

# INCOME INEQUALITY

Hidden Economic Cost of Prevailing  
Approaches to Pension Reforms



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

The National Conference on Public Employee Retirement Systems (NCPERS) is grateful for the contribution of NCPERS director of research Michael Kahn, Ph.D., in bringing this seminal work to light.

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# Executive Summary

The struggle for social and economic justice in the United States cannot be won unless we address the issue of rising income inequality. Income inequality is related to many challenges we face in America today, including retirement security. Do pension reforms of the past three decades exacerbate income inequality? Does rising income inequality in turn dampen the economy? The purpose of this study is to address these questions.

The study reviewed changes in pensions resulting from pension reforms at national and state levels. At the national level, the key change has been a trend of conversion of defined-benefit (DB) pension plans into defined-contribution (DC) plans.<sup>1</sup> At the state and local levels pension changes consisted of cuts in benefits, increased employee contributions, and conversion of DB plans into DC plans. These changes have a negative impact on plan participants and beneficiaries as well as on local economies. Therefore, we refer to these changes as negative pension changes.

The study analyzed the relationship between pension changes and income inequality at national and state levels. At the national level, the data allowed us to examine trends in pension changes, income inequality, and economic growth during the 1980s, 1990s, and 2000s. At the state level, these trends could be examined only during 2000–2010.

**National Trends** – The analysis found that income inequality was highly co-related with the trend toward conversion of DB into DC plans. The correlation between income inequality and percentage of workforce (public and private) covered by DB plans was  $-.894$ . This correlation is

robust and means that the lower the percentage in the workforce with DB plans, the higher the income inequality. Other factors that had a robust inverse relationship with income inequality included changes in the percentage of the workforce in unions, marginal (top income) tax rates, and the rate of investment in public education. Inverse relations mean that higher income inequality is the result when the percentage of the workforce in unions; marginal tax rates; and the rate of investment in public education are all lower.

The national-level analysis also examined the relationship between income inequality and economic growth. The analysis shows that this correlation was  $-.553$ . This simply means that the higher the income inequality, the lower is the economic growth. Other factors considered in the analysis included rate of investment in public education and multifactor productivity. Multifactor productivity refers to economic inputs including labor, capital, and raw materials.

Higher-level analysis of the national data using advanced multivariate techniques was not viable due to limitations of the available data. Yet it is clear from the empirical data from 1980s, 1990s, and

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<sup>1</sup>A defined-benefit pension plan refers to a lifetime guarantee of a pension based on years of service and salary. The employer bears all the risk. A defined-contribution plan, on the other hand, refers to a do-it-yourself pension. In a defined-contribution plan an employee and employer contribute into a tax-deferred 401(k)-type plan, but there is no guarantee that the employee will have adequate or any retirement income. The employee bears all the risk.

2000s that when DB plans are changed into DC plans, income inequality rises and economic growth dampens. Also, just by looking at the raw data one can conclude that if the trend toward conversion of DB into DC plans during the past 30 years did not exist, 15 million more US workers would be covered by a lifetime guarantee of a DB plan.

**State Trends** – The analysis found that the higher the number of negative pension changes made by a state government, the higher is the increase in income inequality in that state. Again, by negative changes we mean cuts in benefits, increases in employee contributions, and conversion of DB plans into DC or hybrid plans. The data show that the correlation between negative pension changes and income inequality during 2000–2010 was  $-.378$ . This correlation means that the more negative changes a state makes to its pension plan, the higher is the income inequality in that state. The state-level data allowed us to do advance multivariate analysis to examine the relationship between pension changes and income inequality and between income inequality and economic growth.

The analysis shows that with a single negative change in pensions in a state, income inequality increases by 15 percent in that state. This relationship holds true even when other factors contributing to income inequality, such as lack of investment in education, are taken into account.

Next, the analysis examined the relationship between income inequality and economic growth in each of the 50 states during 2000–2010. The analysis shows that states with rising income inequality had slower economic growth. The analysis found that for each one-unit increase in income inequality in a state, the rate of economic growth in that state was reduced by about 18 percent. By one unit we mean the ratio of incomes of top and bottom quintiles changes by one. Again, this relationship holds true even when other factors affecting economic growth, such as productivity, are taken into account.

**Implication** – Policymakers should pay serious attention to income inequality and its hidden economic cost to taxpayers before they make the changes that diminish DB pensions. Rather than making changes such as increasing employee contributions, cutting benefits, converting DB plans into DC or hybrid plans, and so forth, policymakers should close tax loopholes. A recent study of a number of states by Good Jobs First shows that on average states gave away twice as much in economic development subsidies and loopholes as they were required to pay into annual pension contributions (see state data<sup>2</sup>). Whereas taxpayer money given through loopholes and subsidies often ends up in overseas tax havens, pension checks are spent locally and stimulate local economies.

<sup>2</sup>See [www.goodjobsfirst.org/statepensions](http://www.goodjobsfirst.org/statepensions).

### Annual Employer Normal Pension Costs Compared with Annual Cost of Taxpayer Money Given Away in Corporate Subsidies and Tax Loopholes in Selected States.

State	Annual Employer Normal Pension Costs (in Billions of Dollars)	Annual Cost of Corporate Subsidies (in Billions of Dollars)	Annual Pension Costs as a Percentage of Corporate Subsidies
Arizona	0.47	0.55	86
California	6.82	9.7	70
Colorado	0.18	0.59	30
Florida	0.91	3.81	24
Illinois	1.85	2.40	77
Louisiana	0.35	1.81	19
Michigan	0.59	1.86	32
Missouri	0.43	0.84	51



# Introduction

The struggle for social and economic justice in the United State cannot be won unless we address the issue of rising income inequality. The prevailing struggle between Republicans and Democrats in Congress, and between Congress and the White House, is nothing compared to the economic consequences of rising income inequality for ordinary Americans. Income inequality is related to many challenges we face in America today, including retirement security. Do pension reforms of the 1980s, 1990s, and 2000s exacerbate income inequality? Does rising income inequality in turn dampen the economy? Using empirical data, the purpose of this study is to address these questions.

It is true that there are many factors that contribute to income inequality. However, it is common sense to conclude that when incomes of some people are reduced through cuts in pensions and compensation, and incomes of others are increased through cuts in marginal (top) tax rates, income inequality is bound to increase. Yet consideration of negative consequences of pension reforms for income inequality and dampening of economic growth is missing in policy circles.

The purpose of this study is to shed some light on the hidden economic cost of prevailing approaches to pension reforms. The findings and conclusions, it is hoped, would cause policymakers to reconsider and reverse the rush to dismantle pensions. When income inequality rises and economic growth dampens, everyone suffers, not just public employees or all those workers in the private sector who still have defined-benefit (DB) pension plans.

The study reviewed changes in pensions resulting from pension reforms at national and state levels. At the national level, the key change has been conversion of DB pension plans into defined-contribution (DC) plans. At the state and local

levels pension changes consisted of cuts in benefits, increased employee contributions, conversion of DB plans into DC or hybrid plans, and so forth. These changes have a negative impact on plan participants and beneficiaries as well as on local economies. Therefore, we refer to these changes as negative pension changes.

According to the latest Gallup Poll, two out of three Americans are concerned that the rich are getting richer and the poor are getting poorer.<sup>3</sup> In other words, people have a gut feeling that rising income inequality is limiting opportunities for them to advance, no matter how hard they work. But neither policymakers nor the general public has made the connection between the prevailing changes in pensions and rising income inequality. In a way we are shooting ourselves in the foot, economically, by overlooking this important connection. A recent study by Standard and Poor's (S&P) that focuses on income inequality and economic growth in the United States has an interesting quote that is worth repeating:

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

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<sup>3</sup> See Gallup Poll: [www.gallup.com/poll/166904/dissatisfied-income-wealth-distribution.aspx](http://www.gallup.com/poll/166904/dissatisfied-income-wealth-distribution.aspx).

Later in the study we'll discuss details of S&P and other studies, including studies conducted by researchers at the International Monetary Fund (IMF) and Organisation for Economic Co-operation and Development (OECD). At this point, suffice it to say that analysis of empirical data in the United States shows that making changes to pensions that diminish them exacerbate income inequality and rising income inequality in turn dampen economic growth.

We are stuck in a debate over DB versus DC plans that overlooks the hidden societal costs of the prevailing trends in pension reforms. One side argues, Why should public employees have DB pensions when most employees in the private sector don't have them? They use the pension-funding gap as a starting point and argue that public pensions are unsustainable; taxpayers can't afford to pay for these pensions, and therefore they must be changed or dismantled.

The other side argues that pensions contribute to the economy and that everyone should have a DB pension. Taxpayers are not paying for these pensions. It's the money that participants have earned as "deferred compensation." Not making a contribution to the pension plan, according to David Cay Johnson, is in fact "a wage theft."<sup>4</sup> It's unfair and not the American way. Since when in America do we tell workers that we are not going to pay them when they have done the work? This side also argues that DB pensions are more efficient than DC plans. Therefore, they should be preserved and expanded to cover all workers.

Yet the trend toward making negative changes to pensions continues. For example, in the private sector, the number of DB plans has declined by 57 percent, and the number of workers covered by DB plans declined by 10 percent during 1975–2011. In the public sector, the number of plans as

well as coverage has remained relatively stable, but the recent changes in the public pensions are troubling in the context of income inequality and dampening of state economies. The National Conference of State Legislatures reports that 48 states made changes to their pension plans – some more than once.<sup>5</sup> The main approaches consisted of the following changes:

- 34 states increased employee contributions
- 38 states instituted higher age and service requirements for retirement
- 30 states reduced cost-of-living adjustments
- 18 states instituted steps to convert DB plans into DC or hybrid plans (mandatory hybrid – 6 states, mandatory cash balance – 3 states, mandatory DC – 2 states, and choice of plan – 7 states)

There may have been additional changes this year, but the push is likely to be in the same direction as was observed at the NCPERS Public Pension Funding Forum in 2014.

Overall, the percentage of the workforce (public and private) covered by DB pension plans continues to decline. Empirical data show that if such a decline did not take place, more than 15 million more workers would have had a lifetime guarantee of a DB pension today.

The present study will present more details in later sections about the trends in pensions in the context of income inequality and economic growth. Our analysis is based on data at both the national and state levels. At the state level, the analysis is limited to public plans. At the national level, the analysis includes both public and private plans. The study is divided into the following four sections. The first section consists of a review of literature on pensions and income inequality and economic growth. The second and third sections will address

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<sup>4</sup>David Cay Johnson spoke at the National Institute on Retirement Security conference in March 2015. Also, see his article at <http://america.aljazeera.com/opinions/2015/3/dont-be-duped-by-misleading-economic-terms.html>.px.

<sup>5</sup>Luke Martel, National Conference of State Legislatures, Presentation at the National Conference on Public Employee Retirement Systems Public Pension Funding Forum, April 2014: [http://www.ncpers.org/ppff\\_archives](http://www.ncpers.org/ppff_archives).

the following two questions:

- What do the national trends in public and private pensions, income inequality, and economic growth reveal?
- What do the state trends in public pensions, income inequality, and economic growth reveal?
- The fourth section will discuss the conclusions of this study.

We must acknowledge that the present study is a work in progress. There has been little research on pensions and income inequality and dampening of economic growth. Most of the research in the area of pensions and economy has focused on the role of pensions in stimulating local economies,

especially in terms of jobs and level of spending of pension checks in local economies. This type of research is important on its own and must be continued.

But it seems that despite this compelling research on the positive impact of pensions on local economies, policymakers continue to make harmful changes to pensions, and the general public feels they don't have "a skin in the game." If this new research focused on pensions and income inequality can make policymakers and the general public become aware that the prevailing approach to pension reforms is harmful to everyone, not just those in DB plans, then we would consider this study a success.

# Section I: Review of Literature on Pensions and Income Inequality and Economic Growth

**Income Inequality in the United States** – A strong economy produces three outcomes: job growth, income growth, and shared prosperity through a reduction in income inequality. Lower inflation is also an important component of a strong economy, but management of inflation is often left at the discretion of the monetary policy of the Federal Reserve Bank. The discussion about economy in policy circles is usually focused on jobs and income. Too often, the subject of income inequality is overlooked.

The most recent research, including Stiglitz<sup>6</sup> and Piketty,<sup>7</sup> shows that income inequality has reached the levels of the years prior to the 1930's Great Depression. The Robert Reich documentary – *Inequality for All* – depicts that income inequality reached its peak in 1928 and 2007. Using a graphic that looks like a suspension bridge, the documentary underscores that each time income inequality reached such high levels, an economic disaster followed.

In Figure 1, we have updated the graphic shown in the documentary using the latest data from the World Top Incomes Database established by Alvaredo, Atkinson, Piketty, and Saez.<sup>8</sup> Data show that we are not out of the woods yet as the rise in income inequality continues beyond 2007.

Others go beyond what the documentary shows. They say that high levels of concentration of wealth and income led to the fall of the Roman Empire and other empires.<sup>9</sup>

Income inequality limits opportunities for ad-

vancement. Above all, rising income inequality polarizes our society and causes gridlock in the policymaking arena. In the end, everyone suffers. For example, Nolan McCarty, Keith Poole, and Howard Rosenthal, in their study *Polarized America: the Dance of Ideology and Unequal Riches*,<sup>10</sup> found a direct relationship between economic inequality and polarization. Nobel Laureate Joseph Stiglitz, in his book *The Price of Inequality* (see note vi), argues that rising inequality in the United States has created a division that puts our democracy in peril.

Despite the evidence to the contrary, some conservatives believe that income inequality is not a problem. For example, in a speech in Detroit during the 2012 presidential primary elections, presidential hopeful Rick Santorum said, “There is income inequality in America, there always has been, and hopefully, and I do say that, there always will be.” Of course, some income inequality is inevitable, but colleagues on the conservative side argue that income inequality is good for economic growth because it provides an incentive for people to work harder to get ahead.

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<sup>6</sup> Joseph Stiglitz, *The Price of Inequality* (New York: Norton, 2013).

<sup>7</sup> Thomas Piketty, *Capital in the 21st Century* (Cambridge, MA: President and Fellows of Harvard College, 2014).

<sup>8</sup> See <http://topincomes.parisschoolofeconomics.eu/#Home>.

<sup>9</sup> See United Nations Research Institute, referenced in Flemming Funch [http://ming.tv/flemming2.php/\\_\\_\\_show\\_article/\\_a000010-001114.htm](http://ming.tv/flemming2.php/___show_article/_a000010-001114.htm).

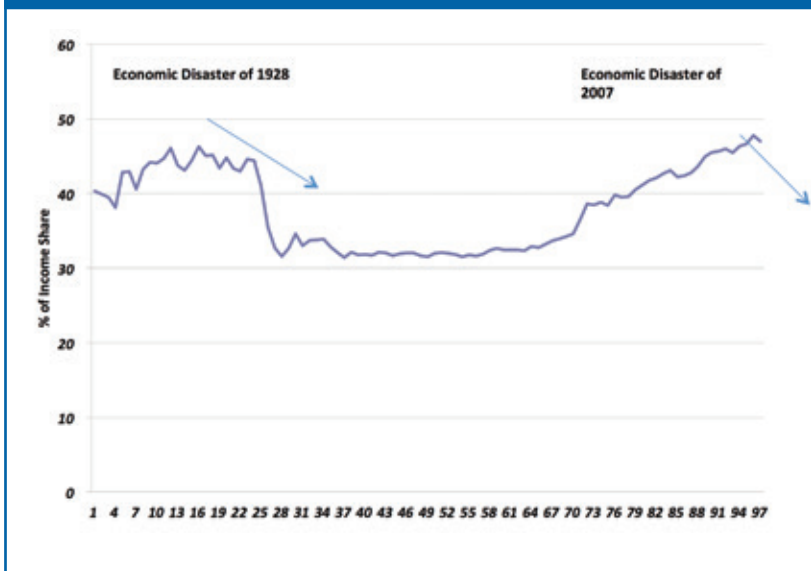
<sup>10</sup> McCarthy, N., Poole, K., and Rosenthal, H. *Polarized America*, Cambridge, MA: MIT Press, 2006

Other conservatives argue that income inequality is the result of an increasing number of newcomers (immigrants) into 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 in 1860 was about 13 percent. The latest data show that today that number is about 12 percent. For more information about conservative views, those interested might want to watch the video or review the content of a debate between American Enterprise Institute visiting scholar Edward Conard and Vice President Biden's former chief economist Jared Bernstein.<sup>11</sup>

Regardless of what conservatives or liberals say, the present study focuses on what empirical data demonstrate. As mentioned earlier, our main purpose is to examine the relationship between income inequality, pension reforms, and economic growth. Before we examine the literature on the relationship between pensions, income inequality, and economic growth, it is important to underscore the positive role pensions play in the economy.

**Pensions and Economy** – Pensions play an important role in the US economy. For example, spending by retirees stimulates local economies; pension assets are an important source of capital for businesses and stimulus for economic growth. A recent study by Public Finance Management suggests that spending by retirees accounts for 5.3 percent of our gross national product.<sup>12</sup> Retirees spend about \$838 billion annually. This spending employs millions of Americans directly and tens of millions indirectly. Should such spending decline in the future, especially through changes that are being made to pension plans, there will be broad economic consequences in terms of negative impact on jobs and income.

Figure 1. Income share of the top 10% in the United States, 1917-2013



The Public Finance Management report further suggests that annuitants hold invested capital totaling \$20.8 trillion either directly, through pension funds, or in 401(k)-type self-directed investments. If this capital is not replaced as it is drawn down, new sources will have to be found to support the capital needed for economic renewal and expansion. America's mortgage market, its private equity and high-tech industries, and many of its start-ups rely on pension funding as a source of capital.

Similarly, other studies such as *Pensionomics 2012: Measuring the Economic Impact of DB Pension Expenditures*<sup>13</sup> found that DB pension benefits have significant positive impact on the economy. This study, conducted by the National Institute on Retirement Security, shows that DB plans support 6.5 million jobs and \$1 trillion in economic output. The study also shows that every dollar paid in pension benefits supports \$2.37 in economic output.<sup>14</sup>

<sup>14</sup> See [www.nirsonline.org/index.php?option=com\\_content&task=view&id=684&Itemid=48](http://www.nirsonline.org/index.php?option=com_content&task=view&id=684&Itemid=48).

<sup>11</sup> See [www.aei.org/publication/bernstein-vs-conard-on-income-inequality/](http://www.aei.org/publication/bernstein-vs-conard-on-income-inequality/).

<sup>12</sup> Public Financial Management, *Addressing the National Pension Crisis: It's Not a Math Problem* (Philadelphia: Public Financial Management, 2013).

<sup>13</sup> National Institute on Retirement Security, *Pensionomics 2012*, Washington, D.C., 2012

On the contrary, when strategies such as raising employee contributions are employed to address the funding gap issue, the effect on local economies is negative. For example, in a typical state like North Carolina, if the state were to increase employee contributions to pension funds by 1 percent in 2013, the job loss in 2014 would have been about 2,500 jobs, personal income loss would have been \$458 million, and gross state product (a measure of state economy) would have declined by \$155 million. These negative economic consequences have a ripple effect that continues well into the future. For example, in North Carolina, by 2020, the job loss would reach 3,100, loss in personal income would be \$723 million, and gross state product would shrink by \$209 million. These losses result in revenue loss, which in turn results in additional job losses. This cycle of negative consequences, in an example like this, continues well into the future.<sup>15</sup>

Prevailing pension reforms, such as cuts in pension benefits, increases in employee contributions, and conversions of DB pensions into DC plans, affect the economy in another way. They increase income inequality, which in turn dampens the economy. Next, we'll examine literature on this subject.

**Pensions and Income Inequality** – Literature on pension reforms and income inequality is somewhat limited. However, there are several

studies that indicate that pension reforms focusing on privatization (converting DB plans into DC plans) and reduction of benefits increase income inequality as well as poverty among the elderly. For example, Robert Brown and Steven Prus in their *Social Transfer and Income Inequality in Old Age*<sup>16</sup> show that the lower the percentage of seniors receiving income from a public pension, the higher is the income inequality among them. Similarly, Kees Goudswaard and Koen Caminada in their 2010 article in *International Social Security Review* (Vol. 63) and Camila Arza in *Pension Reforms in Europe*<sup>17</sup> conclude that shifting from public to private pensions generally results in poverty and higher income inequality among retirees. A recent report by the National Institute on Retirement Security<sup>18</sup> finds that poverty rates among senior citizen households without pensions were about nine times higher than those with such pensions.

#### **Income Inequality and Economic Growth** –

There is mounting empirical evidence that rising income inequality dampens economic growth. We will discuss three key studies that were published in 2014 by researchers at IMF,<sup>19</sup> S&P,<sup>20</sup> and OECD.<sup>21</sup> We'll briefly describe these studies.

The IMF study takes advantage of a recently compiled cross-country data set that distinguishes before taxes and transfers inequality and net (after tax) inequality and allows the researchers

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<sup>15</sup>This analysis was done using Regional Economic Model, Inc., by Richard Sims, Sierra Institute on Applied Economics.

<sup>16</sup>R. Brown and S. Prus, *Social Transfer and Income Inequality in Old Age: A Multinational Perspective*, SEDAP Research Paper No. 109, McMaster University, Ontario, Canada.

<sup>17</sup>K. Goudswaard and K. Caminada, *The Redistributive Effect of Public and Private Social Programs: A Cross Country Empirical Analysis*, *International Social Security Review*, Vol. 63:1, 2010

<sup>18</sup>F. Porell and Diane Oakley, *The Pension Factor*, Washington, DC: National Institute on Retirement Security, 2012.

<sup>19</sup>Jonathan Ostry, Andrew Berg, and Charalambos Tsangarides, *Redistribution, Inequality, and Growth* (Washington, DC: International Monetary Fund, 2014).

<sup>20</sup>Beth Ann Bovino and Gabriel Petek, *How Increasing Income Inequality Is Dampening U.S. Economic Growth, and Possible Ways to Change the Tide* (New York: Standard and Poor's, 2014).

<sup>21</sup>F. Cingano, *Trends in Income Inequality and Its Impact on Economic Growth*, OECD Social, Employment and Migration Working Papers No. 163 (Paris: Organisation for Economic Co-operation and Development, 2014).

to calculate redistributive transfers for a large number of countries over a number of years. The study found that more unequal societies tend to redistribute more, but redistribution appears generally benign in terms of its impact on growth. Lower net inequality, on the other hand, is robustly correlated with faster and more durable economic growth, for a given level of redistribution.

The S&P study is based mainly on secondary research but presents a wealth of data and insights. It concludes that the current level of income inequality in the United States is dampening gross domestic product (GDP) growth at a time when the world's biggest economy is struggling to recover from the Great Recession and the government is in need of funds to support an aging population. The S&P researchers underscore that the United States is reaching extreme levels of income inequality, which can harm sustained economic growth over the long haul. Therefore, according to the study, the S&P has revised its 10-year forecast of US economic growth from 2.8 percent to 2.5 percent.

The OECD study draws on data covering the OECD countries during the past 30 years. The analysis suggests that income inequality has a negative impact on subsequent growth. Like the IMF study, the OECD study argues that redistribution policies (taxes and transfers) are a key tool to ensure that the benefits of growth are more broadly distributed. The results of the study suggest that redistributive policies do not undermine growth.

One of the unique features of the OECD study is that it measures how much economic growth is reduced by inequality in different OECD countries. The study estimates that rising inequality has knocked more than 10 percentage points off growth in Mexico and New Zealand. In the United States, the United Kingdom, Sweden, Finland, and Norway, the growth rate would have been more than one-fifth higher had income disparities not widened. On the other hand, greater equality helped increase GDP per capita in Spain, France, and Ireland during the study period.



# Section II: What Do the National Trends in Public and Private Pensions, Income Inequality, and Economic Growth Reveal?

The present study examined national trends using data from various sources, including the Census of Governments, the Bureau of Labor Statistics, and the Bureau of Economic Analysis. We looked at several variables, including income inequality, workforce covered by DB pensions, unionization, marginal tax rates, and economic growth. The historical depth of the data varied. Some data (e.g., unionization, workforce, marginal tax rates) are available as far back as the 1960s. Other data, such as statistics capturing workforce covered by a DB plan, median income, income inequality, and multifactor productivity (MFP), are available only since the early 1980s (MFP data are available starting only in 1988). So that we can study the trends and relationships among these variables, the analysis had to be limited to the decades of the 1980s, 1990s, and 2000s.

The national trends in income inequality and economic growth were examined by looking at the correlations between these variables and the variables that might affect them. Let's focus first on the relationship between income inequality and pension reforms and the variables that might affect income inequality. We'll then examine the relationship between income inequality and economic growth.

**Income Inequality and Pension Reforms** – In the absence of detailed data on the changes in pensions in private-sector plans during the 1980s, 1990s, and 2000s, we have measured pension reforms by the percentage of the workforce (public and private) covered by DB plans. Other variables included in the study of correlations were measured as follows. Income inequality is measured by the ratio between incomes of the top and bottom quintiles. In some graphics, we have used the ratio of incomes of the top 5 percent to the bottom quintile. Unionization is measured by the percentage of the workforce in unions. Marginal tax rate is the rate that top-income individuals pay. Investment in education is measured by the annual rate of change in investment in education.

Table 1 shows the correlation between income inequality and pension reforms as well as other variables that might be related to income inequality. The correlations shown in Table 1 suggest that when the percentage of the workforce covered by DB pension plans declines, income inequality rises. This is depicted in Figure 2. The two trend lines in Figure 2 clearly show that when the percentage of

**Table 1. Correlation between Income Inequality and Other Variables, 1982–2011**

Variable	Correlation Coefficient
Income inequality and percentage of workforce in defined-benefit plans	-.894
Income inequality and percentage of workforce in unions	-.972
Income inequality and marginal tax rate	-.789
Income inequality and investment in education	-.675



workforce in DB pensions goes down, the income inequality goes up.

The correlations in Table 1 also suggest that when unionization, marginal tax rates, and investment in education decline, income inequality rises. These are robust relationships in terms of magnitude and are consistent with the literature. The data and trend lines for these variables are shown in Appendix A.

The graphic presentation of these trends in Appendix A shows that the income inequality line is the only line that is trending upward. All other trend lines are trending downward. These trend lines support the general contentions that as marginal tax rates, unionization, and investment in education decline, income inequality rises.

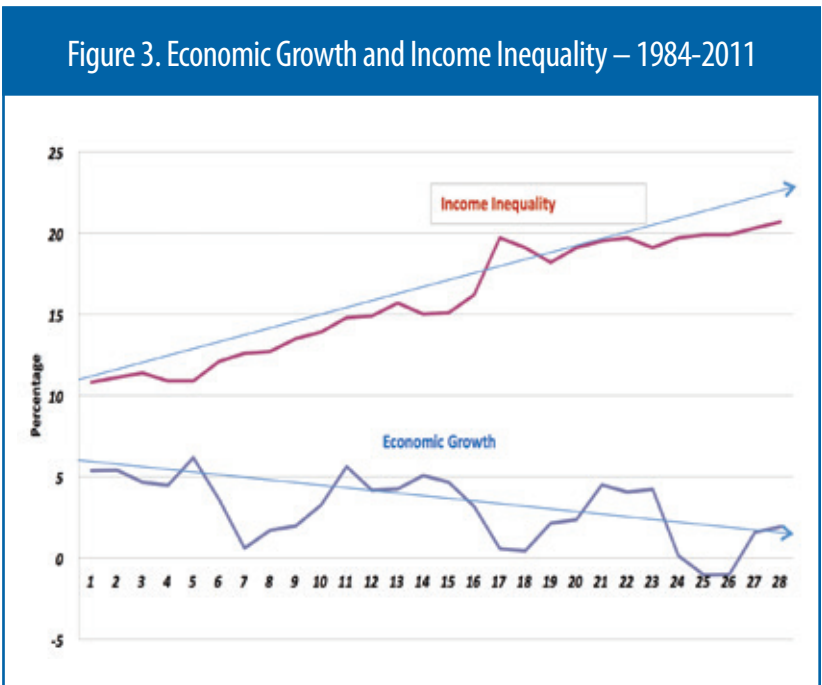
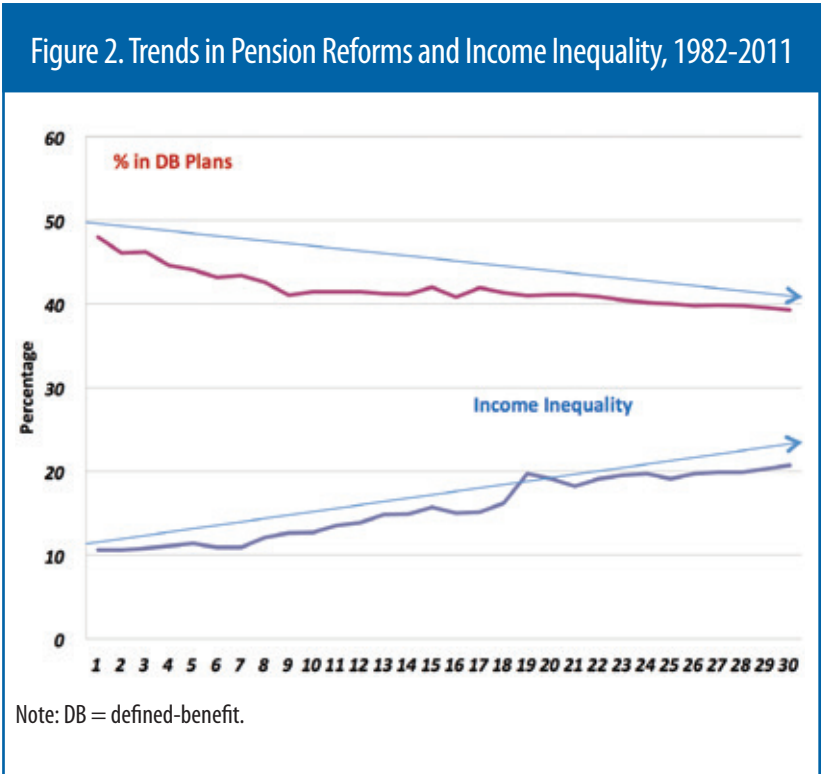
Next we'll examine whether rising income inequality slows down the economy.

**Income Inequality and Economic Growth**

– Economic growth is often measured by GDP growth. However, GDP growth hides the very essence of the subject matter we are trying to examine – income inequality. For example, if the majority of the economic growth goes to the top 1 percent, the GDP will still grow. However, the economic circumstances of the majority of Americans will change little, if at all. Therefore, we use median income growth as a measure of economic growth in our analysis. The other variables that are related to economic growth are investment in education and MFP. MFP refers to all the inputs that go into economic growth, including labor, capital, and raw materials.

The analysis found that the correlation between economic growth and income inequality in the United States is  $-.553$ . This relationship means that higher the income inequality, the lower is the economic growth (see Figure 3).

We also looked at other variables that affect economic growth such as investment in education and MFP. The results in Table 2 show that the correlation between economic growth and investment in education and MFP is positive, which means that the higher the investment in education and MFP, the higher is the economic growth.



**Table 2. Correlation between Economic Growth and Income Inequality and Other Variables, 1984–2011**

<b>Variable</b>	<b>Correlation Coefficient</b>
Economic growth and income inequality	–.553
Economic growth and investment in education	.410
Economic growth and MFP (MFP data are limited to 1988–2011)	.666

Note: MFP = multifactor productivity.

The results in Table 2 are consistent with the literature that shows that rising income inequality slows down economic growth. This analysis is limited to 1984–2011 because of the lack of data on MFP.

Since our focus is on assessing whether income inequality dampens economic growth, the relationship between these two variables is elaborated on in Figure 3. This figure shows that the trend lines for these two variables move in the opposite direction. The basic data used in the graphics and analysis are shown in Appendix B.

The limitations of the data do not allow further analysis such as multivariate analysis. Yet it is clear from the empirical data from the 1980s, 1990s, and 2000s that when DB plans are changed into DC plans, income inequality rises. It follows that when income inequality rises it dampens economic growth.

Also, just by looking at raw data – if the trend toward conversion of DB into DC plans during the past 30 years did not exist, we would have 15 million more workers with DB plans.<sup>22</sup>

<sup>22</sup> In 2011 there were about 150 million people in the workforce. The percentage of the workforce in defined-benefit plans has declined by about 10 percent during 1982–2011. In other words, if there were no such decline, about 15 million more people would have had a lifetime guarantee of a defined-benefit pension.

# Section III: What Do the State Trends in Public Pensions, Income Inequality, and Economic Growth Reveal?

To examine the relationship between current pension reforms and income inequality, we reviewed the legislation passed and enacted during 2000–2010 in each of the 50 states.<sup>23</sup> We counted the negative pension changes, such as increased employee contributions, cuts in benefits, conversion of DB plans into DC plans, and so forth and analyzed the correlation between such changes and income inequality. Income inequality was measured by the change in the ratio of income of the top quintile to the bottom quintile for each of the 50 states during 2000–2010.

**Correlation between Income Inequality and Pension Changes in the States** – The analysis found that the correlation coefficient between the number of negative pension changes and income inequality was .379 (see Appendix C). This correlation suggests that the higher the number of negative changes a state makes, the higher is the increase in income inequality in that state.

While income inequality is caused by various factors – including lack of investment in people and lack of policies that level the playing field – the current “pension reform” efforts in the states seem to exacerbate income inequality. The results of multivariate analysis are shown in Table 3.

Results show that the relationship between negative pension changes and income inequality holds even when other factors are taken into account. Although various other regression runs are not shown here, we found that when the percentage of public employees in each state’s workforce is taken into account, the relationship between negative pension changes and income inequality becomes

**Table 3. Impact of Negative Pension Changes on Income Inequality (Including Other Variables), 2000–2010**

Variable	Regression Coefficient
Intercept	–.537
Number of negative pension changes	.147
Lack of investment in public education	.322
Lack of progressivity of state and local taxes	.0175
Public employees as a percentage of total workforce	.278

even more pronounced. The analysis also suggests that a single negative change in public pensions increases income inequality by about 15 percent.

**Correlation between Income Inequality and Economic Growth** – To examine the relationship between income inequality and economic growth, we examined the correlation between income inequality, economic growth, and investment (or

<sup>23</sup> See [www.ncsl.org/research/fiscal-policy/pension-and-retirement-legislative-summaries-and-r.aspx](http://www.ncsl.org/research/fiscal-policy/pension-and-retirement-legislative-summaries-and-r.aspx).

**Table 4. Impact of Income Inequality on Economic Growth, 2000–2010**

<b>Variable</b>	<b>Regression Coefficient</b>
Intercept	-.248
Income inequality	-.180
Lack of investment in public education	-.030

lack thereof) in education. Again income inequality was measured by the ratio between top and bottom income quintiles. Economic growth was measured by change in median income. Investment in education was measured by education spending as

a percentage of state and local budgets.

We found that the correlation between income inequality and economic growth was  $-.184$ . It simply means that the higher the income inequality in a state, the lower is the economic growth in that state. Table 4 further analyzes this relationship using multivariate analysis.

The results show that when inequality – the ratio of the top and bottom quintiles – increases by one in a state, it decreases that state’s economic growth by 18 percent. These results hold even when we control for other factors such as investment in education.

# Section IV: Conclusions

**C**huck Collins, cofounder 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. He calls this phenomenon the “Wheel of Misfortune.” The current pension reform movement might be a pathway to economic misfortune for all of us.

While there are many factors that are related to income inequality, and we have considered them in our analysis, it is just common sense that when incomes of some people are reduced through cuts in pensions and wages of working people and incomes of others such as the top 1 percent are increased through cuts in marginal tax rates, income inequality is bound to increase. Yet consideration of negative consequences of pension reforms for income inequality and dampening of economic growth is missing in policy circles. The present study has shed some light on the hidden economic cost of prevailing approaches to pension reforms in the hope that we can reverse the rush to dismantle DB pensions.

This study examined national- and state-level trends in pension changes and their implications for income inequality. It then examined the relationship between rising income inequality and economic growth at each level. The period that the analysis covers is limited by the availability of data. The national-level analysis covers the period of the 1980s, 1990s, and 2000s and includes public- and private-sector workers. The state-level analysis is limited to 2000–2010 and covers only public-sector workers.

The national data show that the main trend was conversion of DB into DC plans. We found that this conversion exacerbated income inequality. The analysis shows that there is a robust inverse relationship between the percentage of the workforce covered by a DB plan and income inequality. Other factors that were correlated with rising income inequality included declining membership in unions, marginal tax rates, and rate

of investment in education. The national data also show that rising income inequality slowed down economic growth during 1980s, 1990s, and 2000s. The national data are limited and do not allow us to do multivariate analysis. Yet it is clear from the empirical data that when DB plans are changed into DC plans, income inequality rises and economic growth dampens. Also, just by looking at the raw data one can conclude that if the trend toward conversion of DB into DC plans during the past 30 years did not exist, we would have 15 million more workers with DB plans.

The state-level data focus mainly on recent changes in public pensions during 2000–2010. The main trend at the state and local levels was one of negative changes, such as reductions in benefits, increases in employee contributions, and conversion of DB into DC or hybrid plans.

The analysis found that there was a positive relationship between the number of negative pension changes and income inequality. This relationship suggests that the higher the number of negative changes a state makes, the higher is the increase in income inequality in that state. This relationship holds even when we control for other factors that contribute to income inequality, including lack of investment in people and lack of policies that level the playing field through progressive taxation. The state-level data allow us to conduct multivariate analysis. The analysis suggests that a single negative change in public pensions in a state increases income inequality in that state by about 15 percent.

Next, we examined the relationship between

income inequality and economic growth in the states. The results show that when inequality increases by one in a state, it decreases the state's economic growth by 18 percent.

According to the latest Gallup Poll, two out of three Americans are concerned that the rich are getting richer and the poor are getting poorer.<sup>24</sup> In other words, people have a gut feeling that rising income inequality is limiting opportunities for them to advance, no matter how hard they work. But neither policymakers nor the general public has made the connection between the diminishing of pensions and rising income inequality. In a way we are shooting ourselves in the foot, economically, by overlooking this important connection.

Policymakers should pay serious attention to income inequality and its hidden economic cost to taxpayers before they make the changes that diminish pensions. Instead of making negative changes such as increasing employee contributions, cutting benefits, converting DB plans into DC or hybrid plans, and so forth, state and local governments should close tax loopholes. A recent study of a number states by Good Jobs First shows that on average states gave away twice as much in economic development subsidies and loopholes as they were required to pay into pension contributions.<sup>25</sup> Whereas taxpayer money given through loopholes and subsidies often ends up in overseas tax havens, pension checks are spent locally and stimulate local economies.

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<sup>24</sup> See Gallup Poll: [www.gallup.com/poll/166904/dissatisfied-income-wealth-distribution.aspx](http://www.gallup.com/poll/166904/dissatisfied-income-wealth-distribution.aspx).

<sup>25</sup> See [www.goodjobsfirst.org/statepensions](http://www.goodjobsfirst.org/statepensions)

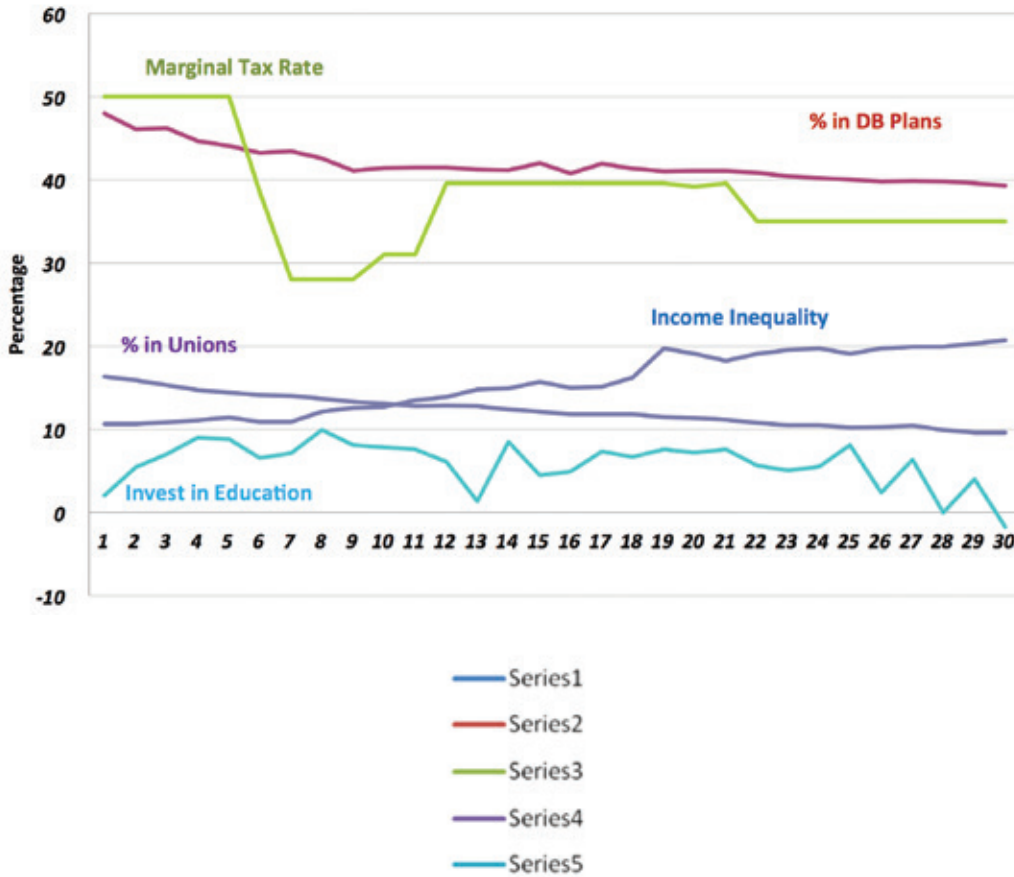
# APPENDIX A

Data Used in Analysis of Correlations and Figure 2

Year	Income Inequality	Percentage in Defined-benefit Plans	Marginal Tax Rate	Percentage in Unions	Investment in Public Education
1982	10.6	47.98918	50	16.33335	2.078017
1983	10.6	46.07351	50	15.88256	5.416667
1984	10.8	46.2138	50	15.27161	7.012987
1985	11.1	44.61853	50	14.72012	8.975306
1986	11.4	44.04162	50	14.40586	8.826805
1987	10.9	43.20194	38.5	14.11004	6.531411
1988	10.9	43.38903	28	13.97398	7.129135
1989	12.1	42.56997	28	13.69269	9.937234
1990	12.6	41.05531	28	13.30261	8.120567
1991	12.7	41.43305	31	13.1132	7.851755
1992	13.5	41.4535	31	12.79419	7.581195
1993	13.9	41.43885	39.6	12.84675	6.066088
1994	14.8	41.22131	39.6	12.77317	1.375157
1995	14.9	41.17109	39.6	12.36546	8.501801
1996	15.7	42.00817	39.6	12.14621	4.472658
1997	15	40.783	39.6	11.81978	4.923584
1998	15.1	41.91526	39.6	11.775	7.318421
1999	16.2	41.34522	39.6	11.82266	6.652524
2000	19.7	40.99156	39.6	11.45578	7.554603
2001	19.1	41.08631	39.1	11.35083	7.176587
2002	18.2	41.10366	39.6	11.17124	7.572204
2003	19.1	40.83612	35	10.76787	5.620445
2004	19.5	40.43188	35	10.49654	5.027941
2005	19.7	40.16542	35	10.50429	5.515857
2006	19.1	40.03883	35	10.14277	8.078765
2007	19.7	39.7854	35	10.23354	2.364832
2008	19.9	39.85819	35	10.4338	6.319676
2009	19.9	39.77761	35	9.943429	0.006787
2010	20.3	39.57528	35	9.562087	4.018594
2011	20.7	39.27235	35	9.610915	-1.7789

# APPENDIX A

Trends in Income Inequality, Marginal Tax Rate, Percentage of Workforce in Defined-benefit Plans and Unions, and Investment in Education, 1982–2011



Note: DB = defined-benefit



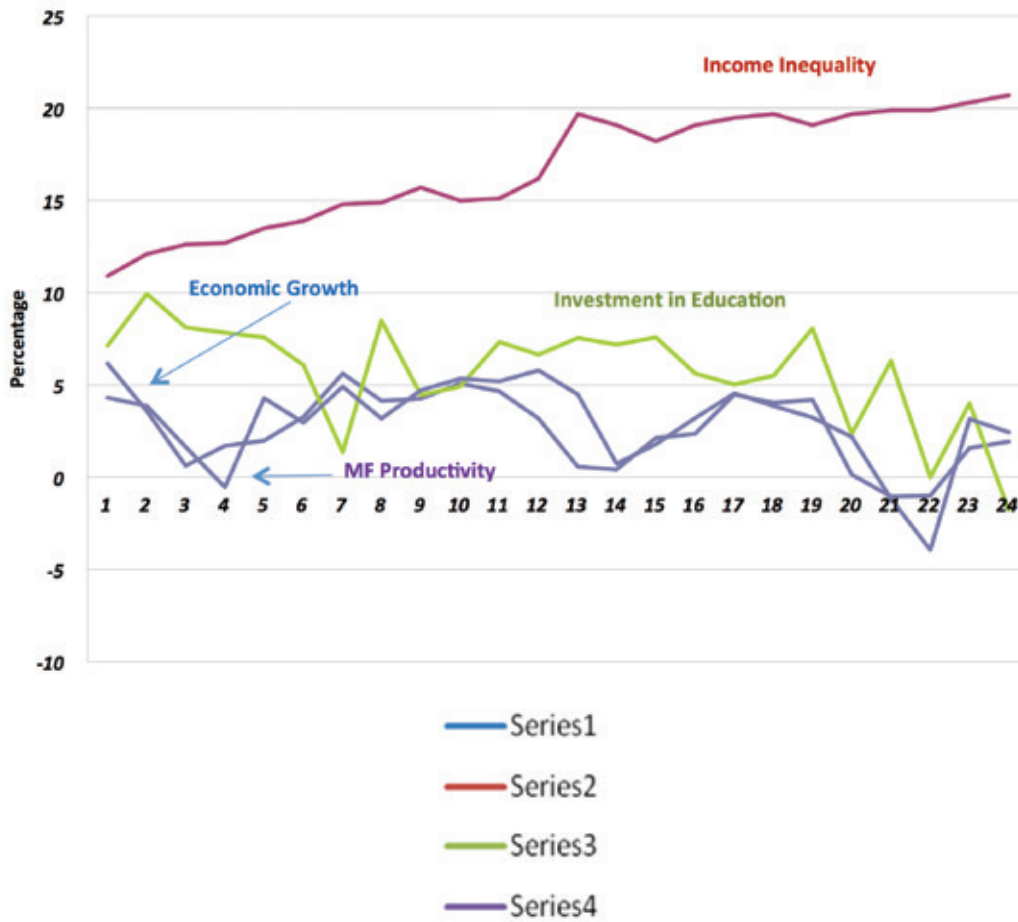
# APPENDIX B

Data Used in Analysis of Correlations and Figure 3				
Year	Economic Growth	Income Inequality	Investment in Education	Multifactor Productivity
1984	5.0	10.8	7.012987	NA
1985	5.0	11.1	8.975306	NA
1986	5.0	11.4	8.826805	NA
1987	4.0	10.9	6.531411	NA
1988	6.0	10.9	7.129135	4.317381
1989	4.0	12.1	9.937234	3.859869
1990	1.0	12.6	8.120567	1.638726
1991	2.0	12.7	7.851755	-0.52926
1992	2.0	13.5	7.581195	4.281567
1993	3.0	13.9	6.066088	2.954151
1994	6.0	14.8	1.375157	4.901366
1995	4.0	14.9	8.501801	3.190408
1996	4.0	15.7	4.472658	4.70324
1997	5.0	15	4.923584	5.343416
1998	5.0	15.1	7.318421	5.197003
1999	3.0	16.2	6.652524	5.802716
2000	1.0	19.7	7.554603	4.489204
2001	0.0	19.1	7.176587	0.748099
2002	2.0	18.2	7.572204	1.792063
2003	2.0	19.1	5.620445	3.213242
2004	4.0	19.5	5.027941	4.551037
2005	4.0	19.7	5.515857	3.853788
2006	4.0	19.1	8.078765	3.243689
2007	0.0	19.7	2.364832	2.195678
2008	-1.0	19.9	6.319676	-1.17698
2009	-1.0	19.9	0.006787	-3.93853
2010	2.0	20.3	4.018594	3.164905
2011	2	20.7	-1.7789	2.437388

Note: NA = Data Not Available.

# APPENDIX B

Trends in Income Inequality, Economic Growth, Investment in Education, and Multifactor Productivity, 1988–2011



Note: MF = multifactor

# APPENDIX C

Data Used in Correlation between Negative Pension Changes and Income Inequality, 2000–2010

State	Pension Changes 2000–2010	Top/Bottom Income Quintile 2000	Top/Bottom Income Quintile 2010	Change 2000–2010
Alabama	1	7.0	7.8	0.8
Alaska	3	6.2	6.8	0.6
Arizona	3	7.3	9.8	2.5
Arkansas	1	6.5	6.6	0.1
California	5	8.2	9.5	1.3
Colorado	5	6.6	8.2	1.6
Connecticut	2	7.4	8.2	0.8
Delaware	0	6.4	6.9	0.5
Florida	4	7.3	8.3	1.0
Georgia	3	7.3	9.3	2.0
Hawaii	1	6.2	6.7	0.5
Idaho	1	6.7	6.4	-0.3
Illinois	4	6.9	8.3	1.4
Indiana	1	5.8	7.4	1.6
Iowa	2	5.7	5.6	-0.1
Kansas	3	6.6	7.2	0.6
Kentucky	3	7.4	7.6	0.2
Louisiana	4	7.3	8.8	1.5
Maine	1	5.9	6.6	0.7
Maryland	1	7.1	7.5	0.4
Massachusetts	2	7.6	8.3	0.7
Michigan	2	6.9	7.5	0.6
Minnesota	4	6.1	6.9	0.8
Mississippi	3	6.8	8.3	1.5
Missouri	2	6.5	7.3	0.8
Montana	1	6.1	6.7	0.6
Nebraska	4	6.2	6.3	0.1
Nevada	1	6.4	7.6	1.2

Note: Correlation between the number of negative pension changes and income inequality = .379.

# APPENDIX C

Data Used in Correlation between Negative Pension Changes and Income Inequality, 2000–2010

State	Pension Changes 2000–2010	Top/Bottom Income Quintile 2000	Top/Bottom Income Quintile 2010	Change 2000–2010
New Hampshire	1	6.0	6.1	0.1
New Jersey	5	7.5	8.3	0.8
New Mexico	3	7.7	9.9	2.2
New York	3	8.7	9.2	0.5
North Carolina	0	7.4	7.9	0.5
North Dakota	1	6.0	7.0	1.0
Ohio	2	6.8	6.9	0.1
Oklahoma	3	7.3	8	0.7
Oregon	1	7.3	6.9	-0.4
Pennsylvania	4	6.4	7.2	0.8
Rhode Island	4	7.0	7.5	0.5
South Carolina	2	6.6	7.4	0.8
South Dakota	1	5.5	6.8	1.3
Tennessee	0	7.6	7.8	0.2
Texas	3	8.1	8.6	0.5
Utah	2	5.3	5.6	0.3
Vermont	2	6.0	6.0	0.0
Virginia	3	7.3	8.1	0.8
Washington	2	6.6	7.1	0.5
West Virginia	2	6.8	6.9	0.1
Wisconsin	2	6.1	6.1	0.0
Wyoming	1	5.9	5.9	0.0

Note: Correlation between the number of negative pension changes and income inequality = .379.









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