earnings accounted for nearly 80 percent of new pension fund receipts, a pattern that would continue throughout most of the 2000s.

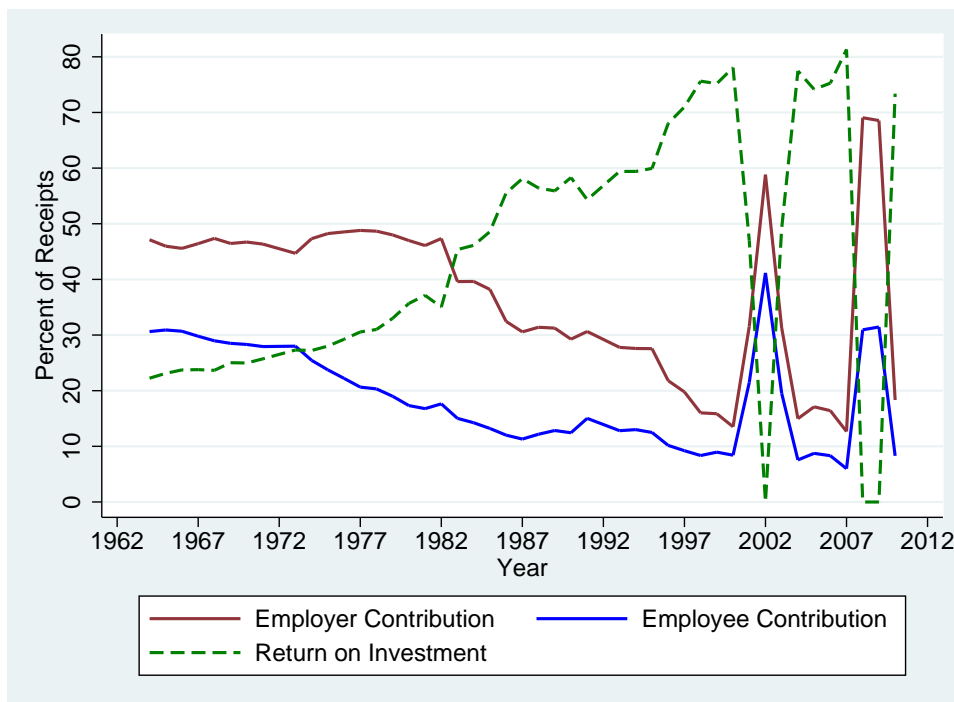


Figure 3: Sources of new contributions to plan assets. Note: Figure does not include investment losses in years with negative investment returns.

In fiscal years 2002, 2008, and 2009, pension funds actually lost money on their investments, the only three occasions during the 46-year period that earnings dipped into the negative territory. Both periods of decline corresponded to economic recessions, the Dot-Com bust in 2001 and the global financial crisis that began in 2007. Indeed, market declines during the financial crisis wiped out nearly \$1 trillion off the value of equities held by state and local plans (Munnell, Aubry, and Quinby 2011). In Figure 3, poor investment performance is clearly represented by the sharp downturn in investment earnings and the much greater share of new receipts represented by employee and employer contributions during these years.³

³Greater reliance on employee and employer contributions during these two periods can be explained primarily by the shrinking denominator (total receipts) rather than substantial growth in the size of either the employee or employer payments.

Growing reliance on investment earnings to accumulate fund assets, and the shrinking role played by member and employer contributions, coincided with another stark trend: a shift toward riskier investments. Figure 4 uses quarterly figures from the Federal Reserve's *Flow of Funds* reports to plot the share of public pension fund assets invested in corporate securities. Until 1970, public funds relied on a conservative investment strategy that emphasized fixed-income investments. Most retirement funds kept their assets in relatively safe classes of investments like government and corporate bonds and mortgages. During this period, corporate stocks represented less than 10 percent of the public pension funds' investment portfolios. Annual earnings came primarily in the form of interest and dividend payments, rather than growth in the underlying value of the investments (Tilove 1976, p. 202-203). Indeed, prior to the adoption of the GASB standards, only a small minority of pension funds priced their assets at market value; the vast majority valued their assets at the original purchase price, or book value (House Committee on Education and Labor 1978, p. 131).

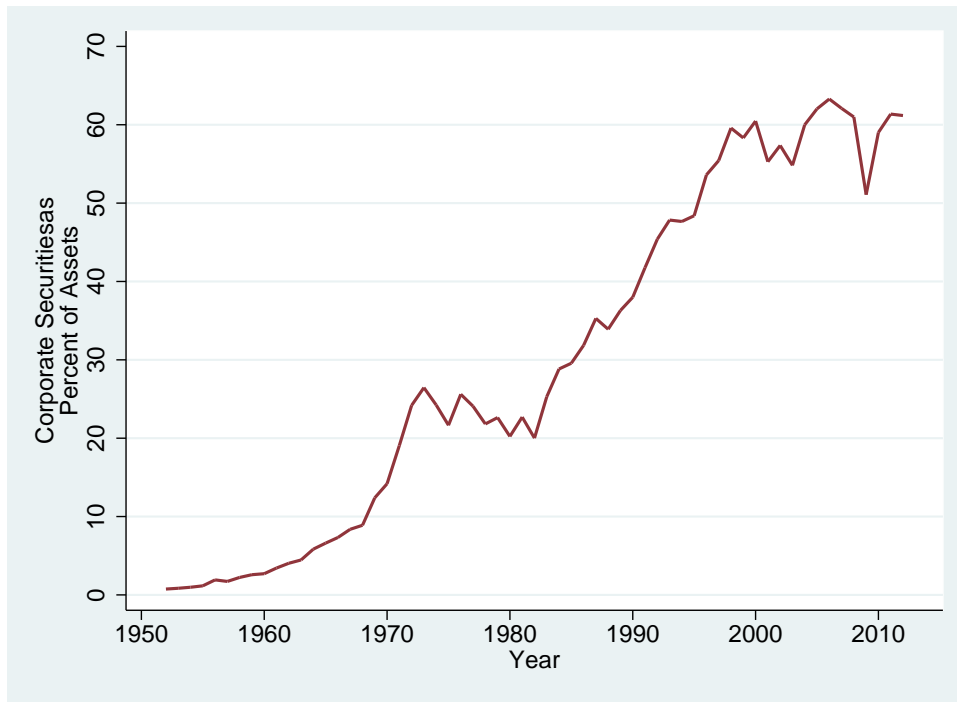


Figure 4: Corporate securities as a percent of pension fund assets.

During the 1970s, the share of pension fund assets invested in corporate securities grew dramatically, to approximately a quarter of the retirement systems' portfolios. This growth only accelerated during the following decade. By the mid-1990s, stocks accounted for nearly 60 percent of all assets held by public pension funds.

4 What Explains the Dominance of Equities?

Although the shift away from fixed-income investments toward more speculative and risky stock holdings may have been motivated in part by growing sophistication on the part of pension fund managers, the historical record suggests that two sets of public policy changes also played a decisive role. The first includes new pension accounting rules that created strong incentives to invest in higher-yield but also more volatile investments.

In November 1986, GASB issued Statement No. 5, *Disclosure of Pension Information by Public Employee Retirement Systems and State and Local Governmental Employers*. The guidelines imposed greater uniformity in pension accounting. In particular, the standards spelled out a precise formula to be used by pension actuaries to calculate the present value of pension liabilities. For the purpose of carrying out such discounting, Statement No. 5 directed actuaries to use “the assumed rate of return on investment of present and future PERS assets” (p. 6). Although discounting future liabilities by the expected rate of return on assets makes intuitive sense — if existing assets are sufficient to cover the present value of the liabilities, and investments continue perform as expected, pensions will remain fully funded over time — recent commentators have pointed out that these guidelines cannot be justified by conventional economic theories. Novy-Marx and Rauh (2009), who provide the most forceful critique of the GASB framework, point out that there exists no logical reason for why the interest rate used to discount pension *liabilities* should be the same as the expected rate of return on fund *assets*: “This approach is analytically misguided: the magnitude of pension liabilities and how a pension’s funds are invested are two separate

issues that should be considered independently. In practice, the accounting standard being used sets up a false equivalence between pension payments, which are extremely likely to be made, and the much less certain outcome of a risky investment portfolio” (p. 192).

Although Novy-Marx and Rauh’s proposal to use a risk-free interest rate to discount pension liabilities remains highly controversial, there is no need to resolve the intellectual dispute here. Instead, one simply needs to recognize that linking the discount rate to expected gains on investments creates perverse incentives for fund administrators, encouraging them to maximize the average rate of investment return even if higher returns come at the cost of greater risk (e.g., greater year-to-year variation in rate of return). These incentives are present because more aggressive investment strategies not only cause assets to grow more quickly but also allow actuarial assumptions to be based on a higher expected rate of return, which makes the present value of liabilities look smaller and improves the funded status of pension funds for accounting purposes (Brown and Wilcox 2009 provide more detailed explication of this argument).

GASB Statement No. 25, released in November 1994, only further exacerbated these perverse incentives. The new guidelines instructed pension funds to use the market, rather than the book, value of assets as the basis for actuarial account. The statement did, however, recommend that actuaries use a rolling average rather than pure market prices, to “smooth short-term fluctuations in market values that may have little or no meaning from a long-term, ongoing plan perspective” (p. 79). The shift toward market valuation increased the attractiveness of corporate securities, particularly for stocks that do not pay regular dividends. When book value is used as the basis for actuarial accounting, growing stock prices can result in investment gains only when the stocks are actually sold, making corporate securities look less attractive than fixed-income investments that pay out interest or dividends on a regular basis. By contrast, when stocks are valued at their market value, appreciating prices lead to unrealized paper gains that can reported as investment earnings, improving the funded status of the pension plans. What matters is the value of the stock, rather than

the amount paid out by the company in dividends in any given year.

New GASB accounting standards were necessary, but not sufficient, to shift pension funds assets toward riskier, higher-yield investments. Without changes in state regulations governing public pension funds, plan administrators could not answer the siren call of fast-appreciating corporate stocks. A survey carried out in the late 1970s found that 93 percent of state and local funds were affected by statutory or constitutional restrictions on investing pension fund assets in corporate common stock. Almost 60 percent of all pension plans reported being prohibited from investing more than 35 percent of plan assets in common stock; for more than 80 percent of plans, investments in stocks were capped at 50 percent of their total portfolio (House Committee on Education and Labor 1978, p. 132). Over the next two decades, states dramatically rolled back restrictions on investing pension fund assets in the stock market, often with explicit voter approval. In 1984, for example, California voters approved Proposition 21, changing the state constitution to remove language limiting corporate stock investments to 25 percent of pension fund assets. In 1996, voters in both Indiana (Public Question 2) and South Carolina (Issue 5) repealed state constitutional language prohibiting public pension funds from investing in corporate securities. The number of funds reporting legal restrictions on their investment allocations declined dramatically by the mid-1990s (Useem and Hess 2001).

5 Political Consequences of Pension Timing

Observers have long recognized that the passage of time between when pension benefits are earned and when these benefits must be paid out creates a serious political challenge. “The ability to defer pension costs is a fundamental factor,” Tilove (1976, p. 3) noted. “This presents an almost irresistible attraction for an elected official, who can always win friends by giving in the present, while deferring cost so that somebody else — another elected official or another generation of taxpayers — will have to face the inevitable cost.” Without a

mechanism that can discipline policymakers by tying future benefits to present costs, public pensions create a clear instance of moral hazard (Giertz and Papke 2007).

Although the GASB standards adopted in the 1980s and 1990s attempted to solve this challenge, the shift in pension fund investment strategies toward more risky asset classes and the growing reliance on investment returns has created a second time inconsistency problem. Time inconsistency — the inability of elected officials to credibly commit to fully funding pensions during bad economic times and to refrain from raiding accumulated surpluses during good years — is intimately related to the timing of pension contributions, and how this timing has changed in recent decades.

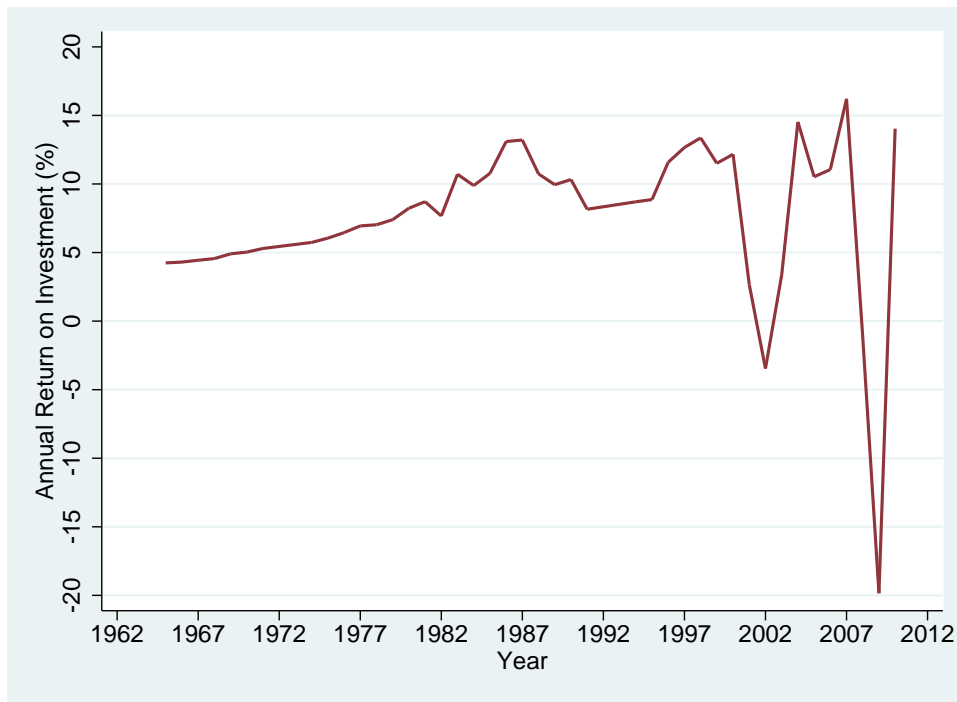


Figure 5: Annual return on investments.

Figure 5 tracks the annual return on investment reported by state and local pension funds. Investing a growing share of assets in corporate securities has brought clear benefits to public plans, increasing the annual rate of return substantially. Investment gains grew from less than 5 percent of assets in the 1960s to the low teens in the 1990s. However, higher returns came at a significant cost: greater volatility (Lind 2006). Investment earnings fell

Table 1: Correlation Between Growth in Employer Pension Contribution_t and Performance of S&P 500 Stock Index_{t-1}

Time Period	Pearson's r	P Value
1964-1989	-0.08	0.73
1990-2010	-0.51	0.03

from 16.2 percent in fiscal year 2007 to -1.2 percent in 2008, for example. In fiscal 2009, the value of pension fund assets declined by 19.8 percent — a loss amounting to more than \$633 billion — before recovering in 2010 to post a 14 percent gain.

For elected officials, volatility creates a serious problem through its effect on the timing of pension contributions. Affirming the connection between investment performance and the contributions required from employers (ARCs) described above, taxpayer payments have fallen in years of strong performance but have increased following disappointing returns. As corporate securities have come to dominate pension assets, government pension payments have increasingly come to track the performance of the economy as a whole. Table 1 reports the correlation between the change in the size of the employer pension contribution and performance of the S&P 500 during the previous fiscal year. Prior to 1990, government pension costs were unrelated to the broader economy ($r = -0.08, p = 0.73$). Over the past two decades, however, pension payments have become closely correlated with the performance of the stock market ($r = -0.51, p = 0.03$), shrinking during good economic times and growing after periods of recession.

During periods of sustained, above-average growth in the stock market, strong investment gains may cause pension fund assets to exceed the present value of their liabilities. This occurred during the late 1990s, when state and local pension funds were, in the aggregate, over-funded (Giertz and Papke 2007). Under existing actuarial standards, over-funding causes the required annual contribution to drop, freeing up funds that elected officials can redirect toward programs and services valued by their constituents.⁴ Having contributed their

⁴In the most extreme example of this phenomenon, surpluses allowed the University of California Re-

own money into the pension system during previous years, public employees can convincingly argue that part of the surplus belongs to them and should be shared with the plan members through smaller employee contributions or, in many cases, benefit increases (Peskin 2001). Brown, Clark, and Rauh (2011) argue that, “For political economy reasons, short-time-horizon politicians have an incentive to increase pension benefits when funding levels are high, not placing sufficient weight on the fact that they might be unable to reduce them (due to constitutional prohibitions) when funding levels are lower.”

Regardless of which of these scenarios is most likely to unfold — whether public officials siphon off surplus earnings through smaller contributions or through more generous pension benefits — state and local governments draw down on the surpluses during good times, usually with permission of fund actuaries, rather than setting the money aside for a rainy day.

While strong investment earnings create an embarrassment-of-riches-problem for plan sponsors, investment losses force employers to increase their pension contributions at precisely the time they are most likely to face budgetary stress. Just as stock market returns correlate with changes in the size of the employer contributions, market performance also directly impacts state and local finances. However the correlation runs in the opposite direction. During the entire 46-year period, the performance of the S&P 500 was positively correlated with both growth in per-capita own-source revenues ($r = 0.32, p = 0.03$) and per capita tax revenue ($r = 0.33, p = 0.03$) among state and local governments. The relationship should be particularly strong in states that rely on capital gains taxation for a substantial portion of their budget, as this revenue source is particularly sensitive to the state of the economy.

Put another way, the correlation between the performance of the stock market, pension fund investment returns, and government revenues mean that pension contributions rise just as revenue growth plummets, creating a fiscal vise that tightens from both ends. This

tirement System to take a 19-year “pension holiday,” contributing nothing between 1991 and 2009.

timing is particularly unfortunate from the point of view of elected officials, who must justify increasing pension contributions to their constituents even as they are lay off police officers and teachers, close libraries and parks, and increase tuition for college students to cope with slowing revenues (Kogan and McCubbins 2010). When investment earnings determine the size of pension contributions, state and local governments pay least when they can most afford it and must pay the most its politically infeasible to do so.

6 Discussion and Implications

Given the political challenges created by the timing of pension contributions, the most prudent and useful reforms would ensure that the size of government pension contributions stay roughly even over the course of the business cycle. This could be accomplished by averaging asset values over more extended periods of time or through the reimposition of limitations on the types of assets that public pensions can hold. In this context, laws that limit pension fund investments in riskier asset classes like corporate stocks should be seen as a “commitment device” that helps public officials overcome the time-inconsistency problem. Although safer investments would slow rate of return, they would also dramatically reduce volatility.

By contrast, GASB Statements 67 and 68, released in the summer of 2012, appear to move in the opposite direction. Although the new guidelines incorporate risk-free discounting of liabilities in certain circumstances, they continue to allow most pension plans to use the assumed rate of return to discount future liabilities, encouraging riskier investment.⁵ The most important change, however, is GASB’s call for pension plans to end the use of actuarial smoothing and instead value their assets at current market prices. This change will only further exacerbate the volatility in pension contributions, allowing plan assets to inflate faster during market bubbles and causing pension payments to balloon even more during recessions.

⁵Munnell, Aubry, Hurwitz, and Quinby (2012) document serious problems with the new “hybrid” approach, which will, if anything, make pension plans less comparable.

This threatens to only accelerate the feast-and-famine cycle that currently confronts state and local governments, undermining political support for public pensions and threatening the long-term solvency of these systems.

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