CENTER for RETIREMENT RESEARCH at BOSTON COLLEGE

HOW WILL COVID-19 AFFECT PENSIONS FOR NONCOVERED WORKERS?

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Abstract

Federal law allows certain state and local government employees to be excluded from Social Security if they are covered by an employer pension of sufficient generosity. As a result, approximately one-quarter of state and local workers are not covered by Social Security on their current job. Before COVID-19, these "FICA replacement plans" all satisfied the letter of the law in terms of providing benefits of sufficient generosity. This study has three aims. The first is to document the immediate impact of COVID-19 on the financial status of FICA replacement plans. The second is to investigate whether COVID-19 has led to cuts in benefit promises among plans, as well as the likelihood of future cuts. The third is to investigate the likelihood that FICA replacement plans will exhaust their trust fund assets and default on benefit promises.

The paper found that:

- The immediate impact of COVID-19 on noncovered public pension plans has been minimal. In fact, strong investment returns and resilient tax revenues have resulted in better funded ratios than prior to the pandemic and a positive near-term outlook.
- Given the minimal impact of COVID-19 on public plans, benefit cuts due to the pandemic have been virtually nonexistent. And recent pre-COVID trends suggest that benefit cut activity will continue to be infrequent.
- A projection of future assets levels for noncovered plans over the next decade suggests only one of 57 plans analyzed faces any real risk of exhausting its assets.

The policy implications are:

- While COVID has had little impact on noncovered plans, these plans – like other public plans – still face the same underlying financial challenges that they did before COVID.
- At the same time, though, virtually all of the noncovered plans analyzed are expected to be able to continue paying benefits over the projection period.

Introduction

Federal law allows certain state and local government employees to be excluded from Social Security if they are covered by an employer pension of sufficient generosity.[1] As a result, approximately one-quarter of state and local workers are not covered by Social Security on their current job. Before the COVID-19 crisis, these so-called "FICA replacement plans" all satisfied the letter of the law in terms of providing benefits of sufficient generosity.[2] Then, the initial economic disruptions of the COVID-19 pandemic raised concerns that governments would enact benefit reductions that might push some plans afoul of the law. Now, the outlook for public pension plans is in some respects better than before the crisis. Financial markets, a key driver of pension fiscal health reached new highs through fiscal year 2021. And, the near-term fiscal health of state and local governments has also improved due to historically strong tax revenues and substantial federal support through a series of pandemic relief bills.

While the immediate impact of COVID-19 on public plans seems – at this point – to be virtually non-existent, many still face the long-term structural challenges they faced prior to the pandemic. These include primarily negative cash flows and a dependence on achieving relatively aggressive investment targets to meet their future benefit obligations. Because of these issues, it is possible that some plans may ultimately fall short of having the funds necessary to pay promised benefits in full. If FICA replacement plans fail to pay benefits that have been promised, they enter a legal gray zone with respect to the obligation of the state or locality to pay promised benefits, and with respect to the Social Security coverage of plan members.[3] Since the

[1] The legal requirements for benefit generosity are specified in the Employment Tax Regulations. Defined benefit pensions (the dominant benefit structure in the state and local sectors) must provide an annuity, commencing on or before the Social Security full retirement age, of equal value to the Primary Insurance Amount (PIA) that the member would have received had he participated in Social Security. To help determine sufficient benefit generosity, the federal government has established "Safe Harbor" benefit parameters (a normal retirement age and formula for calculating annual benefits); legally, plans that meet the Safe Harbor requirements comply with the Employment Tax Regulations.

[2] Even though all plans satisfied the letter of the law, noncovered state and local workers did not always receive Social Security-equivalent benefits (Quinby, Aubry, and Munnell 2020). The reason is that state and local pensions often set long vesting periods and are increasingly unlikely to grant full cost-of-living adjustments (COLAs) after retirement. COLAs, in particular, were often targeted during the 2008 financial crisis, when many government sponsors were looking to reduce pension costs (Aubry and Crawford 2017; Munnell, Aubry, and Cafarelli 2014). Although state law typically protects accrued pension benefits, courts generally upheld COLA cuts as a way to reduce accrued liabilities (Cloud 2011; Monahan 2010 and 2017; Munnell and Quinby 2012; Reinke 2011). And COLAs for uncovered workers are not regulated by the Safe Harbor provisions.

[3] Quinby, Aubry, and Munnell (2020).

IRS Employment Tax Regulations do not consider a scenario in which a state or local plan defaults, the policy response is unclear in advance.

This study has three aims. The first is to document the immediate impact of COVID-19 on the financial status of FICA replacement plans. The second is to investigate whether COVID-19 has led to cuts in benefit promises among plans, as well as the likelihood of benefit cuts in the future. The third is to investigate the likelihood that FICA replacement plans will exhaust their pension trust fund assets and default on their future benefit promises.

Literature Review

Although the pandemic continues to weigh on the U.S. economy, virtually all research has now shown that the initial concerns that it would severely impact state and local government finances were overblown. For example, Leachman and McNichol (2020) report that projected revenue declines made in the early pandemic were overstated. Sheiner (2020) found that, because job losses were concentrated among lower-income workers, the impact of COVID-induced unemployment on income tax revenue was small. At the same time, the rising stock market increased capital gains tax receipts, while fiscal stimulus from the CARES Act supported sales taxes by buttressing overall consumption even as recreation and travel consumption – and their associated government revenues – fell.[4] Dadayan (2020) documented similar patterns regarding state and local revenue, noting that states with more progressive income tax rates, which rely more heavily on taxes from higher earners, fared better than states with flat tax rates.

While state and local finances in the aggregate are more positive than first expected, research suggests that some governments may have fared better than others. Chernick, Copeland, and Reschovsky (2020) concluded that city governments that rely less on state aid and have less diversified revenue streams will be shielded from the most severe impacts of COVID-19. In particular, cities that rely heavily on property taxes are likely to fare much better than those that rely on either sales or income taxes, because property taxes have not been negatively impacted by the pandemic. The authors note, by way of example, that cities in New England, where property taxes are the dominant form of city revenue, are likely to fare better than their counterparts in New York, which rely heavily on both state aid and local sales taxes.

[4] Sheiner (2020) also found that fees from services at airports, gasoline sales, recreational services, and mass transit all declined.

In terms of public pensions, Aubry and Wandrei (2021) found that pension funded ratios – in the aggregate – rose approximately two percentage points in fiscal year 2021 due mainly to historically high investment returns over the period.[5] But, one topic that remains unexplored is whether the pandemic has had a differential impact on the pension plans for state and local employees who are not covered by Social Security. Aubry and Crawford (2015) found that nearly three-quarters of state-run plans (and the majority of large locally-run plans) cut benefits in the wake of the financial crisis, and that a higher ratio of pension cost to government revenue was associated with a greater likelihood of benefit cuts. If some of the so-called "FICA replacement plans" are maintained by state and local governments whose revenue sources were hit harder than the aggregate statistics indicate, they may be considering benefit cuts which could put them afoul of the Safe Harbor parameters. Before the pandemic, Quinby, Aubry and Munnell (2020) found that a few noncovered plans, particularly those in Chicago, might be at risk of exhausting assets within a decade. If a noncovered plan were unable to pay promised benefits due to trust fund exhaustion, the policy response is unclear because the IRS Employment Tax Regulations do not consider a default scenario. This study is the first – to our knowledge – that focuses on the status of noncovered plans during COVID.

Data and Sample of Noncovered Plans

The data for this analysis come primarily from the *Public Plans Database* (PPD), a nationally-representative dataset of 210 public sector pension plans. The PPD covers 95 percent of public plan membership and assets nationwide, and includes both state- and locally-administered plans. This analysis focuses on the 57 plans for which a substantial portion of members are not covered by Social Security: 49 plans for which virtually all members are noncovered and 8 plans for which a meaningful share are noncovered.[6] In 2020, these plans covered approximately 5 million state and local government employees and roughly $232 billion

[5] Sielman (2021) found similar improvements in pension funding as part of Milliman's "Public Pension Funding Index."

[6] Table 1 lists each of the 57 noncovered plans included in this study. Social Security coverage rates were obtained through a review of government documents and websites, private communications with pension plan administrators, and a confidential NASRA survey administered to plans. Plans are classified as fully noncovered if fewer than 6 percent of members participate in Social Security. Similarly, plans are classified as fully covered if at least 95 percent of members participate in Social Security. All other plans are classified as partially noncovered.

in annual earnings, representing about 80 percent of the noncovered state and local government workforce.[7]

Interestingly, the sample of noncovered plans spans nineteen states and includes various types of state and local government employees – including teachers and public safety. The sample of plans also varies in size. The largest plan in the sample – and the largest plan in the country – is California Public Employees Retirement System (CALPERS), for which roughly 65 percent of members are estimated to be noncovered. The largest plan for which all members are noncovered is Texas Teachers Retirement System (TRS), which has over 1.4 million members. At the other extreme, the sample also includes some smaller local public safety plans, such as Atlanta Fire, Fairfax County Police, and Pittsburgh Police. Each of these plans has less than 3,000 members.

COVID-19 and Public Pension Financial Status

The direct impact of COVID-19 on public pension finances has been minimal. In fact, the average funded ratio (the ratio of current assets over the actuarially calculated present value of future benefits) for noncovered plans improved by almost two percentage points in 2021– a greater increase than experienced among covered plans (see Figure 1).[8]

Two key factors underlying the financial health of public pension plans are the pension fund investment returns and contributions from government sponsors. In terms of pension fund investment performance, plans typically target annual investment returns around 7 percent. Figure 2 shows the average investment return in 2021 relative to actuarial targets. Both covered and uncovered plans did similarly well, exceeding their actuarial return targets by over 20 percentage points on average.

In terms of contributions from government sponsors, the key metric is the actuarially required contribution (ARC). The ARC is the amount calculated by the plan's actuary that is required to keep the plan on a steady path toward full funding. It equals the normal cost (the present value of the retirement benefits accrued in a given year) plus a payment to amortize the

[7] The Government Accountability Office (2007) estimated total noncovered state and local government earnings of about $213 billion in 2007 and noncovered earnings for the 57 plans was estimated to be about $175 billion at that time.

[8] As of September 2021, roughly half of PPD plans have released 2020 data and virtually none have released 2021 data. To estimate 2020 and 2021 for PPD plans that have not yet released their data, this analysis follows the methodology in Aubry and Wandrei (2021).

unfunded liability (the gap between the level of actuarial assets and actuarially accrued liabilities), generally over a period of 25 years. The data show that – a few years after the impact of the Global Financial Crisis – governments began to contribute an increasing share of the ARC and continued to do so in fiscal 2020, even as the COVID pandemic emerged (see Figure 3).

One reason that governments continued to pay much of the ARC during COVID is that tax revenues were not impacted as much as initially expected. After a brief drop in income taxes during the second quarter of 2020, revenues rebounded significantly and still remain somewhat elevated relative to recent history (see Figure 4).[9] The elevated tax levels are likely related to the greater income tax revenue from stimulus checks, unemployment benefits, and Paycheck Protection Program (PPP) funds that have been disbursed during the pandemic.[10] Income from capital gains may have also played a role.

Given that the major change from the pandemic was the increase in the income tax revenues and that state governments rely more heavily on income tax, Figure 5 compares the quarterly change in state government tax revenue in the 19 states with a major noncovered pension plan to change in revenue for the other 31 states (see Figure 5). The data suggest very little difference in the pattern of tax revenue during the pandemic between the two groups of states – if anything, the states with noncovered plans rebounded more strongly than states without a noncovered plan.[11]

In addition to better-than-expected tax revenues since the onset of COVID, state and local governments have also received billions of dollars in federal aid. The Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020 included $150 billion for necessary expenditures incurred due to the public health emergency. The American Rescue Plan (ARP) Act included $350 billion – $195 billion to state governments, $130 billion to local governments, $5 billion to territories, and $20 billion to tribal governments.[12] ARP funds will likely bolster state and local

[9] Gordon et. al (2020) documented the severe decline income and sales tax revenue collected by state governments in the second quarter of calendar year 2020 and suggested tying fiscal aid to easily observable economic conditions and characteristics that cannot be easily manipulated by state and local governments, such as the unemployment rate or prior year's revenues.

[10] Dadayan (2020) noted that states differed in their tax treatment of the $600 weekly federal unemployment supplement; some states taxed those benefits as income, while others did not.

[11] As of 2018, prior to the pandemic, the share of local government (non-school district) tax revenue coming from income tax was the same in states with a major noncovered plan as in the state without one. This suggests that local governments finances within each group of states were also similarly affected by the pandemic.

[12] Per the provisions of ARP, funds are to be distributed based on a state's unemployment rate at the end of 2020, but each state is guaranteed to receive a minimum of $500 million. County governments receive allocations based

finances for a few years. Many governments receive half of the ARP funds in 2021 and the other half in 2022.[13] And, the funds need not be spent until the end of 2024.

Although aid in the CARES Act and ARP are subject to certain restrictions that ostensibly prohibit their use for bolstering pensions, money is fungible.[14] Some analysts suggest that the federal aid amounts more than make up for the challenges faced by state and local governments due to the pandemic and anecdotal evidence suggests that states have contributed more to pensions than they otherwise would have.[15] Connecticut, for example, is supplementing its normal pension contributions to its State Employees and Teachers plans by 35 percent in fiscal year 2022, a dollar amount that represents roughly six out of every ten federal relief dollars.[16] New Jersey – one of the worst states in terms of its historical commitment to pension funding – has also scheduled a historically large pension contribution for the current fiscal year.[17]

Overall, strong investment returns, steady government contributions, and resilient government revenue (with some help from the additional federal aid) have resulted in a positive near-term outlook for public pensions despite the general negative impact of COVID on certain types of economic activity.

COVID-19 and Public Pension Benefit Cuts

The initial contours of the COVID-19 pandemic roused fears of an economic fallout like that of the Global Financial Crisis (GFC). In the wake of the GFC, 70 percent of state plans and 63 percent of large local plans cut benefits (see Figure 6).[18] And, the likelihood of cuts during that period was most associated with high pension costs as a percentage of government revenue

on their population, and cities receive allocations based on existing criteria in the Community Development Block Grant (CDBG).

[13] ARP provisions stipulate that local governments and states with less than a two-percent increase in the unemployment rate since February 2020, will receive their funds in two tranches – half in May 2021 and the other half in 2022. The Committee for a Responsible Federal Budget estimated that 20 states (and DC) would get their federal funds in a single lump sum while 30 states would get theirs in two separate payments.

[14] Federal aid in the CARES Act is only available to cover items not already budgeted for in a state or local government's most-recently approved budget as of March 27, 2020. Similarly, ARP dollars cannot be used to make pension contributions, top up rainy day funds or other reserves, fund debt service, pay legal settlements or judgments, or fund general infrastructure (other than water, sewer, and broadband).

[15] Committee for a Responsible Federal Budget. (2021a) and Tax Foundation (2021).

[16] Phaneuf (2021).

[17] Young and Borak (2021).

[18] While 36 percent of state plans – and 18 percent of large local plans – cut benefits for new and current employees, the majority of public pension plans only cut benefits for new hires.

(net of the funds earmarked for state Medicaid programs.[19] However, the economic impact of COVID-19 on pension plans and their government sponsors bears little resemblance to the GFC experience and only two plans in the PPD – and no noncovered plans – have made meaningful cuts to pension benefits since the pandemic began.[20]

Given the minimal impact of COVID on public pensions, a potentially more useful recent history may be 2015 to 2019 – a period when state and local governments saw steady increases in revenue, and pension funds experienced more manageable financial markets.[21] Over that period, only about a quarter of state and local plans implemented benefit cuts (see Figure 7). And, a regression analysis found no statistically discernable differences between plans that made benefit cuts and those that did not.[22] The lower volume and random nature of benefit cuts from 2015 to the start of the pandemic and the dearth of benefit cuts made since then suggest that future benefit cuts are likely to be infrequent and idiosyncratic if the current economic environment continues.

COVID -19 and Public Pension Trust Fund Exhaustion

While the impact of COVID-19 on public pension plans seems – at this point – to be virtually non-existent, plans still face the long-term structural challenges they faced prior to the pandemic. These challenges include primarily negative cash flows and a dependence on achieving relatively aggressive investment targets to meet their future benefit obligations. Although most plans received almost 100 percent of the ARC from their government sponsors in 2021, the increasing number of retirees and benefit outflows since 2001 has raised concerns about the persistently negative cashflow in pension trust funds (see Figure 8).

[19] Additionally, being a locally-administered plan was associated with a lower likelihood of cutting benefits for new employees, and being in a state with constitutional protection of benefit promises was associated with a lower likelihood of cutting benefits for current employees. See Appendix Table 2A for complete regression results.
[20] In 2021, Texas ERS closed their defined benefit plan to new hires so that all employees hired after 09/01/2022 will be enrolled in ERS's cash balance plan. The Birmingham Retirement and Relief System reduced the benefit multiplier for those hired after 07/1/2021, and increased the member contribution rate for all employees irrespective of hire date.
[21] According to the U.S. Census Bureau's *Annual Survey of State & Local Government Finances*, total state and local revenues grew by an annualized 3.6 percent between 2015 and 2019, greater than the 2.8 percent by which they grew between 2010 and 2014. The average annualized return for public plans from 2015 to 2019 was 6.4 percent – falling short of the target 7.2-percent return over the period.
[22] See Appendix Table 2A for complete regression results.

And, even though investment returns exceeded expectations in 2021, public pension plans have fallen short over the long term. Figure 9 shows that investment performance since 2001 has been quite similar for both covered and noncovered plans, but that both groups have realized actual investment returns about 1 percent below their expectations.

Because of the two structural challenges – negative cash flows and lower-than-expected investment returns – it is possible that some noncovered plans may ultimately fall short of having the funds necessary to pay promised benefits in full. If FICA replacement plans fail to pay benefits that have been promised, they enter a legal gray zone with respect to the obligation of the state or locality to pay promised benefits, and with respect to the Social Security coverage of plan members.[23] Since the IRS Employment Tax Regulations do not consider a default scenario, the policy response is unclear in advance. To assess whether some noncovered pension plans might exhaust their assets, the CRR constructed a pension cashflow projection model with stochastic investment returns to project assets levels for each of the 57 noncovered plans from 2021 to 2031.

The CRR model projects future contributions, benefits, and investment returns. Future contributions for each plan are fixed at their current percentage of employee payroll, while payroll is projected to grow according to each plan's actuarial assumption for payroll growth. Future benefit payouts for each plan are based on an actuarial benefit projection tool built by Cheiron, a large actuarial firm serving many public pension plans.[24] Future investment returns for each plan are based on their current asset allocation in the PPD and the return expectations for each asset class from a recent Capital Assets Pricing Model (CAPM) performed by Aon, a large investment consultant serving many public sector pension plans.[25] The average expected return across the sample of plans was 6.7 percent (with an average standard deviation of 11.3 percent), less than the current average actuarially assumed return of 7.1 percent but similar to

[23] Quinby, Aubry, and Munnell (2020).

[24] Based on the typical shape of expected future benefit payouts among their public pension clients, the Cheiron model allows users to input the present value of future benefits reported for a specific plan of interest (in this case, the 57 noncovered plans in the PPD) to estimate the plan's future benefit payouts.

[25] CAPM models provide expected returns, standard deviations, and correlations, by asset class. In practice, each plan uses expectations from the CAPM of their own investment consultant to develop their asset allocation. Regardless of expectations, however, all plans realize actual returns within the same investment environment. As such, to maintain a consistent investment environment across all plans, this analysis relied on expectations from a single CAPM.

historical performance.[26] Based on the expected return and standard deviation of each plan, a Monte-Carlo model is used to generate 1,000 random walks of future investment returns from 2021 to 2031.[27]

Given the projected contributions, benefits, and investment returns for each plan, assets are calculated as follows:

$$Assets_{i,j,k} = [Assets_{i-1,j,k} + (0.5 * (contributions_{i,j} - Benefits_{i,j})] * (1 + InvestmentReturn_{i,j,k}) + (0.5 * (contributions_{i,j} - Benefits_{i,j})]$$

where *i* is the projected year, *j* is the specific noncovered plan, and *k* is one of the 1,000 investment paths projected for that specific noncovered plan. The result is one thousand projected asset levels as of 2031 for each plan. The probability of exhausting assets for each plan is equal to the share of the 1,000 asset levels in 2031 that are zero.[28]

Even with future modelled returns falling below expectations on average, 54 of the 57 noncovered plans that were modelled exhibited zero probability of exhausting assets by 2031 (see Figure 10).[29] Two plans – Atlanta Fire and Cincinnati ERS – exhibited single-digit probabilities of exhausting assets. Only one plan – Chicago Municipal Employees – exhibited any meaningful probability of asset exhaustion. The next section investigates the specific situation of Chicago Municipal more closely.

Chicago Municipal Employees Retirement System: A Brief Case Study

Chicago Municipal, like most public pension plans, has experienced both negative cashflows and lower-than-expected returns since 2001. However, Chicago Municipal's negative

[26] Each plan's most recent asset allocation was aligned with the results from Aon's CAPM to create portfolio-level projected returns and standard deviations. As such, the differences in the expected return and standard deviation across plans is due solely to differences in asset allocation.
[27] For fiscal years 2020 and 2021, the analysis relied on the actual portfolio return reported by each plan if available. If actual returns were not available, the CRR estimated each plan's portfolio return based on the plan's asset allocation and actual returns for the appropriate asset-class indices.
[28] Once asset levels fall to zero or below, all future asset levels are set to zero. For example, if – in a specific investment return path – a plan runs out of assets in 2025, asset levels from 2025 to 2031 in that return path are set to zero.
[29] Assuming contributions remain a constant percentage of payroll in an environment where actual returns fall below expectations is conservative because, in practice, most plans would increase their contribution rates if returns consistently fall below expectations.

cash flows have been particularly severe due to an inadequate government contribution policy that was in place from 1996 to 2016. During this period, rather than contributing an actuarially determined amount, the City's payment was defined under Illinois state statute as 1.25 times the employee contribution. As a result, in 2016, the last year of the old contribution policy, Chicago Municipal's cash flow equaled a negative 12 percent of assets.[30]

In 2017, Chicago Municipal established a new funding schedule to increase the City's contributions into the pension fund. Public Act 100-0023 scheduled a five-year contribution ramp-up to transition the City from its current contribution payment to an actuarially determined amount (see Figure 11).[31] Even though the ramp-up required annual increases of about 20 percent from 2018 to 2021, the City has – to this point – adhered to the stated schedule. Looking forward, however, the City faces a 50-percent increase from 2022 to 2023, when the schedule transitions to actuarially determined contributions. It is unclear if the City will make this larger payment when it comes due.

To better understand the risk of asset exhaustion for Chicago Municipal, we project the plan's asset levels under three contribution scenarios (see Figure 12). In the first scenario, the City adheres to the ramp-up schedule through 2022 and makes the transition to full payment of the ARC in 2023. In the second scenario, the City adheres to the ramp-up schedule through 2022 and then contributes at a constant percent of payroll from 2022 forward (with payrolls growing by 2.5 percent per year, per Chicago's actuarial assumptions). For the third scenario, the City adheres to the ramp-up schedule through 2022, and then contributes a constant dollar amount from 2022 forward.

The results of the scenario analysis show that, if the City were to stick to the ramp-up schedule through 2022 and transition to the full ARC, the probability of asset exhaustion is zero (see Figure 13). If the City were to follow the ramp-up schedule through 2022 and then contribute at a constant percent of payroll from that point forward, the plan faces a 32-percent chance of asset exhaustion in 2031. Finally, if the City were to follow the ramp-up schedule

[30] The city of Chicago sponsors four large noncovered plans – Chicago Municipal, Chicago Teachers, Chicago Police, and Chicago Fire. All are poorly funded and have a history of larger-than-average negative cashflows due to inadequate government contribution policies. Chicago Municipal was the last to make changes to their inadequate funding schedule. As a result, Chicago Municipal currently faces the threat of asset exhaustion while the other plans are on much better footing with virtually no chance of exhausting their assets.

[31] Importantly, the actuarially determined payment is designed to achieve a 90-percent funded ratio in 35 years rather than the standard goal of a 100-percent funded ratio.

through 2022 and then pay a constant dollar amount, the plan faces a 68-percent chance of exhaustion by 2031. These results underline just how important it is for Chicago to fully transition to paying its ARC.

If Chicago Municipal were to exhaust its assets by 2031, the plan would enter a legal gray zone in regards to its obligations to pay promised benefits and the IRS Safe Harbor Rules. The average retiree receives about $36,000 in benefits. But, in the event the pension fund exhausts it assets, annual contributions to the pension fund would likely cover about 70 percent of annual benefit payouts.[32] For those members of Chicago Municipal who did not accrue any Social Security benefits because they spent their career employed by the City of Chicago, a cut to promised pension benefits due to trust fund exhaustion would have particularly serious consequences.

Conclusion

The immediate impact of COVID-19 on noncovered public pension plans – and public plans in general – has been minimal. In fact, strong investment returns and resilient state and local revenue have resulted in better funded ratios than prior to the pandemic and a positive near-term outlook. Given the minimal impact of COVID-19 on governments and their pension plans, benefit cuts due to COVID-19 have been virtually nonexistent. Looking forward, the dearth of benefit reforms from 2015 to 2019 – in combination with the lack of cuts during COVID – suggests that benefit cut activity will continue to be infrequent.

While the impact of COVID-19 has been minimal, systemic challenges, such as negative cashflows and lower-than-expected investment returns, still pose risks to noncovered plans. A projection of future assets levels for noncovered plan suggests only one plan – Chicago Municipal – faces any real risk of exhausting its assets by 2031. If the City adheres to its new funding schedule implemented in 2017, the risk of exhaustion is zero. But, if the City stops short of its mandated funding plan, the probability of asset exhaustion remains significant. If Chicago Municipal were to exhaust its assets by 2031, the plan would enter a legal gray zone in regards to its obligations to pay promised benefits to plan members and the IRS Safe Harbor Rules. For those members of Chicago Municipal who did not accrue any Social Security benefits because

[32] The scheduled payment of 576 million in 2022 represents roughly 70 percent of the projected annual benefit payment in 2022.

they spent their career employed by the City of Chicago, a cut to promised pension benefits due to trust fund exhaustion would have particularly serious consequences.

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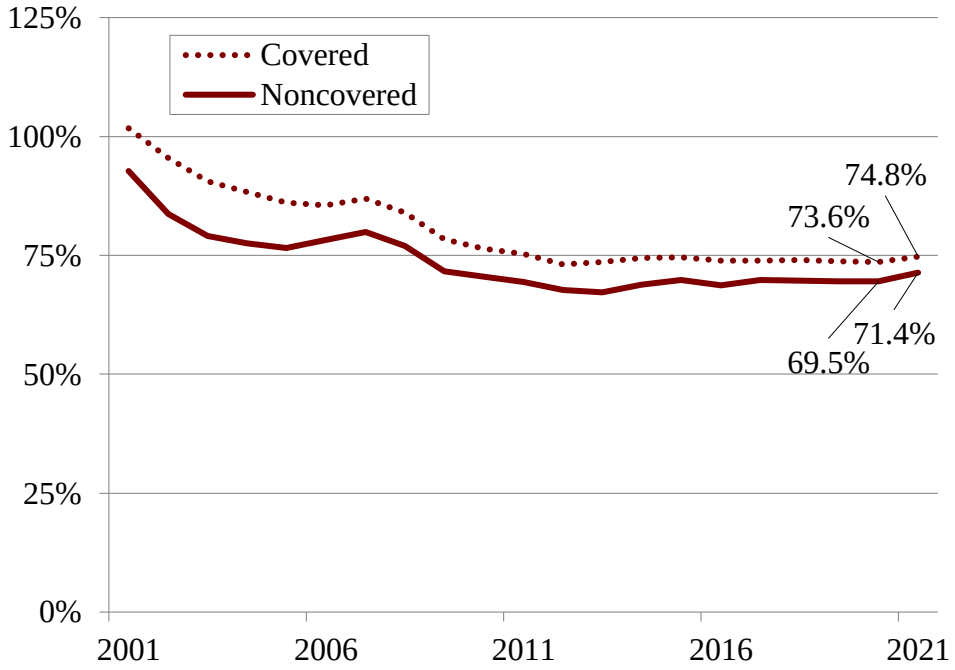
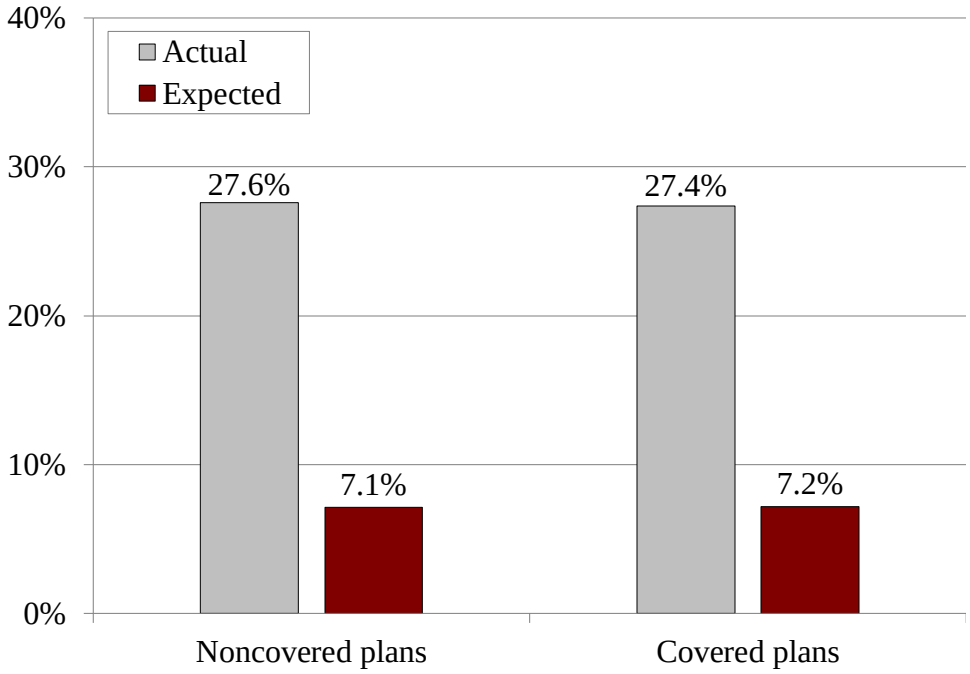
Figure 1. *Aggregate Funded Ratio for Covered and Noncovered Pension Plans, 2000-2021*



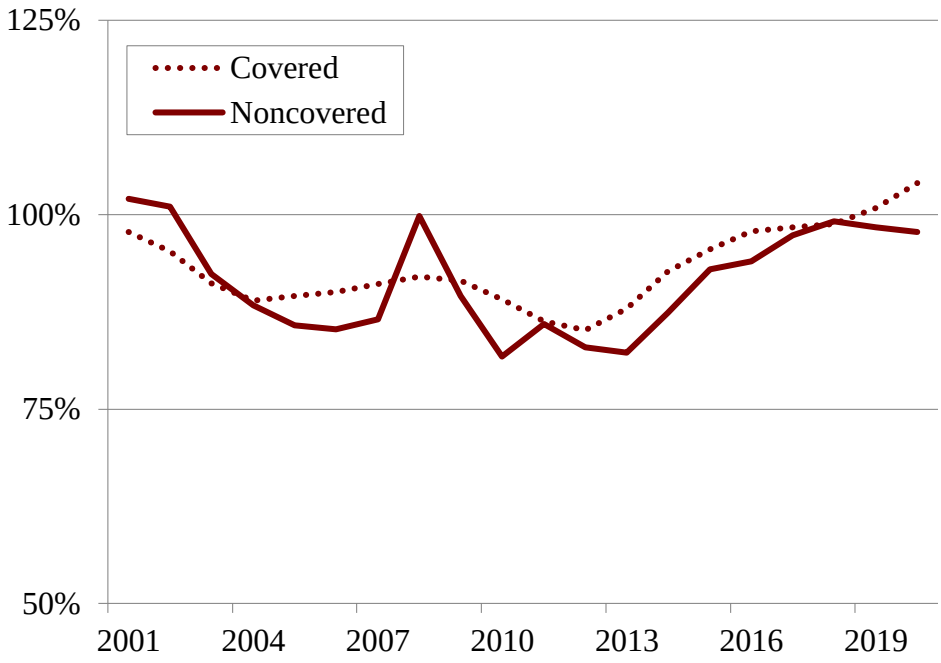
Source: Authors' calculations based on the PPD (2001-2020).

Figure 2. *Actual and Expected Investment Returns, 2021*



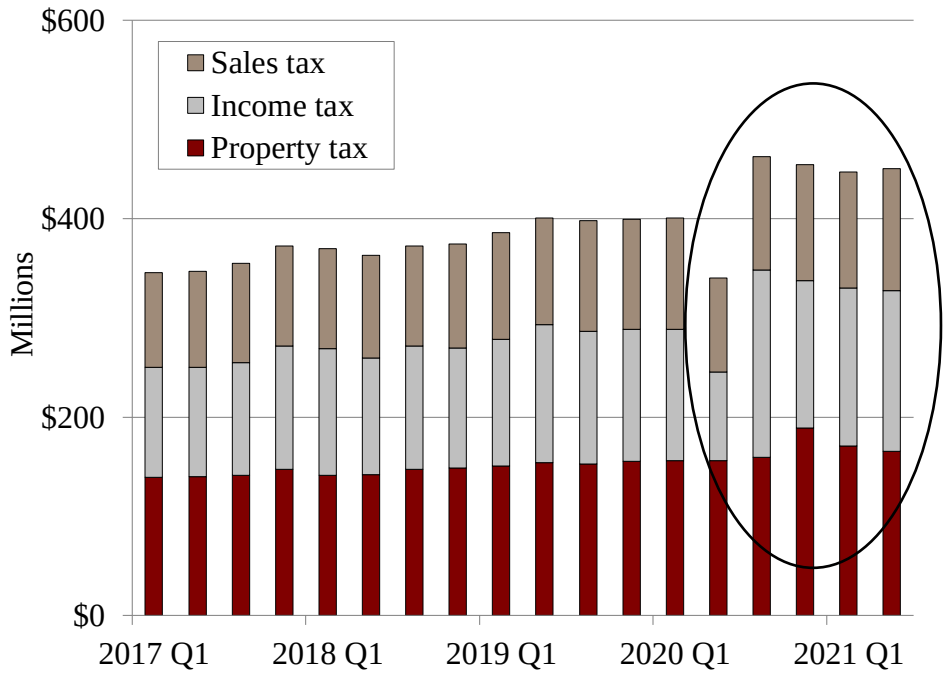
Sources: Authors' calculations based on the PPD, plan investment reports, and direct communications with plan administrators.

Figure 3. *Average Percentage of ARC Paid, 2001-2020*



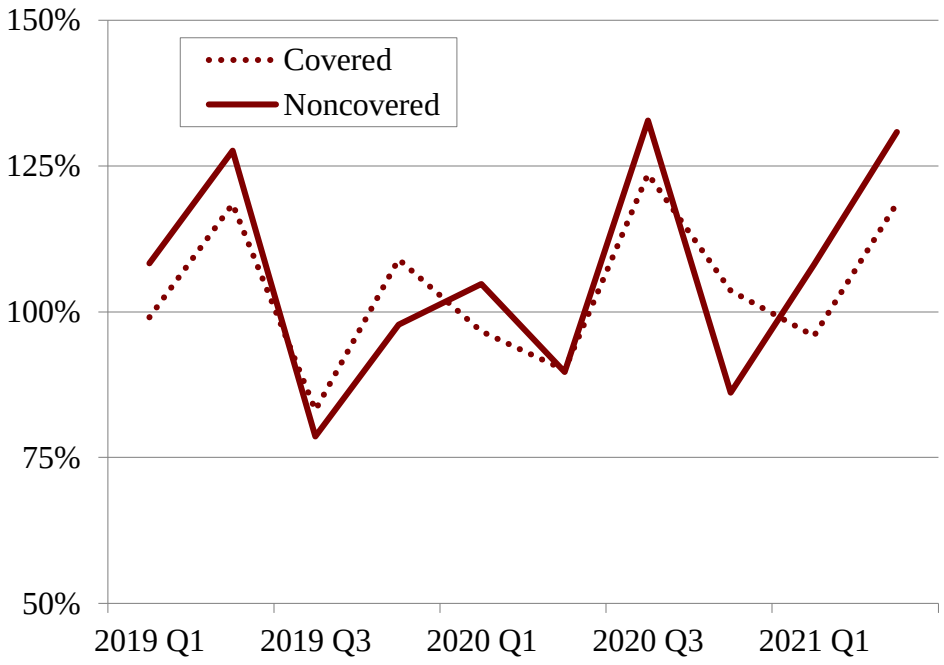
Source: Authors' calculations based on the PPD (2001-2020).

Figure 4. *Quarterly State and Local Tax Revenues (Seasonally Adjusted), 2017-2021*



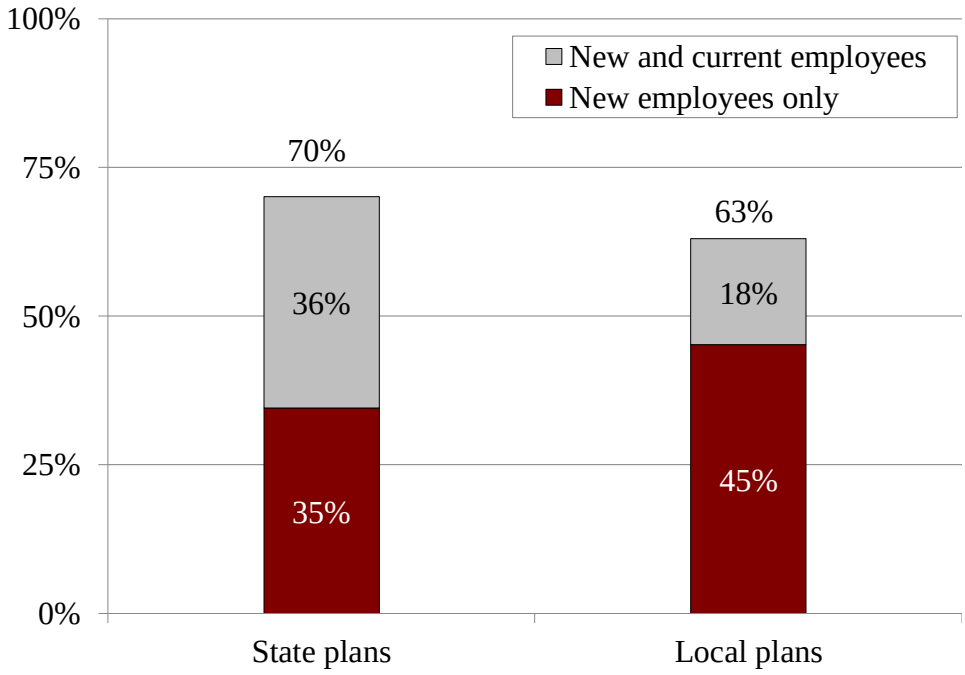
Source: Authors' calculations based on Census of Governments: *Quarterly Summary of State & Local Tax Revenue* (QTAX) (2017-2021).

Figure 5. *Percentage Change in Quarterly State Tax Revenue*, 2019-2021



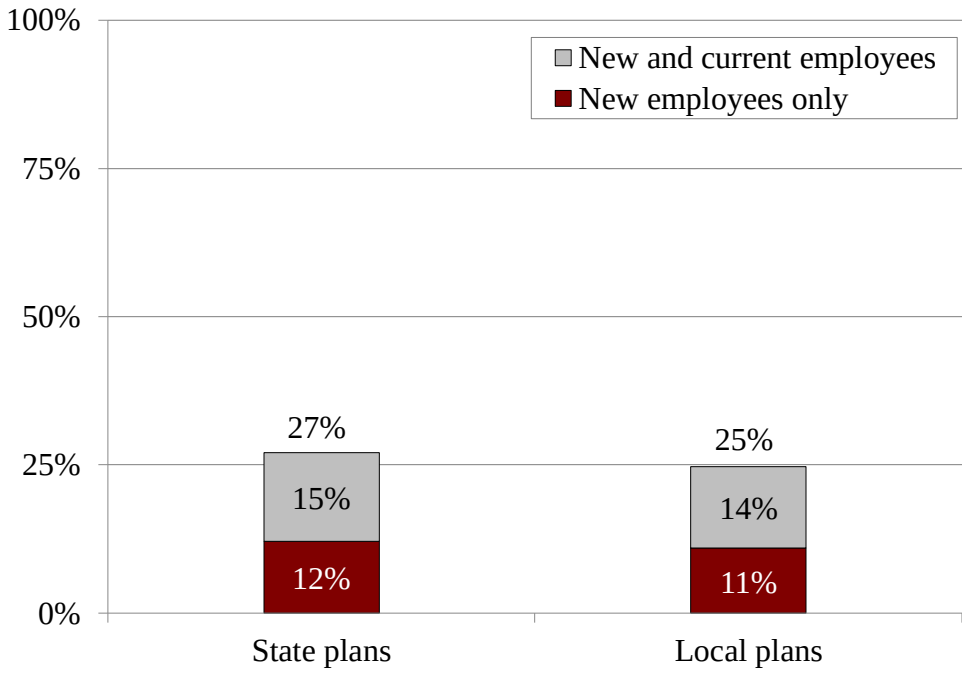
Source: Author's calculations based on Census of Governments: *Quarterly Summary of State & Local Tax Revenue* (QTAX) (2019-2021).

Figure 6. *Share of Major State and Local Plans Making Benefit Changes from 2009 to 2014*



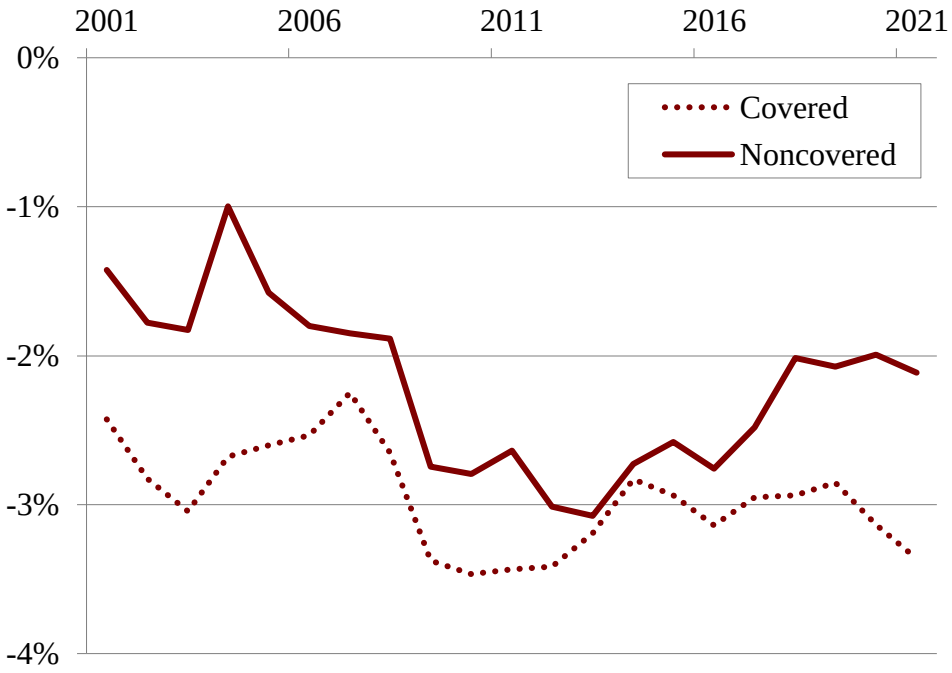
Source: Authors' calculations based on review of plan actuarial valuations and annual financial reports.

Figure 7. *Share of Major State and Local Plans Making Benefit Changes from 2015 to 2019*



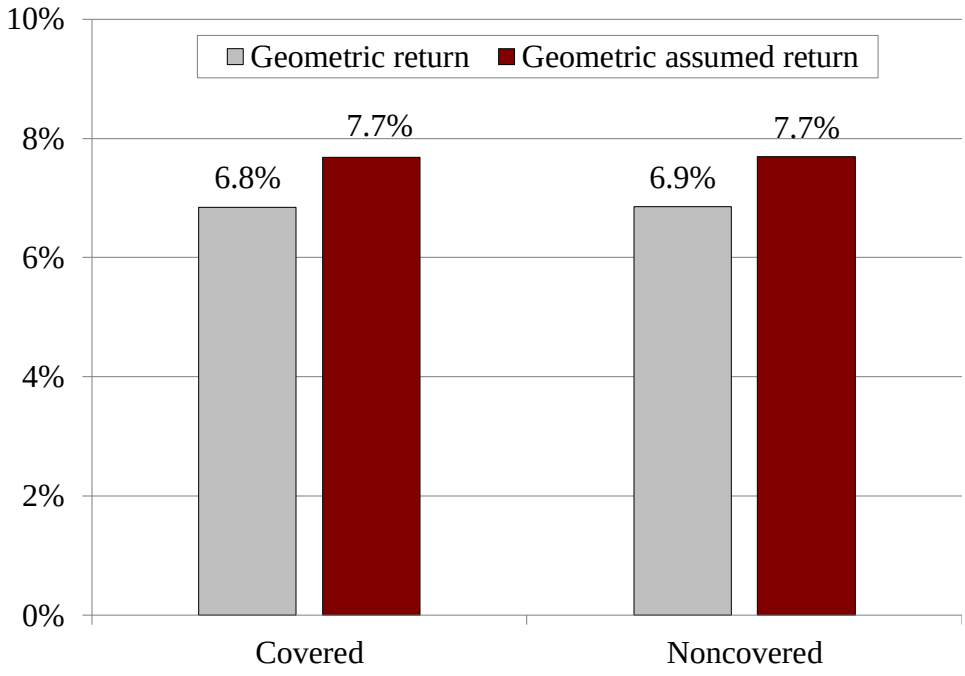
Source: Authors' calculations based on review of plan actuarial valuations and annual financial reports.

Figure 8. *Annual Cash Flows as a Percentage of Pension Fund Assets, 2001-2020*



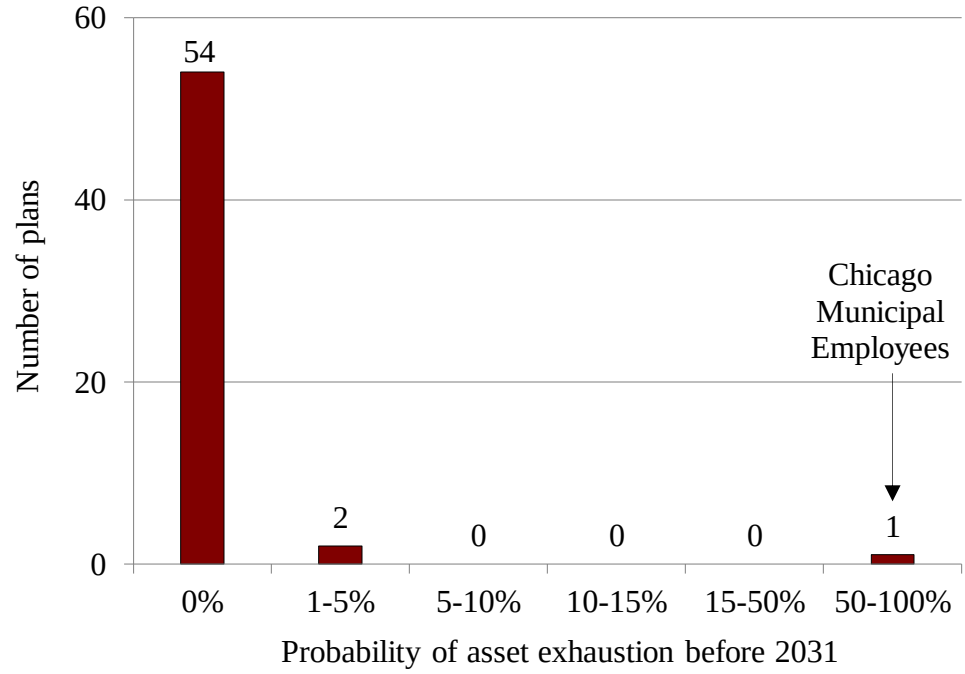
Source: Authors' calculations based on the PPD (2001-2020).

Figure 9. *Annualized Actual and Assumed Investment Returns for Pension Plans, 2001-2021*



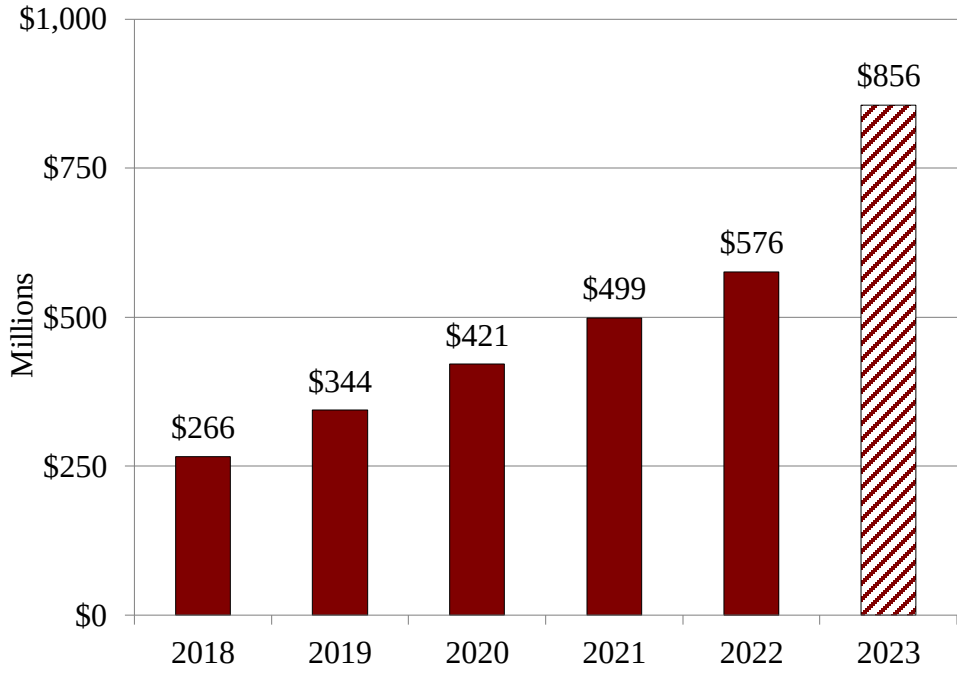
Source: Authors' calculations based on the PPD, plan investment reports, and direct communications with plan administrators.

Figure 10. *Number of Noncovered Plans, by the Probability of Asset Exhaustion before 2031*



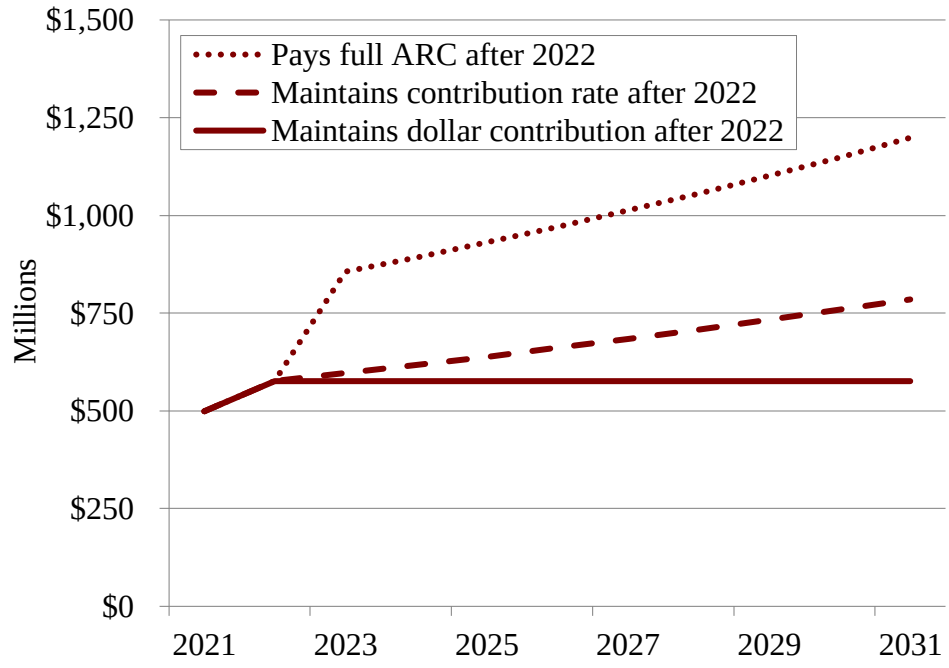
Source: Authors' calculations using PPD (2001-2020).

Figure 11. *Scheduled Contributions for Chicago Municipal, 2018-2023*



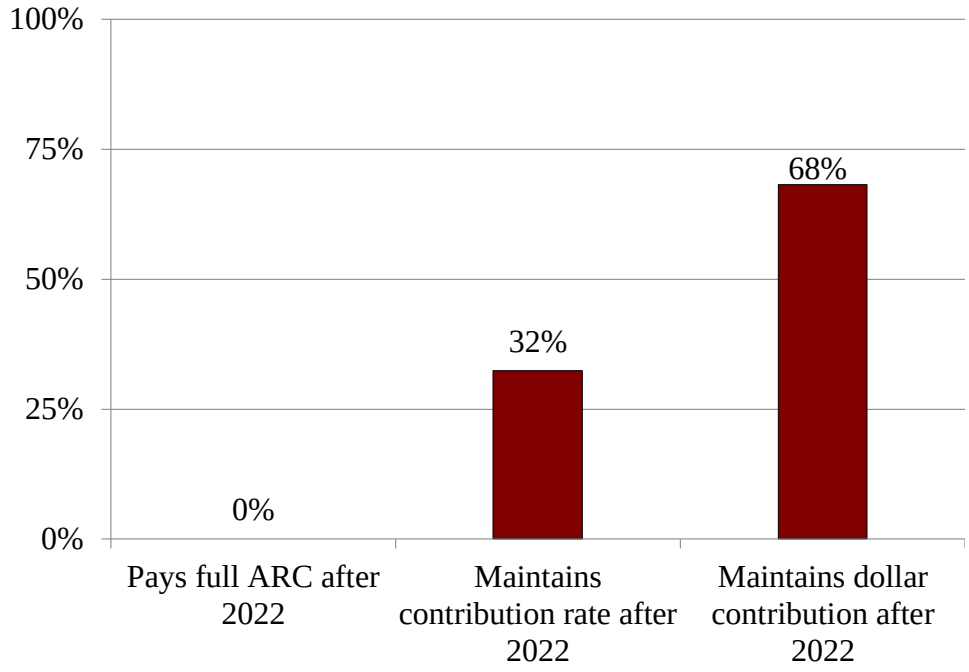
Sources: Chicago Municipal actuarial valuations (2018-2022) and authors' calculations (2023).

Figure 12. *Projected Contributions for Chicago Municipal under Three Tailored Scenarios*



Note: Full schedule after 2023 reflects the average ARC under all 1,000 return scenarios.
Sources: Chicago Municipal actuarial valuations (2021-2022) and authors' calculations (2023-forward).

Figure 13. *Probability of Asset Exhaustion before 2031 for Chicago Municipal*



Source: Authors' calculations using PPD (2001-2020), and Chicago Municipal AVs and CAFRs.

Appendix

Table 1A. *Summary Overview of Noncovered Plans in Analysis Sample*

State	Plan	Social Security coverage	Payroll (thousands)	Membership
CA	California PERF	Some	$19,736,850	702,229
CA	University of California	Some	523,549	10,362
CT	Connecticut Municipal	Some	224,569	6,882
CT	Connecticut SERS	Some	1,363,955	38,243
GA	Georgia Teachers	Some	4,753,131	188,797
IL	Illinois SERS	Some	185,056	5,626
LA	Louisiana Parochial Employees	Some	638,477	22,308
TX	Texas Municipal	Some	950,740	30,371
	Total -- Some Coverage		***$28,376,328***	***1,004,819***
CA	California Teachers	None	32,897,000	801,260
CA	LA County ERS	None	8,370,050	181,260
CA	Los Angeles ERS	None	2,225,413	55,254
CA	Los Angeles Fire and Police	None	1,583,808	27,155
CA	Los Angeles Water and Power	None	1,141,876	21,340
CA	Orange County ERS	None	1,952,534	47,197
CO	Colorado Municipal	None	681,094	23,714
CO	Colorado School	None	5,104,431	215,154
CO	Colorado State	None	2,995,453	103,969
CO	Denver Schools	None	736,264	24,815
CT	Connecticut Teachers	None	4,257,150	90,234
DC	DC Police & Fire	None	495,809	9,366
DC	DC Teachers	None	516,609	10,731
FL	Miami Fire and Police	None	168,059	4,219
GA	Atlanta ERS	None	188,719	7,021
GA	Atlanta Fire	None	51,938	2,056
GA	Atlanta Police	None	94,943	3,439
IA	Iowa Municipal Fire and Police	None	315,937	8,608
IL	Chicago Fire	None	457,082	9,853
IL	Chicago Municipal	None	1,802,790	76,440
IL	Chicago Police	None	1,228,987	27,831
IL	Chicago Teachers	None	2,203,056	67,538
IL	Illinois Teachers	None	10,450,452	303,373
IL	Illinois Universities	None	3,506,650	236,039
KY	Kentucky Teachers	None	3,648,428	137,252
LA	Baton Rouge City Parish RS	None	147,942	6,766
LA	Louisiana Municipal Police	None	305,445	12,372
LA	Louisiana Schools	None	289,731	26,506
LA	Louisiana SERS	None	1,952,496	93,900
LA	Louisiana Teachers	None	4,071,754	175,681

MA	Boston RS	None	1,646,906	36,562
MA	Massachusetts SRS	None	6,354,473	156,846
MA	Massachusetts Teachers	None	7,074,960	161,213
ME	Maine State and Teacher	None	1,979,024	84,535
MI	Detroit Police and Fire	None	133,730	12,358
MO	Missouri Teachers	None	4,844,249	154,973
NV	Nevada Police Officer and Firefighter	None	1,135,529	22,979
NV	Nevada Regular Employees	None	5,651,371	173,585
OH	Cincinnati ERS	None	206,122	7,370
OH	Ohio PERS	None	14,380,000	1,150,298
OH	Ohio Police & Fire	None	2,313,631	63,203
OH	Ohio School Employees	None	3,463,000	245,851
OH	Ohio Teachers	None	12,296,800	346,225
OK	Oklahoma Fire	None	307,735	9,825
PA	Pittsburgh Police	None	65,311	2,445
TX	Houston Firefighters	None	272,498	7,451
TX	Houston Police	None	454,696	9,819
TX	Texas Teachers	None	47,414,000	1,427,734
VA	Fairfax County Police	None	117,663	2,663
	Total -- No Coverage		***$203,953,600***	***6,886,278***
	Total -- Full Sample		***$232,329,928***	***7,891,097***

Note: For plans with "some" Social Security coverage, the payrolls and membership data reported in this table were calculated by applying the share plan members estimated to be noncovered (obtained from a private survey of plan administrators done by NASRA or direct communications with plan administrators by the CRR) to the plan's total membership and payroll.
Sources: Authors' calculations based on the PPD, government and retirement system financial reports, plan websites, and direct communications with plan administrators.

Table 2A. *Factors Associated with Benefit Cuts, by Period and Employee Group*

	2009-2014		2015-2019	
	Current employees	New employees	Current employees	New employees
Locally-administered plan	-0.140*	-0.145*	0.015	0.018
	(0.075)	(0.077)	(0.060)	(0.074)
ARC-to-govt-revenue (less Medicaid)	0.417	3.215***	-0.441	0.031
	(0.898)	(0.923)	(0.539)	(0.665)
Total normal cost	-0.784	-0.808	-0.457	-0.126
	(0.782)	(0.804)	(0.528)	(0.652)
Constitutionally protected benefits	-0.174**	0.219**	0.058	-0.022
	(0.086)	(0.088)	(0.072)	(0.088)
Plan members covered by Social Security	-0.036	-0.020	-0.059	0.051
	(0.075)	(0.077)	(0.060)	(0.074)
Teacher plan	0.117	0.002	0.106	0.078
	(0.090)	(0.093)	(0.071)	(0.089)
Police and/or fire plan	0.076	0.061	0.043	-0.085
	(0.111)	(0.114)	(0.087)	(0.107)
Reform for current employees, 2009-2014			0.053	-0.017
			(0.067)	(0.083)
Reform for new employees, 2009-2014			0.076	0.072
			(0.064)	(0.079)
Constant	0.443	0.677	0.162	0.164
	(0.133)	0.136	(0.102)	(0.126)
Sample size	185	185	185	185
R-squared	0.0794	0.0773	0.055	0.0257

Notes: Coefficients are significant at the 1-percent level (***), 5-percent level (**), and 10-percent level (*). The dependent variable is a 0-1 dummy for whether a plan made at least one benefit cut within the analysis period. Variables that can change value over the analysis period – such as the ARC-to-govt-revenue and the total normal cost – are set equal to their value at the beginning of the period (i.e., their value in 2009 and 2015).
Sources: Authors' calculations based on the PPD, government and retirement system financial reports, plan websites, and direct communications with plan administrators.

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