

The Hidden Costs of Pension Reforms:

Rising Income Inequality, Lagging Economic Growth



National Conference on Public Employee Retirement Systems
The Voice for Public Pensions

Acknowledgment:

This study was conducted by Michael Kahn, Ph.D., Director of Research, National Conference on Public Employee Retirement Systems (NCPERS). The author and NCPERS are grateful to the following academics and practitioners for their peer review and valuable comments and suggestions:

Robert Kuttner, Brandeis University and The American Prospect

Teresa Ghilarducci, The New School for Social Research

Keith Brainard, National Association of State Retirement Administrators

TABLE OF CONTENTS

| | |
|----------------------------------------------------------------------------------|----|
| ■ EXECUTIVE SUMMARY | 2 |
| ■ INTRODUCTION | 3 |
| ■ SECTION I: REVIEW OF LITERATURE | |
| What variables impact income inequality? | 6 |
| Do pension reforms exacerbate income inequality? | 8 |
| Does income inequality drag the economy down? | 9 |
| ■ SECTION II: DATA AND METHODOLOGY | |
| What variables are used in the study and how are they measured? | 10 |
| A brief summary of analytical techniques employed in this paper | 11 |
| ■ SECTION III: RESULTS | |
| National trends in income inequality and variables that impact income inequality | 12 |
| A closer look at the costs of pension reform | 16 |
| ■ SECTION IV: CONCLUSIONS | 18 |

Executive Summary

Policy discussions of public sector pension “reforms” can often boil down to simplistic zero-sum arguments. For example, it often seems that all the positive effects generated by public plans are assumed to flow exclusively to their members, while taxpayers and their state and local elected officials are assumed to shoulder all the associated costs. This is an incomplete picture, however, as it completely ignores how pensions contribute to broader income equality – and not just among retirees. It also overlooks how retired pension members contribute to local and state economic activity by spending their pension income and how the investment of trillions of dollars of pension fund assets grows local economies and generates billions in tax revenues.¹

The present study attempts to fill these gaps in contemporary policy discussions by examining the relationship between “pension reforms” (consisting mainly of benefit reductions), income inequality, and economic growth. Our goal here is to help pension trustees and pension advocates alike gain a basic, practical understanding of the dynamic that connects these factors so that they can feel more comfortable presenting this perspective in their own discussions with other stakeholders, including policy makers.

This paper will review various broad types of changes in both public and private sector pension coverage and their relationship to income inequality and economic growth at both the national and state levels. At the national level, the main trend for many years has been a shift from defined benefit (DB) to defined contribution (DC) plans, especially in the private sector.² At the state level, reforms typically consist of cutting benefits, increasing employee contributions, and closing pensions to new hires. Therefore, we will refer to these changes as “negative pension changes.” The study analyzes the relationship between negative pension changes, income inequality, and economic growth at the state level, as well as over time.³

Our analysis shows that, at the national level, income inequality is inversely correlated with the shift from DB plans to DC plans. This means that the lower the percentage of the workforce in DB plans, the higher the rate of income inequality, and vice versa.

To isolate the impact of pension reforms, other variables that also impact income inequality must be considered. Current research discussed in the literature review section reveals that in addition to pension changes, the lack of investment in public education, regressive taxation, and a decline in union membership are other key variables that impact income inequality.

Our analysis shows that all of these variables have an inverse relationship with income inequality. By “inverse” relationship, we mean here that as these variables increase in intensity, income equality declines. But it also holds, based on our findings, that when access to DB plans, investment in public education, and union membership increases, and when taxes become more progressive rather than regressive, income inequality goes down. We hope these findings can help to anchor the ongoing debate over pension costs in objective facts, rather than supposition and slogans.

1 While pension funds invest globally, the economic impact can be traced to the state and local levels. See National Conference on Public Employee Retirement Systems, *Unintended Consequences: How Scaling Back Public Pensions Puts Government Revenues at Risk – 2020 Update* (Washington, DC: NCPERS, 2020), www.ncpers.org/files/ncpers-research-unintended-consequences-2020-update.pdf.

2 While this national trend has been prevalent for many years and widely discussed, one constraint we must work within is that the available data on private-sector pension changes are not broken down by state. Due to this limitation, the analysis presented below focuses mainly on the shift to DC plans and its relationship to income inequality and economic growth over time at the national level.

3 For the national-level analysis, the analysis is by year. For the state-level analysis, the unit of analysis is the individual state expressed through relevant variables measured over time.

Introduction

Policy discussions of public sector pension “reforms” can often boil down to simplistic zero-sum arguments. All the benefits associated with these pensions are often described, for example, as flowing entirely to the members of public sector pensions. Similarly, critics of defined benefit (DB) plans paint a picture in which all the costs exclusively fall on taxpayers and their state and local elected officials. This is a badly distorted perspective, however, as it completely ignores how pensions contribute to income equality, and not just among the elderly. It also overlooks how retired pension members contribute to local and state economic activity by spending their pension income – and how the investment of trillions of dollars of pension fund assets grows local economies and generates billions in tax revenues.⁴ The present study attempts to fill these gaps in contemporary policy discussions by examining the relationship between pension reforms, income inequality, and economic growth.

One might ask: Why should policy makers and pension trustees or advocates care about rising income inequality? Rising income inequality makes the economy inefficient because of the different consumption patterns of the rich and the rest of the consumer population. According to one estimate, rising inequality reduces growth in GDP by 2 to 4 percentage points annually.⁵ Whereas the rich might spend their money on luxury items or choose to save or invest it, consumers of more modest means spend most of their money on everyday needs and items. About 70 percent of US economic growth comes from consumer spending. When economic growth is concentrated to the degree that the rich keep getting richer and the poor keep getting poorer, this drags both demand and the economy down.⁶ In short, a less equal economy not only promotes income inequality but is also inefficient. Robert Reich argues that rising income inequality, if left unchecked, may eventually lead to an economic disaster. For example, income inequality reached its previous peak in 1928, with an economic disaster following in 1929 in the form of the Great Depression.⁷

Rising income inequality also creates other social and economic consequences. For example, Chuck Collins, co-founder of United for a Fair Economy and author of *Economic Apartheid in America*, argues that as inequality rises, power concentrates in the hands of a few wealthy people and big corporations. Wealthy citizens and corporations begin to influence policies in their own favor, resulting in voter disengagement, polarization, and a dysfunctional government.⁸ He calls this phenomenon the “wheel of misfortune” (see Figure 1).

“The present study finds that pension reforms generally exacerbate income inequality and dampen economic growth. An awareness of the impact of changes to pensions on income equality and economic growth is often, however, missing in pension policy debates.”

4 While pension funds invest globally, the economic impact can be traced to the state and local levels. See National Conference on Public Employee Retirement Systems, *Unintended Consequences: How Scaling Back Public Pensions Puts Government Revenues at Risk – 2020 Update* (Washington, DC: NCPERS, 2020), www.ncpers.org/files/ncpers-research-unintended-consequences-2020-update.pdf.

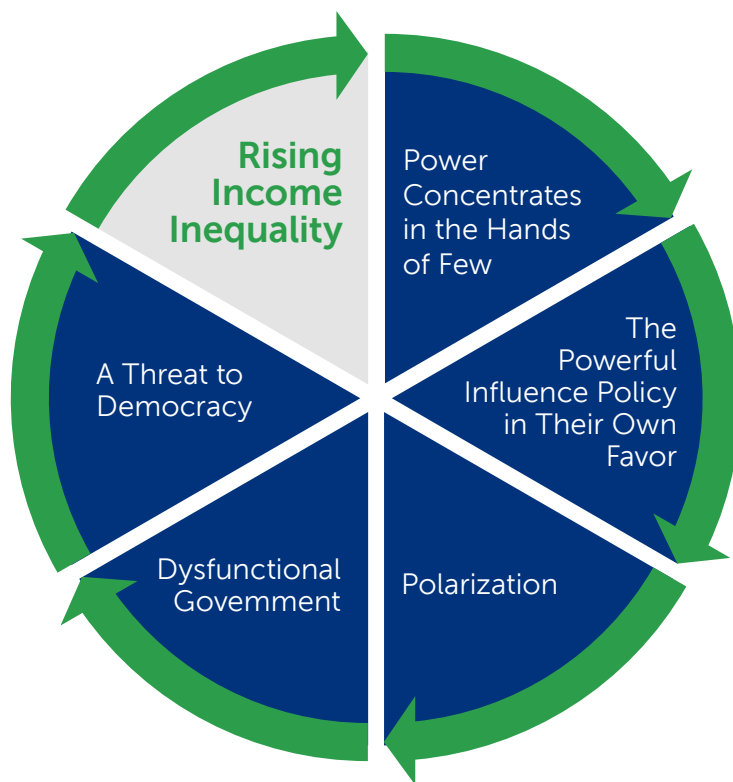
5 “Inequality Is Slowing US Economic Growth: Faster Wage Growth for Low- and Middle-Wage Workers Is the Solution,” Economic Policy Institute, December 12, 2017, www.epi.org/publication/secular-stagnation/.

6 Josh Bivens and Asha Banerjee, “Inequality’s Drag on Aggregate Demand: The Macroeconomic and Fiscal Effects on Rising Income Shares of the Rich,” Economic Policy Institute, May 24, 2022, www.epi.org/publication/inequalitys-drag-on-aggregate-demand/.

7 Robert Reich, “Inequality for All,” YouTube video, 2013, www.youtube.com/watch?v=zvAFPHLFMa0.

8 Chuck Collins and Felice Yeskel, *Economic Apartheid in America* (New York: The New Press, 2005), <https://thenewpress.com/books/economic-apartheid-america>.

Figure 1. Rising Income Inequality and Wheel of Misfortune



A prosperous democratic society has historically been associated with equality, progressive taxation, investment in education and health care, safety nets such as pensions, and protection of workers' rights. Weaken one of these, some say, and you risk weakening all of them.⁹

Others argue that income inequality is not a problem. They suggest that it might even be good for economic growth, because it provides an incentive for people to work harder to get ahead. They also argue that income inequality is the result of an increasing number of immigrants entering the United States at the lower end of the income scale. The data from the decennial census, however, show that the percentage of foreign-born individuals in 1890 was about 15 percent. Today, that figure is about 14 percent, casting doubt on this particular factor as a driver of inequality.¹⁰

The present study finds that pension reforms generally exacerbate income inequality and dampen economic growth. An awareness of the impact of changes to pensions on income equality and economic growth is often, however, missing in pension policy debates. The findings of this study, it is hoped, will cause policy makers to pause and think before they enact measures that undermine pensions, especially in the public sector.

According to a February 2023 Gallup study, three out of four Americans were concerned that the rich are getting richer and the poor are getting poorer.¹¹ In other words, average people feel that rising income inequality limits opportunities for them to advance, no matter how hard they work. But neither policy makers nor the general public necessarily make the connection between pension changes, income inequality, and lagging economic growth.

9 Joseph Stiglitz, "Inequality and Economic Growth," *The Political Quarterly* 86, no. S1: 134–155, <https://rooseveltinstitute.org/wp-content/uploads/2020/07/RI-Inequality-and-Economic-Growth-201803.pdf>.

10 Author's calculations.

11 Lydia Saad, "Americans Still Glum About State of the Union in Most Areas," Gallup, February 2, 2023, <https://news.gallup.com/poll/469241/americans-glum-state-union-areas.aspx>.

In addition to the general public's sense that income inequality is not good for our society, both Wall Street institutions and academic scholars are concerned about rising income inequality. For example, a study by Standard & Poor's (S&P) that focuses on income inequality and economic growth in the United States includes an interesting quote that is worth highlighting:¹²

"A rising tide lifts all boats ... but a lifeboat carrying a few, surrounded by many treading water, risks capsizing."

Joseph Stiglitz, Nobel Laureate in economics, notes:¹³

"... the rising tide has only lifted the large yachts, and many of the smaller boats have been left dashed on the rocks. This is partly because the extraordinary growth in top incomes has coincided with an economic slowdown."

In the next section, we will expand on both the S&P and Stiglitz studies. We will also discuss other relevant literature on the causes and economic consequences of income inequality.

The present study is divided into four sections. Section I reviews the relevant literature. Section II describes the data and methodology. Section III presents results showing that the shift to defined contribution plans in the private sector and changes in state and local public pensions exacerbate income inequality and dampen economic growth. Section IV presents conclusions – including a call for policy makers to weigh the full costs of cuts to public sector pensions.

12 Standard & Poor's, *How Increasing Income Inequality Is Dampening US Economic Growth, and Possible Ways to Change the Tide* (New York: Standard & Poor's, 2014), www.spglobal.com/_division_assets/images/special-editorial/how-the-advancement-of-black-women-will-build-a-better-economy-for-all/ratingsdirect_28714420_jun-07-2021.pdf.

13 Joseph Stiglitz, "Inequality and Economic Growth," *The Political Quarterly* 86, no. S1: 134–155, <https://rooseveltinstitute.org/wp-content/uploads/2020/07/RI-Inequality-and-Economic-Growth-201803.pdf>.

Section I: Review of Literature

The literature review that follows is divided into three parts, as we seek to answer three questions. First, what variables contribute to income inequality? Second, do pension reforms, especially public pension changes, exacerbate income inequality? And finally, does income inequality drag the economy down?

What variables impact income inequality?

Income inequality in the United States was low during the 1950s through the 1970s. This was a period during which our tax system was highly progressive, when we made adequate investments in education and the training of our workforce, and labor unions were strong. Starting in the 1980s, tax and economic policies made a U-turn.

Some have taken the position that lower taxes, few or no regulations, and the weakening of workers' right to organize were good for the economy and removed barriers to growth. For example, President Reagan reduced the marginal tax rate (the tax rate that top income earners pay) from 70 percent in 1980 to 28 percent in 1988, and the resulting revenue shortfall led to deficit spending (as the promised economic growth resulting from the tax cuts did not transpire). This change marked the start of an upward trend in income inequality in the modern era.

The literature on income inequality identifies three key variables contributing to the rise in US income inequality: **regressive tax policy, cuts in public investment in education, and a decline in the share of workers covered by labor union contracts.**

Let's look at each in more detail.

Regressive taxation: This refers to an approach to tax policy under which the burden of taxation shifts to those who are least able to pay, exacerbating income inequality. Such policies cut rates for the top income earners and fill the resulting

revenue shortfall through deficit spending – or implementing regressive revenue-generating measures (especially at the state and local levels) such as casinos, lotteries, user fees, and so on.

The theory here is that cutting taxes for the top income earners will create economic growth that will trickle down to those of more modest incomes. As Nobel Laureate Paul Krugman notes in his book *Arguing with Zombies*, the economic growth promised by these “trickle down” approaches has yet to be realized.¹⁴ So far, after each tax cut benefiting the top income earners, not only has income inequality increased, but an economic recession has often followed.

How regressive is the US tax system? The most recent analysis of 50 states by the Institute on Taxation and Economic Policy shows that when we add up all the taxes people pay (income tax, property tax, sales tax, gas tax, cigarette tax, user fees, etc.), the bottom 20 percent of income earners in the United States pay \$11.30 in taxes out of every \$100 they earn. The same figure for the top 1 percent of income earners is \$7.20.¹⁵

How does a regressive tax system exacerbate income inequality? An article by John Cassidy in *The New Yorker* features a graphic that compares income inequality before and after taxes.¹⁶ It shows that the Gini coefficient (a measure of income inequality) for the United States was 0.42 before taxes. The after-tax Gini coefficient was about 36 percent higher. This increase in income inequality is attributable to the regressive nature of our tax system.

14 Paul Krugman, *Arguing with Zombies* (New York: W. W. Norton & Company, 2020), <https://wwnorton.com/books/9781324005018>.

15 Institute on Taxation and Economic Policy, *Who Pays?* 7th ed. (Washington, DC: ITEP, 2024), <https://sfo2.digitaloceanspaces.com/itep/ITEP-Who-Pays-7th-edition.pdf>.

16 John Cassidy, “American Inequality in Six Charts,” *The New Yorker*, November 18, 2013, <https://www.newyorker.com/news/john-cassidy/american-inequality-in-six-charts>.

Lack of investment in public education: Public education is a great equalizer. Historical data show that increases or decreases in funding for education go hand in hand with increases or decreases in income inequality. For example, income inequality was low from the 1950s through the mid-1970s. Education funding during that period increased from 2.6 percent of GDP in 1953 to 5.7 percent of GDP in 1976. Public education funding has fluctuated since the 1980s and now stands at 4.3 percent of GDP. Income inequality has been on the rise since the mid-1970s.¹⁷

It is important to adequately fund education to ensure that a high-quality education is available to all children, regardless of their life circumstances. A recent report by Oxfam International suggests that good-quality education can help close the gap between rich and poor.¹⁸ However, a highly unequal education system can increase that gap. Unfortunately, state supreme court rulings in numerous states show that education funding in the United States remains inadequate and inequitable.¹⁹

Decline in union membership: Workers have historically formed unions to ensure that wages keep up with productivity and that neither executives nor shareholders are unduly rewarded. Unions have also worked to ensure safe working conditions and fairness in the workplace. While unions strive to improve the economic lot of their members, their net effect, according to Harvard economist Richard Freeman, has been to reduce income inequality.²⁰

Unions were strong from the 1950s through the 1970s. But from the 1980s onward, various legislative and policy actions undermined workers' right to organize and press for improvements in

their working conditions. For example, Timothy Noah, in a 2010 article in *Slate*,²¹ writes, "Thomas Geoghegan, a Chicago-based labor lawyer, argues that Taft-Hartley was the principal cause of the American labor movement's eventual steep decline. Taft-Hartley led to widespread 'union-busting.' It started when a new 'profession' of labor consultants began to convince employers that they could violate the [pro-labor 1935] Wagner Act [since the Wagner Act had no real teeth/sanctions] ..."

Another reason for the decline of unions began in the 1980s when, according to Noah's article, "Reagan's hostility to unions [in addition to his actions against the air traffic controllers union] was reflected in his appointment of Donald Dotson to chair the National Labor Relations Board. Dotson had previously worked as a management-side labor adversary for Wheeling-Pittsburgh Steel, and believed collective bargaining led to 'the destruction of individual freedom.' Under Reagan's two terms, the federal minimum wage, which previously had been adjusted upward almost every year, would remain stuck at \$3.35 an hour for close to a full decade. Similarly, President George W. Bush, another two-term Republican President, later let the minimum wage remain at \$5.15."

Union membership and income inequality have an inverse relationship. For example, in 1980, when US union membership was about 20 percent, the ratio of the top income quintile to the bottom income quintile was about 7 – which means that the top income quintile earned 7 times more than the bottom quintile. In 2021, when union membership had declined to about 9 percent, the top quintile earned 14 times more than the bottom quintile.²²

17 A Century of Education Spending, https://www.usgovernmentspending.com/education_spending#google_vignette

18 Jo Walker, Caroline Pearce, Kira Boe, and Max Lawson, *The Power of Education to Fight Inequality* (Oxford, UK: Oxfam International, 2019), https://www-cdn.oxfam.org/s3fs-public/file_attachments/bp-education-inequality-170919-summm-en.pdf.

19 Eric A. Hanushek and Matthew Joyce-Wirtz, "Incidence and Outcomes of School Finance Litigation: 1968–2021" (EdWorkingPaper 23-779, Annenberg Institute, Brown University, 2023), <https://edworkingpapers.com/sites/default/files/aj23-779.pdf>.

20 As underscored in Timothy Noah, "The Great Divergence and the Death of Organized Labor," *Slate*, September 12, 2010, <https://slate.com/news-and-politics/2010/09/the-great-divergence-and-the-death-of-organized-labor.html>.

21 Timothy Noah, "The Great Divergence and the Death of Organized Labor," *Slate*, September 12, 2010, <https://slate.com/news-and-politics/2010/09/the-great-divergence-and-the-death-of-organized-labor.html>.

22 Author's calculations.

Do pension reforms exacerbate income inequality?

The literature on the relationship between pension reforms and income inequality is relatively limited, especially at the state level. One relevant paper is a 2015 NCPERS study on this topic, which found a clear and direct link between public pension reforms (benefit cuts, contribution rate increases, and conversions of DB plans to DC plans) at the state level and increased income inequality.²³

There are some other studies worth noting (although they mainly focus on the transition from DB to DC plans). A 2023 Congressional Budget Office study²⁴ examines how the shift from DB to DC plans impacted wealth inequalities. The study finds that between 1989 and 2019, the shift accounted for about a fifth of the increase in the Gini coefficient and a fifth of the increase in the share of wealth held by families in the top 10 percent of the wealth distribution.

In their 2019 article entitled “Are Disappearing Employer Pensions Contributing to Rising Wealth Inequality?” John Sabelhaus and Alice Henriques Volz of the Federal Reserve Board find that “... wealth inequality has increased more than it would have in a counterfactual world in which traditional pension coverage did not decrease.”²⁵ This study uses data from the Federal Reserve’s Survey of Consumer Finances for the years 1989 through 2016. The study shows that trends in employer-sponsored retirement plans negatively impacted

families except those in the top wealth quartile. The entire bottom half of the wealth distribution suffered, as their share of total retirement assets declined from 7 percent in 1989 to about 4 percent in 2016.

There are several other studies indicating that DB to DC plan conversions and reductions in pension benefits increase income inequality as well as poverty among the elderly. For example, Robert Brown and Steven Prus, in their research paper *Social Transfer and Income Inequality in Old Age*,²⁶ show that the lower the percentage of seniors receiving income from a public pension, the higher the income inequality among them. Similarly, Kees Goudswaard and Koen Caminada, in a 2010 article in *International Social Security Review*,²⁷ and Camila Arza in *Pension Reforms in Europe*,²⁸ conclude that the shift from DB to DC plans generally results in poverty and higher income inequality among retirees.

While the above studies show that transitioning from DB to DC plans increases income and wealth inequality, a 2023 study by Nari Rhee backed by both the National Institute on Retirement Security and UC Berkeley’s Labor Center shows that participation in public pensions decreases economic inequality among the elderly.²⁹ For example, the study finds that public pensions play an outsized role in the retirement income security of older adults and help narrow racial and gender wealth gaps.³⁰

23 National Conference on Public Employee Retirement Systems, *Income Inequality: Hidden Economic Cost of Prevailing Approaches to Pension Reforms* (Washington, DC: NCPERS, 2015), www.ncpers.org/files/ncpers-research-income-inequality-hidden-economic-cost-of-prevailing-approaches-to-pension-reforms-2015.pdf.

24 Nadia Karamcheva and Victoria Perez-Zetune, “Defined Benefit and Defined Contribution Pensions and the Distribution of Family Wealth,” Working Paper 2023-02, Congressional Budget Office, February 10, 2023, www.cbo.gov/publication/58305.

25 John Sabelhaus and Alice Henriques Volz, “Are Disappearing Employer Pensions Contributing to Rising Wealth Inequality?” *FEDS Notes*, February 1, 2019, www.federalreserve.gov/econres/notes/feds-notes/are-disappearing-employer-pensions-contributing-to-rising-wealth-inequality-20190201.html.

26 Robert Brown and Steven Prus, *Social Transfer and Income Inequality in Old Age: A Multinational Perspective*, SEDAP Research Paper 109 (Ontario, Canada: McMaster University, 2003).

27 Kees Goudswaard and Koen Caminada, “The Redistributive Effect of Public and Private Social Programs: A Cross Country Empirical Analysis,” *International Social Security Review* 63, no. 1: 1–19, <https://onlinelibrary.wiley.com/doi/10.1111/j.1468-246X.2009.01351.x>.

28 Camila Arza and Martin Kohli, eds., *Pension Reforms in Europe* (Abingdon, UK: Routledge, 2011).

29 Nari Rhee, “Closing the Gap: The Role of Public Pensions in Reducing Retirement Inequality,” National Institute on Retirement Security, September 2023, www.nirsonline.org/reports/closingthegap/.

30 Ibid.

This contribution of DB plans to overall retirement income security becomes more significant given the prevailing trend of workers and their families having to shoulder the burden of caring for aging parents, which may ultimately have negative impacts on broader productivity in the workforce and economy. An estimated one in seven Americans between the ages of 40 and 60 is currently part of the “sandwich generation.”³¹ With rising healthcare costs and an aging workforce, the need for income security in retirement will only become more dire.

Does income inequality drag the economy down?

A study by S&P entitled *How Increasing Income Inequality Is Dampening US Economic Growth, and Possible Ways to Change the Tide* notes the following:

- Too much income inequality can undermine growth.
- Income inequality can lead affluent households to increase savings and decrease consumption, while those with less means increase consumer borrowing to sustain consumption ... until those options run out. When these imbalances can no longer be sustained, we see extreme and frequent boom/bust cycles such as the one that culminated in the Great Recession.
- In addition to the extreme economic swings, such income imbalances tend to dampen social mobility and produce a less-educated

workforce that can't compete in a changing global economy.

- S&P sees extreme income inequality as a drag on long-run economic growth. It reduced its 10-year US growth rate forecast to 2.5 percent. Five years previously, in contrast, it expected a 2.8 percent growth rate.³²

We earlier quoted Joseph Stiglitz, a Nobel Laureate economist, on how the “rising tide lifts all boats” hypothesis no longer works in a world where regressive tax policy favors the rich. Stiglitz is not the only economist concerned about the impact of income inequality. A study by the Institute for New Economic Thinking (INET) shows that income inequality is holding back the US economy by dragging down demand in the economy. Since more than 70 percent of US economic growth comes from consumer spending, the lower the demand, the slower the economic growth. The INET study finds that demand is at least 10 percent below where it would have been with the income distribution of the early 1980s.³³

Echoing these findings, a 2022 study by the Economic Policy Institute shows that income inequality has risen sharply since the 1970s and has stayed high, resulting in significant macroeconomic and fiscal effects. The study notes that high income inequality has led to chronic shortfalls in demand, stemming from weakened household spending. These chronic demand shortfalls have constrained economic growth – by as much as 3.4 percent of GDP per year.³⁴

31 Mathew Fedor, “Why Employers Need to Support the ‘Sandwich Generation,’” Foster Swift, April 30, 2020, <https://www.fosterswift.com/communications-why-employers-must-support-workforce.html>.

32 Standard & Poor’s, *How Increasing Income Inequality Is Dampening US Economic Growth, and Possible Ways to Change the Tide* (New York: Standard & Poor’s, 2014), www.spglobal.com/division_assets/images/special-editorial/how-the-advancement-of-black-women-will-build-a-better-economy-for-all/ratingsdirect_28714420_jun-07-2021.pdf.

33 Barry Cynamon and Steven Fazzari, “Rising Inequality Is Holding Back the US Economy,” Institute on New Economic Thinking, July 16, 2015, www.ineteconomics.org/perspectives/blog/rising-inequality-is-holding-back-the-us-economy.

34 Josh Bivens and Asha Banerjee, “Inequality’s Drag on Aggregate Demand: The Macroeconomic and Fiscal Effects on Rising Income Shares of the Rich,” Economic Policy Institute, May 24, 2022, www.epi.org/publication/inequalitys-drag-on-aggregate-demand/.

Section II: Data and Methodology

As mentioned in the literature review section, there are three key variables that increase income inequality: regressive taxation, lack of investment (or spending cuts) in public education, and declines in union membership. In this study, we argue that pension reforms (consisting of benefit cuts) also exacerbate income inequality. Similarly, economic growth is slowed not only by rising income equality but also by lack of investment in public education. To further examine the relationships between these variables, we will use a combination of trend-line graphics, correlational analysis, and multivariate analysis, presented below in greater detail.

What variables are used in the study and how are they measured?

Income inequality: Income inequality is measured by the ratio of the average income of the top income quintile to that of the bottom quintile. Historical data on income by quintiles is available from the US Census Bureau at both the national and state levels. We use the ratio of top to bottom quintiles as a measure of income inequality due to its simplicity compared to other measures such as the Gini coefficient.

Regressive taxation: Regressive taxation at the national level refers to cuts in the marginal income tax rate (the rate that applies to top incomes). For example, the marginal tax rate prior to 1980 was 70 percent. Today, it is about half that (37 percent). The resulting revenue shortfalls are invariably made up through measures such as gas taxes and deficit financing, which further accentuates the regressive trend by shifting the burden of taxation away from the rich. The data cited in this paper on national marginal tax rates are obtained from the Tax Policy Center.³⁵

At the state level, taxes are regressive because of the way they are structured. That is, states rely mostly on revenue from regressive taxes such as sales and excise taxes. Increasing proportions of state and local revenues are coming from nontax sources such as user fees, casinos, lotteries, and so on, making the state taxation framework even more regressive.

Regressive state and local taxation, for the purpose of this study, is measured by tax revenues as a percentage of total revenues. These data are derived from a census of state and local governments.³⁶

Lack of investment in public education: Public education is primarily a state and local function. More than 90 percent of education funding comes from state and local governments. For the purpose of this study, we measure lack of investment or cuts in public education by estimating education expenditures as a percentage of total expenditures. At a minimum, this ratio should stay stable over time, not decline. The data for constructing this variable come from a census of state and local governments.

³⁵ "Historical Highest Marginal Income Tax Rates," Tax Policy Center, May 11, 2023, www.taxpolicycenter.org/statistics/historical-highest-marginal-income-tax-rates.

³⁶ "Census of Governments," United States Census Bureau, <https://www.census.gov/programs-surveys/cog.html>

Decline in union membership: This variable is measured as the percentage of workers who are members of a union. The data for this variable come from the US Bureau of Labor Statistics.

Pension reform: Pension reform is measured in two ways. At the national level, where the main reform trend has been a shift from DB to DC plans (especially in the private sector), this variable is measured by the percentage of the workforce (public and private) covered by pensions. The data for this variable come from the US Bureau of Labor Statistics.

At the state level, public pension reform consists of various changes to DB plans, including increases in employee contributions, reductions in benefits, and closing pensions to new hires or altogether. We refer to this variable as *negative pension changes*, as such changes are harmful to employees as well as employers and local communities. The data on these negative pension changes were compiled from the National Conference of State Legislatures and the National Association of State Retirement Administrators. This variable is measured as the number of negative pension changes a state has made in the last 20 years.

Economic growth: Economic growth is measured by annual growth (or decline) in median income. These data are available from the US Census Bureau. In some cases, in confirming our findings, we have also used multifactor productivity (MFP) to measure economic growth. Multifactor productivity means productivity resulting from various factors such as labor, capital, and raw materials. The MFP data are available from the US Bureau of Labor Statistics.

A brief summary of analytical techniques employed in this paper

To further explore the issues raised in this paper, we use historical data and three distinct methods to analyze trends and the relationships among the variables we have cited. These methods include graphics, correlational analysis, and multivariate analysis.

Graphics: In the following pages, this paper presents simple charts to compare trends as they relate to several key variables. These charts reveal some helpful relationships between variables. For example, if the trend line representing marginal tax rates is going down and the trend line for income inequality is going up, this suggests that cuts in marginal tax rates may increase income inequality.

Correlational analysis: This paper also uses correlations to measure the relationship between two or more variables using correlation coefficients. The correlation coefficient varies between 0.0 (no correlation) and 1.0 (perfect correlation) and has a positive or negative value. If, for example, a correlation coefficient between income inequality and the proportion of the workforce with access to pensions during the period 1977–2021 is -0.96, then this means that if the percentage of workforce in DB plans decreases, income inequality increases. The size of the coefficient indicates how strong or robust the correlation is.

Multivariate analysis: Finally, this paper uses multivariate analysis to weigh the impact of specific individual variables on policy outcomes. For example, this analytical approach allows us to separately examine the extent to which factors such as regressive taxation, a lack of investment in education, and pension reforms have by themselves (as well as together) contributed to increasing income inequality over the last 20 years.

Section III: Results

Our discussion of results is divided into two parts. First, we will present our findings illustrating national trends in income inequality. This presentation will include orienting pension reforms within the context of other variables that contribute to income inequality.

Second, we will take a closer look at the costs of pension reforms by focusing on state trends in income inequality and public pension changes consisting of cuts in benefits, increases in employee contributions, closing pensions to new hires, and so on, controlling for other variables that contribute to income inequality.

National trends in income inequality and variables that impact income inequality

As discussed in the literature review, regressive taxation, lack of investment in education, declines in union membership, and pension changes such as the shift from DB to DC plans are key variables that increase income inequality. Let's examine these trends graphically as well as through correlational analysis.

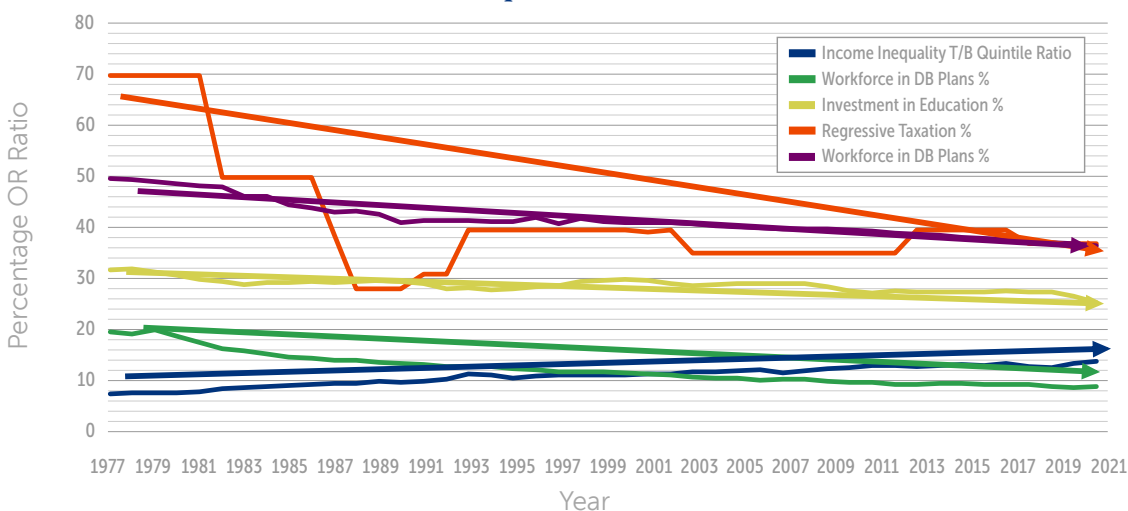
Graphic presentation of trends in income inequality and other variables:

Figure 2 shows trends that impact income inequality, broken out by variable.³⁷ While the trend lines for all other variables are trending downward, the trend line for income inequality is trending upward. This means that all these variables have an inverse relationship with income inequality. Let's take each trend line individually.³⁸

Decline in share of public- and private-sector workforce in DB plans

Recall that the key trend at the national level has been a shift from DB to DC plans. This variable is measured by the percentage of the workforce in DB plans over time. The trend line for this variable in Figure 2 shows that the share of the US workforce³⁹ covered by DB plans decreased from about 50 percent in 1977 to about 37 percent in 2021 – a decline of 13 percentage points.

Figure 2. Trends in income inequality, regressive taxation, workforce in unions, investment in education, and workforce in defined benefit plans, United States, 1977-2021



Please note that each variable has two lines. One line is a plot of actual data, and the other with an arrowhead shows the slope.

³⁷ For a description of the variables behind each line in Figure 2, please refer to the Data and Methodology section above.

³⁸ Please note that each variable in Figure 2 has two lines. One line is a plot of actual data, and the other with an arrowhead shows the slope.

³⁹ Workforce means total public- and private-sector workers.

During the same time, income inequality (the ratio of the top income quintile to the bottom income quintile) increased from 7.4 to 13.8 – which means that the top income quintile on average earned about 7 times more than the bottom quintile in 1977, while in 2021, the top income quintile earned almost 14 times more than the bottom quintile. The two variables have an inverse relationship – the percentage of the workforce covered by DB plans is trending downward, and income inequality is trending upward.

Regressive taxation – There are various ways to measure regressive taxation. However, for the purpose of this study and based on availability of relevant data, we measure it by reductions in the marginal tax rate. Figure 2 shows that the marginal tax rate declined from 70 percent in 1977 to 37 percent in 2021. During the same period, income inequality nearly doubled.

Decline in union membership – The trend line for union membership has a downward slope, capturing the decline in union membership from about 20 percent in 1977 to about 9 percent in 2021. During the same period, income inequality has a trend line that slopes upward – indicating an inverse relationship.

Lack of investment in public education – As stated in the Data and Methodology section, lack of investment in public education is measured by education spending by state and local governments as a percentage of total spending.

The percentage should at least be stable, if not increasing. A declining percentage is an indication of cuts in education.

Figure 2 shows that public education spending as a percentage of total state and local expenditures decreased from about 32 percent of total spending in 1977 to about 25 percent in 2021 – a decline of about 7 percentage points. While education spending as a percentage of total expenditures is trending downward, income inequality is trending upward – indicating an inverse relationship between the two.

Correlational analysis of income inequality and other variables: The trend lines of different variables in Figure 2 give us a sense of the inverse relationship between income inequality and other variables that impact income inequality. Table 1 shows the correlation coefficients that measure the magnitude of the inverse relationship. The negative sign of the correlation coefficient in Table 1 means that the variable has an inverse relationship with income inequality.

The correlation coefficients shown in Table 1 are statistically significant. Such robust coefficients are rare in social science studies. For example, the decline in union membership is highly correlated with income inequality at -0.97. The minus sign of the coefficient means that as union membership declines, income inequality rises.

Table 1. Correlation between income inequality and other variables that contribute to income inequality, United States, 1977–2021

| VARIABLE | CORRELATION COEFFICIENT |
|-------------------------------------------|-------------------------|
| Regressive taxation | -0.68 |
| Decline in union membership | -0.97 |
| Decline in share of workforce in DB plans | -0.96 |
| Lack of investment in public education | -0.84 |

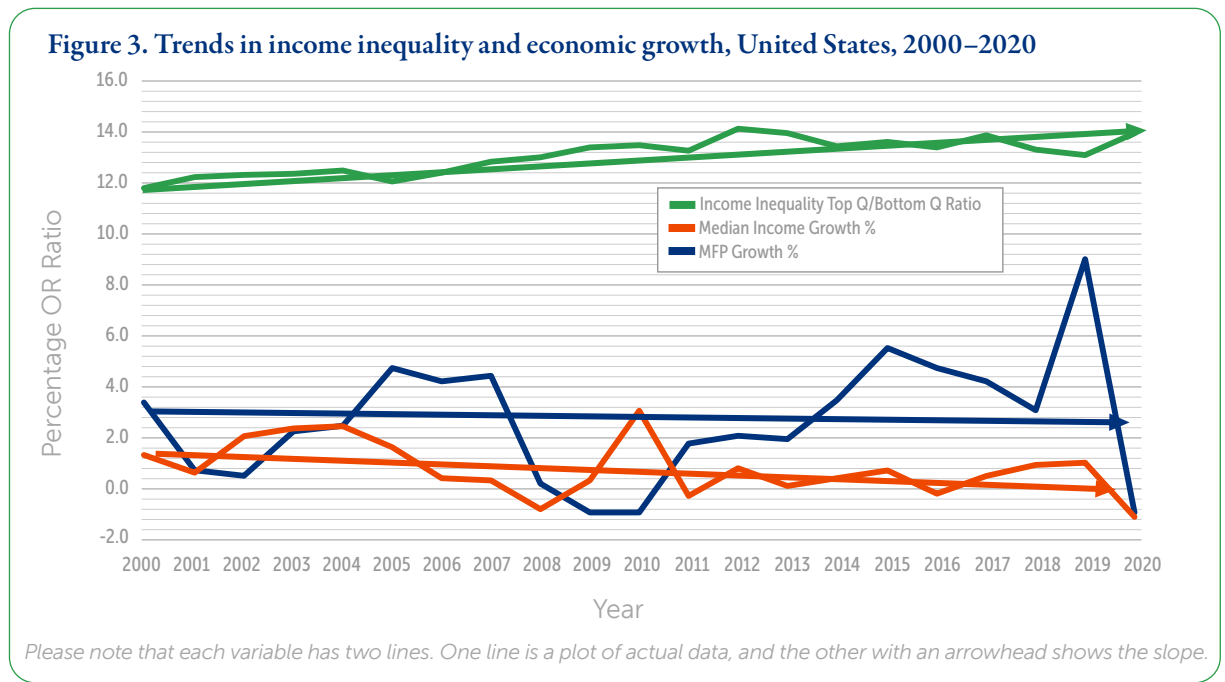
Similarly, the correlation coefficient for the relationship between the decline in the share of the workforce in DB plans and income inequality is -0.96, indicating that as the percentage of the workforce in DB plans declines, income inequality rises. Lack of investment in public education and regressive taxation variables also have negative correlations with income inequality, with coefficients of -0.84 and -0.68, respectively.

It may be worth mentioning here that the decline in union membership is a major factor in the decline in the proportion of the workforce that has access to DB plans. One change leads to another, and the impact on income inequality multiplies.

Graphic presentation of trends in income inequality and economic growth: As previously discussed, rising income inequality drags the economy down. Let's graphically examine the trends in income inequality and national economic growth. Figure 3 shows the trends

in income inequality and economic growth. Economic growth is measured by annual increase or decrease in median income as well as multifactor productivity (MFP is an index that takes into account all the inputs – labor, capital, raw materials – that go into economic growth).⁴⁰

The trend lines in Figure 3 show that while income inequality is trending upward, median income and MFP are trending downward, pointing to an inverse relationship. In other words, when income inequality rises, growth in median income and MFP declines. For example, during the study period, 2000–2020, income inequality, as measured by the ratio of the average income of the top income quintile to that of the bottom quintile, increased from 11.4 to 13.5 (an increase of about 18 percent). At the same time, annual median income growth declined from 3.2 percent to -1.0 percent, with fluctuations during the period in between. The same is true for MFP, which declined from 1.2 to -1.2 during the study period.⁴¹



40 We use both median income and MFP in our analysis to show that no matter what measure of economic growth we use, income inequality has a negative impact on it. We did not use GDP in the analysis, as it distorts economic growth due to the extremely high concentration of income growth at the top. In other words, the economy (as measured by GDP) may appear to be growing when in fact it is doing so only at the top.

41 The study period is limited to the years 2000–2020 because of the availability of data.

Table 2. Correlation between income inequality and economic growth, United States, 2000–2020

| VARIABLE | CORRELATION COEFFICIENT |
|---------------------------------|-------------------------|
| Median income growth | -0.11 |
| Multifactor productivity growth | -0.42 |

Correlational analysis of income inequality and economic growth: Again, the graphic presentation in Figure 3 gives us a visual picture of the direction of the trend lines. This illustration suggests that when income inequality trends upward, the other economic variables tend to trend downward – indicating an inverse relationship between income inequality and economic growth.

Table 2 shows that the correlation coefficient for income inequality and median income growth is -0.11. The same figure for MFP is -0.42. The negative sign indicates that when income inequality goes up, the two measures of economic growth used in this study go down. In other words, rising income inequality dampens economic growth.

What is the relationship between the national economy and stock market returns?

The relationship between the economy and the stock market is complex. It is, however, common sense to expect that when the economy slows, stock market returns are likely to suffer. Figure 4 shows trend lines for annual growth (or decline) in the economy (as measured by personal income), the Dow Jones Industrial Average, and S&P 500 during the period 1985–2022. While swings in stock market returns are much greater in magnitude than changes in economic growth rates, Figure 4 shows that the trend lines tend to move in the same direction, indicating a positive correlation.

Figure 4. Trends in annual growth of US economy, Dow Jones Industrial Average, and S&P 500, 1985-2022

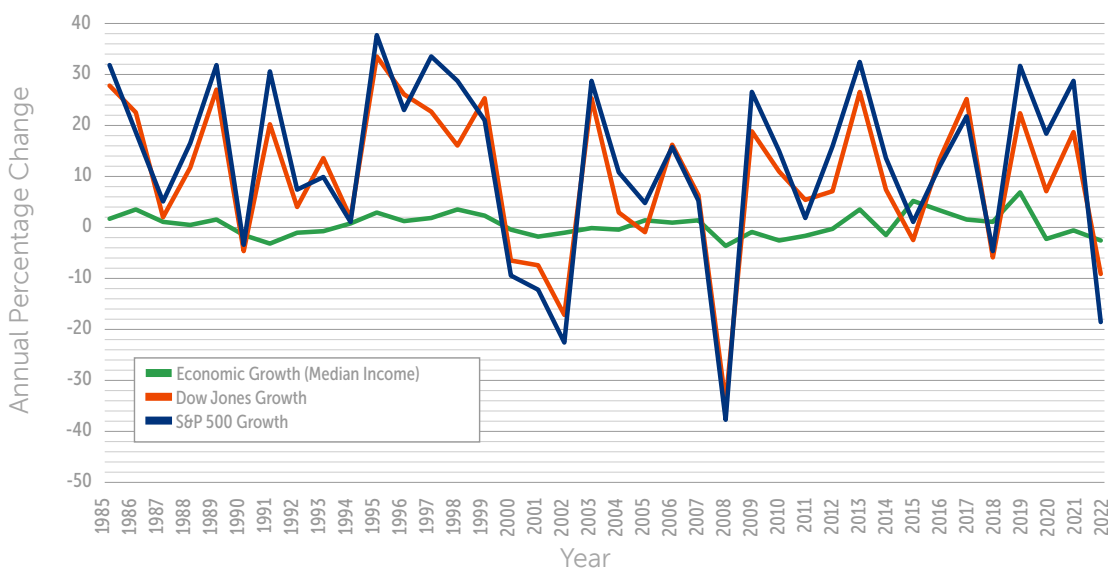


Table 3. Correlation coefficient matrix for annual growth in US economy, Dow Jones Industrial Average, and S&P 500, 1985–2022

| VARIABLE | ECONOMY (MEDIAN INCOME) | DOW JONES INDUSTRIAL AVERAGE | S&P 500 |
|------------------------------|----------------------------|------------------------------------|---------|
| Economy (median income) | 1.0 | | |
| Dow Jones Industrial Average | 0.48 | 1.0 | |
| S&P 500 | 0.46 | 0.95 | 1.0 |

Table 3 presents correlation coefficients for annual growth in the US national economy, Dow Jones Industrial Average, and S&P 500. It shows that during 1985–2022, the correlation coefficients for economic growth and growth in the Dow and S&P were about 0.48 and 0.46, respectively. This means that when the economy grows, market returns grow, and when the economy slows, market returns decline. A study by Nicolas Rabener shows that the correlation coefficient during 2000–2020 was even stronger than that in our own estimate – about 0.7.⁴²

These results suggest that negative pension changes, which are usually made to save money, may end up costing more due to the dynamic interrelationship between pension changes, income inequality, the economy, and market returns.

A closer look at the costs of pension reform

Do public pension reforms in a state contribute to increased income inequality in that state? Does rising income inequality in a state slow its

economic growth? We’ll answer these questions through a multivariate analysis of 50 states’ data on income inequality, regressive taxation, lack of investment in public education, negative pension changes made by state and local governments, and economic growth.⁴³ The analysis covers the period from 2000 to 2020.

Public pension reforms at the state level exacerbate income inequality: The results presented in Table 4 show that during 2000–2020, a single negative pension change increased the ratio of the top to bottom income quintiles – the measure of income inequality – by 0.27.

During the same period, a 1 percent cut in public education increased the ratio of top to bottom income quintiles during 2000–2020 by 0.84. Similarly, regressive taxation increased the ratio by 1.78. The analysis shows that the prevailing reforms in state and local pensions exacerbate income inequality, even when we control for the effects of other variables that also increase income inequality.

⁴² Nicolas Rabener, “Myth-Busting: The Economy Drives the Stock Market,” CFA Institute blog, March 17, 2023, <https://blogs.cfainstitute.org/investor/2023/03/17/myth-busting-the-economy-drives-the-stock-market/>.

⁴³ We do not have union membership data at the state level. Many states are right-to-work states where public employees are not permitted to form a union.

Table 4. Beta values showing impact of key variables on income inequality in states during 2000–2020

| VARIABLE | BETA COEFFICIENT |
|---------------------------------|------------------|
| Intercept ⁴⁴ | 7.04 |
| Lack of investment in education | 0.84 |
| Regressive taxation | 1.78 |
| Negative pension changes | 0.27 |

Rising income inequality slows state economic growth: Table 5 shows the effect of income inequality on economic growth, as measured by median income growth as a beta coefficient. The MFP data are not available at the state level. Therefore, our analysis here is limited to median income growth as a measure of economic growth or decline. In this analysis, we control for lack of investment in education, which also impacts economic growth.

The results presented in Table 5 show that income inequality is inversely related to economic growth because the beta coefficient is negative. This means that if income inequality goes up, economic growth goes down. For example, during 2000–

2020, when income inequality (the ratio of top to bottom quintiles) rose by one unit in a state, the annual rate of economic growth in that state fell by 2 percent.

To isolate the effects of other variables that also negatively impact economic growth, we control for lack of investment in education. This variable also has an inverse relationship with economic growth. The results presented in Table 5 show that during 2000–2020, for each 1 percent decrease in investment in public education, the annual rate of economic growth declines by about 46 percent. In short, rising income inequality hurts economic growth in a state even when we control for investment (or lack thereof) in public education.

Table 5. Beta values showing impact of income inequality and lack of investment in education on economic growth in states during 2000–2020

| VARIABLE | BETA COEFFICIENT |
|---------------------------------|------------------|
| Intercept | 0.81 |
| Income inequality | -0.02 |
| Lack of investment in education | -0.46 |

⁴⁴ *Intercept* refers to the average value of the dependent variable (which in this case is income inequality – the ratio of the top income quintile to the bottom income quintile) at the starting point of the analysis. And Beta values refer to the magnitude of change in dependent variable for a unit change in independent variable.

Section IV: Conclusions

Using data from various public sources, the present study sought to answer the following questions: Do pension reforms increase income inequality? Does rising income inequality in turn slow economic growth? After examining these questions at the national and state levels, the study finds that the answer to both of these questions is **yes**.

Analysis of data at the national level shows that a shift from DB to DC plans does indeed increase income inequality. The analysis also finds that rising income inequality in turn degrades national economic growth. Similarly, public sector pension changes at the state and local levels – such as increases in employee contributions, cuts in benefits, or closing public pensions to new hires – exacerbate income inequality. And rising income inequality in a state in turn slows economic growth in that state. Yet consideration of the impact of pension changes on increasing income inequality and dampening economic growth is often missing in policy circles.

Policy makers should think twice before they make changes that undermine public sector pensions or support policies that encourage elimination of pensions in the private sector. They should be aware of the negative consequences of such actions, including higher income inequality and slower economic growth. They need to remember that plan changes that are made to save money could potentially end up costing the state and local governments more than the anticipated savings. This is because of the dynamic interrelationship among pension reforms, income inequality, the economy, and investment returns.

Economic slowdown not only impacts the fortunes of local communities but also lowers returns on plan investments by negatively impacting asset prices in the stock market. Although the relationship between the economy and the stock market is complex, it is common sense to expect that when the economy slows, stock market returns are likely to suffer. Our own analysis shows that during the period 1985–2022, when the economy grew, market returns grew – and when the economy slowed, market returns declined.

Our findings suggest that we as trustees, managers, and advocates of pension funds are at a crossroads. The current policy path, taken to its conclusion, will undermine access to pensions, make our revenue systems more regressive, and shrink investments in public education. On this path, the economy grows – but with the growth concentrated at the top; thus, we will continue to see increasing income inequality and less overall economic growth.

But we have another option that has been demonstrated by this study to be a better choice. Instead of drifting along the “wheel of misfortune” cited earlier, we can take a different path that strengthens pensions, makes revenue systems progressive, and adequately invests in public education. This path increases economic equality and prosperity for all, including those at the top. This path is not hard to follow, especially where it involves strengthening pensions.

Actions to increase income equality – such as instituting a progressive tax framework, broadening access to pensions, increasing investments in public education, or promoting workers’ right to organize – are correlated with a positive “trickle up” effect, benefiting all layers of the population.

NCPERS research shows that public pensions are revenue positive.⁴⁵ For example, in 2018, the spending of retiree pension checks and investment of pension fund assets added \$1.7 trillion to the economy, which in turn generated \$341.4 billion in state and local revenues. During the same period, taxpayers’ contributions to pension funds amounted to about \$162 billion. In other words, pension funds generated \$179.4 billion in net

revenues for state and local economies. Now, imagine the boost to income equality if pensions were able to continue making these contributions to the economy while resources available for public education increased and states identified less-regressive ways to raise revenues. Imagine the difference this could make from coast to coast, for all segments of the population, in all 50 states.

45 National Conference on Public Employee Retirement Systems, *Unintended Consequences: How Scaling Back Public Pensions Puts Government Revenues at Risk – 2020 Update* (Washington, DC: NCPERS, 2020), www.ncpers.org/files/ncpers-research-unintended-consequences-2020-update.pdf.



National Conference on Public Employee Retirement Systems

1201 New York Avenue, NW, Suite 850

Washington, DC 20005

☎ 202-601-2445

📠 202-688-2387

www.ncpers.org

info@NCPERS.org