Do Pension Expenditures Impact Education Spending?

2023 Research Update

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

Acknowledgments

This study was conducted by Michael Kahn, PhD, Director of Research at the National Conference on Public Employee Retirement Systems (NCPERS) under contract with NCPERS.

The author and NCPERS are grateful to the following academics and practitioners who peer reviewed the earlier version of this report: Teresa Ghilarducci, New School; Nari Rhee, UC Berkeley; Christian Weller, University of Massachusetts; Nick Johnson, Center on Budget and Policy Priorities; and Matt Gardner, Institute on Taxation and Economic Policy.

Table of Contents

Executive Summary 4

Introduction 6

Section 1—Literature Review 10

- Do Government Pension Contributions Discourage Education Funding? 10
- Are State and Local Revenue Systems Out of Sync with the Economy? 12

Section 2—Data and Methodology 16

- Data Sources 16
- Methodology 16
- Extraction of Variables 16
- Preparation of Data 17
- Analysis 17

Section 3—Results 18

Do Pension Expenditures Crowd Out Education Funding? 18

- Annual Rate of Growth of Education and Pension Expenditures 18
- Pension Funding is Not Usually Part of Education Budgets 21
- Expenditures on Education and Pensions as a Share of State and Local Revenues 21
- Slopes of Trend Lines of Education and Pension Expenditures 21

Are State and Local Tax Revenue Systems Out of Sync with the Economy? 22

Section 4—Conclusions 27

Appendix: State-by-State Charts 28

Executive Summary

A flawed notion has taken hold in the national discourse over public pensions. Critics maintain that pension expenditures by state and local governments are crowding out other important forms of spending—notably, education funding.

On the contrary, the data show that the crowding-out effect simply isn't occurring. Pensions consume a relatively small portion of state and local resources, and their rate of growth is modest.

This study looked at historical data on rates of growth in government spending and compared pension spending with education spending. When viewing a 26-year period from 1993 to 2019, education funding grew at three times the annual rate of pension spending. The growth of pension funding averaged 0.82 percent annually during this period, while education funding grew at 2.48 percent annually, or triple the rate of pension funding.

This study examined state and local finances in close detail to pose a vital question: Can governments afford both pensions and education? In updating a 2019 National Conference on Public Employee Retirement Systems study with the latest data,[1] we dug into claims that pension expenditures are rising faster than education expenditures and found them flawed.

We looked at the crowding-out question in four ways. In each instance, our research showed not only that pensions do not crowd out resources needed for education but that they don't exert outsized pressure on other important public services.

Are pension expenditures rising faster than education funding? Read the papers, dip into published research, and you could be excused for reaching the conclusion that pensions are headed for a crisis. But you would be wrong.

Those who argue that pension expenditures are outpacing education funding fail to look at the impact of volatility in pension funding.

What do we mean by volatility? We mean that the revenue stream for public pensions is unfortunately more unpredictable than it should be.

In theory, pension funding is relatively stable because employers and employees alike set aside funds according to a carefully spelled-out plan based on actuarial calculations. This steady income stream in the form of contributions should provide a stabilizing counterweight to investment performance, which of course varies as markets shift.

In reality, however, pension funding is prone to volatility because employers—state and local governments—occasionally excuse themselves from the obligation to keep paying.

Unlike employees, who must make predetermined contributions each year, employers have been known to give themselves the option to veer from required contribution schedules for reasons of political expediency. Sometimes they make only partial contributions; sometimes they skip contributions altogether—occasionally for years at a time. Then, having played their own personal get-out-of-jail-free card, employers find themselves scrambling to make catch-up contributions, either in lump sums or by issuing pension obligation bonds.

When you adjust for volatility, however, it becomes clear that the annual growth of pension funding lags the average annual growth of education funding.

Apart from looking at the risk-adjusted rates of growth of pension and education expenditures, we examined whether pension expenditures are part of education

1 www.ncpers.org/files/ncpers-research-peaceful-coexistence-the-facts-about-pensions-and-education-funding-2019.pdf.

budgets. If they are not, just as a road construction budget is unlikely to displace an education budget, pension funding is unlikely to displace education funding. We contend that pension contributions are not part of education budgets, basing this conclusion on the author's more than 25 years of experience as head of school finance research at the National Education Association and the fact that in 2019 all but four states paid more than 70 percent of pension contributions. Instead, pension contributions are paid through appropriations by state legislature outside of education funding formulae. Even the U.S. Census Bureau's Census of Government data do not show pension expenditures under education expenditures.

Another reason pension funding is unlikely to displace education funding is that pension contributions are such a small part of state and local revenues. For example, during the past quarter century, the average pension expenditures were 3.6 percent of state and local own-source revenues (taxes and fees collected by municipalities). The same figure for education expenditures was 33.8 percent. In such a situation, pension expenditures would be unlikely to crowd out education funding even if pension expenditures were rising faster than education expenditures.

Finally, as in our 2019 study, we looked at slopes (beta values) of the education and pension expenditures trend lines using the best-fit linear regression model. We found that from 1993 to 2019, beta values for education were consistently higher than pensions. In other words, the trend lines are on a path that will not converge. Hence, pension expenditures do not crowd out education expenditures.[2]

While pension costs do not impinge on education funding, there is a squeeze on state and local budgets to fund public education and other important public services such as health care and public safety. The squeeze has occurred because state and local revenues are out of sync with the economy. Today, the purposeful role that state and local taxes play in the allocation of resources is obscured by frequent acts of tax cuts and tax increases driven by political ideology. States have cut progressive and stable taxes and filled the resulting budget gaps with regressive and risky revenue schemes such as casinos and lotteries. This shift in revenue sources has rendered tax systems increasingly regressive.

A regressive tax system becomes misaligned with the economy, especially when income inequality is rising. When a tax system isn't calibrated to the economy, it does not grow even when the economy grows. A well-conceived tax system should not require frequent adjustments. It should yield stable results in hard economic times and growth in prosperous times.

To examine whether state and local revenue systems are in harmony with the economy, this study used scatter diagrams that plot state and local revenues relative to the state economy measured by personal income, which is the main source of taxes. We then constructed trend lines to see how revenues correlated with the economy, using 40 years of data and best-fit regression equations. We found that the slopes of the trend lines diverge with the passage of time instead of growing together. The slope of the economy line is much steeper than that of revenues, indicating that revenues lag economic growth and are out of kilter with the economy.

State and local governments face many competing priorities including funding education and public safety and maintaining retirement systems that allow them to attract and retain the most qualified workforce. The governments can afford both pensions and education. But to do so, they must take determined steps to bring their revenue systems into harmony with the economy.

2 This is demonstrated in Table 1 using actual data.

Introduction

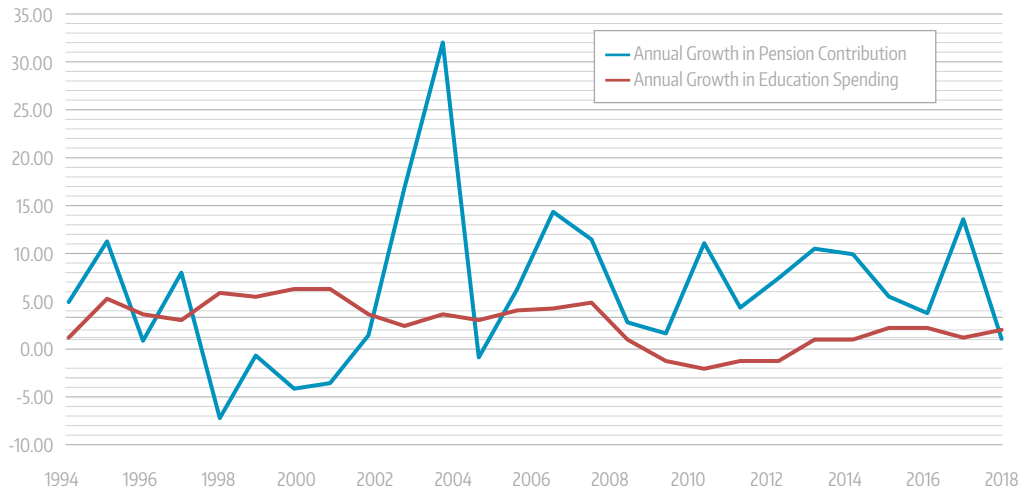
This study examines state and local finances to see whether these governments can afford both pensions and education. It updates our 2019 study with an additional three years' data. Some of our colleagues in public pension research circles have argued that pension costs are rising faster than education funding and hence crowding out education budgets. They are overlooking an important fact—annual growth in funding of public pensions has been volatile, and funding for public education has been relatively stable.

Volatility in pension funding has a variety of causes. Plan sponsors may contribute less than they are required to allocate to pensions, skip contributions altogether, or make occasional extra lump-sum payments through appropriations or through issuance of pension obligation bonds to reduce unfunded liabilities. Figure 1 displays the volatility in annual rate of growth in pension and education expenditures from 1994 to 2019. It shows wild swings in annual growth rates of pension funding compared to relatively stable or less volatile annual growth rates in education funding.

When we adjust for volatility, the average annual risk-adjusted rate of growth of education funding during the past quarter century has been three times higher than that of pensions. For example, education funding on average grew by 2.48 percent annually. The comparable figure for pension funding was 0.82 percent.

Before getting into other reasons pension costs are unlikely to displace education funding, let's look at the big picture. Those who would like to see public pensions converted into 401(k)-type defined contribution plans make two arguments. First, they argue that taxpayers cannot afford public pensions. Second, they argue that public pensions are soaking

Figure 1. Annual Percentage Growth in State and Local Pension and Education Expenditures, U.S., 1994-2019



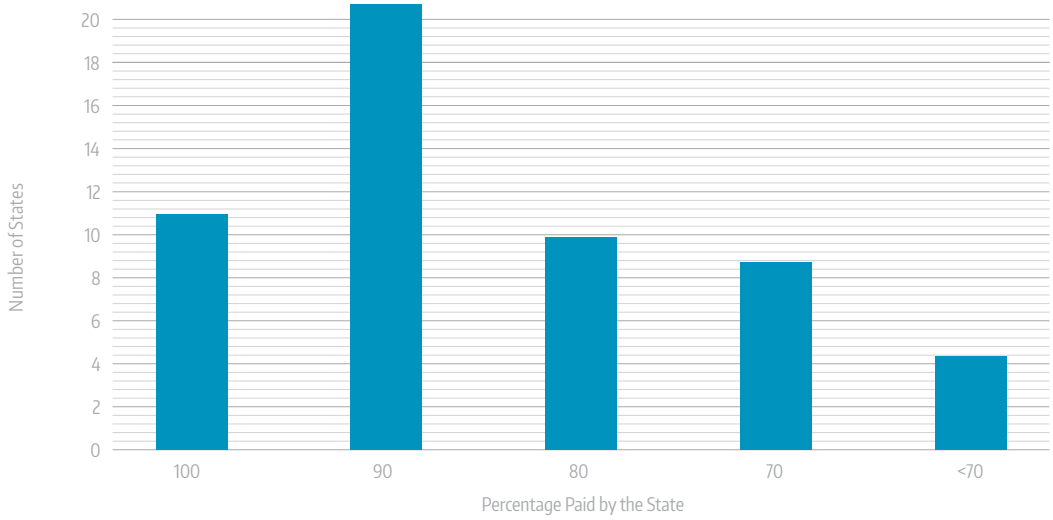
up resources that should go to fund education. There is no empirical evidence, based on our review of high-quality public data and advanced analysis, to support either of these arguments.

With respect to the first argument, a National Conference on Public Employee Retirement Systems (NCPERS) biennial study[3] shows that taxpayers can't afford not to have public pensions. Public pensions contribute to state and local economies through investment of their assets as well as through spending by pensioners of their monthly pension checks. These contributions to the economy in turn generate state and local tax revenues. The NCPERS study shows that in 2018, public pensions contributed $1.7 trillion to the national economy and $341.5 billion to state and local tax revenues. In the same year, state and local governments contributed $162 billion to public pensions. In other words, public pensions are net revenue generators to the tune of $179.5 billion ($341.5 billion minus $162 billion equals $179.5 billion). If there were no public pensions, taxpayers would have to pony up $179.5 billion more to get the same level of public services.

The second argument, that pensions are crowding out education, is also meritless for several reasons. As mentioned earlier, when we adjust for volatility of pension and education funding, education funding grew at an average annual rate that is three times higher than that of pension funding.

Apart from the fact that the risk-adjusted average annual rate of growth of education funding is higher than that of pensions, pension funding is not usually a part of education budgets. If pension funding is not a part of education budgets, it cannot possibly crowd out education funding. States bear the lion's share of pension funding through appropriation by state legislature outside of education funding formulae.

*Figure 2. Number of States by Percentage of Total Pension Expenditures Paid by State**



*The percentages in Figure 2 are not percentages of actuarially determined contributions. Instead, they refer to the percentage of pension expenditures paid by the state out of total amounts paid by state and local governments.

3 *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.

Figure 2 shows the percentage of pension expenditures paid by the state out of the total amounts paid by state and local governments. In 10 states, 100 percent of pension contributions are paid by the state. In another 19 states, more than 90 percent of money comes from states. Only 4 states (Massachusetts, Nebraska, New York, and Rhode Island) provide less than 70 percent of pension funding. Even Census of Government data do not show pension expenditures under education expenditures. For that reason, pension expenditures are unlikely to crowd out education funding.

Another reason is that pension contributions are such a small part of state and local revenues that they cannot possibly displace a major state and local function such as public education. For example, during the past quarter century, the average pension expenditures were 3.6 percent of state and local own-source revenues. The same figure for education expenditures was 33.8 percent. In this situation, even if pension expenditures rise faster than education expenditures, pension funding is unlikely to crowd out education funding because the ratio of the two is likely to stay about the same. This is demonstrated in Table 1 using actual data.

Table 1 shows that from 1993 through 2019, the average annual rate of growth for pensions, unadjusted for volatility, was higher than that of education funding: 6.48 percent versus 5.57 percent. But when we look at the current and projected expenditures for the two variables, the ratio between the two remains the same, 0.11, indicating no crowding-out effect.

Table 1. Ratio of Pension to Education Expenditures as a Percentage of Own-Source Revenues Remains the Same Even if Pension Expenditures Grew Faster than Education Expenditures, United States, 2019–2020

Variable	Pension Expenditure	Education Expenditure	Ratio of Pension to Education Expenditures
Average Expenditure as a Percentage of Revenues (1993–2019)	3.58%	33.8%	N/A*
Current Expenditures in 2019 (in $1,000)	$118,554,956	$1,119,317,738	0.11
Average Annual Unadjusted Growth Rates (1993–2019)	6.48%	5.57%	N/A*
Projected Expenditures in 2020 (in $1,000)	$126,237,317	$1,181,663,736	0.11

**Note: Not Applicable*

Finally, in this study, when we look at the slopes (beta values) of trend lines of education and pension expenditures using a best-fit linear regression model, beta values of pension expenditures are consistently lower than those of education expenditures. Once again, this means that pension expenditures cannot displace education expenditures.

Surely there is a squeeze on state and local resources for various services that state and local governments provide, including education, but it's not due to pension costs. Instead, it is due to the way state and local revenue systems are currently structured. Over the years, states have cut progressive and stable taxes, such as income and property taxes, in good economic times and have filled the budget gaps with regressive and volatile revenue sources, such as casinos and lotteries, excise taxes, and user fees. On top of that, they have given away the store in subsidies and tax loopholes in the name of economic development with little or no economic gains. As a result, state and local revenue systems have become regressive and out of sync with the economy.

We undertook this study to examine whether pensions are crowding out important public services such as public education and to evaluate whether state and local revenue systems are misaligned with the economy. Beyond discerning the truth about pensions' crowding out public services, it is important to understand the relationship between the economy and state and local revenues. If the economy and revenues are improperly aligned, then we have a bigger problem that needs to be addressed. Instead of focusing on pensions' crowding out education, we need to focus on fixing state and local revenue structures.

A few words about what we mean by crowding out and revenues' being out of balance with the economy: By crowding out, we mean if the trend line of expenditure on pensions goes up, the trend line for expenditure on education should go down, and the correlation between the two is negative. But if the relationship is positive and the slope of the education spending trend line, as measured by the beta value of regression equation, is steeper than that of the pension spending trend line, there is no crowding out. The present study examines crowding out using trends in expenditures on pensions and public education for the United States and each of the 50 states during the past quarter century. We did not find any evidence of convergence or crowding out in any state.

Similarly, we examine the lack of harmony between economy and state and local revenues through trend lines for the United States and each of the 50 states during the past 40 years. If the slopes of these trend lines grow apart such that the slope of the economy trend line is steeper than that of revenues, then revenue growth lags economic growth, and revenues don't accurately reflect economic developments. When the economy grows, the need for public services such as infrastructure, education, and public safety grows. A synchronized revenue system should be stable in economic downturns and grow in good economic times to keep pace with the changing needs of a prosperous civilized society.

The present study is divided into four sections. Section 1 reviews the literature, section 2 focuses on data and methodology, section 3 presents results, and section 4 offers conclusions.

Section 1: Literature Review

The literature review focuses on studies about two questions addressed in this study:

1. Do government pension contributions discourage education funding?
2. Are state and local revenue systems out of sync with the economy?

The literature showing that pensions crowd out education funding outweighs the literature showing there is no crowding out. However, the former has serious methodological limitations. The studies use a limited number of handpicked jurisdictions to magnify results when public data for all jurisdictions are available and could provide a realistic picture. They also use meaningless numbers and anecdotal evidence to paint a scary picture to support their ideological bias against public pensions. In the end, they argue that public defined-benefit pensions should be converted into defined-contribution or hybrid plans.

Do Government Pension Contributions Discourage Education Funding?

A March 2022 study by the Opportunity Institute argues that California spent 13 percent of its education budget on teacher pensions.[4] Ten years ago, the same figure was 5.6 percent. This translates to a 7.4 percent increase in 10 years or 0.74 percent per year. Obviously, employee benefit costs such as health insurance and pensions increase each year based on the actuarial valuation and claims experience of these programs. But to prove that pension costs are crowding out teacher salaries, the study argues that if there were no increase in pension costs, the average teacher would have earned an additional $19,588 in salary. The study overlooks increases in health care costs and costs of other employee benefits. Aren't health care costs crowding out education funding? Why focus only on pensions?

The reason becomes obvious in the Recommendations section. The study suggests that defined-benefit pensions should be changed into hybrid plans that include elements of defined-contribution plans. It also suggests that California teachers (who are not currently covered by Social Security) should join Social Security. The study does not mention the cost implications of such a change for education funding. Joining Social Security means employers and employees would need to pay Federal Insurance Contributions Act taxes, currently at a rate of 15.3 percent evenly split between employers and employees. This would impose a serious squeeze on resources available for education programs.

The Opportunity Institute study has the noble goal of ensuring equity in education funding. But this is best done through education funding formulae rather than through blaming pensions as the culprit. California is the fifth largest economy in the world. California can afford to provide adequate and equitable funding for education as well as provide health care, pensions, and other benefits for the well-being of California teachers and other public employees.

The Reason Foundation study of March 2021 is typical of those that would like to see public pensions converted into do-it-yourself retirement savings plans.[5] It begins with typical drastic statistics to make a case for changing defined-benefit public pensions into defined-contribution or hybrid plans. For example, the study argues that the rising cost of pension debt—which now accounts for 57 percent of every dollar contributed to the pension plan by California State Teachers' Retirement System (CalSTRS) employers—crowds out the education budget, diverting funds away from classrooms. The

4 theopportunityinstitute.org/publications-list/2022/3/7/expensive-inequitable-and-out-of-reach-the-problems-with-californias-teacher-pension-system-and-what-can-be-done

5 Leonard Gilroy and Zachary Christensen, "California's Pension Debt Takes Money from Classrooms and Students," Reason Foundation, March 2021, reason.org/commentary/californias-pension-debt-takes-money-from-classrooms-and-students/.

study does give credit to CalSTRS for taking steps in the right direction. Yet in the end, the study suggests changes in the pension system that would move it away from the one-size-fits-all approaches of the past—which may be another way of saying CalSTRS's plan should be changed into a defined-contribution or hybrid plan that combines elements of defined-contribution and defined-benefit plans.

Another study along the same lines was conducted by Equable in April 2020.[6] This study shows that 14.4 percent of education spending in the United States in 2018 went to pay pension costs. The comparable figure for 2001 was 7.5 percent. In other words, pension costs have increased by 6.9 percent in 19 years, or 0.36 percent per year. This study does not address health care costs or other employee benefits costs. As in the Opportunity Institute study mentioned above, there are undertones that pension design should be updated to twenty-first-century needs—which probably means a hybrid or defined-contribution plan.[7]

Like the two studies mentioned above, a Pivot Learning study of April 2019 shows that pension expenditures as a percentage of the education budget in a sample of districts increased from 3.8 percent in 2011 to 6.4 percent in 2018.[8] This translates into a 0.32 percent increase per year. The study claims such an increase means districts that paid approximately $500 per pupil in 2013–2014 for employee pension costs will pay $1,600 per pupil in 2020–2021. This dramatic increase in pension costs, the study claims, affects teacher salaries, class sizes, and other programs. The study does not go into analysis showing the impact of pension costs versus the impact of other factors that also may affect teacher salaries, class sizes, and other education programs. Other factors such as demographics, immigration, rising health care costs, and deferred maintenance may have an impact on salaries, class sizes, and other programs. In the Solutions section, the study proposes looking at other states. In the end, the study proposes that a blend of defined-benefit and defined-contribution plans should be considered, especially for those who serve for less than a full career.

An October 2017 study by Joe Nation from Stanford University argues that rising pension costs are crowding out funding for education and other services, including "soft services" such as libraries.[9] This study has a serious shortcoming. It targets a limited number of jurisdictions in California to draw broad conclusions about pension indicators. For example, the study argues that employer contributions from 2002–2003 to 2017–2018 have increased by 400 percent. Census Bureau data show that pension contributions for all state and local pension plans in California increased by 285 percent. And if we use 2003–2004 as a base year, pension contributions rose by 168 percent over 14 years—less than half of what Nation claims.[10] Why use a sample of 14 California jurisdictions when public data are available for all state and local pension plans in California?

An October 2016 study that makes the case that pensions are crowding out expenditures on public education was conducted by Josh McGee, senior fellow at Manhattan Institute.[11] This study focuses on teacher pensions and translates 30-year, $500 billion unfunded pension liability in terms of per-pupil pension debt. The study argues that per-pupil student pension debt increased by $9,588 per

6 Jonathan Moody and Anthony Randazzo, "Funding Cuts: How Growing Teacher Pension Debt Is Eating into K–12 Education Budgets," Equable Institute Research Report, April 2020 equable.org/wp-content/uploads/2020/04/National-Paper_Hidden-Funding-Cuts_Final.pdf.

7 www.k12dive.com/news/report-teacher-pension-debt-is-crowding-out-funding-for-education/576225/.

8 Hannah Melnicoe, Carrie Hahnel, Cory Koedel, and Arun Ramanathan, "The Big Squeeze: How Unfunded Pension Costs Threaten Educational Equity," Pivot Learning, April 2019, www.pivotlearning.org/wp-content/uploads/2019/04/big-squeeze-report-april-2019.pdf

9 Joe Nation, "Pension Math: Public Pension Spending and Service Crowd Out in California, 2003–2030" (Working Paper 17-023, Stanford Institute for Economic Policy Research, October 2017), siepr.stanford.edu/research/publications/pension-math-publicpension-spending-and-service-crowd-out-california-2003.

10 E-mail exchange with Nari Rhee, University of California, Berkeley, July 24, 2019.

11 Josh McGee, "Feeling the Squeeze: Pension Costs Are Crowding Out Education Spending," Manhattan Institute, October 2016, www.manhattan-institute.org/html/feeling-squeeze-pension-costs-are-crowding-out-education-spending-9368.html.

pupil from 2000 to 2013. This is no different from arguing that every baby born in the United States is responsible for about $1.6 million of U.S. national debt.[12] Such a calculation is mathematical and has no practical economic meaning. Debt issued for a high rate of return on investment such as education may actually increase the lifetime wealth and well-being of the baby.

McGee makes the mistake of arguing that a correlation is causation. He argues that the correlation between pension cost increases and spending cuts in education equipment and facilities, instruction supplies, and flat teacher pay trends from 2000 to 2013 is causal, which is not evidence. The study thus does not identify the cause of lower education spending. The study does not explore what other important factors, such as changes in state and local revenue structures, may have caused education funding to fall during this period.

Most crowding-out studies are focused on California. However, a few studies are focused elsewhere, such as one done by Illinois Policy that makes the case that the rising cost of pensions is leading to layoffs and crowding out of public services in Peoria.[13] However, such studies are often based on anecdotal evidence rather than systematic research.

A study that casts doubt on the argument that pension costs negatively affect teacher salaries was conducted by academics at the University of Missouri and Texas Christian University in February 2019.[14] The authors examined data from 2001 to 2015 and explored the relationship between pension contributions and salary expenditures. Overall, they found that there is no relationship between pension contributions and salary expenditures. But when they broke down the analysis by pre– and post–Great Recession periods, they found a negative relationship between pension and salary expenditures in the post recession period—in other words, if pension contributions went up, salary expenditures went down. However, the authors acknowledged that this relationship was not statistically significant.

A study by Tyler Bond reviewed literature on various aspects of public pensions and found that the crowding-out argument is false and a distraction because public pension contributions are a small portion of state and local budgets.[15] Furthermore, most of the money for public pension funds comes from employee contributions and investment earnings. Finally, state and local pensions are big contributors to the economy and revenues. In fact, public pensions are net revenue contributors to state and local treasuries. They can't displace other public services. Without public pensions, taxpayers would have to pay more to receive the same level of public services.

Are State and Local Revenue Systems Out of Sync with the Economy?

A well-designed revenue or tax system should be in sync with the economy. If the economy grows by 1 percent, the revenues should grow by 1 percent too to keep up with societal needs that grow proportionally with economic growth. In other words, a revenue system should have an elasticity of 1.0. Much like investment strategies, tax systems should consist of a diversified portfolio of taxes to provide stability in bad economic times and growth in good economic times without making frequent changes to

12 Terence P. Jeffrey, "U.S. Debt Up $1,608,304 for Each Baby Born the Year Obama Took Office," CNSNew.com, January 20, 2014, www.cnsnews.com/news/article/terence-p-jeffrey/us-debt-1608304-each-baby-born-year-obama-took-office.

13 Adam Schuster, "Crowding Out: Pension Pressure Leads to Layoffs in Peoria," Illinois Policy, www.illinoispolicy.org/crowding-out-pension-pressure-leads-to-layoffs-in-peoria/.

14 Dongwoo Kim, Cory Koedel, and P. Brett Xiang, "The Trade-off Between Pension Costs and Salary Expenditures in the Public Sector" (unpublished paper, University of Missouri, February 2019), https://www.cambridge.org/core/journals/journal-of-pension-economics-and-finance/article/abs/tradeoff-between-pension-costs-and-salary-expenditures-in-the-public-sector/FF32B466DA8E52B21DB91382C30164BB.

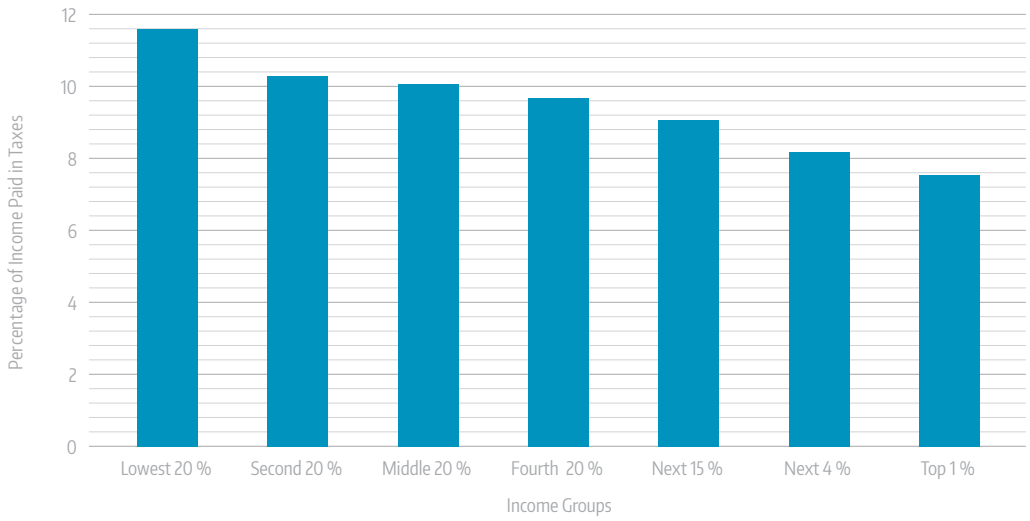
15 Tyler Bond, "The 'Pension Crisis' Is a Myth, Part Six," National Public Pension Coalition blog, November 13, 2017, protectpensions.org/2017/11/13/pension-crisis-myth-part-six/.

the tax system. In short, a tax system should look as if it were designed for a purpose—to meet the needs of a prosperous and modern society in all economic circumstances.

Today, frequent random acts of tax cuts and tax increases based on political ideology have the damaging effect of chipping away at purposefully developed systems of state and local taxation. A study by Nick Johnson and Iris Lav[16] suggests that states usually cut progressive and stable taxes, such as income and property taxes, in good economic times and fill the budget gaps with regressive and risky revenue schemes such as sales and excise taxes and, lately, casinos and lotteries. This phenomenon has made tax systems increasingly regressive and inelastic over time.

A regressive tax system cannot keep up with the needs of a modern society for two reasons. First, it shifts the burden of taxes to those who don't have much money—especially low- and middle-income people who live paycheck to paycheck. The regressive nature of state and local tax systems is underscored by a study by the Institute on Taxation and Economic Policy (ITEP).[17] The ITEP study titled *Who Pays?* shows the percentage of taxes paid by different income groups. The study shows that in 2018 (the latest data available), when we add up all the taxes people pay, including income, sales,

Figure 3. Average Effective State and Local Taxes as a Percentage of Income by Different Income Groups, 2018



Source: Who Pays: A Distributional Analysis of the Tax Systems in All 50 States. Washington DC: Institute on Taxation and Economic Policy. 2018 - https://itep.sfo2.digitaloceanspaces.com/whopays-ITEP-2018.pdf

16 Nick Johnson and Iris Lav, "Are State Taxes Becoming More Regressive?" Center on Budget and Policy Priorities, October 1997, www.cbpp.org/archives/930sttax.htm.

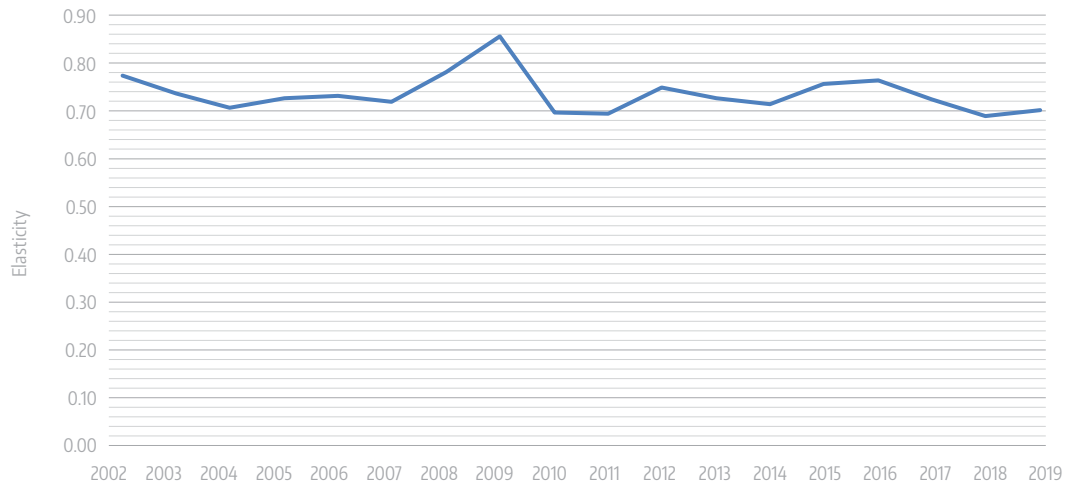
17 Meg Wiehe, Aidan Davis, Carl Davis, Matt Gardner, Lisa Christensen Gee, and Dylan Grundman, "Who Pays?" Institute on Taxation and Economic Policy, October 2018, itep.org/wp-content/uploads/whopays-ITEP-2018.pdf.

property, and excise, the lowest 20 percent of income earners pay $11.40 in taxes out of every $100 of their income. The same figure for the top 1 percent of income earners is $7.40. Using data from the ITEP report, Figure 3 shows the percentage of taxes paid by different income groups. It shows that as income goes up, tax burden (percentage of income paid in taxes) goes down.

This not only is unfair and regressive but also increases income inequality and throws the revenue system out of balance with the economy. Robert Tannenwald identifies how revenue systems can become out of balance with the economy.[18] His study, published in the *National Tax Journal*, argues that state and local revenue shortfalls emerge over the business cycle due to economic ups and downs but also due to the changing structure of our economy. In its infancy, the U.S. economy was predominantly agrarian. After the Industrial Revolution, it became mainly a manufacturing economy. In recent times, the economy has become more of a service economy, and it might be transforming into a cyber economy. Many state and local tax systems have not kept pace with the changing economy and may now be obsolete.

Second, a regressive tax system becomes inelastic and misaligned with the economy. For example, if the economy grows by 1 percent, revenues grow by less than 1 percent. Figure 4 shows the trend in elasticity. It shows state and local tax systems have become more out of sync with the economy. For example, in 2002, elasticity of state and local revenue systems was about 0.77, which means if the economy grew by $1.00, revenues grew by only $0.77. In 2019, elasticity was 0.71, which means if the economy grew by $1.00, revenues grew by only $0.71.

Figure 4. Elasticity of State and Local Government Revenue Systems, U.S., 2002-2019



18 Robert Tannenwald, "Are State and Local Revenue Systems Becoming Obsolete?" *National Tax Journal 55*, no. 3 (2002): 467–89, econpapers.repec.org/article/ntjjournl/v_3a55_3ay_3a2002_3ai_3a3_3ap_3a467-89.htm.

Given that state and local tax systems continue to be regressive and misaligned with the economy, they are unable to produce the revenues needed to fund necessary public services such as education. Pension contributions are a small portion of state and local revenues, and education funding has grown faster than pension contributions. Yet opponents of public pensions continue to blame pensions for revenue shortfalls instead of considering the impact of revenue systems that are becoming unfair and inelastic.

We invite everyone to join pension organizations in making a concerted effort to fix state and local revenues systems. We don't need to fight for a piece of the pie. We can work together to grow the pie so it's enough to adequately and equitably fund education and pensions—and the rest of public services that a modern and prosperous society needs.

Section 2: Data and Methodology

As we have noted, we set out to examine whether pension contributions crowd out education funding and whether state and local revenue systems are out of sync with the economy. To do this, we needed to examine state-by-state historical data on pension contributions, education expenditures, revenues, and the economy.

Data Sources

The data needed for this study are available from the following three sources:

1. Data on state and local revenues and expenditures are available from the U.S. Census Bureau's Annual Survey of State and Local Government Finances as well as from the Tax Policy Center.[19] These data span the period from 1977 to 2019 for each of the 50 states.

2. Data on state and local pension contributions are available from the U.S. Census Bureau's Annual Survey of Public Pensions.[20] These state-by-state data cover the period from 1993 to 2020, but we extracted data up to 2019 to match with revenue and expenditures data.

3. Economic data for individual states are available from the federal Bureau of Economic Analysis.[21] These data span a much longer period, but for the purposes of the present study, we have extracted economic data, specifically personal income, from 1977 to 2019 to match with state and local revenues mentioned in item 1 above.

Methodology

Our methodology consists of the following steps.

Extraction of Variables

We extracted the following four variables from the data sources identified above:

1. Pension Contributions—This variable consists of state-by-state pension contributions by state and local governments in thousands of dollars ($1,000s) from 1993 to 2019.

2. Education Expenditures—Education funding or education expenditures consist of state-by-state spending by state and local governments on public education. It is measured in thousands of dollars ($1,000s) and covers the period from 1993 to 2019 to match with pension contributions. This variable does not include federal education money.

3. Revenues—This variable consists of state-by-state total state and local governments' own-source tax revenues. It is measured in thousands of dollars ($1,000s) and spans 1977 to 2019.

4. Economy—We measure economy in terms of personal income. This variable consists of state-by-state personal income in millions of dollars ($1,000,000s) from 1977 to 2019.

19 U.S. Census Bureau, www.census.gov/programs-surveys/gov-finances.html; Tax Policy Center (housed in Urban Institute), slfdqs.taxpolicycenter.org/pages.cfm.

20 U.S. Census Bureau, www.census.gov/programs-surveys/aspp/data/datasets.2007.html.

21 Bureau of Economic Analysis, https://apps.bea.gov/iTable/?reqid=70&step=1&acrdn=2.

Preparation of Data

Since some data are in thousands of dollars ($1,000s), we converted all variables into billions for the purpose of analysis. We have not deflated these variables as the results of the analysis will be the same regardless of whether we use current dollars or inflation-adjusted dollars.

Analysis

Compared to our earlier study, the present study expands the analysis in two ways.

1. We examine annual rates of growth of pension and education expenditures from 1993 to 2019. In doing so we found that pension funding has been very volatile compared to education funding. It is important, therefore, to adjust the average annual rates of growth of both variables by volatility (as measured by standard deviation) before comparing them.

2. We also look at the percentage of pension expenditures coming from state governments. We know that in most states, pension contributions are not part of education budgets. It so happens that two-thirds of states provide more than 90 percent of pension funding, usually through separate appropriations. Only four states provide less than 70 percent of pension expenditures.

Like our earlier study, this study uses a combination of visual graphics and best-fit regression equations to examine whether pensions are crowding out funding for vital public services such as education. For example, we first plot a scattergram of pension contributions and education expenditures over time. We then apply the best-fit regression to each scattergram. This produces trend lines for each variable in the diagram as well as slopes of the regression lines as measured by beta values of the regression equation. If the two trend lines are moving apart with the passage of time, indicating that the slope of education funding is steeper than the slope of pension contributions, there is no crowding out between pensions and education funding. Conversely, if the beta value for the pension trend line is higher than the education expenditures line, then pension contributions are rising faster than education expenditures. This could reflect crowding out, although this can be due to other factors—for instance, limited tax revenues. Alternative explanations must be examined to make a case for crowding out.

Similarly, we use scattergram and best-fit regression lines to examine whether the economy and state and local revenues are out of sync. If the two lines grow apart with the passage of time, they are out of sync. By this, we mean when the economy grows, the revenues do not grow as much. In this situation, revenues will always be short relative to the spending needs of state and local governments. On the other hand, if the two lines are parallel or on a convergence path, that means revenues are in harmony with the economy (they grow as the economy grows) or grow faster than the economy.

The next section presents results in terms of graphics and beta values for each state as well as for the United States as a whole. These results show that pension contributions are not the cause of education budget problems as they are portrayed by some in public pension circles. Instead, it's the lack of harmony between the economy and state and local revenue systems that needs to be fixed to address the fiscal woes of state and local governments.

Section 3: Results

The discussion of results is organized around two questions. Do pension expenditures crowd out education funding? Are state and local revenues keeping pace with the economy to meet the growing expenditures needed to adequately fund education and pensions?

Do Pension Expenditures Crowd Out Education Funding?

We look at the answer to this question in the following four ways.

1. Annual rate of growth of education and pension expenditures
2. Pension funding is not usually part of education budgets
3. Expenditures on education and pensions as a share of state and local revenues
4. Slopes of trend lines of education and pension expenditures

All of these ways suggest that state and local government pension expenditures cannot possibly crowd out education expenditures. Let's look at the findings about each of these four perspectives on whether pension funding is crowding out education funding.

Annual Rate of Growth of Education and Pension Expenditures

As shown in Figure 1 in the Introduction, annual growth in pension expenditures has been volatile for reasons such as employers' underpaying or skipping pension contributions and making occasional extra catch-up payments. On the other hand, growth in education funding has been relatively stable. To compare the growth rates of the two variables, one of which is volatile and the other of which is not, it is important to adjust both variables for their volatility (measured by standard deviation). Table 2 shows risk-adjusted annual rates of growth for each of the 50 states during 1993 to 2019.

Table 2. Comparison of Risk-Adjusted Average Annual Rate of Growth of State and Local Education and Pension Expenditures, 1993–2019

	Annual Growth in Education			Annual Growth in Pension		
		Standard	Adjusted		Standard	Adjusted
State	Mean	Deviation	Mean	Mean	Deviation	Mean
Alabama	5.34	4.65	1.15	7.20	17.35	0.41
Alaska	3.47	6.42	0.54	19.43	76.50	0.25
Arizona	5.26	5.28	1.00	14.53	22.43	0.65
Arkansas	5.05	4.48	1.13	8.46	26.44	0.32
California	5.89	5.02	1.17	11.05	28.24	0.39
Colorado	5.82	3.69	1.58	7.40	14.30	0.52
Connecticut	4.70	4.51	1.04	13.11	38.28	0.34
Delaware	5.69	3.79	1.50	13.06	43.00	0.30
Florida	5.06	5.44	0.93	3.71	16.33	0.23
Georgia	5.89	5.26	1.12	6.95	7.14	0.97
Hawaii	4.29	6.57	0.65	31.07	134.39	0.23
Idaho	4.99	4.78	1.04	5.07	5.83	0.87
Indiana	4.10	3.35	1.22	6.81	11.8	0.58
Illinois	4.33	4.07	1.06	18.93	62.72	0.30
Iowa	4.41	2.77	1.59	11.69	40.69	0.29

	Annual Growth in Education			Annual Growth in Pension		
		Standard	Adjusted		Standard	Adjusted
Kansas	4.55	4.07	1.12	18.47	52.81	0.35
Kentucky	4.86	4.21	1.15	9.06	18.08	0.50
Louisiana	4.13	4.83	0.86	6.32	8.52	0.74
Maine	3.71	4.07	0.91	3.77	17.65	0.21
Maryland	5.23	4.75	1.10	6.37	10.22	0.62
Massachusetts	5.50	4.23	1.30	4.47	9.04	0.49
Michigan	3.48	4.08	0.85	8.06	27.77	0.29
Minnesota	4.37	3.51	1.25	4.81	5.05	0.95
Mississippi	4.55	4.26	1.07	5.66	4.35	1.30
Missouri	4.64	4.14	1.12	6.89	5.50	1.25
Montana	4.13	4.27	0.97	6.55	10.07	0.65
Nebraska	4.90	3.60	1.36	10.45	24.96	0.42
Nevada	6.77	7.00	0.97	7.19	25.23	0.28
New Hampshire	5.10	4.66	1.09	12.09	14.68	0.82
New Jersey	4.77	4.70	1.01	93.99	383.61	0.25
New Mexico	4.99	5.23	0.95	5.51	6.25	0.88
New York	4.77	3.64	1.31	11.25	29.03	0.39
North Carolina	5.29	3.30	1.60	8.32	19.38	0.43
North Dakota	5.06	4.55	1.11	8.82	18.27	0.48
Ohio	4.27	3.60	1.19	3.29	9.06	0.36
Oklahoma	4.53	4.83	0.94	5.77	8.94	0.65
Oregon	5.45	4.04	1.35	14.97	50.99	0.29
Pennsylvania	4.41	4.68	0.94	12.37	31.99	0.39
Rhode Island	4.26	3.91	1.09	6.76	15.33	0.44
South Carolina	5.66	4.00	1.42	6.86	5.84	1.17
South Dakota	4.68	3.83	1.22	5.31	6.31	0.84
Tennessee	5.01	3.95	1.27	6.23	15.5	0.40
Texas	5.91	4.28	1.38	7.00	11.13	0.63
Utah	5.99	5.56	1.08	7.69	6.78	1.13
Vermont	5.68	4.20	1.35	7.86	15.62	0.50
Virginia	5.36	3.93	1.36	6.65	13.16	0.51
Washington	5.23	3.50	1.49	9.41	26.75	0.35
West Virginia	3.40	3.75	0.91	137.68	513.5	0.27
Wisconsin	3.88	2.48	1.56	6.32	35.33	0.18
Wyoming	5.11	5.98	0.85	3.57	10.93	0.33
United States	**5.57**	**2.25**	**2.48**	**6.48**	**7.95**	**0.82**

The results in Table 2 show that for the United States as a whole, the risk-adjusted annual average rate of growth for education funding was 2.48 percent. The same figure for pension funding was 0.82 percent. In other words, education funding grew three times faster than pension funding. This defies the crowding-out arguments made by some colleagues in public pension research arena.

*Table 3. The Percentage of Pension Costs Paid by the State in 2019**

State	Percentage of Pension Cost Paid by State
Alabama	95
Alaska	90
Arizona	86
Arkansas	98
California	76
Colorado	91
Connecticut	91
Delaware	81
Florida	70
Georgia	84
Hawaii	100
Idaho	100
Illinois	72
Indiana	96
Iowa	100
Kansas	96
Kentucky	99
Louisiana	96
Maine	100
Maryland	72
Massachusetts	63
Michigan	87
Minnesota	95
Mississippi	100
Missouri	81
Montana	100
Nebraska	49
Nevada	96
New Hampshire	96
New Jersey	100
New Mexico	100
New York	38
North Carolina	99
North Dakota	88
Ohio	99
Oklahoma	96
Oregon	90
Pennsylvania	81
Rhode Island	69
South Carolina	100
South Dakota	90
Tennessee	70
Texas	79
Utah	98
Vermont	94
Virginia	77
Washington	94
West Virginia	86
Wisconsin	87
Wyoming	100
United States	**78**

*The percentages in Table 3 are not percentages of actuarially determined contributions. Instead, they refer to the percentage of pension expenditures paid by the state out of total amounts paid by state and local governments.

It is important to underscore that if we look at just unadjusted average rates of growth, pension funding grew faster than education funding—6.48 percent versus 5.57 percent. But just as we don't compare annual rates of growth or returns on pension fund investments without adjusting for risk or volatility, we shouldn't compare education and pension funding rates of growth without adjusting for volatility.

Table 2 also shows the adjusted average annual rates of growth of pension and education expenditures for individual states. The results show that in 48 states, education funding grew faster than did pension funding. The two states in which growth in pension funding was almost equal to or slightly more than growth in education funding are Missouri and Utah. In California, the epicenter of the crowding-out literature, average growth in education funding was about three times higher than growth in pension funding (1.17 vs. 0.39).

Pension Funding is Not Usually Part of Education Budgets

As mentioned before, pension expenditures are usually not a part of education budgets. This is further supported by the fact that the lion's share of pension funding comes from states rather than local governments. The percentage of pension expenditures paid by state governments in different states indicates that the vast majority of states pay more than 70 percent of pension expenditures (see Figure 2 in the Introduction). Figure 2 shows the percentage of pension expenditures paid by the state out of the total amounts paid by state and local governments. In 10 states, 100 percent of pension contributions are paid by the state. It also shows that 19 states pay more than 90 percent of the costs.

Table 3 shows the percentage of pension costs paid by the state (out of the total amounts paid by state and local governments) in each of the 50 states in 2019 (the latest year for which data are available). It shows that only 4 states pay less than 70 percent of the pension costs—Massachusetts, Nebraska, New York, and Rhode Island. To the best of our knowledge, there isn't any literature claiming pension costs are crowding out education funding in these four states.

Expenditures on Education and Pensions as a Share of State and Local Revenues

In the grand scheme of things, the share of pension expenditures compared with education expenditures as a percentage of state and local revenues is so small that increases in pension expenditures are unlikely to have any significant negative impact on the functioning of the public education system. On average, pension expenditures have been about 3.6 percent of state and local revenues during the past quarter century. The same figure for education expenditures is 33.8 percent.

When pension expenditures as a percentage of state and local revenues are so small compared with education expenditures, pensions are not likely to displace education even if pension expenditures grow faster than education expenditures. This is shown in Table 1. The table shows that from 1993 to 2019, the average annual unadjusted (for volatility) rate of growth for pensions was higher than that of education funding (6.48 percent vs. 5.57 percent). But when we look at the current and projected expenditures for the two variables, the ratio between the two remains the same, 0.11, indicating no crowding-out effect. So the crowding-out argument under these circumstances seems to be just a mirage.

Slopes of Trend Lines of Education and Pension Expenditures

In this study, looking at the slopes (beta values) of trend lines of education and pension expenditures using the best-fit linear regression model, beta

values of pension expenditures are consistently lower than education expenditures. This means that pension expenditures cannot possibly crowd out education expenditures. Let's examine national and state-by-state data and graphics to elaborate on lack of support for the crowding-out argument.

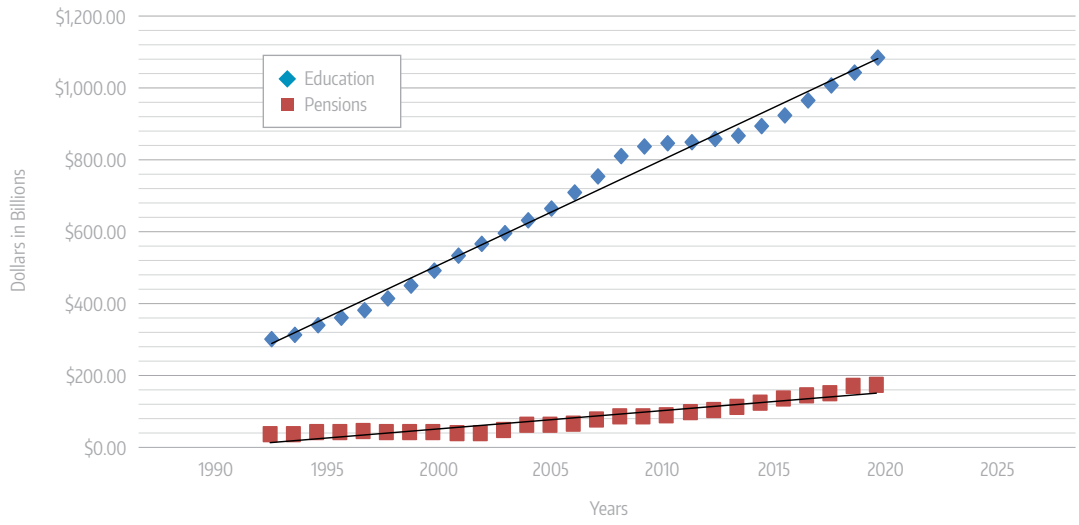
Do pension contributions crowd out education funding? The trend lines for the pension and education variables during the past quarter century show that there is no evidence of crowding out. Were there crowding out, the two trend lines would have been on a path to convergence. Instead, as Figure 5 shows, the lines move farther apart with the passage of time.

The slopes of these lines are measured by the beta value of the regression equation that best fits the data in the scattergram. Beta values for education expenditures and pension contributions for each state are shown in Table 4. This table shows that there is no crowding out in any state. In each state, the beta value (slope) of education funding line is greater than the beta value of the pension contributions line.[22]

Let's look at California, to which most of the crowding-out literature relates. The slope (beta value) of the education expenditures line is 4.01, and the slope of pension contributions line is 1.15. This means that these lines are on a trajectory that will not converge. This is true even for states such as Illinois and Kentucky, which are often portrayed by some of our colleagues in public pension circles as "in trouble." Graphic results for individual states are shown in the appendix.

Obviously, faster growth in education funding than in pension contributions does not mean that education funding is adequate and equitable. State supreme court decisions in numerous states indicate that education funding is nowhere near adequate and equitable. This is because state and local revenue systems are out of sync with the economy.

Figure 5. Trends in State and Local Expenditures on Education and Pensions, U.S., 1993-2019



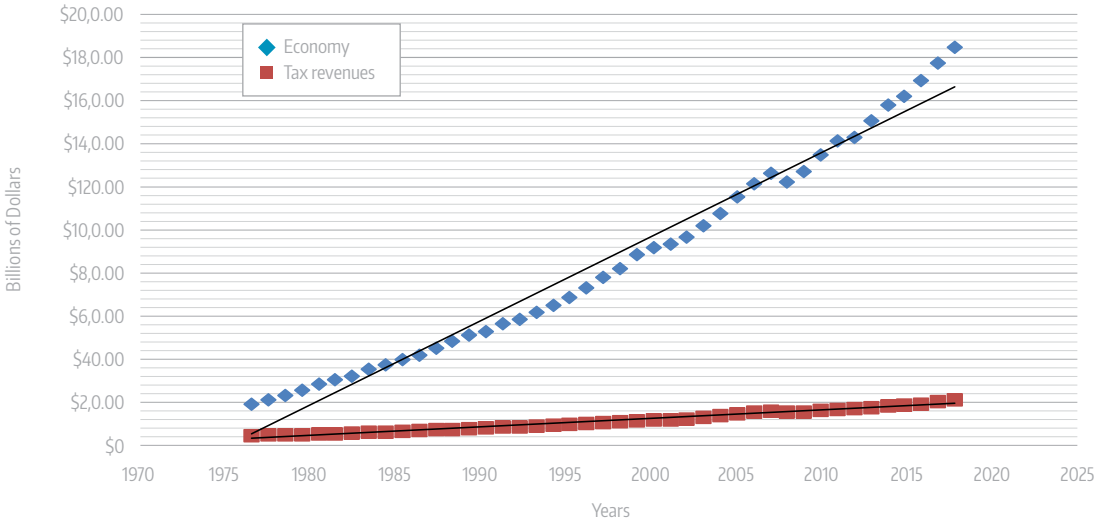
22 While these beta values are significant, we have not included level of significance statistics in the table. They usually are relevant only when a sample is used. When using the entire population (all 50 states), it is not crucial to focus on level of significance.

Table 4. Beta Values of the Best-Fit Regression Lines for State and Local Education and Pension Expenditures Depicting Slopes of the Trend Lines, 1977–2019

	Beta Value	
State	Education	Pensions
Alabama	0.44	0.04
Alaska	0.09	0.03
Arizona	0.46	0.09
Arkansas	0.26	0.03
California	4.01	1.15
Colorado	0.52	0.05
Connecticut	0.39	0.12
Delaware	0.12	0.01
Florida	1.23	0.05
Georgia	0.86	0.76
Hawaii	1.99	0.27
Idaho	0.09	0.01
Indiana	0.43	0.06
Illinois	1.04	0.44
Iowa	0.30	0.03
Kansas	0.27	0.04
Kentucky	0.37	0.07
Louisiana	0.33	0.09
Maine	0.08	0.01
Maryland	0.63	0.09
Massachusetts	0.69	0.09
Michigan	0.64	0.12
Minnesota	0.49	0.04
Mississippi	0.22	0.03
Missouri	0.41	0.08
Montana	0.07	0.01
Nebraska	0.21	0.02
Nevada	0.21	0.05
New Hampshire	0.12	0.02
New Jersey	1.05	0.13
New Mexico	0.20	0.02
New York	2.47	0.78
North Carolina	0.80	0.06
North Dakota	0.09	0.01
Ohio	0.93	0.07
Oklahoma	0.29	0.04
Oregon	0.40	0.03
Pennsylvania	1.16	0.21
Rhode Island	0.09	0.02
South Carolina	0.45	0.05
South Dakota	0.07	0.00*
Tennessee	0.40	0.05
Texas	2.79	0.23
Utah	0.31	0.04
Vermont	0.09	0.01
Virginia	0.81	0.10
Washington	0.70	0.07
West Virginia	0.14	0.03
Wisconsin	0.46	0.01
Wyoming	0.10	0.01
United States	**29.04**	**5.05**

**The actual value is 0.004.*

Figure 6. Trends in Economy and Tax Revenues, U.S., 1977-2019



Are State and Local Tax Revenue Systems Out of Sync with the Economy?

Figure 6 shows the trend lines for the economy and revenues over time for the United States as a whole. It clearly shows that the two trend lines grow apart with the passage of time. This means revenues do not keep pace with economic growth because they are out of sync with the economy. If they were in sync, the two lines would have been at least parallel.

We examine the lack of harmony between the economy and revenues through beta values of the best-fit regression lines for individual states. This information is shown in Table 5. It is clear from the table that beta values for the economy trend lines are greater than beta values for the revenue trend lines for each of the 50 states. In other words, the slope of the economy line is steeper than the slope of the revenue line. This means state and local revenues are unlikely to be enough for public services, even if there were no pension contributions or if they were converted into hybrid plans.

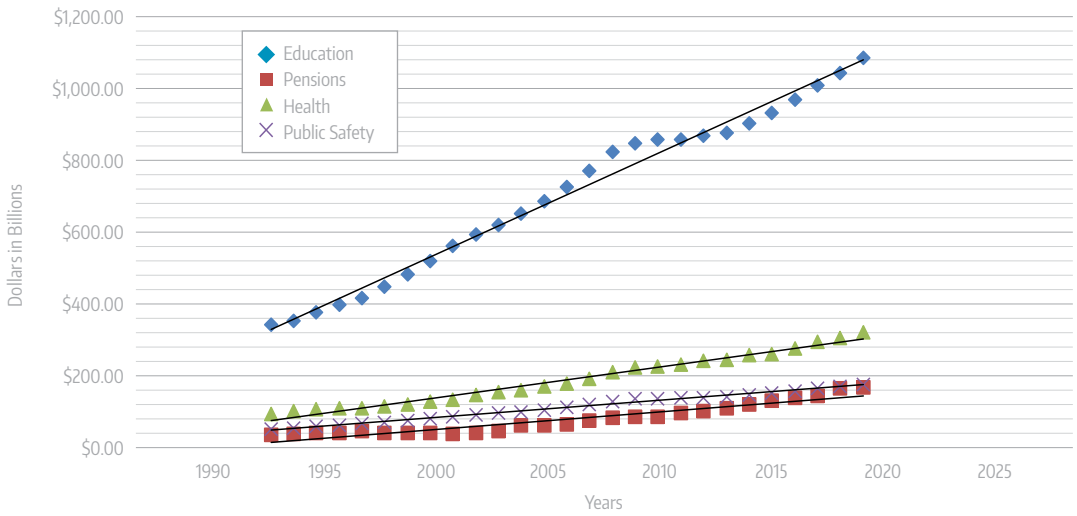
Table 5. Beta Values of the Best-Fit Regression Lines for State and Local Economy and Tax Revenues Depicting Slopes of the Two Lines, 1993–2019

	Beta Value	
State	Economy	Tax Revenues
Alabama	4.62	0.38
Alaska	0.99	0.10
Arizona	7.38	0.66
Arkansas	2.92	0.29
California	52.89	5.88
Colorado	7.32	0.66
Connecticut	6.04	0.67
Delaware	0.93	0.09
Florida	17.60	1.68
Georgia	8.72	0.86
Hawaii	1.25	0.15
Idaho	1.70	0.15
Indiana	6.76	0.64
Illinois	15.54	1.72
Iowa	3.35	0.34
Kansas	3.31	0.33
Kentucky	4.18	0.41
Louisiana	4.79	0.45
Maine	1.43	0.17
Maryland	8.49	0.88
Massachusetts	10.56	1.02
Michigan	9.72	0.87
Minnesota	7.08	0.79
Mississippi	2.6	0.26
Missouri	6.32	0.54
Montana	1.11	0.09
Nebraska	2.26	0.23
Nevada	3.59	0.35
New Hampshire	1.90	0.16
New Jersey	13.11	1.52
New Mexico	2.02	0.21
New York	27.84	4.13
North Carolina	10.94	1.01
North Dakota	0.96	0.14
Ohio	11.83	1.23
Oklahoma	4.16	0.33
Oregon	4.51	0.43
Pennsylvania	15.24	1.51
Rhode Island	1.25	0.14
South Carolina	4.92	0.42
South Dakota	1.04	0.08
Tennessee	7.14	0.53
Texas	33.45	2.92
Utah	3.23	0.31
Vermont	0.77	0.09
Virginia	11.2	1.00
Washington	9.9	0.92
West Virginia	1.57	0.17
Wisconsin	6.51	0.65
Wyoming	0.81	0.08
United States	387.88	39.26

Are public pensions crowding out other public services? In this study we have focused mainly on whether pensions crowd out education funding. This is largely because most of the literature emanating from those who would like to see public pensions converted into defined-contribution plans focuses on public education. We also looked at whether pensions displace other services, such as health care and public safety. Figure 7 shows that pension contributions do not crowd out education, health, and public safety expenditures. The slope of the trend lines for each of these services is not on a path to convergence with pension contributions.

If our research colleagues are so worried about the crowding-out effect of public pensions and want public education and other public services to be adequately funded, they need to focus on efforts to reform state and local revenue systems.

Figure 7. Trends in State and Local Expenditures on Education, Health, Public Safety, and Pensions, U.S., 1993-2019



Section 4 : Conclusions

This paper examined state and local finances to see whether states can afford both pensions and education. Our conclusion is that they can. But at the same time, state and local governments need to structure their revenue systems to keep pace with the economy and resulting needs of a civilized, prosperous society. Some in public pension circles make two arguments for converting defined-benefit pensions into defined-contribution plans. First, they insist that taxpayers cannot afford public pensions. Second, they argue that public pensions are crowding out important public services, especially education. Careful analysis demonstrates that both of these arguments cannot be supported by our analysis and data.

With respect to the first argument, the NCPERS biennial study[23] shows that public pensions are net revenue generators to the tune of $179.5 billion. In other words, if there were no public pensions, taxpayers would have to pay $179.5 billion more to get the current level of public services. Regarding the second argument, this study shows that public pensions do not crowd out education funding—or funding for other public services including health care and public safety.

Is there a squeeze on funding public education and other services? Yes. But it is because state and local revenue systems are out of sync with the economy, not because of pension expenditures. Instead of blaming public pensions for state and local budget problems, we need to synchronize state and local revenue systems. As we previously have noted in this report, state and local governments face many competing priorities, including funding education and public safety and maintaining retirement systems that allow them to attract and retain the most qualified workforces. The governments can afford both pensions and education. But to do so, they must take determined steps to bring their revenue systems into harmony with the economy.

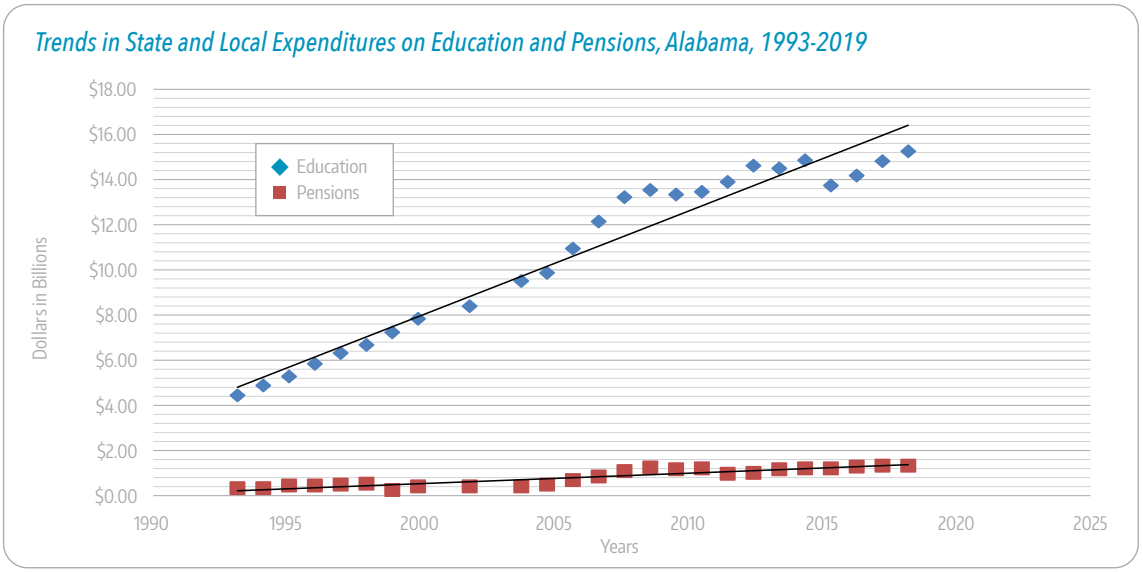
23 *Unintended Consequences.*

Appendix: State-by-State Charts

ALABAMA

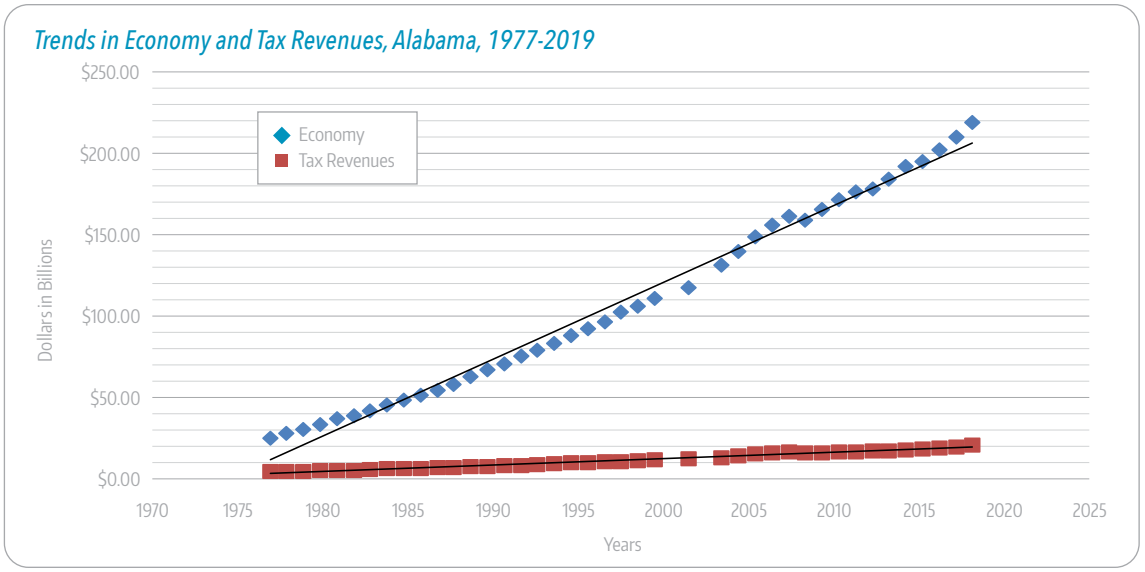
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

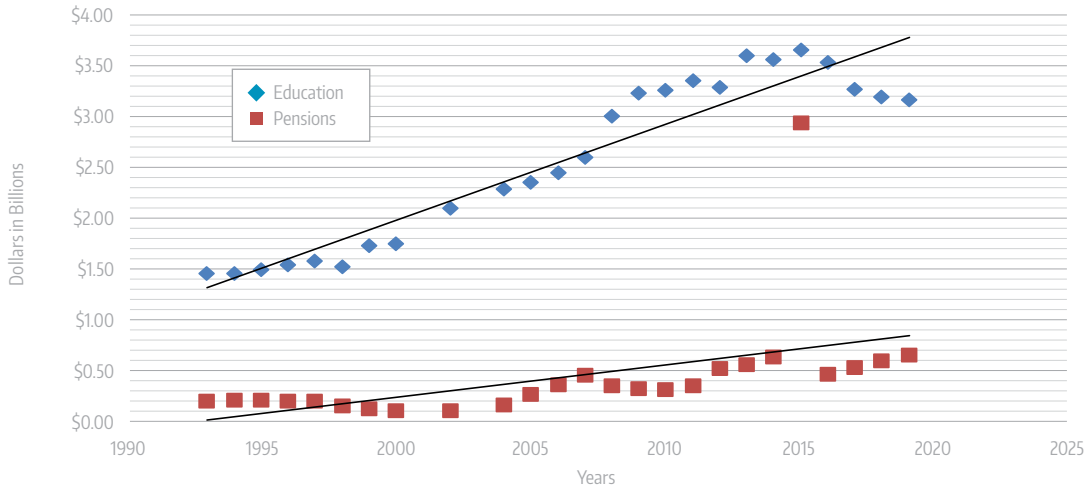


ALASKA

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

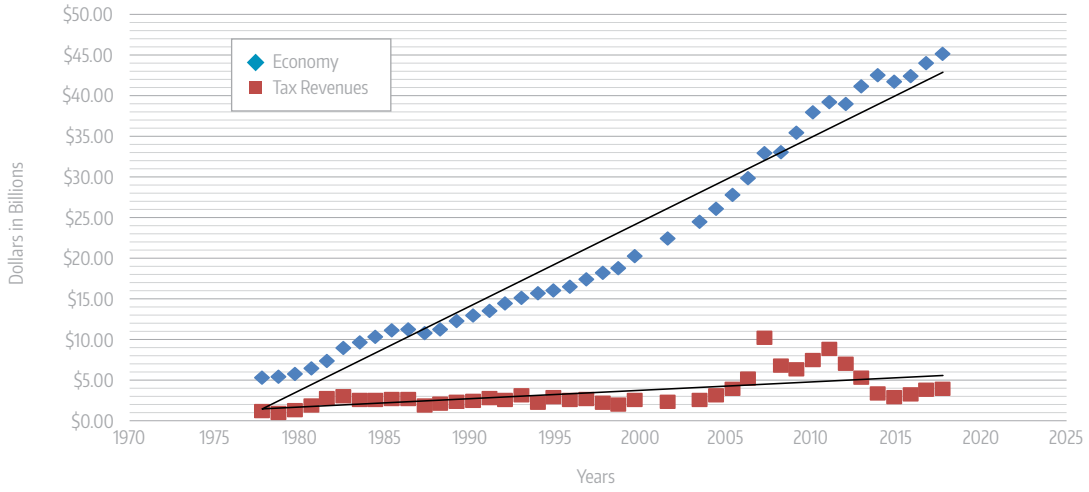
Trends in State and Local Expenditures on Education and Pensions, Alaska, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

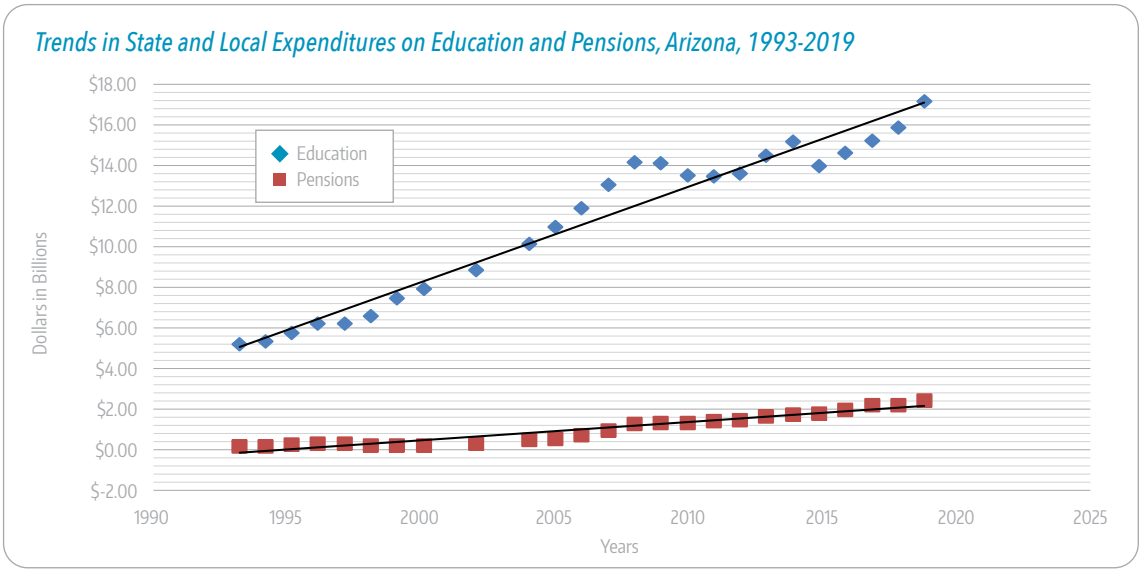
Trends in Economy and Tax Revenues, Alaska, 1977-2019



ARIZONA

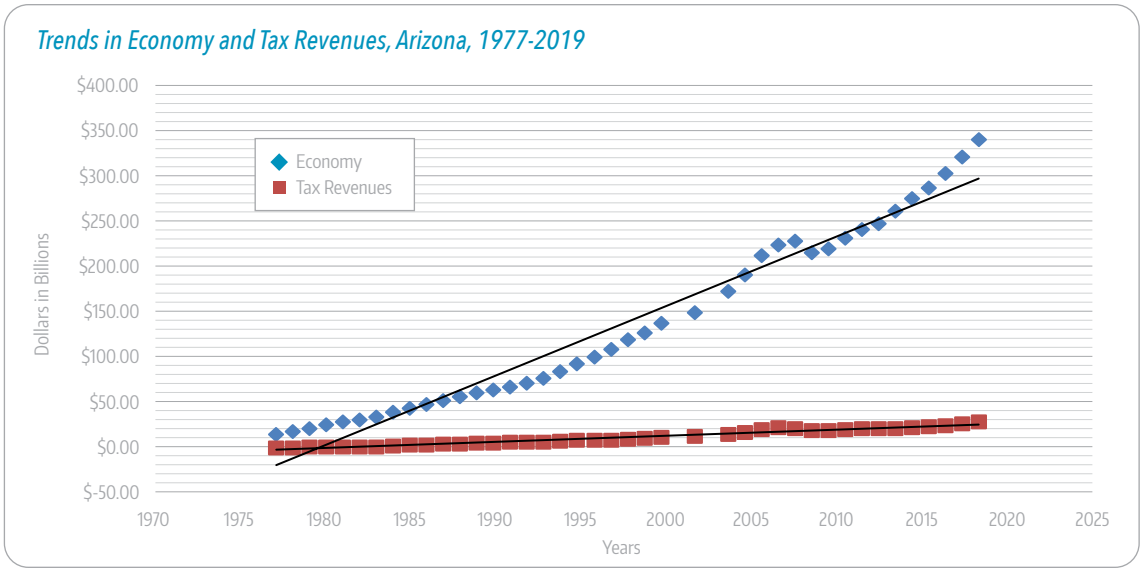
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

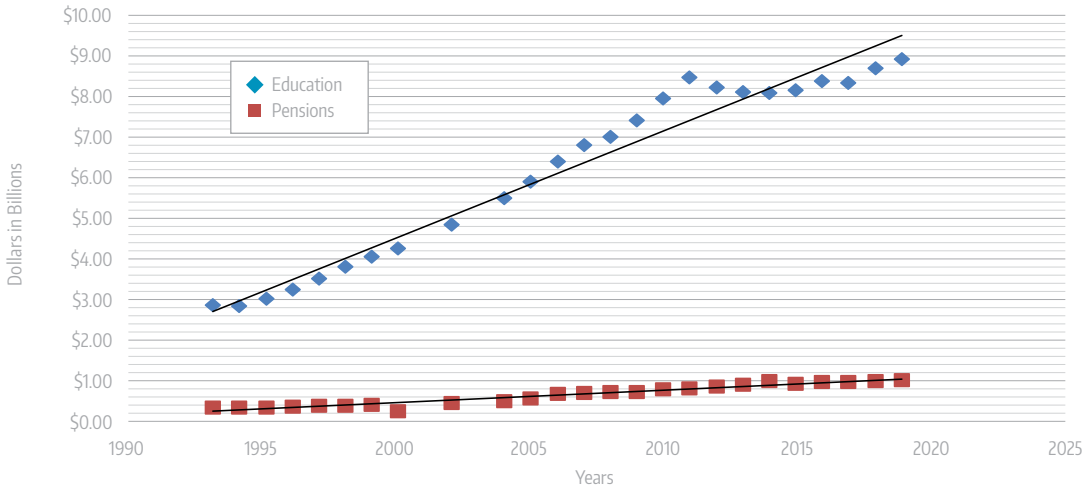


ARKANSAS

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

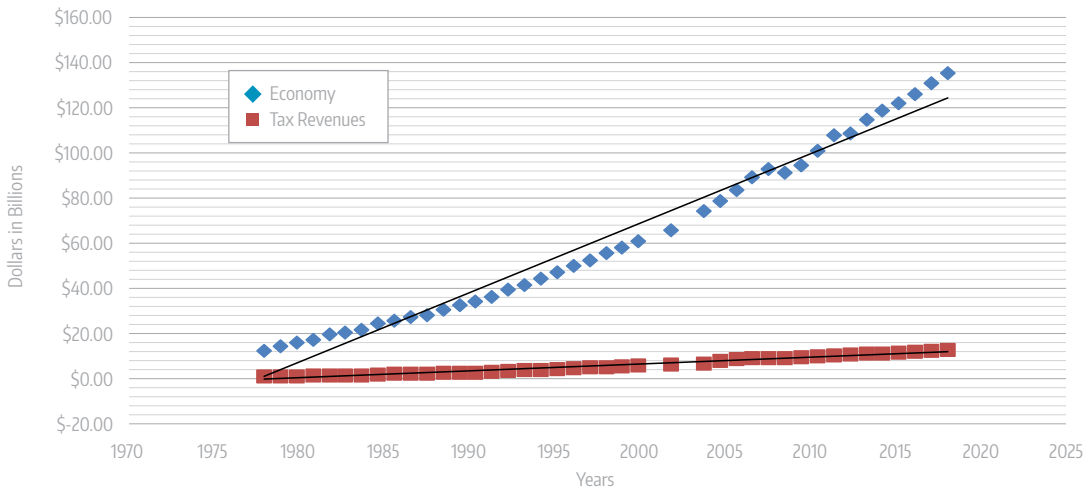
Trends in State and Local Expenditures on Education and Pensions, Arkansas, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

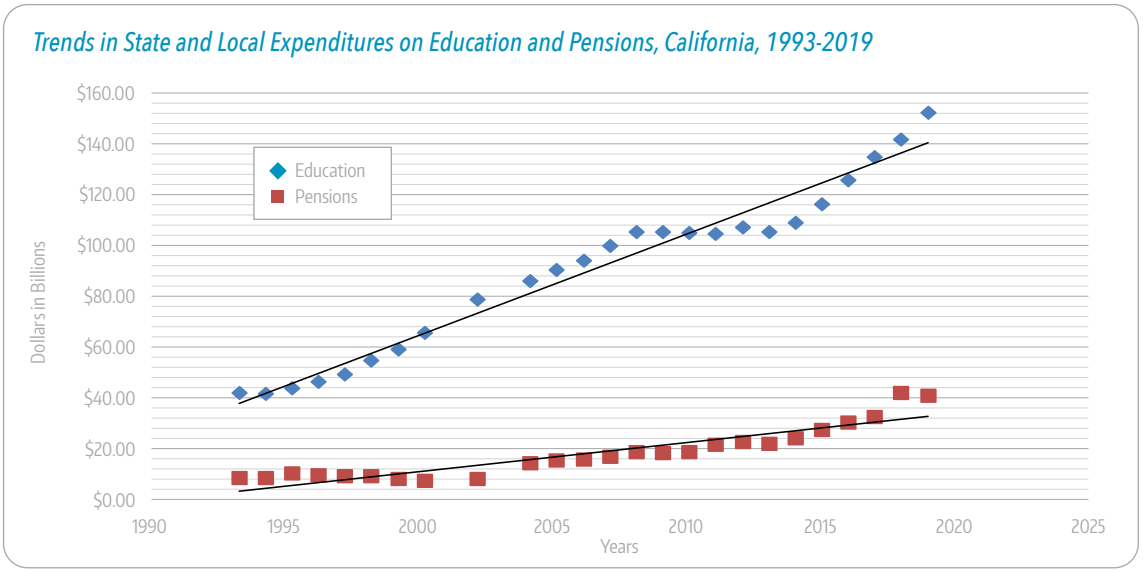
Trends in Economy and Tax Revenues, Arkansas, 1977-2019



CALIFORNIA

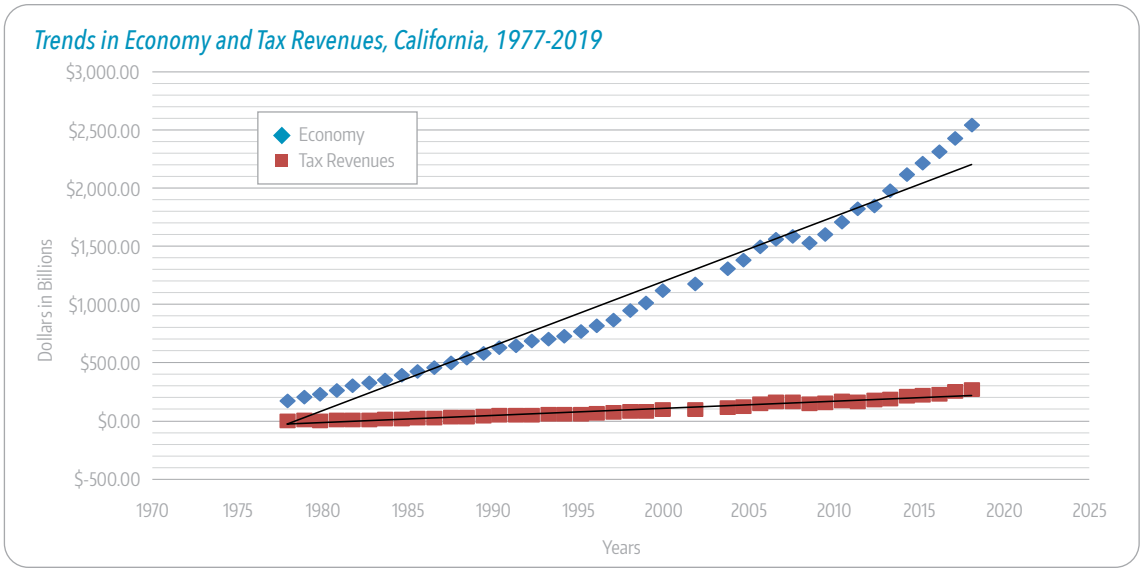
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

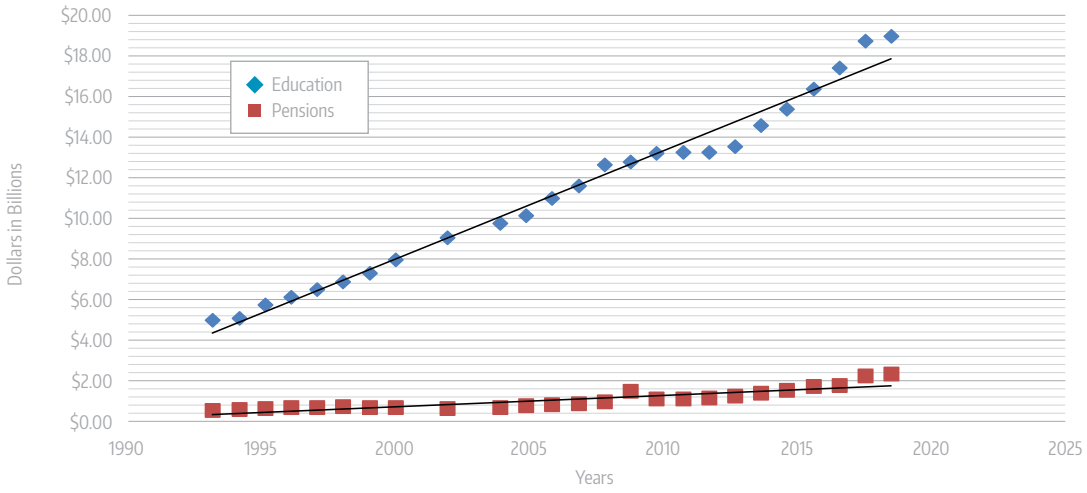


COLORADO

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

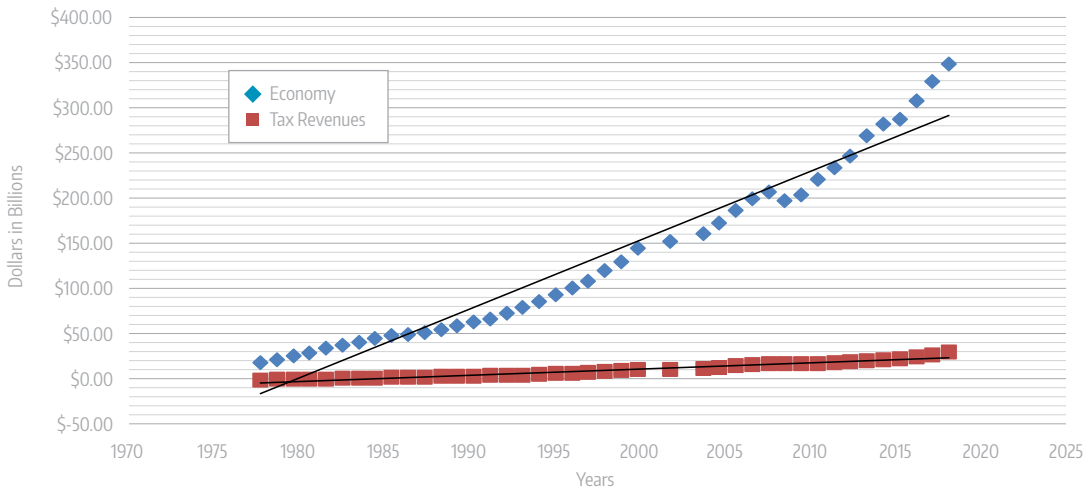
Trends in State and Local Expenditures on Education and Pensions, Colorado, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

Trends in Economy and Tax Revenues, Colorado, 1977-2019

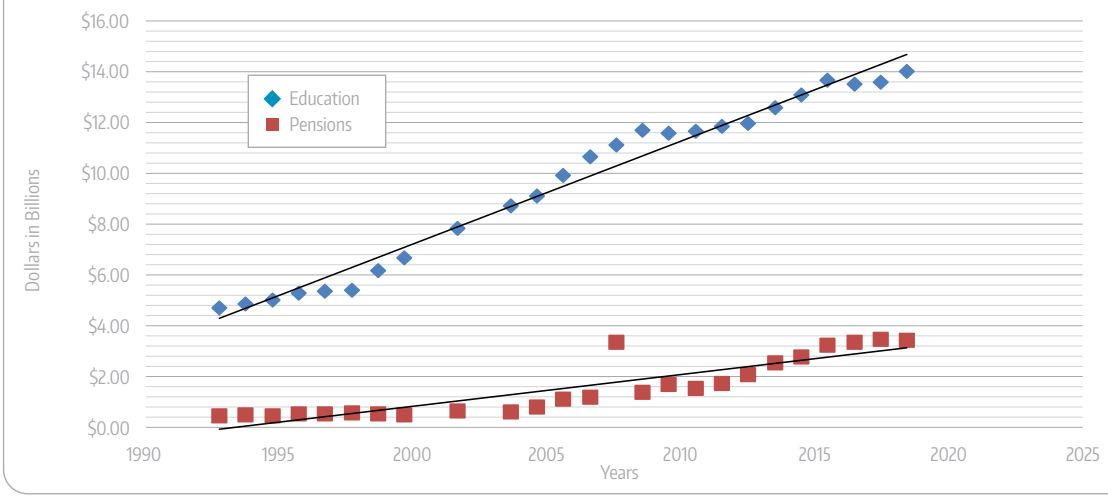


CONNECTICUT

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

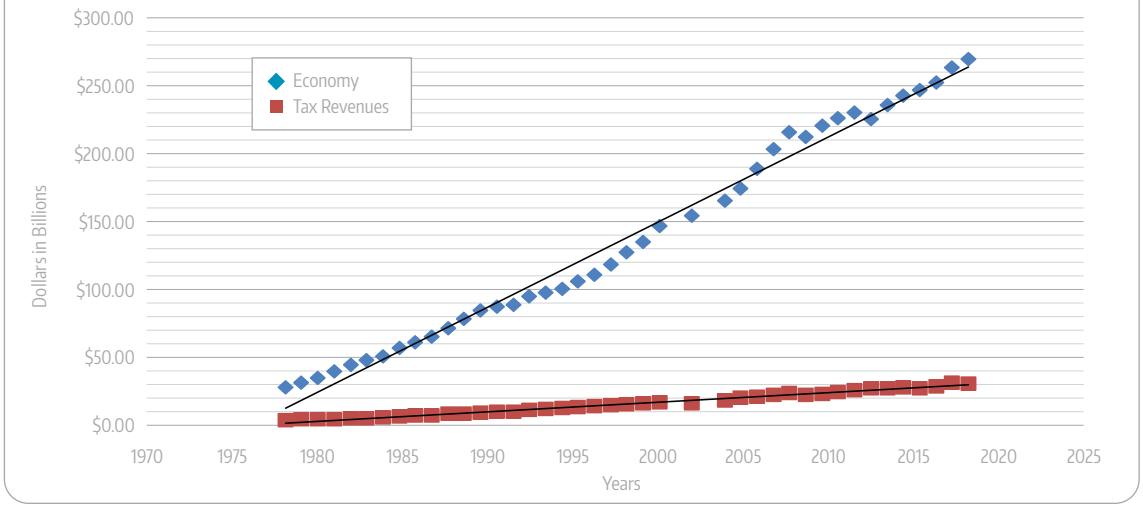
Trends in State and Local Expenditures on Education and Pensions, Connecticut, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

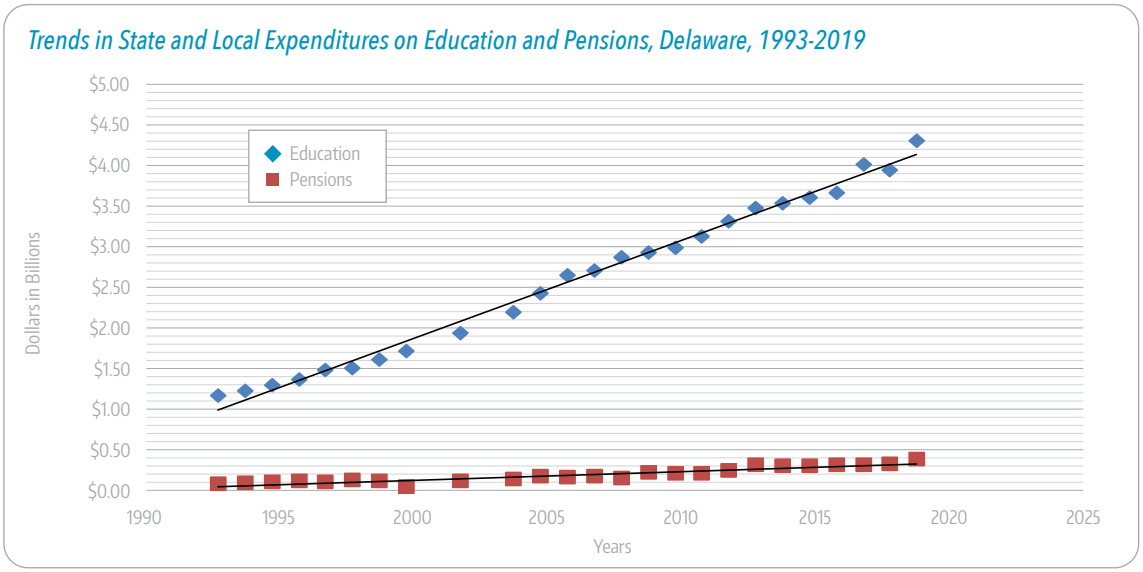
Trends in Economy and Tax Revenues, Connecticut, 1977-2019



DELAWARE

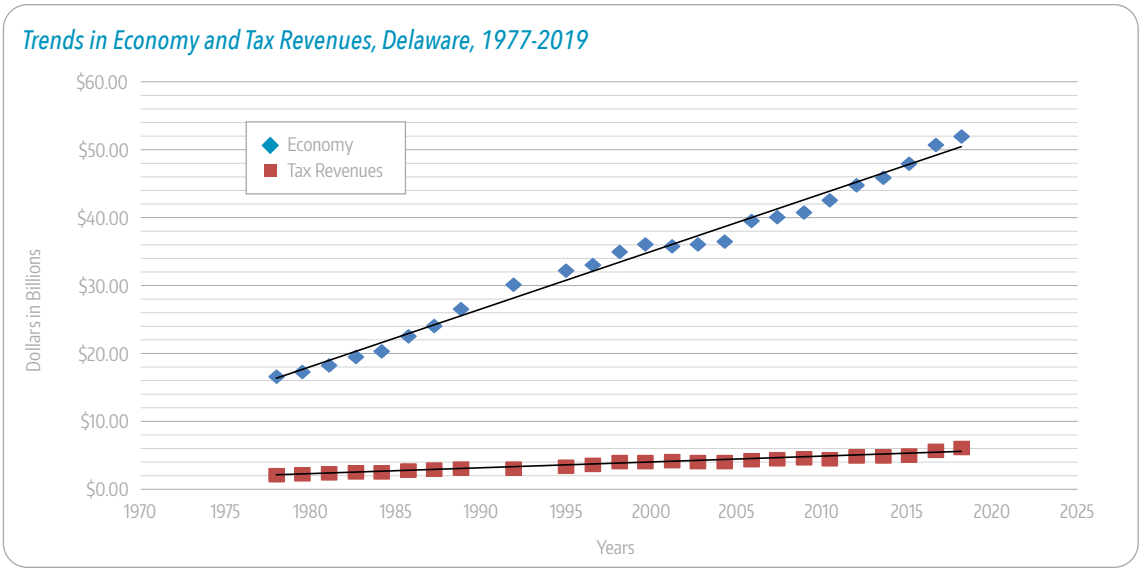
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

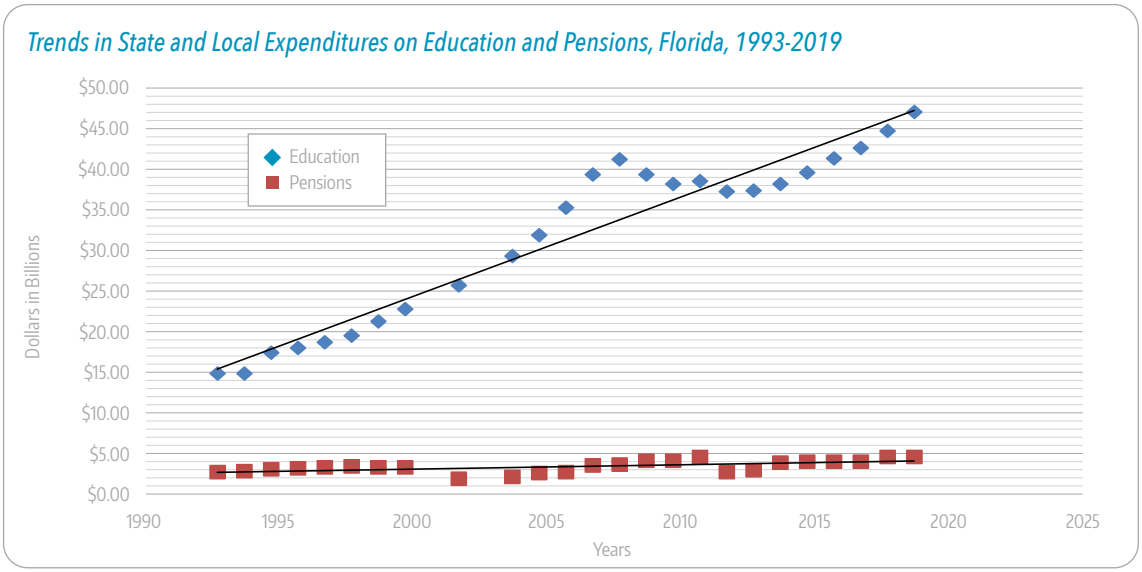


FLORIDA

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

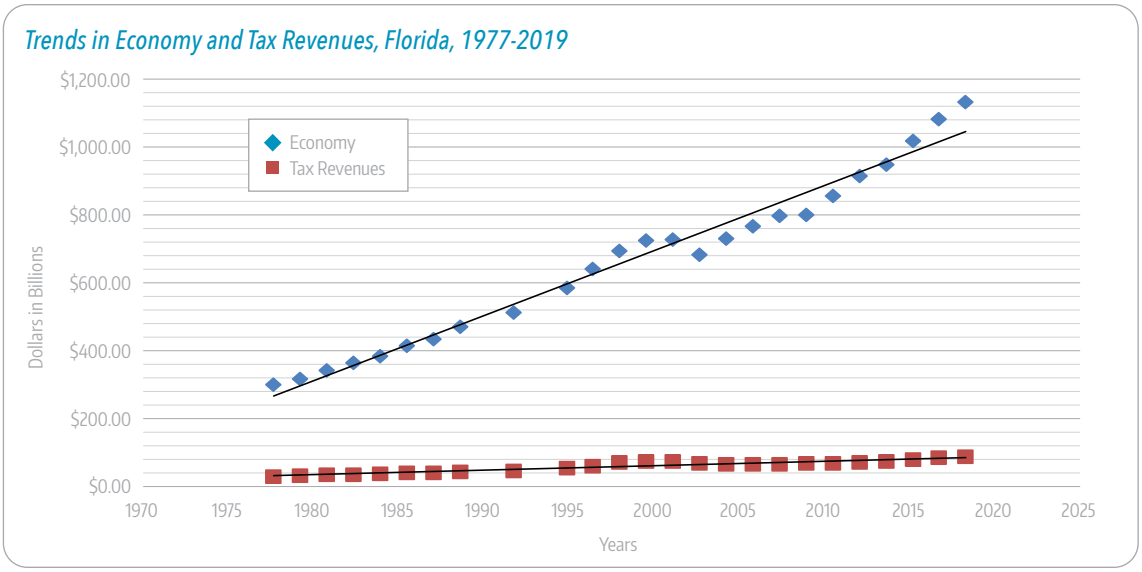
Trends in State and Local Expenditures on Education and Pensions, Florida, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

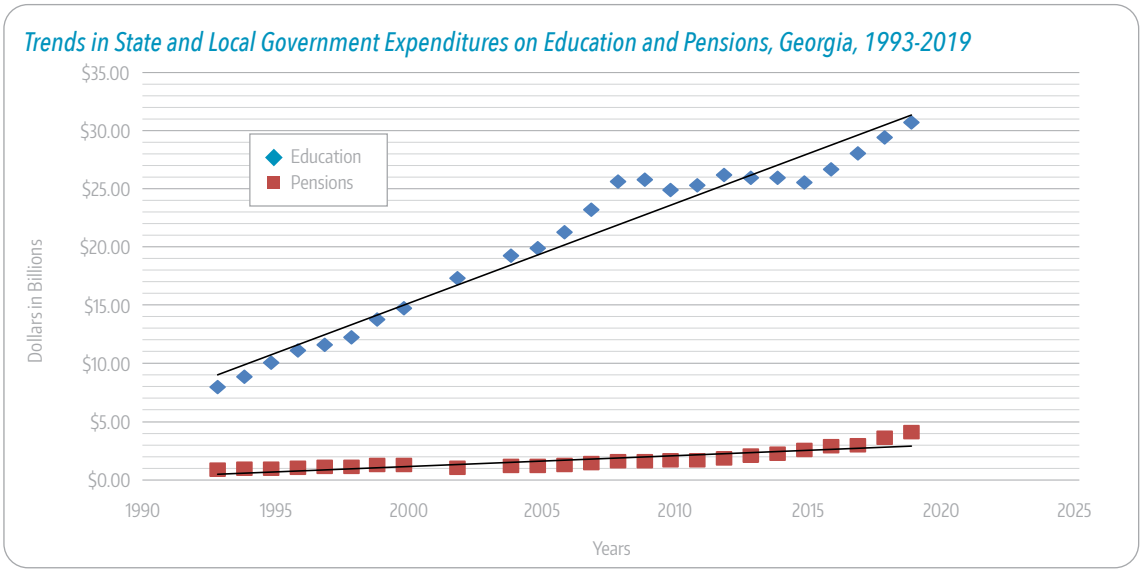
Trends in Economy and Tax Revenues, Florida, 1977-2019



GEORGIA

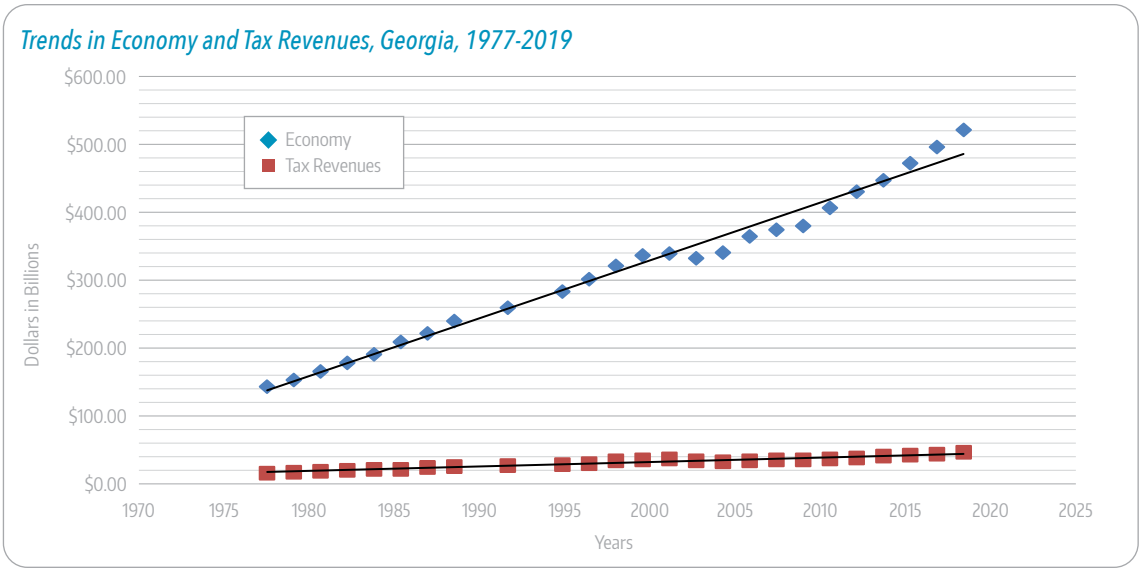
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

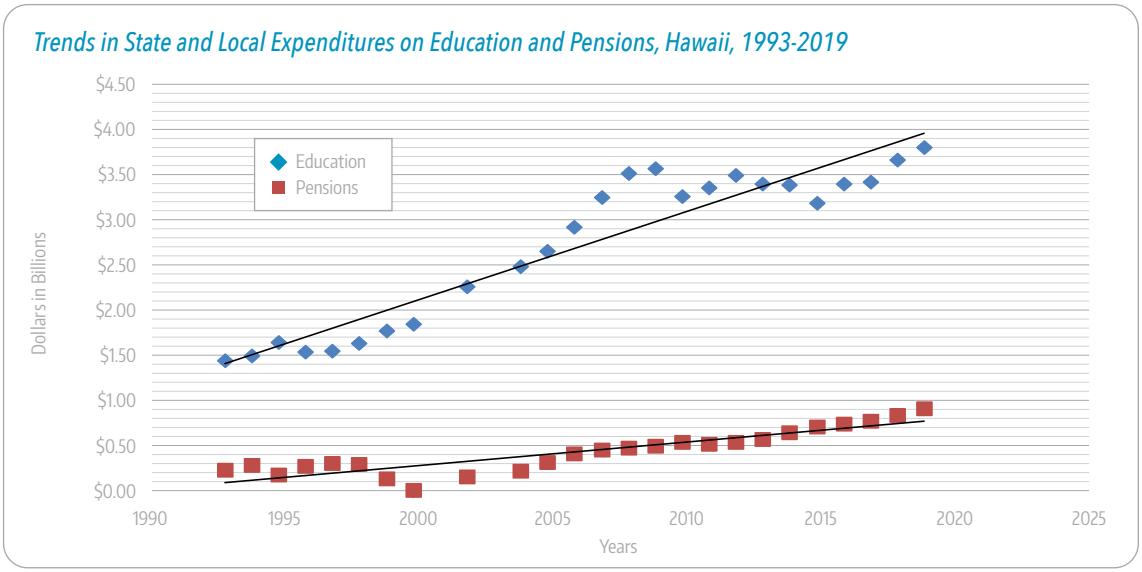
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



HAWAII

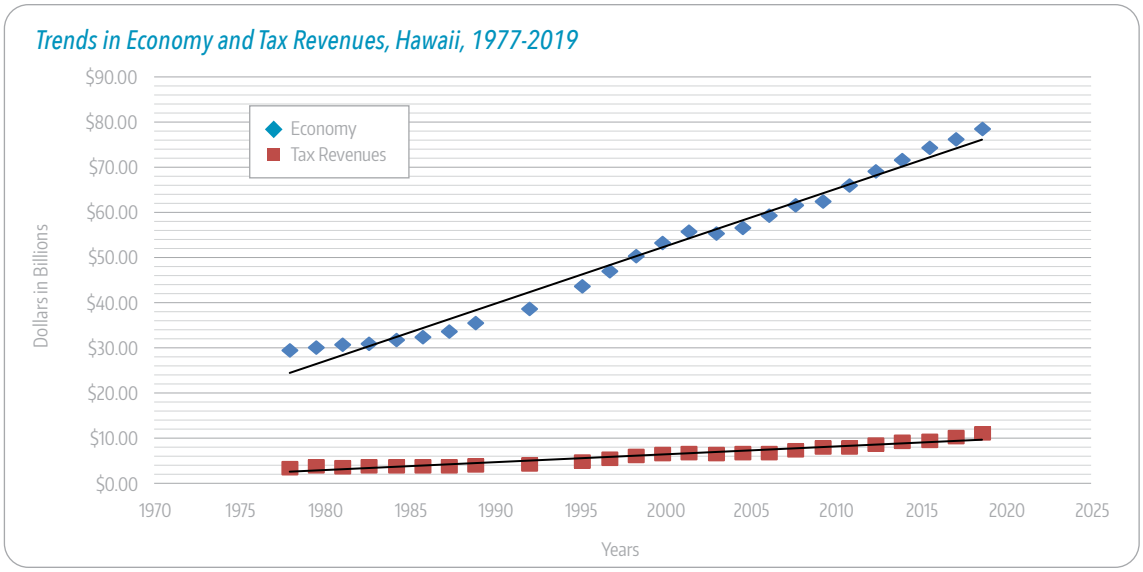
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

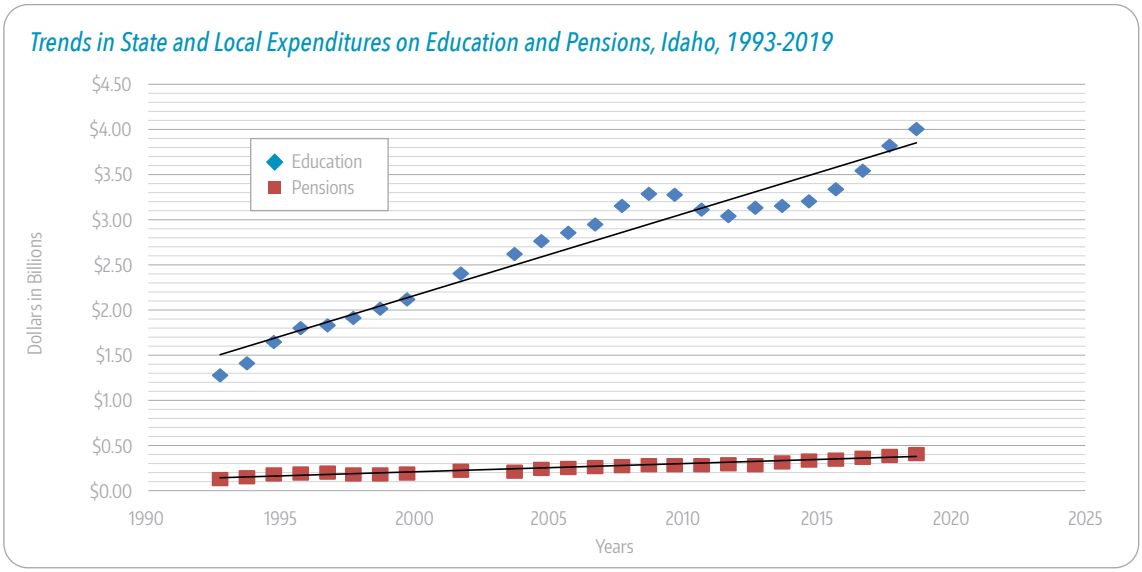
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



IDAHO

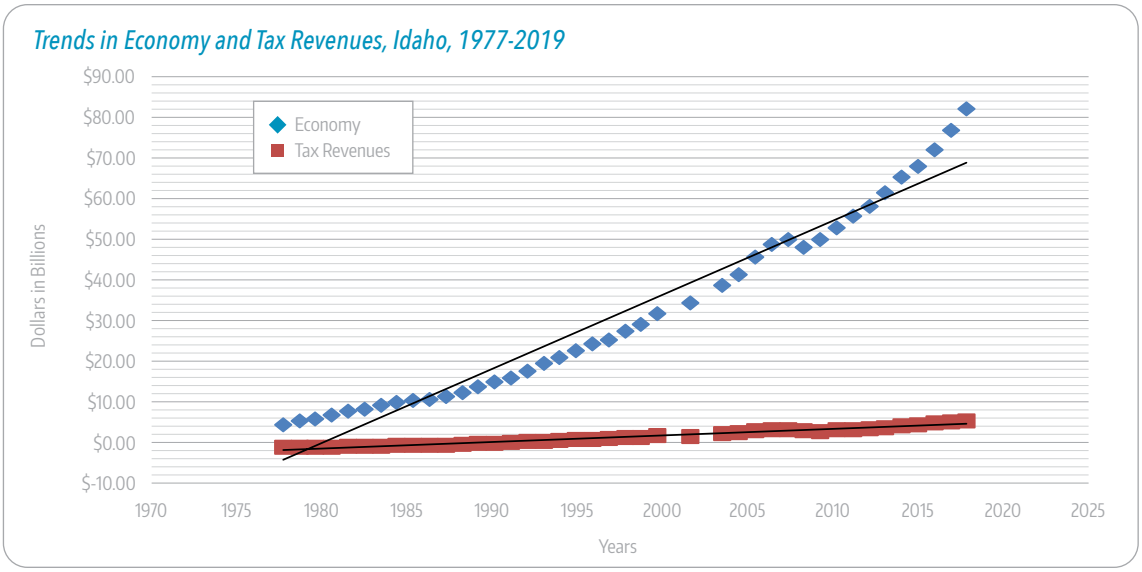
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

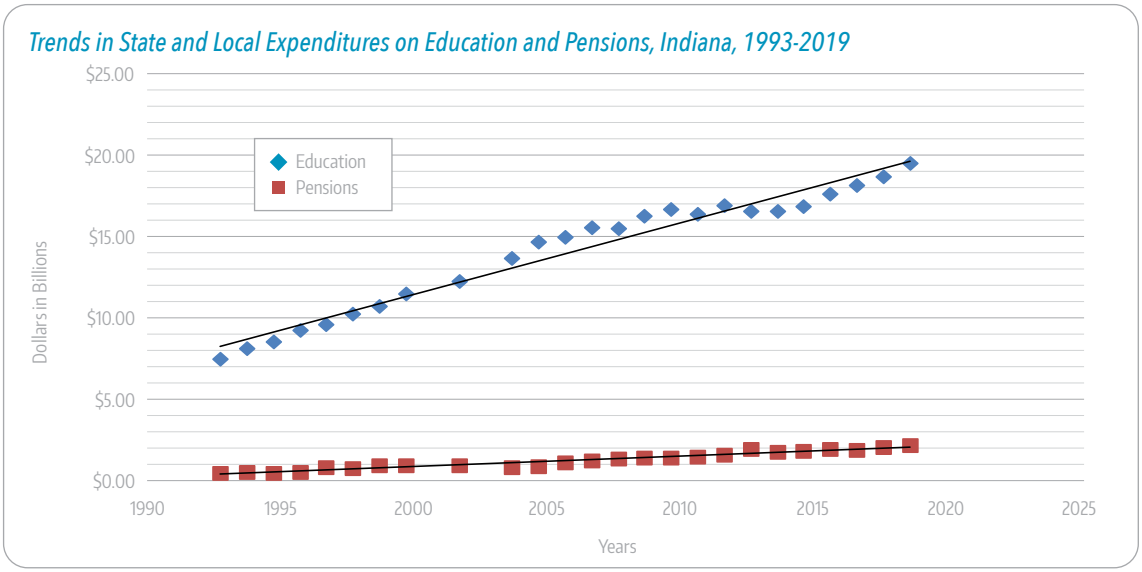
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



INDIANA

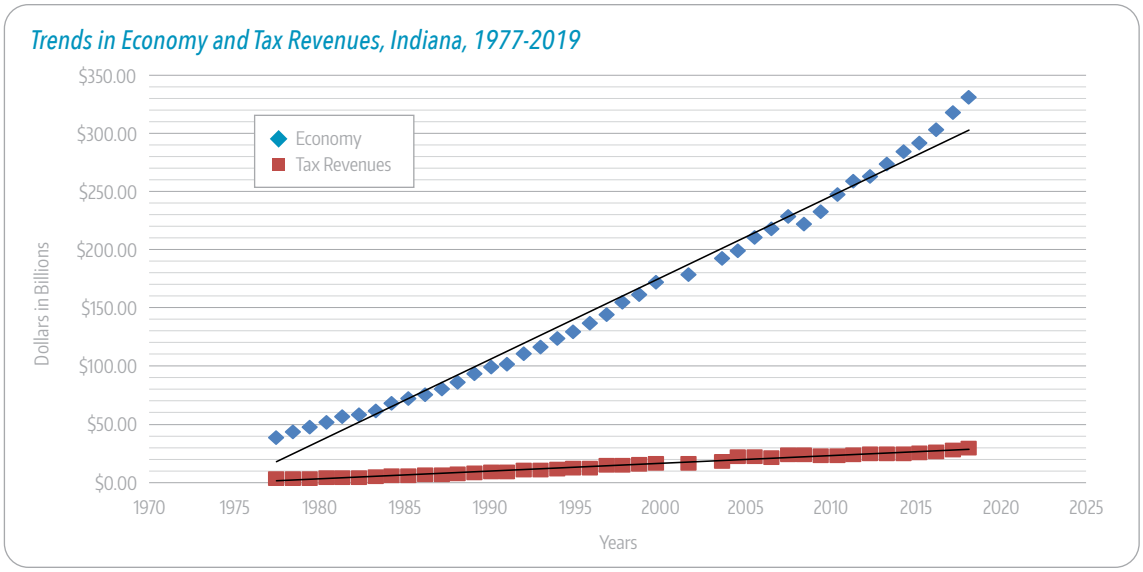
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

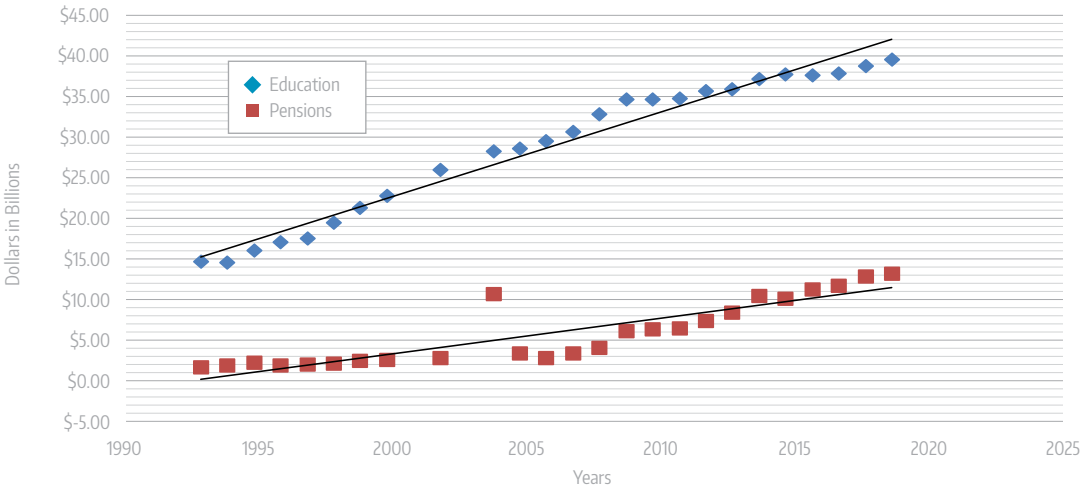


ILLINOIS

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

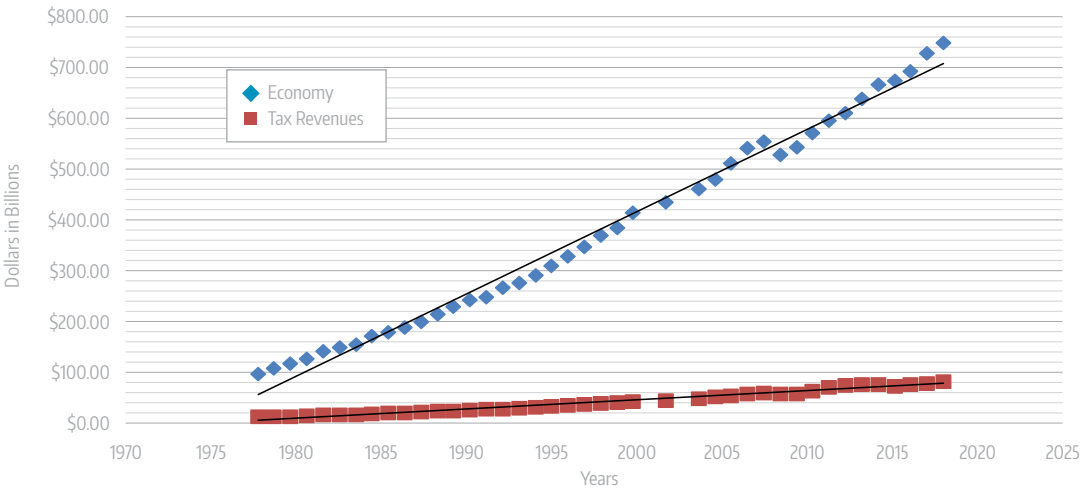
Trends in State and Local Expenditures on Education and Pensions, Illinois, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

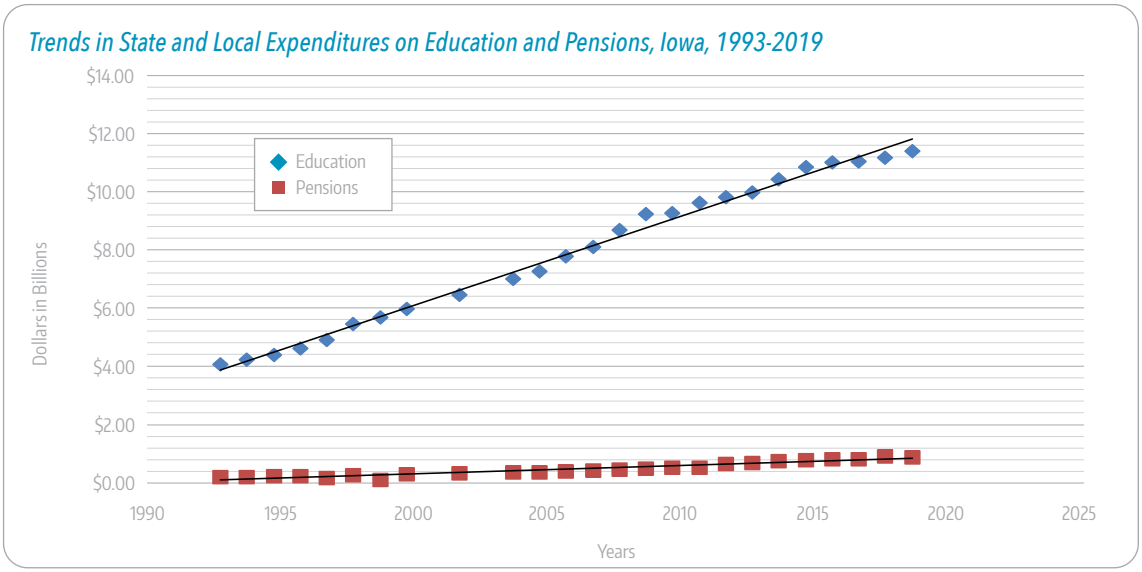
Trends in Economy and Tax Revenues, Illinois, 1977-2019



IOWA

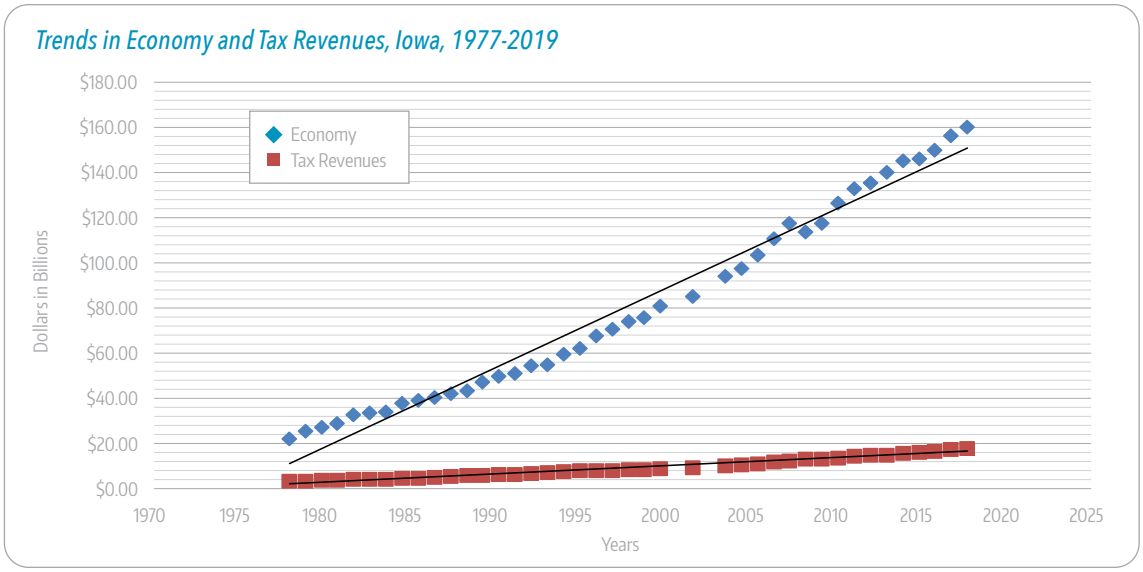
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

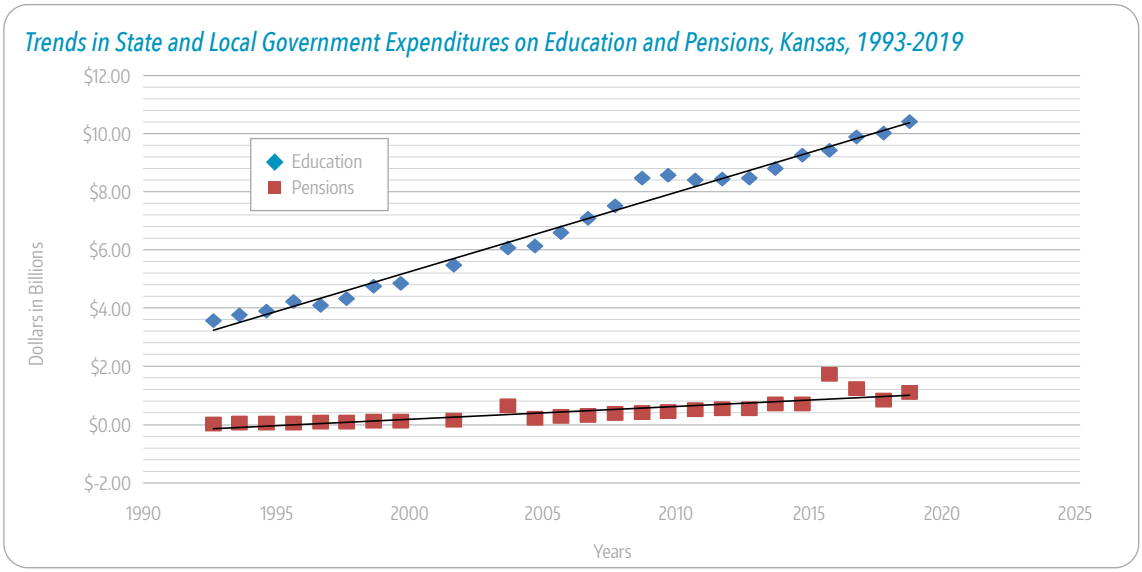
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



KANSAS

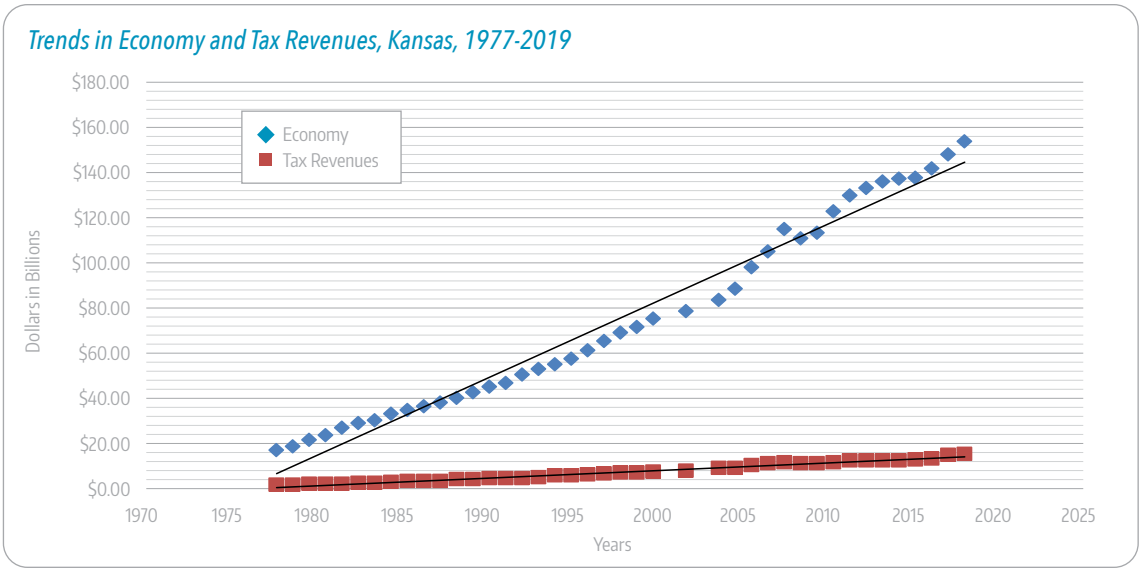
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

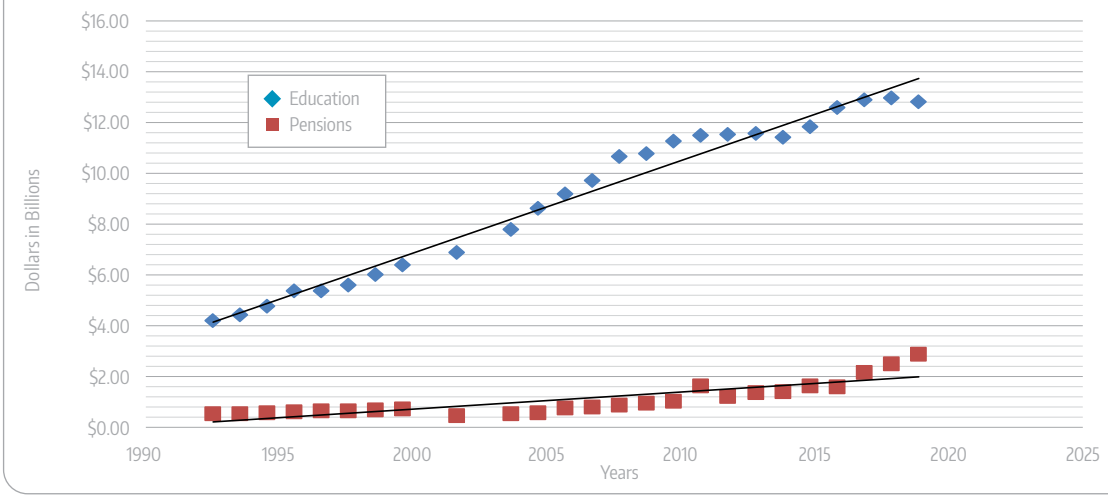


KENTUCKY

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

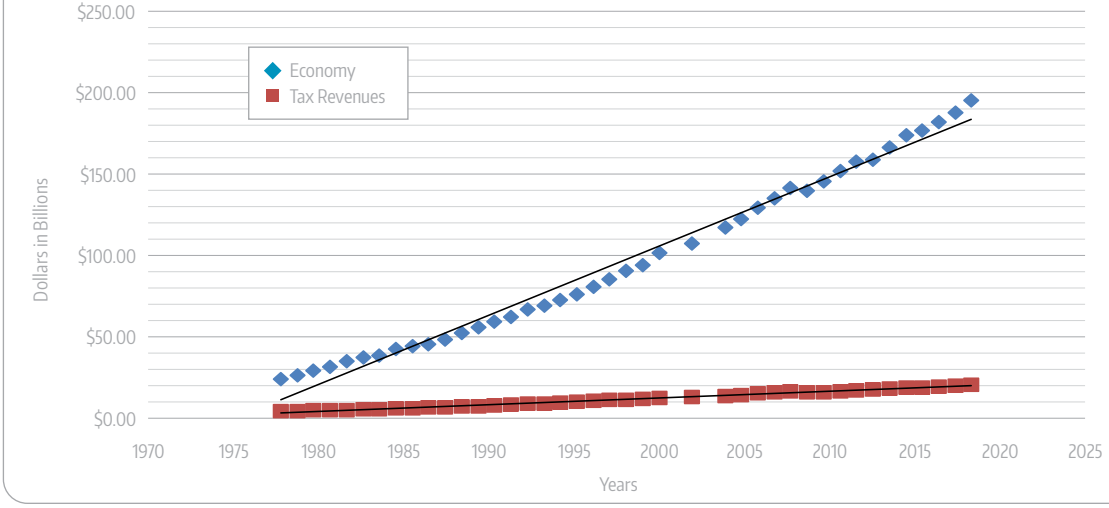
Trends in State and Local Government Expenditures on Education and Pensions, Kentucky, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

Trends in Economy and Tax Revenues, Kentucky, 1977-2019

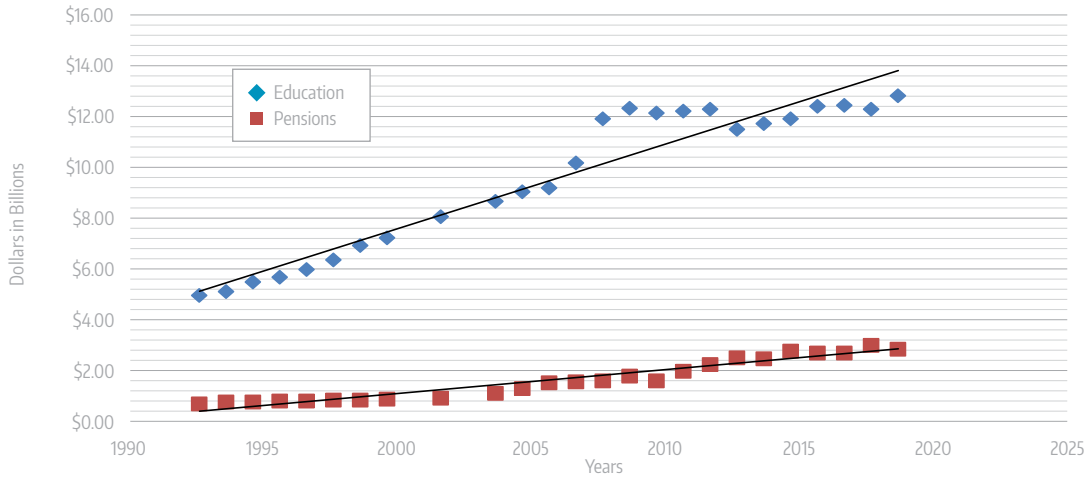


LOUISIANA

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

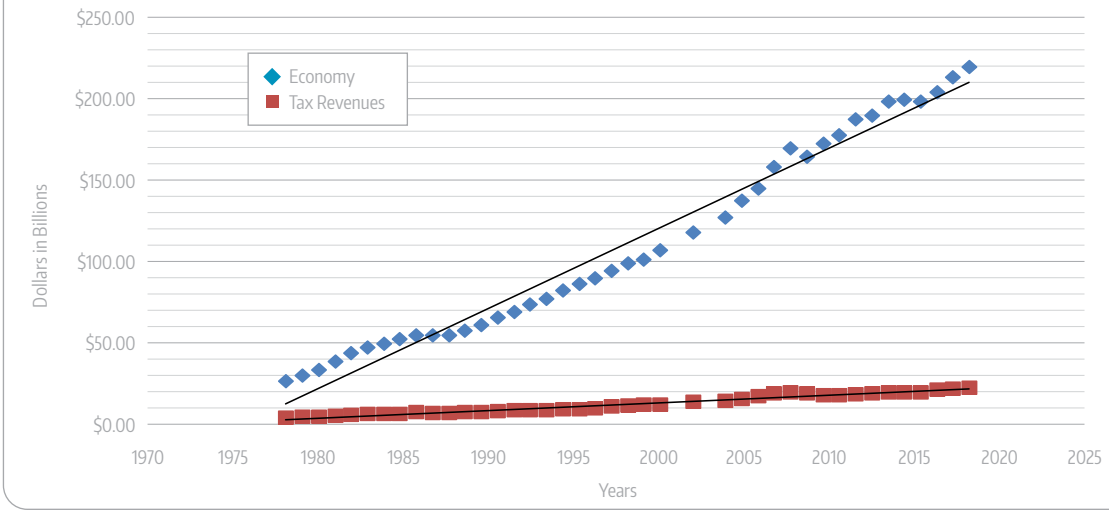
Trends in State and Local Expenditures on Education and Pensions, Louisiana, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

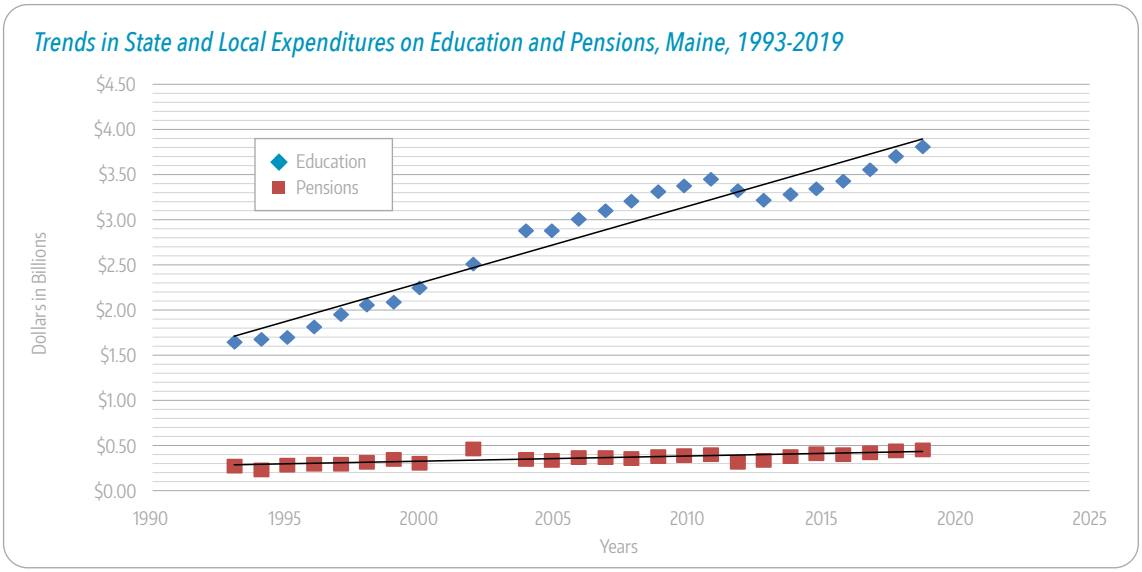
Trends in Economy and Tax Revenues, Louisiana, 1977-2019



MAINE

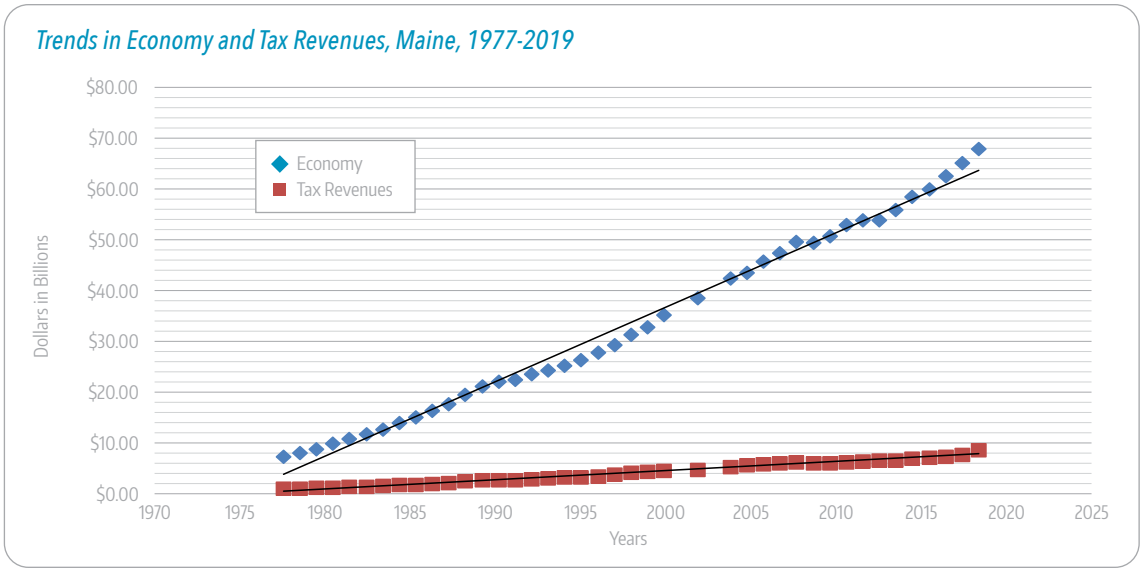
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

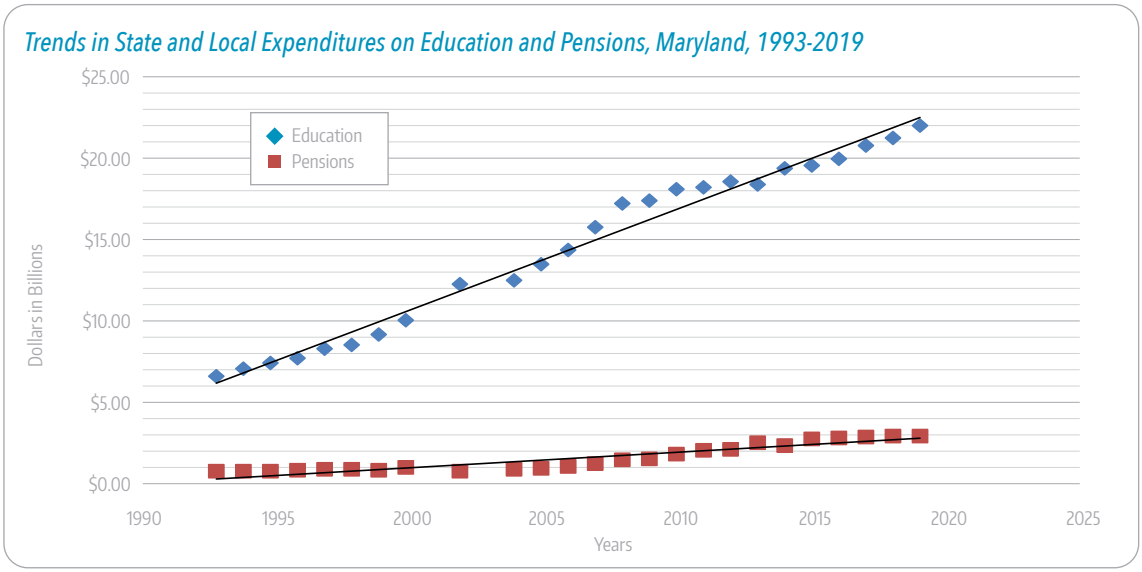
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



MARYLAND

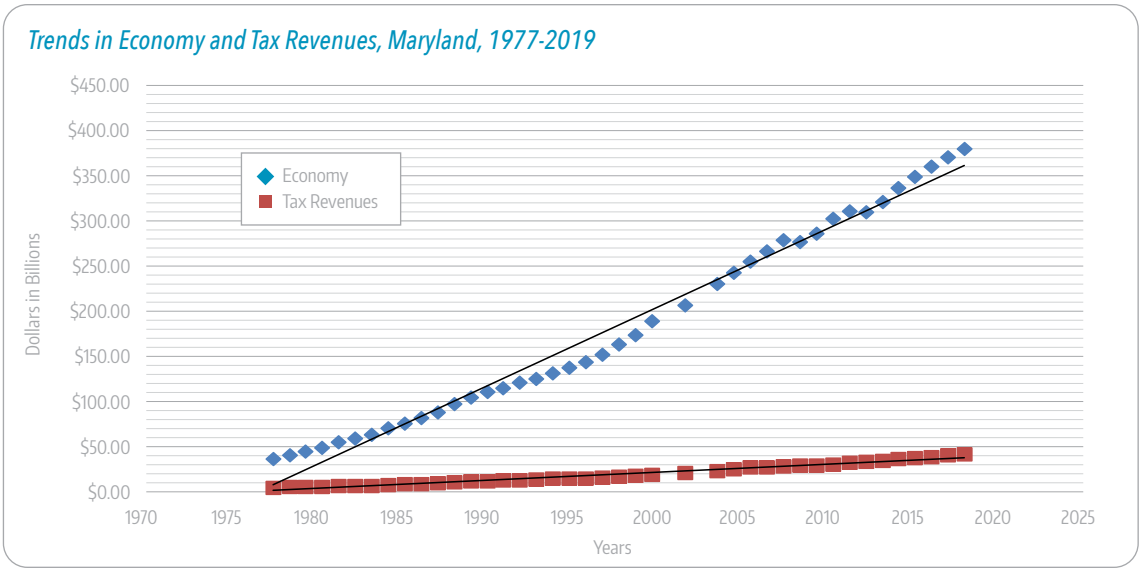
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

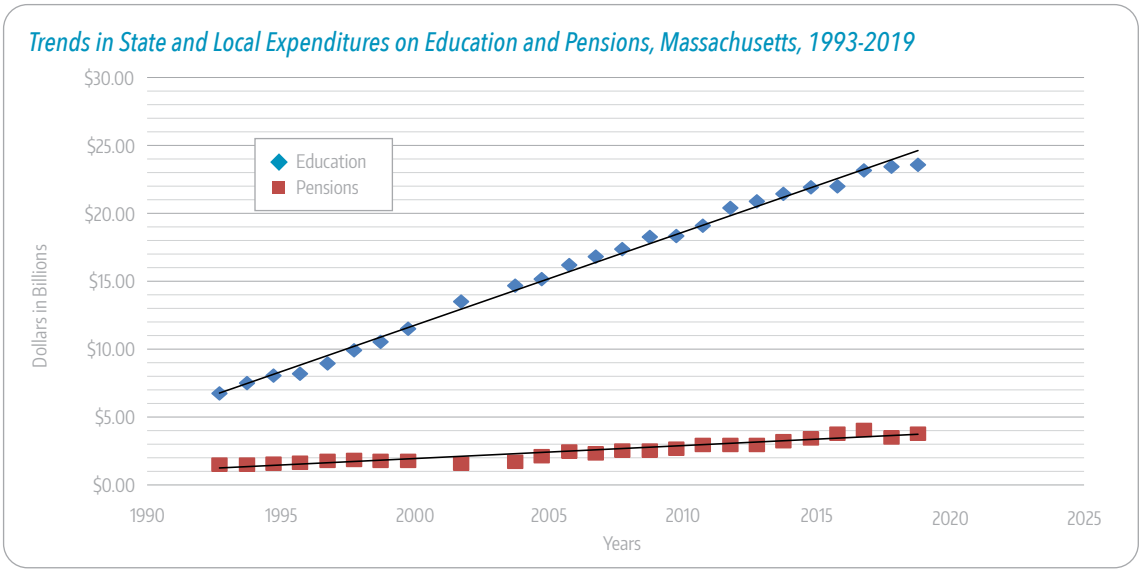
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



MASSACHUSETTS

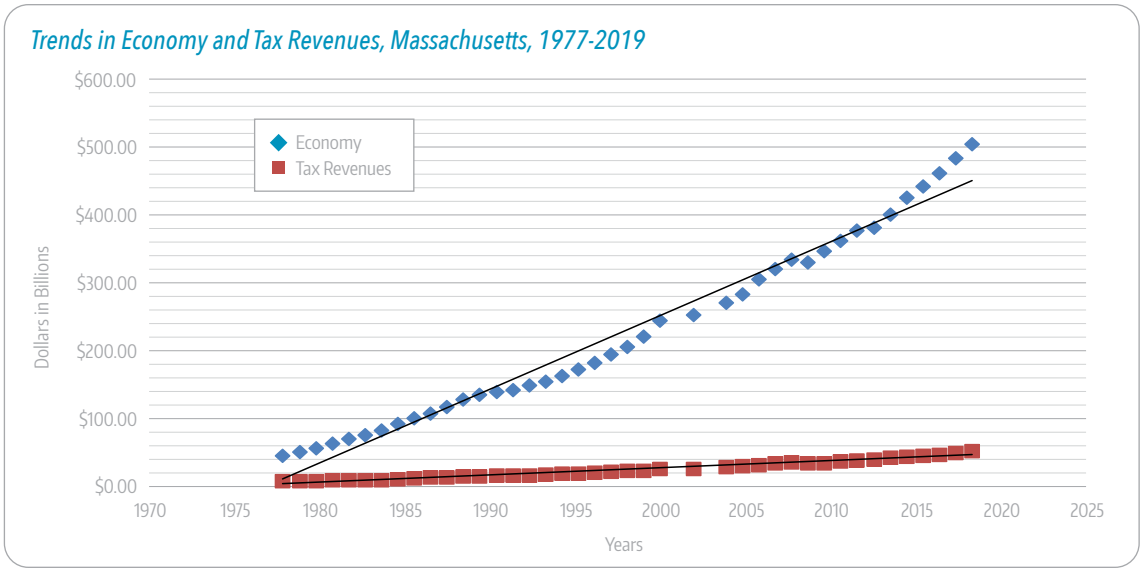
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

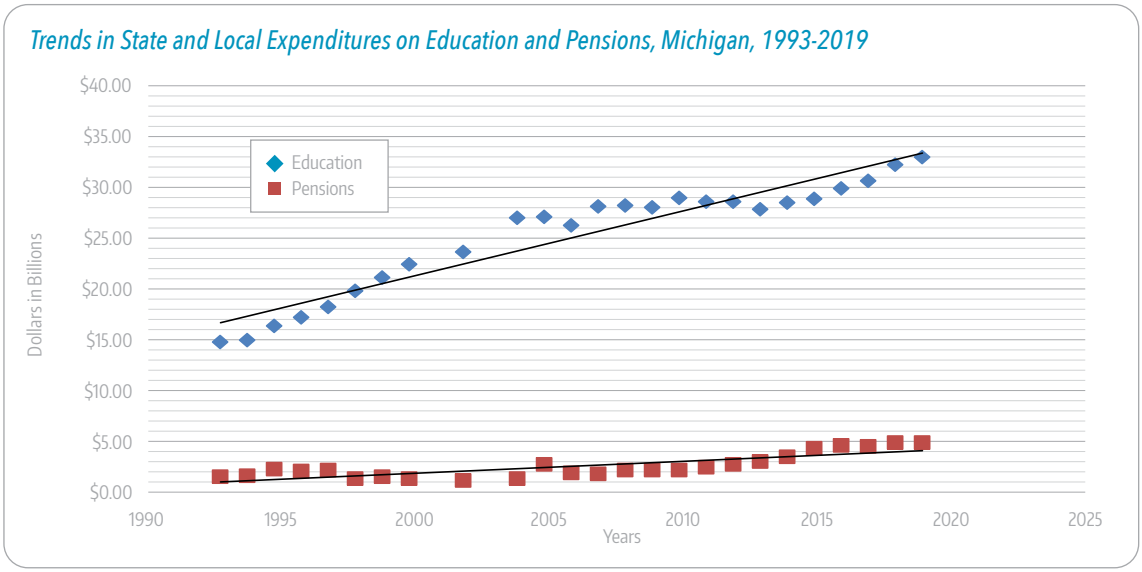
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



MICHIGAN

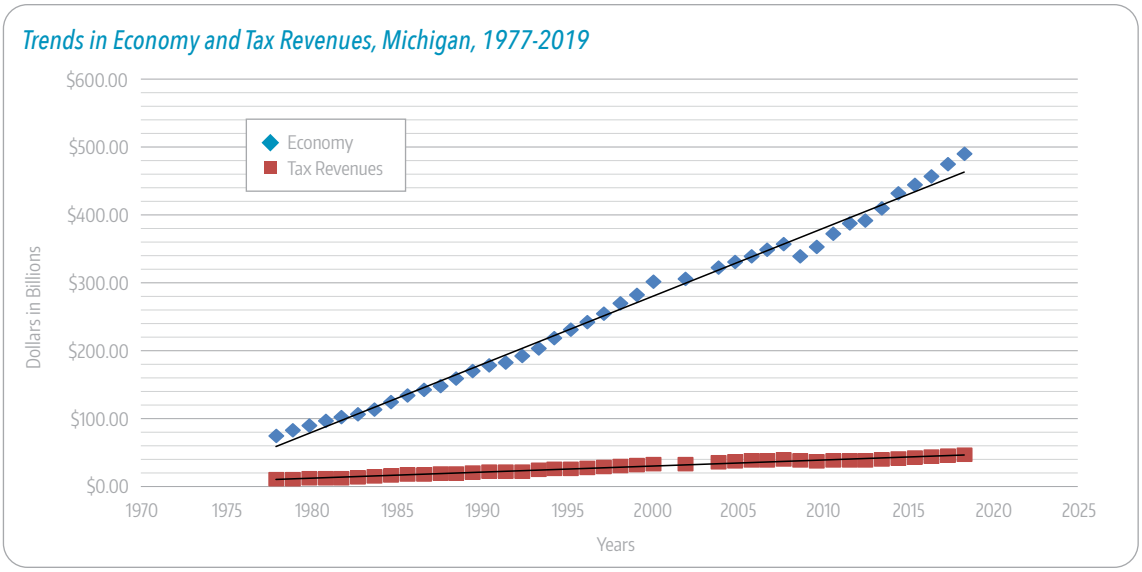
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

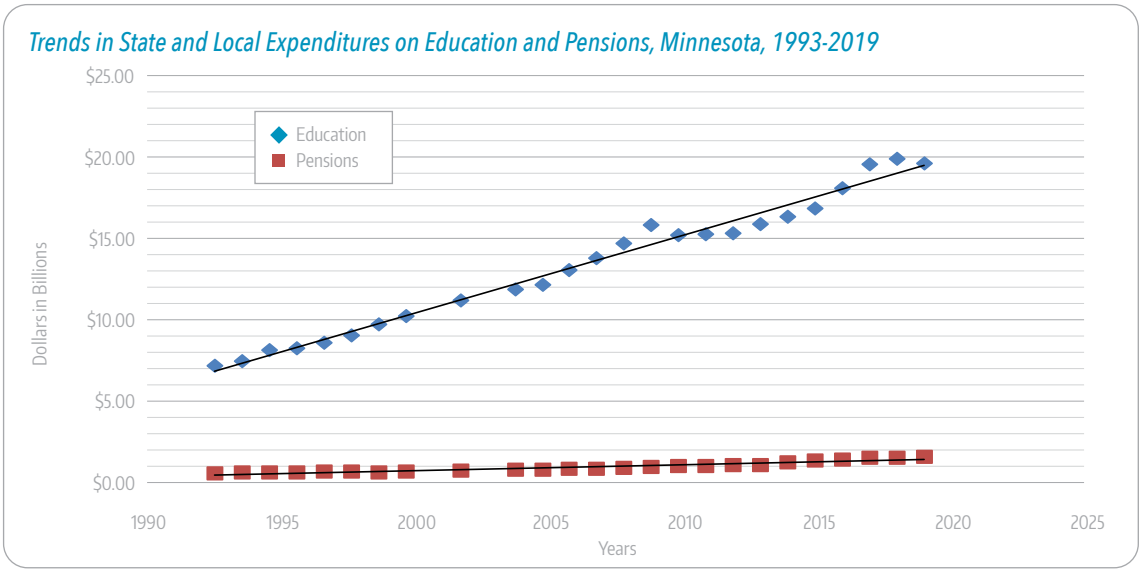
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



MINNESOTA

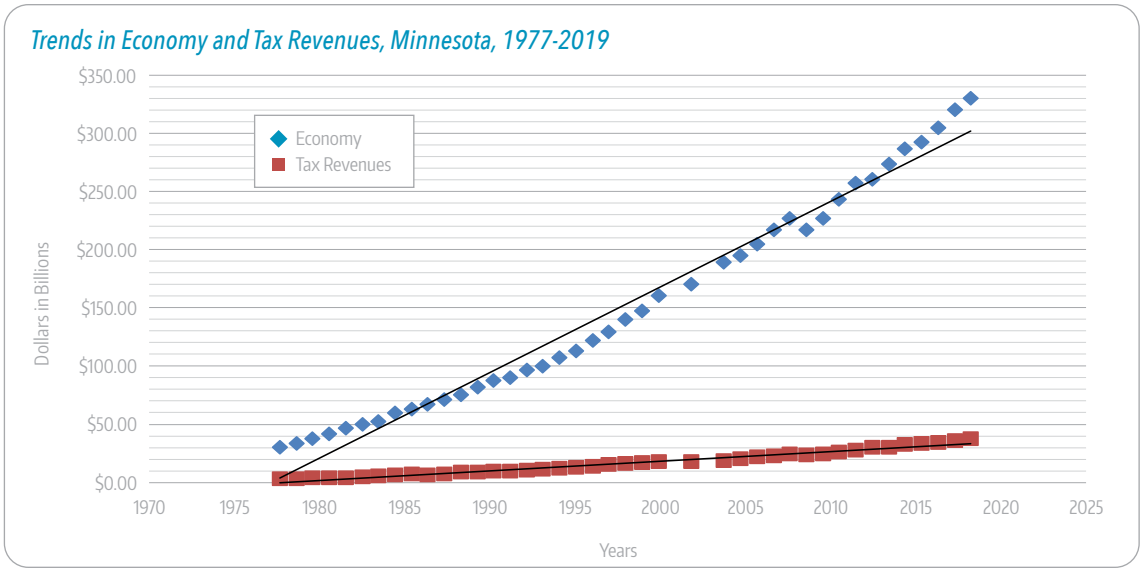
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

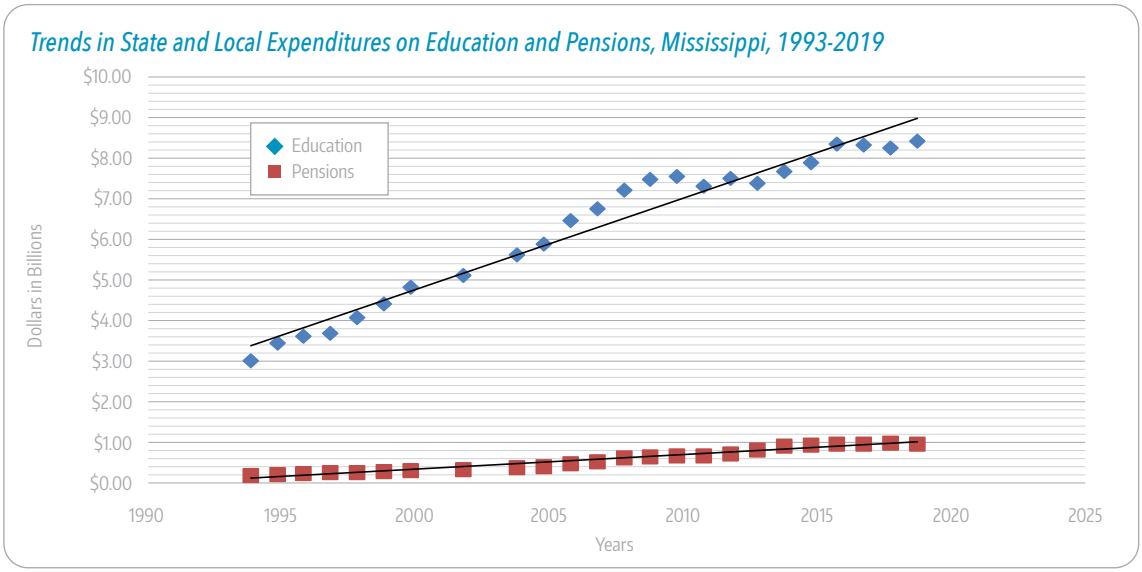
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



MISSISSIPPI

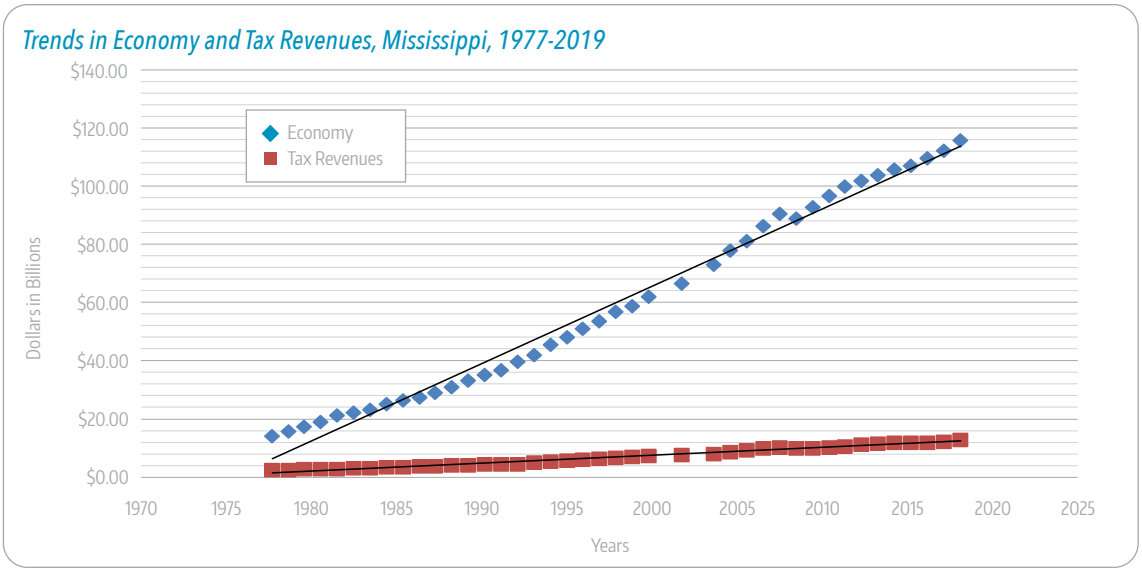
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

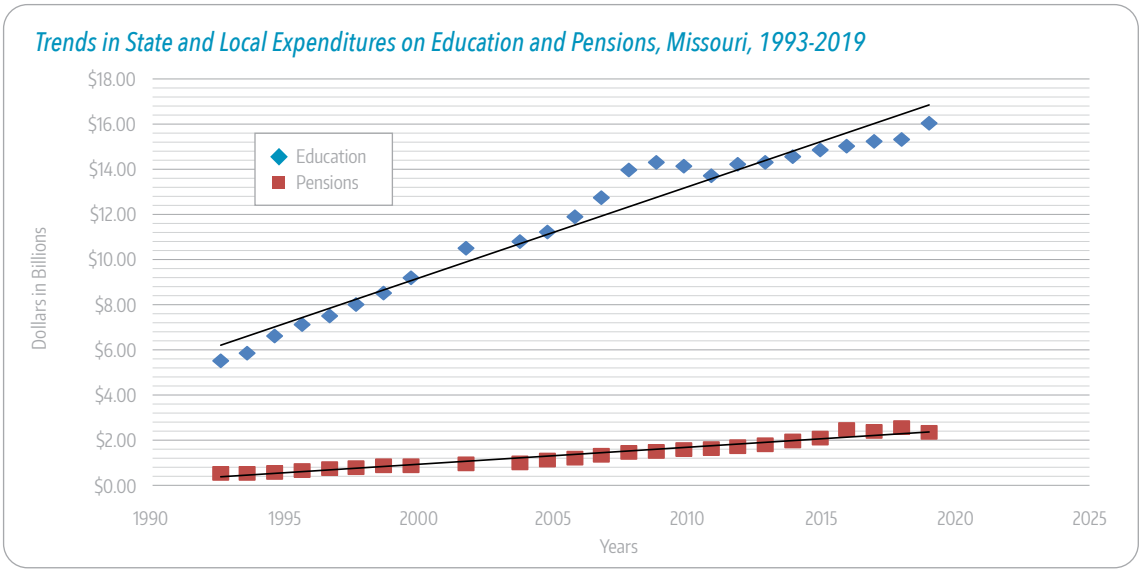
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



MISSOURI

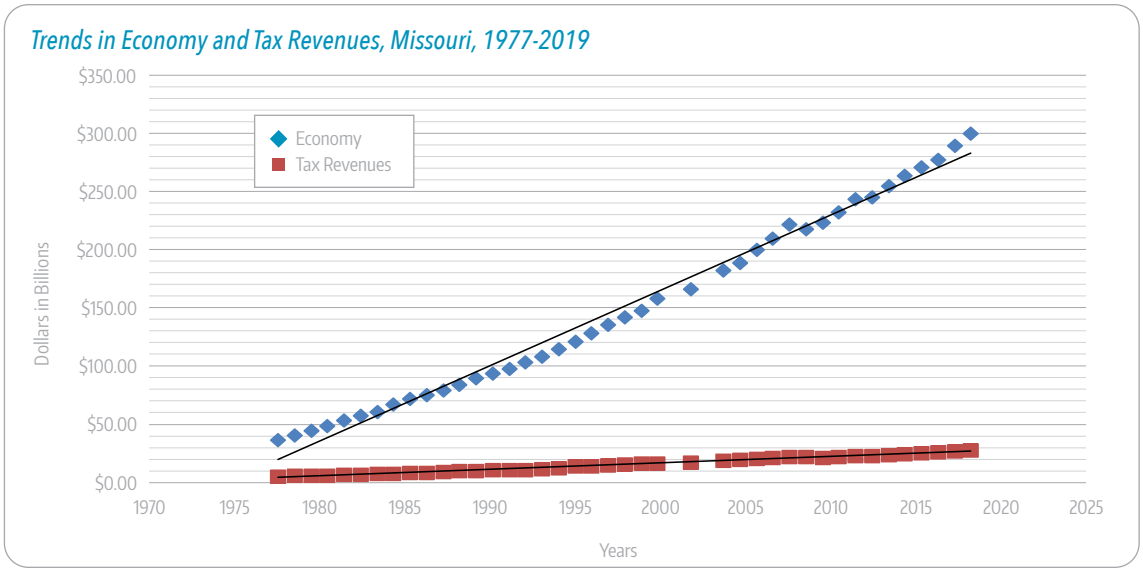
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

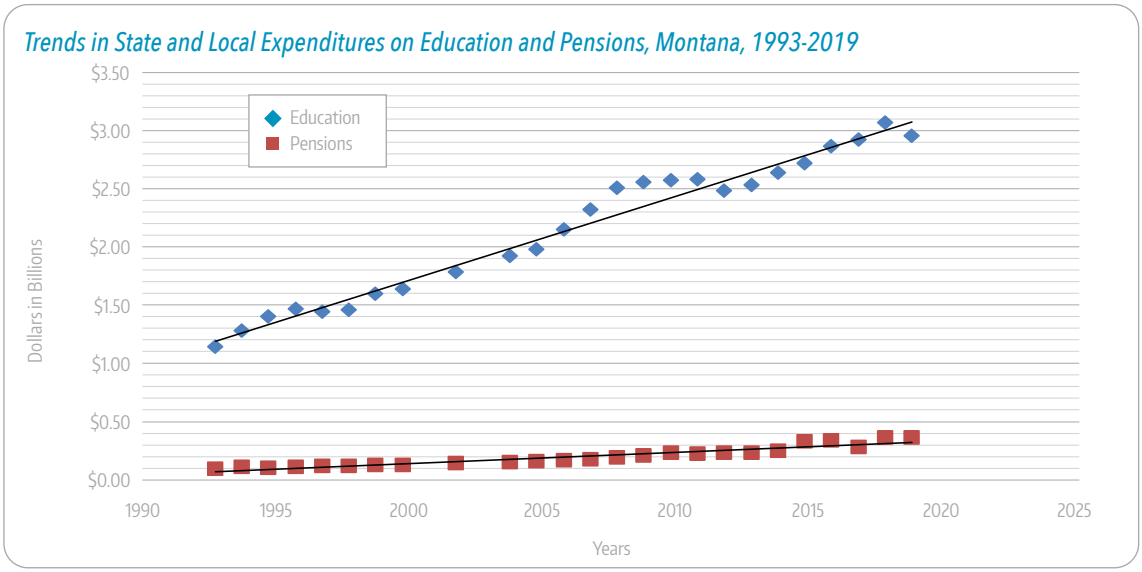
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



MONTANA

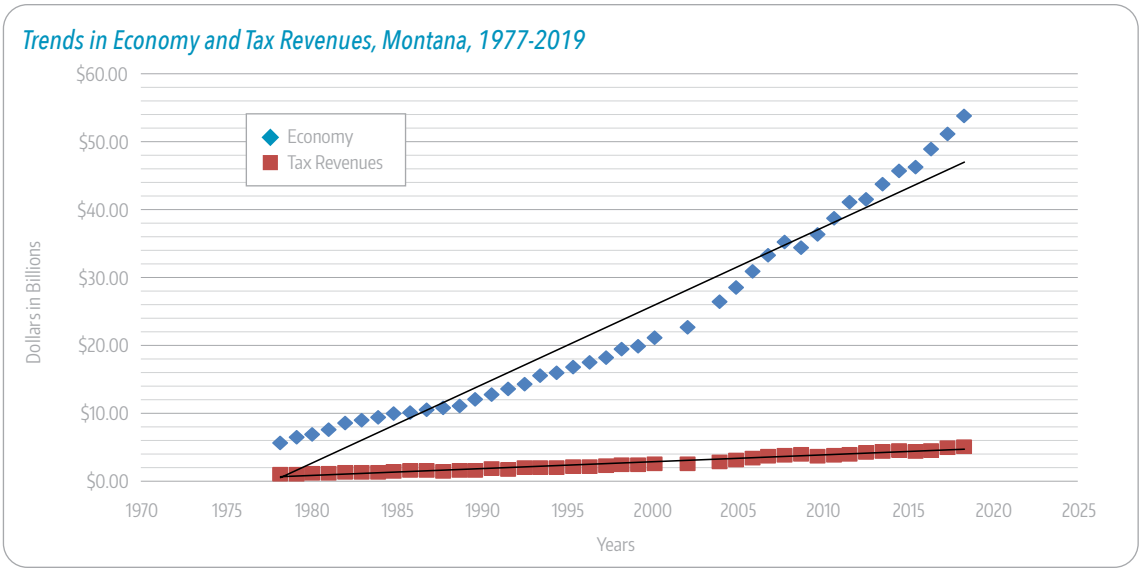
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

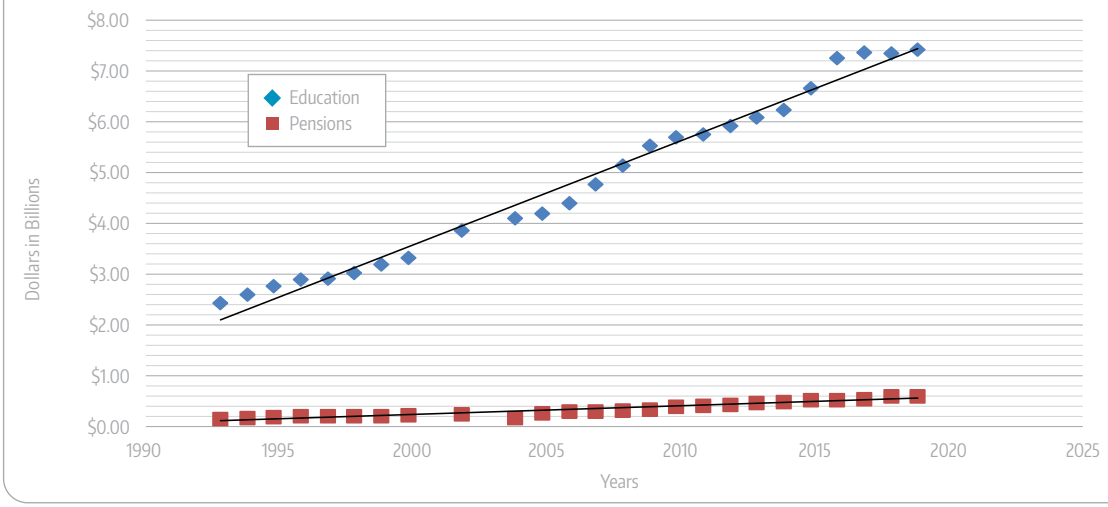


NEBRASKA

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

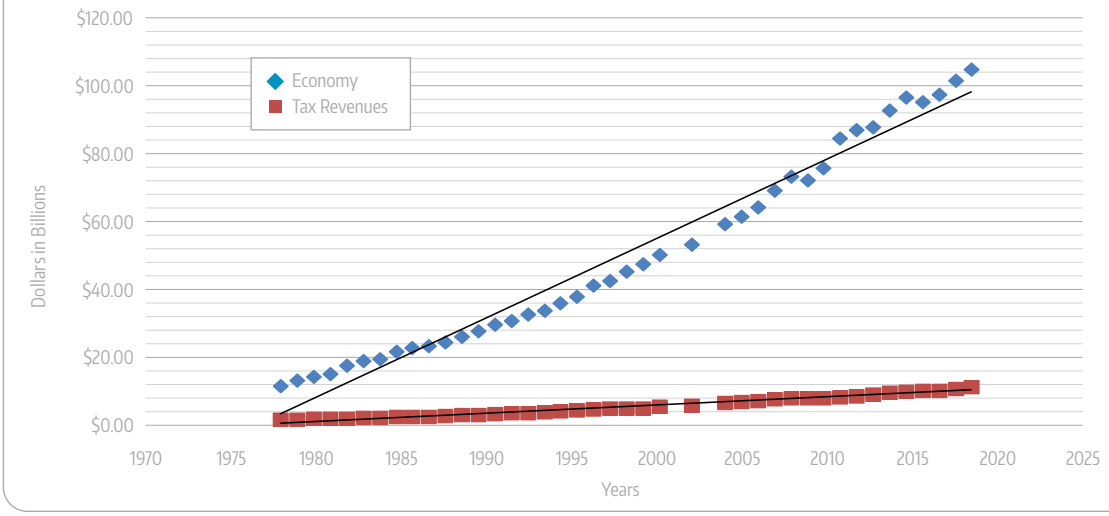
Trends in State and Local Expenditures on Education and Pensions, Nebraska, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

Trends in Economy and Tax Revenues, Nebraska, 1977-2019

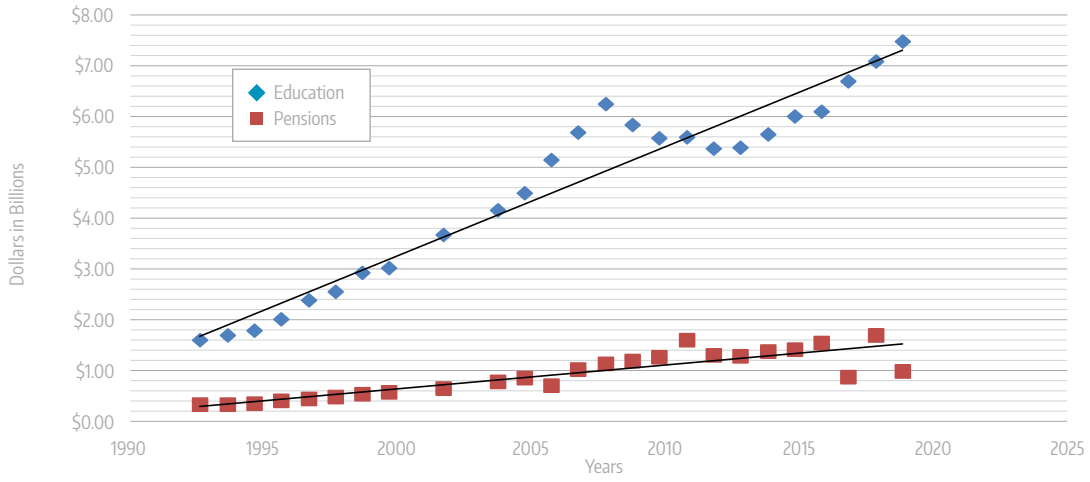


NEVADA

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

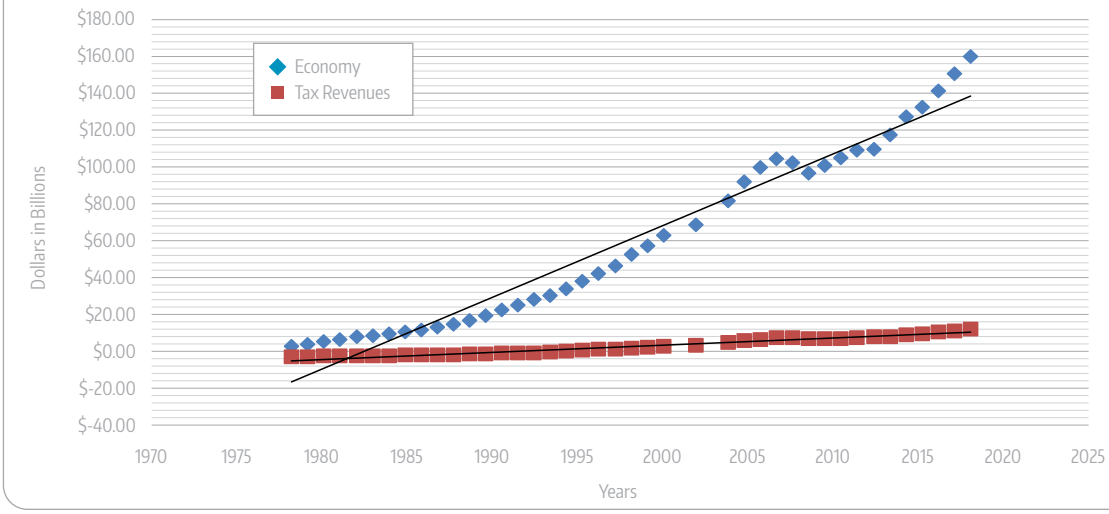
Trends in State and Local Government Expenditures on Education and Pensions, Nevada, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

Trends in Economy and Tax Revenues, Nevada, 1977-2019

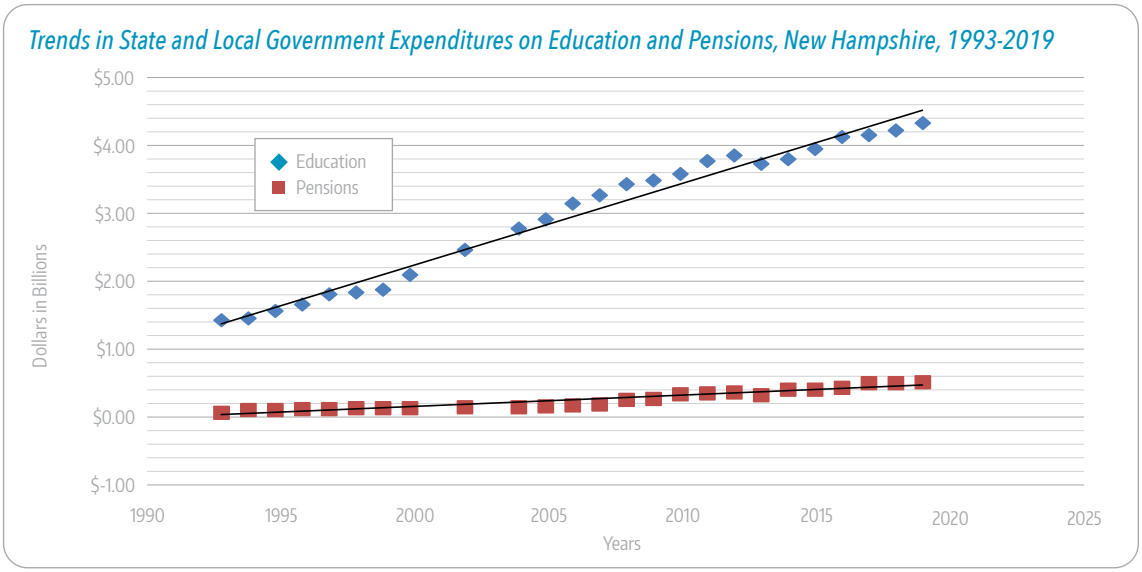


NEW HAMPSHIRE

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.

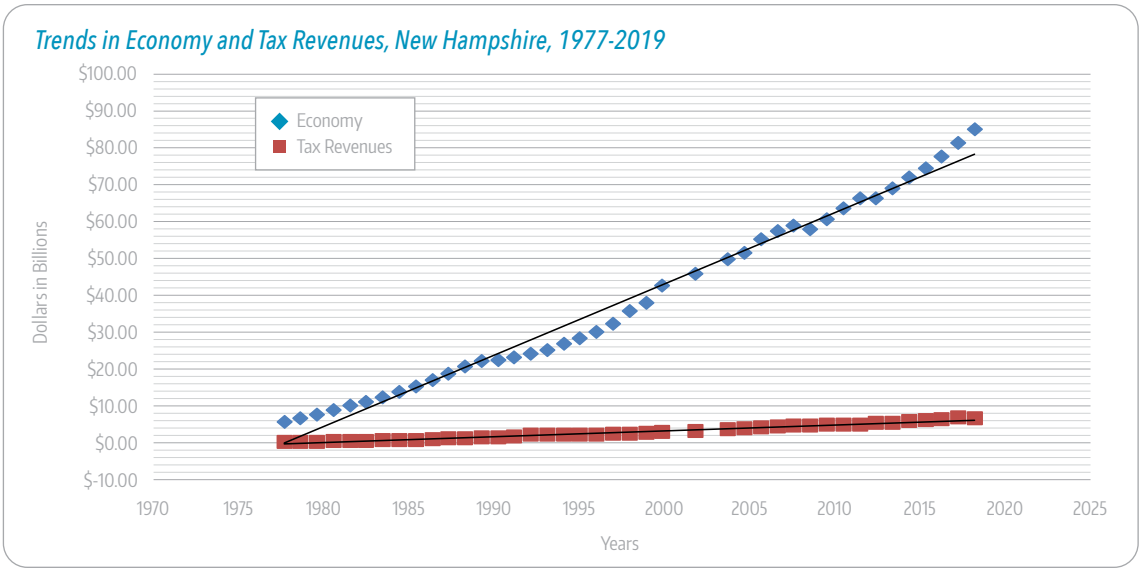
Trends in State and Local Government Expenditures on Education and Pensions, New Hampshire, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

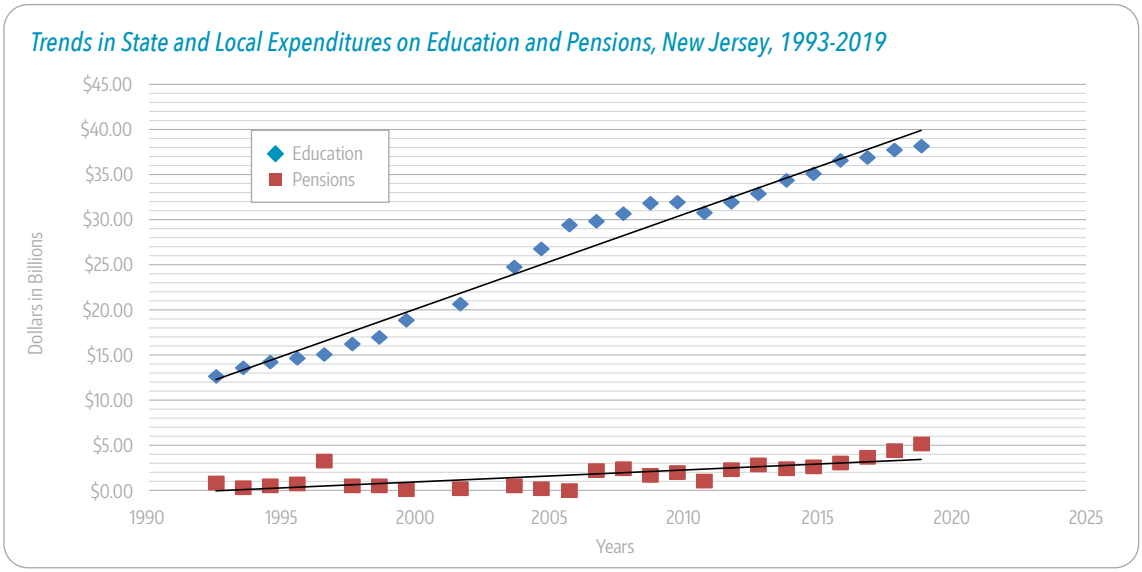
Trends in Economy and Tax Revenues, New Hampshire, 1977-2019



NEW JERSEY

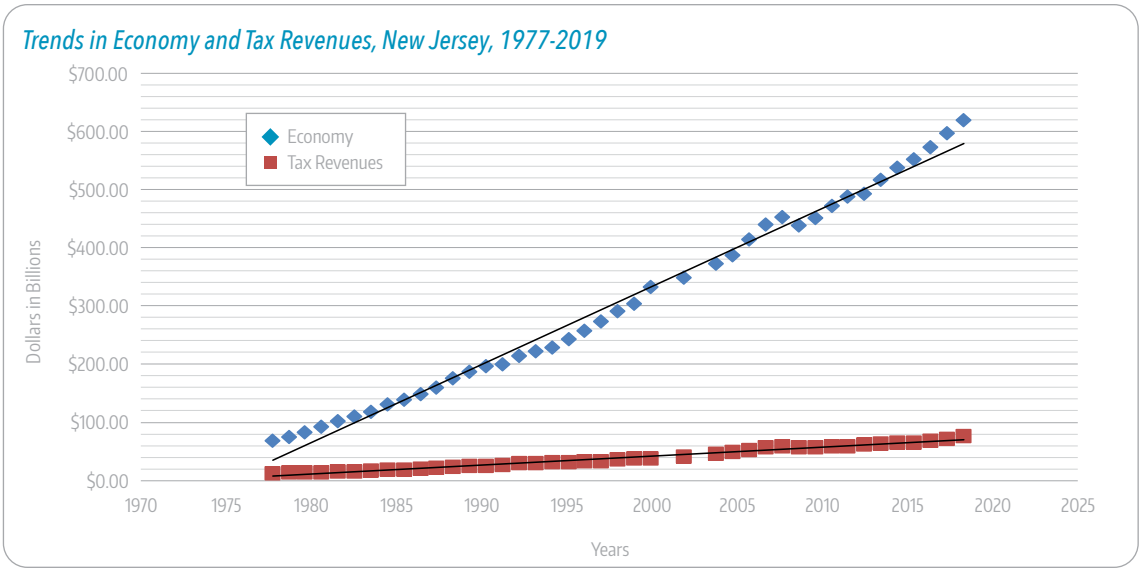
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

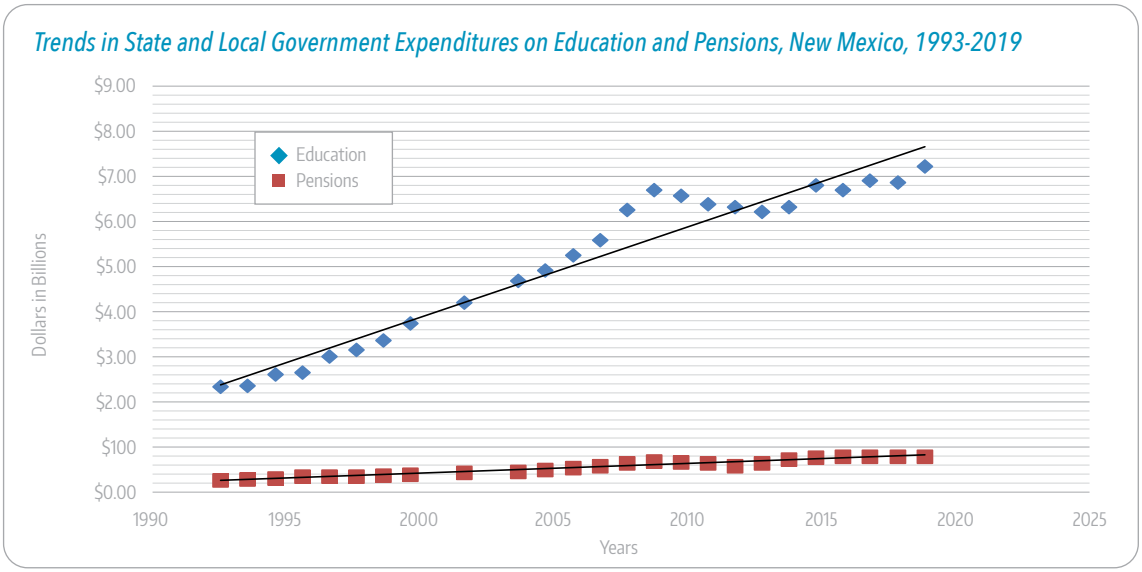
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



NEW MEXICO

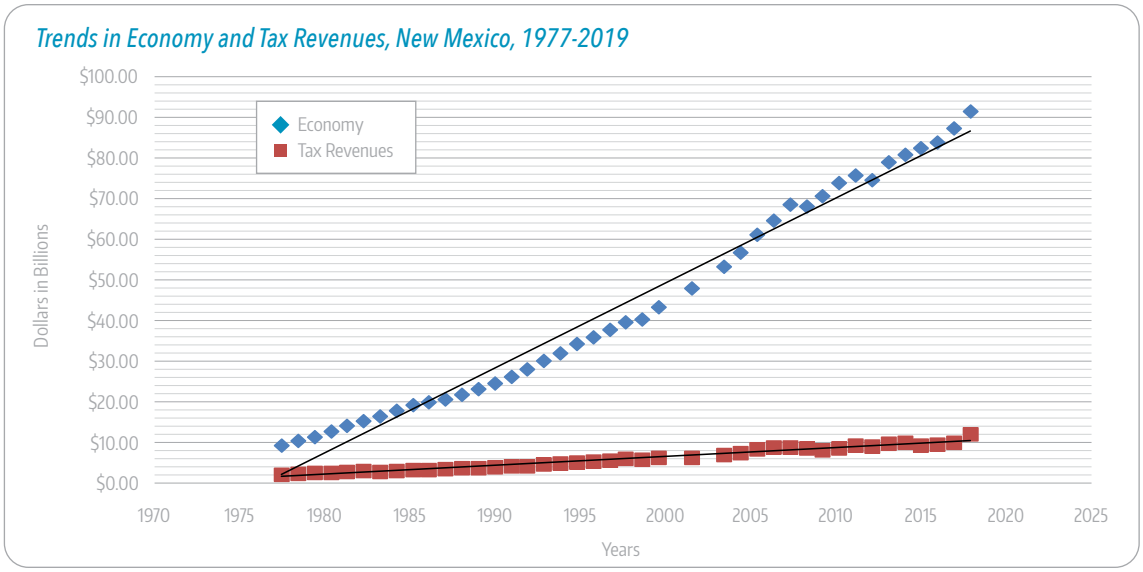
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

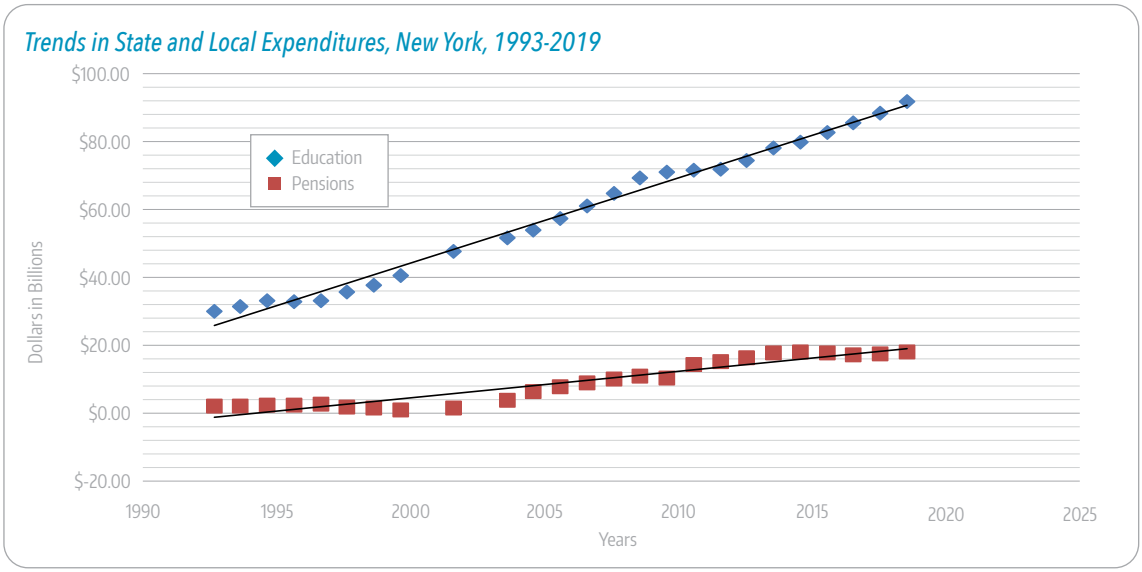
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



NEW YORK

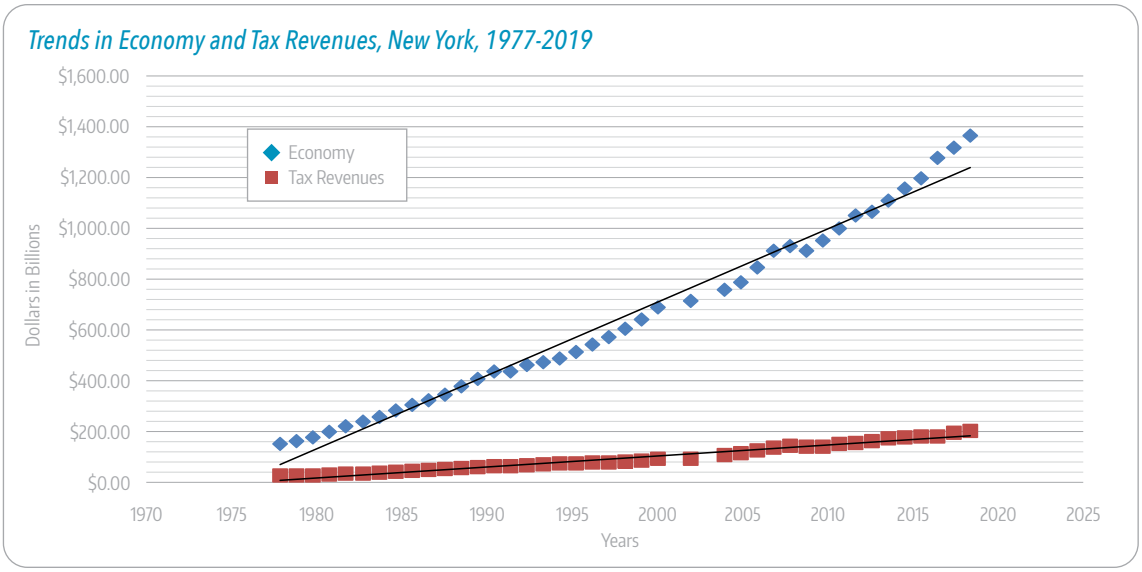
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

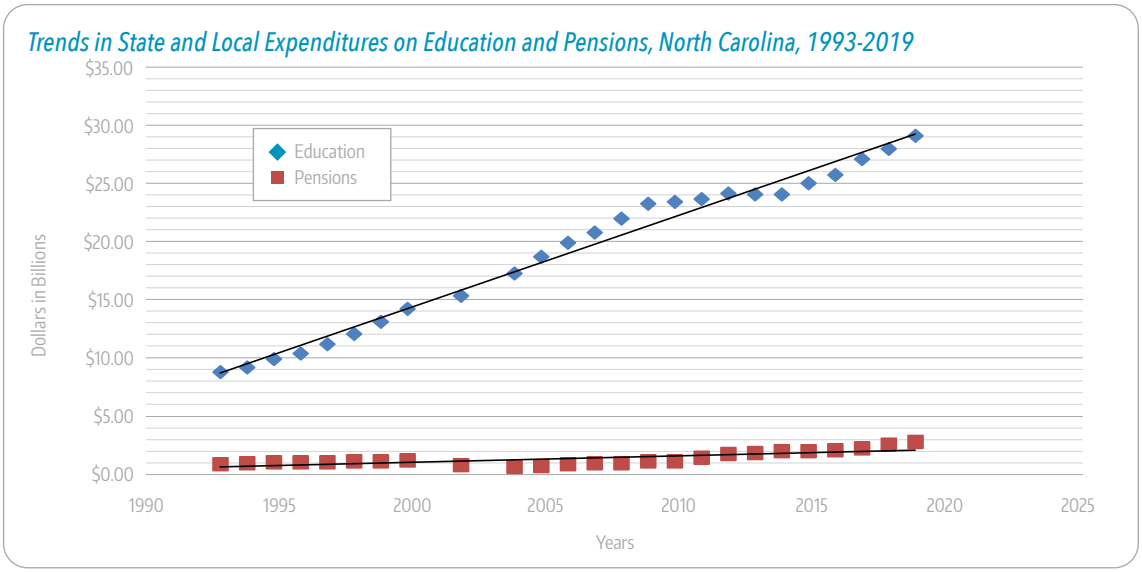
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



NORTH CAROLINA

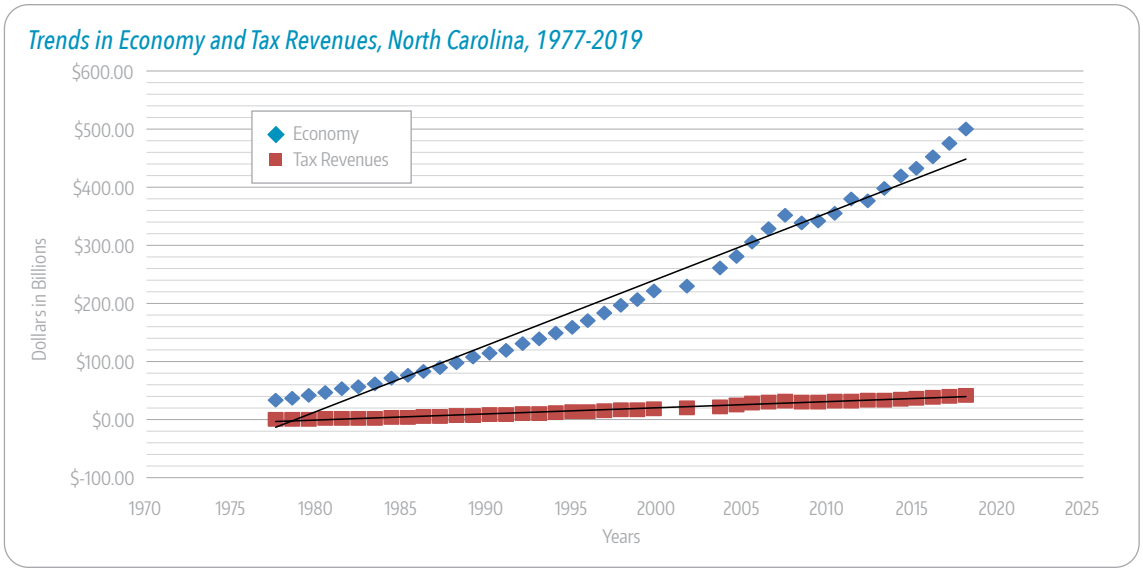
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

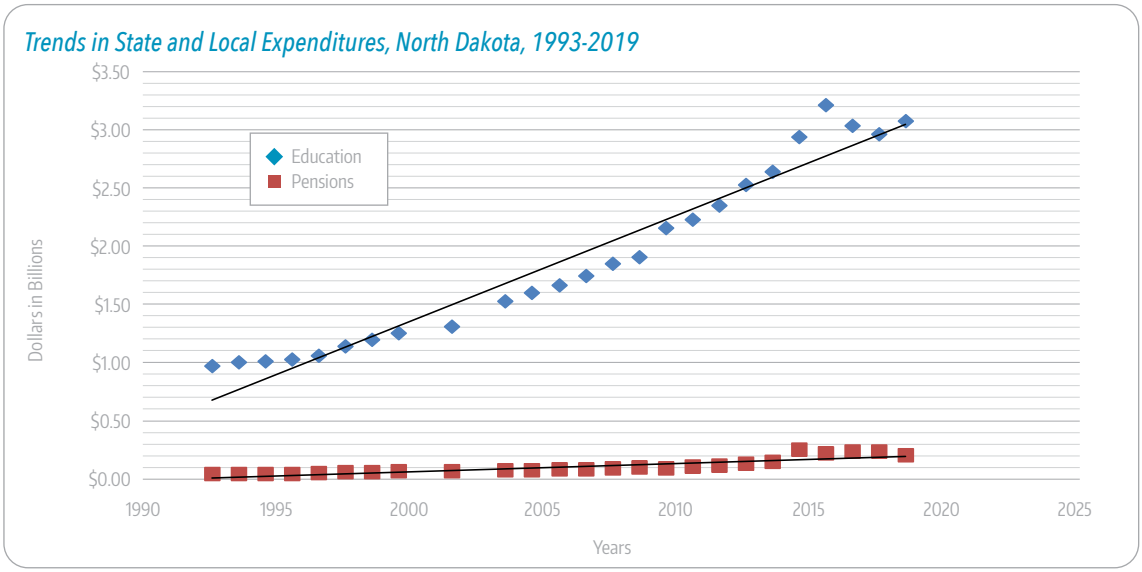
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



NORTH DAKOTA

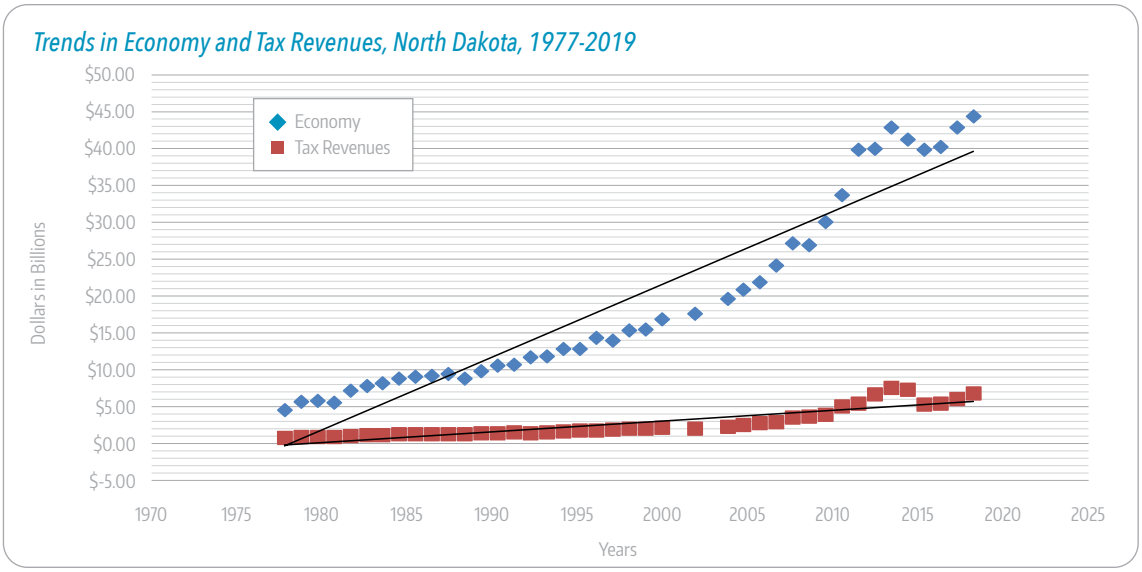
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

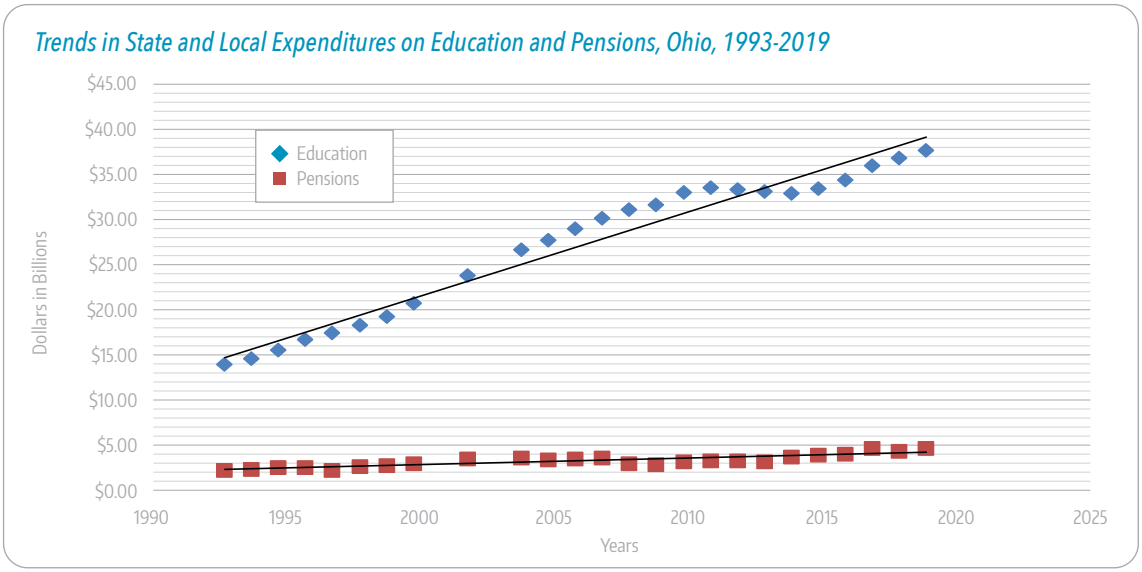
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



OHIO

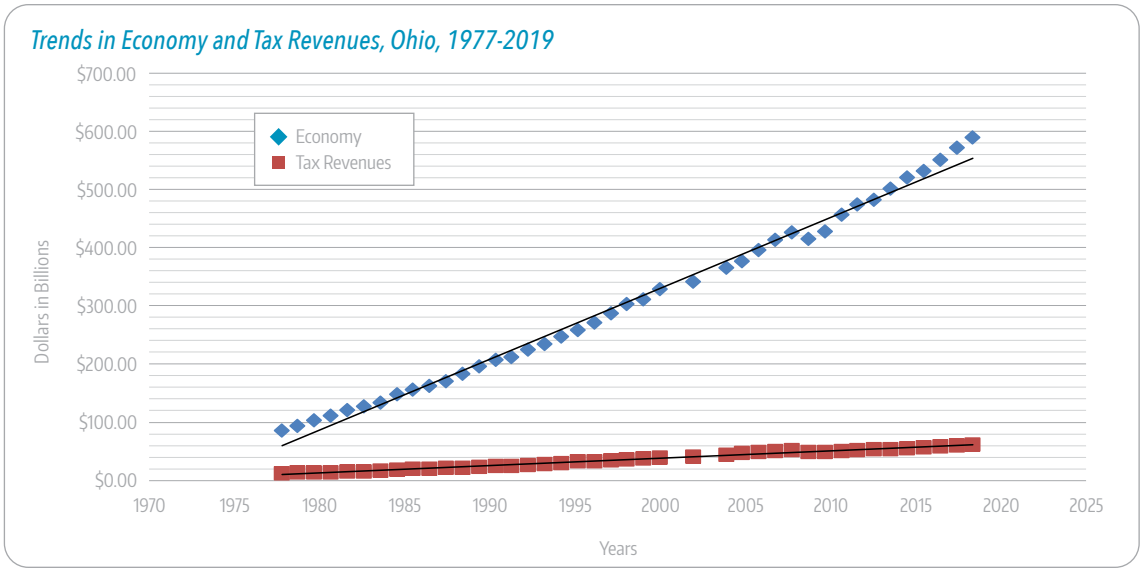
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

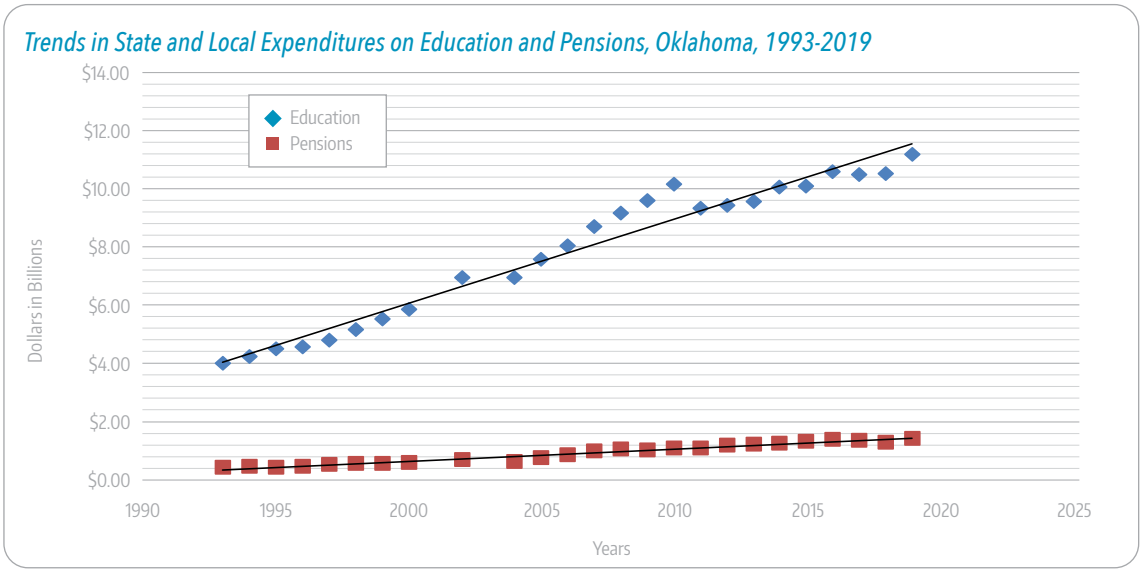
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



OKLAHOMA

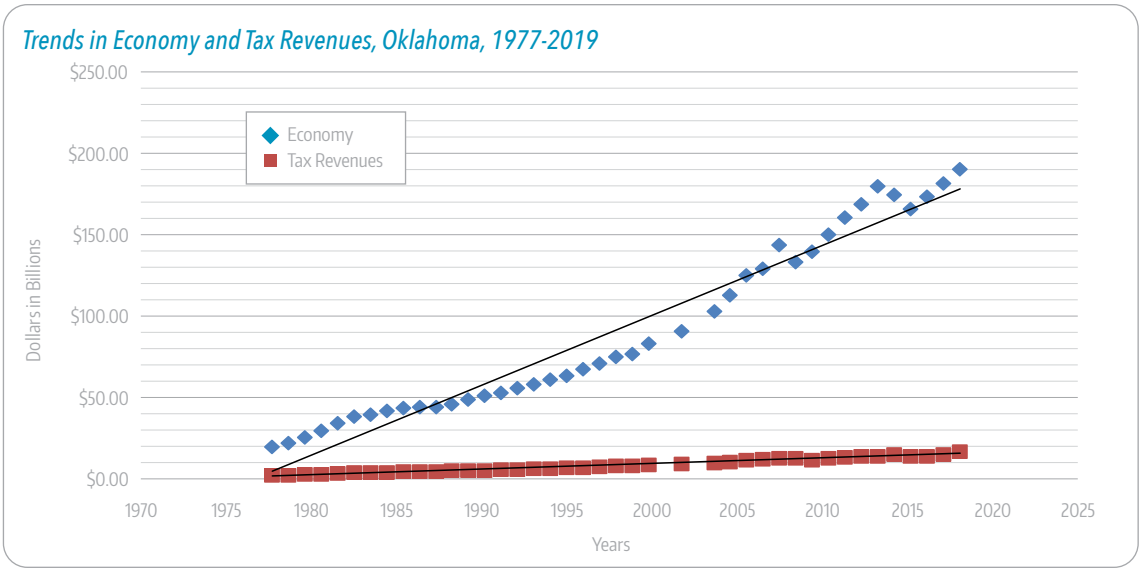
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

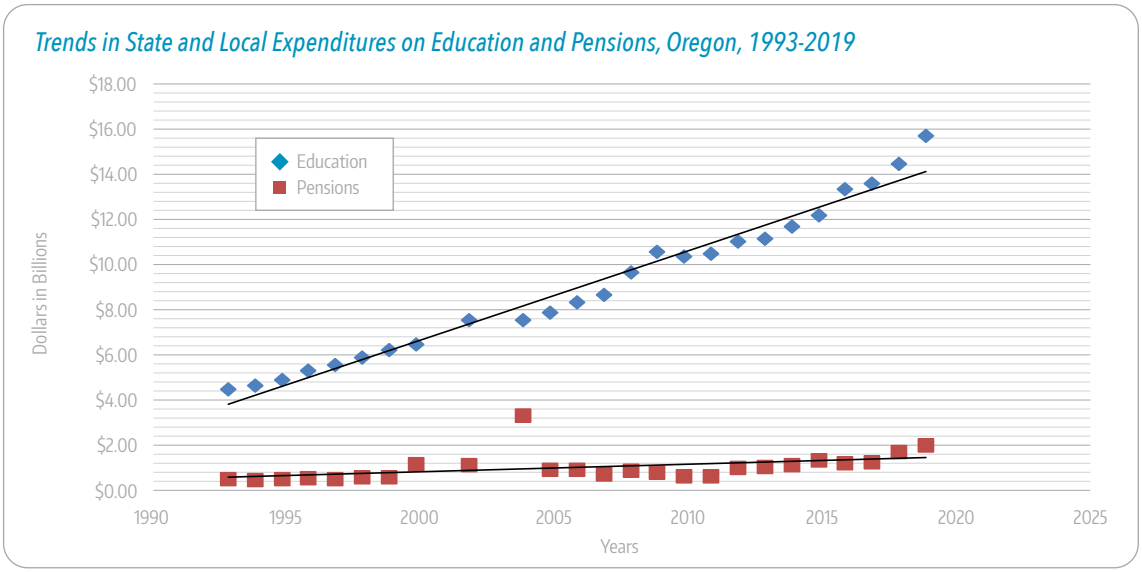
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



OREGON

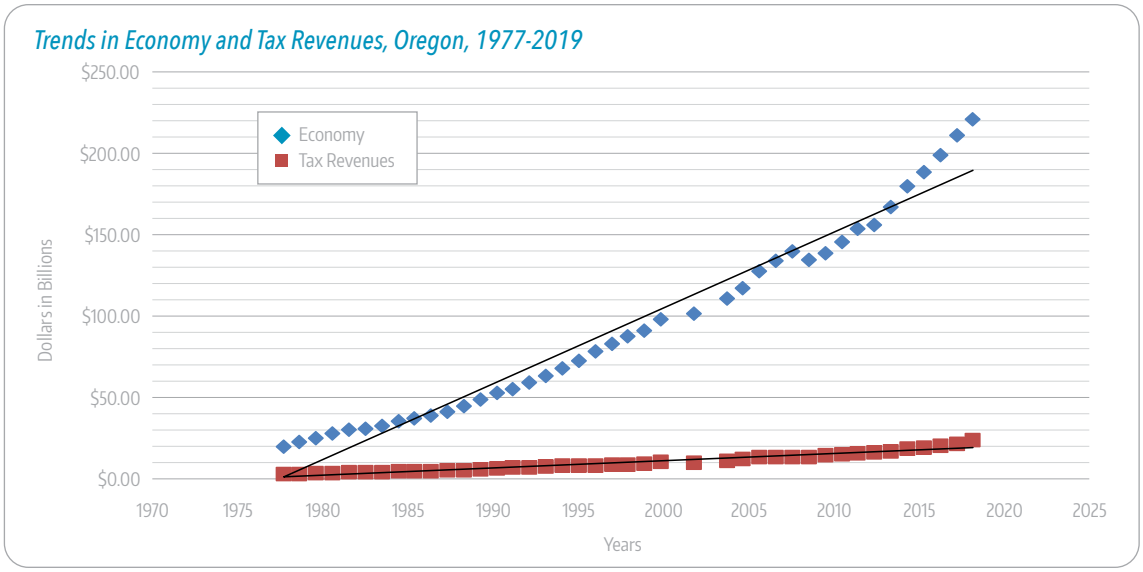
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

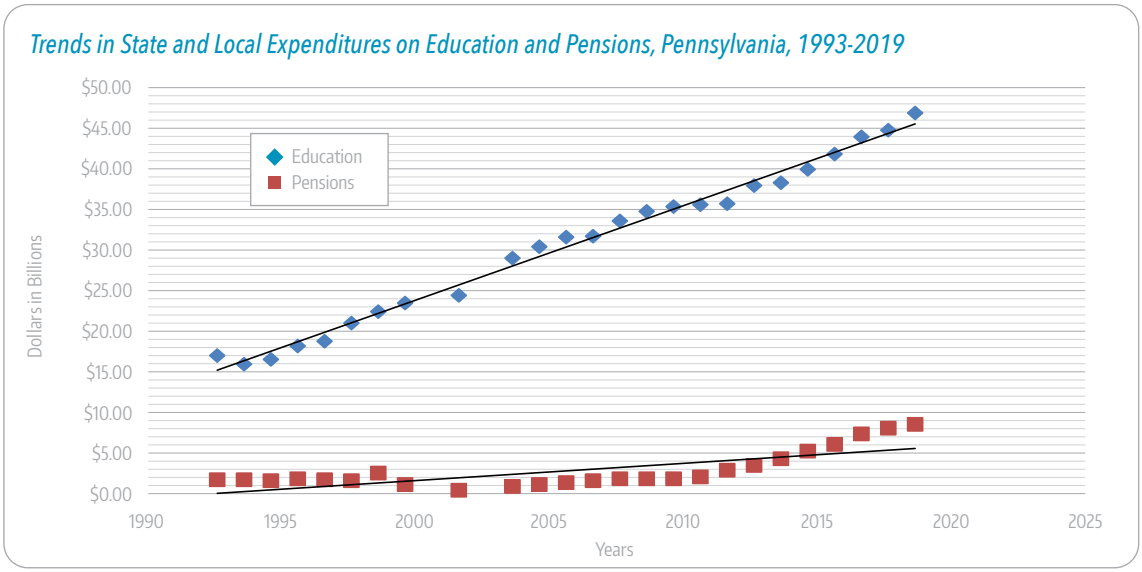
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



PENNSYLVANIA

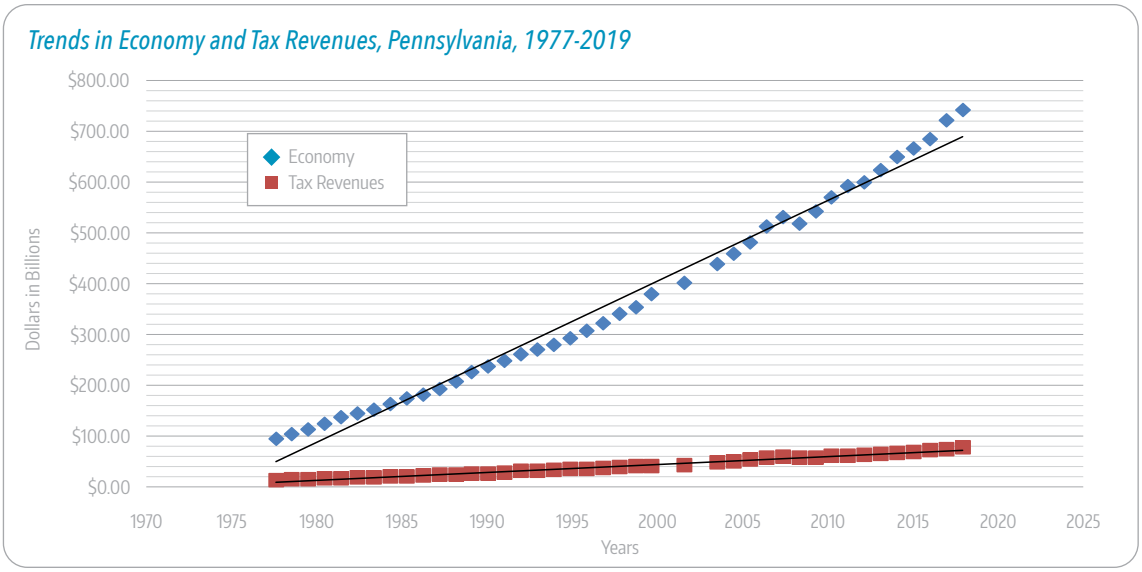
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that of revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

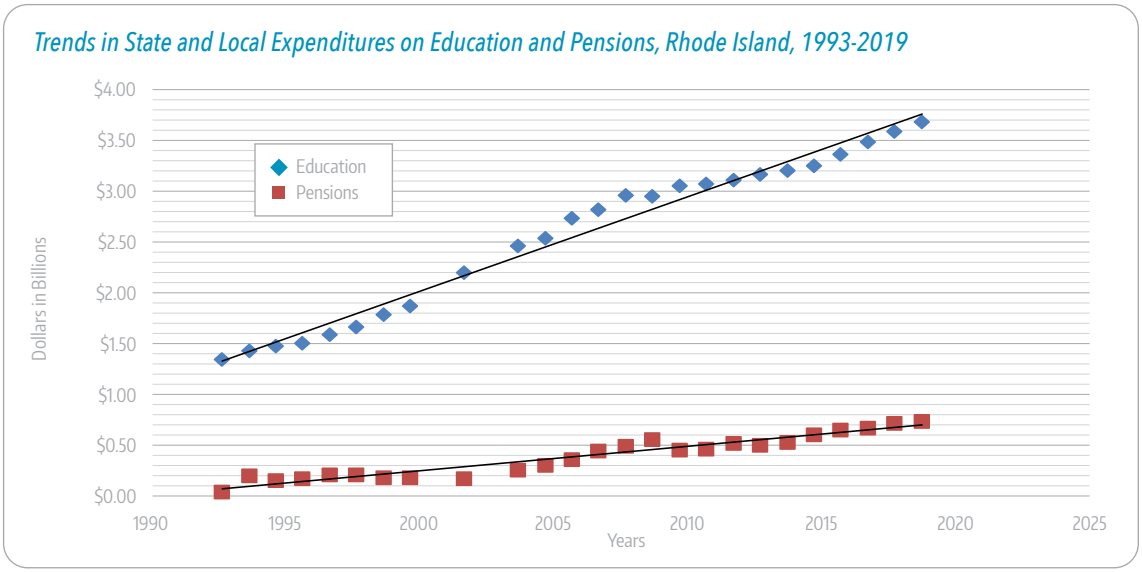


RHODE ISLAND

Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. The crowding out is likely only if the two lines were on a path to convergence.

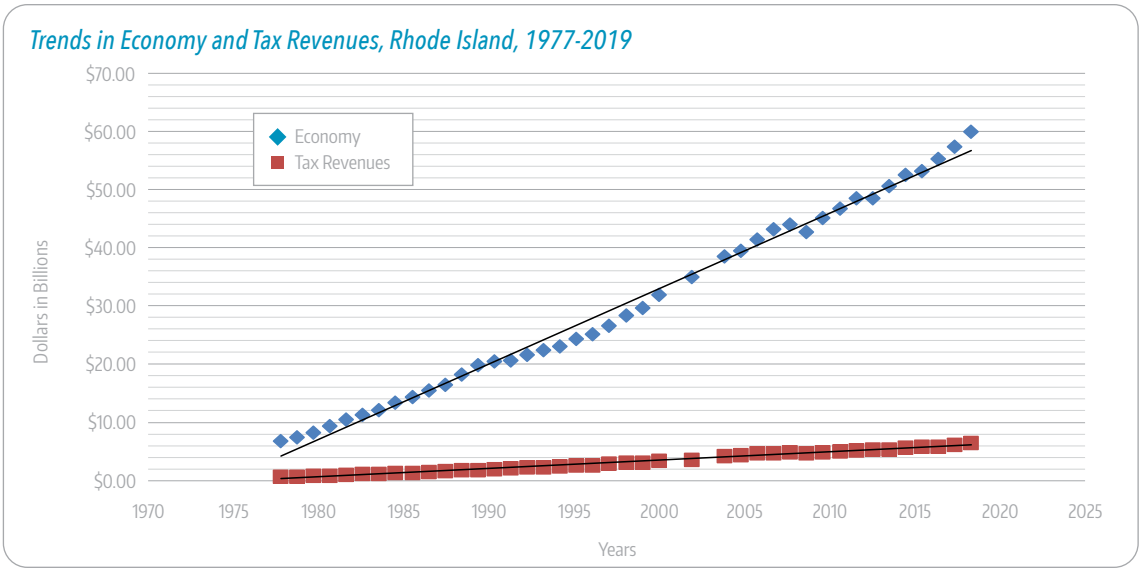
Trends in State and Local Expenditures on Education and Pensions, Rhode Island, 1993-2019



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.

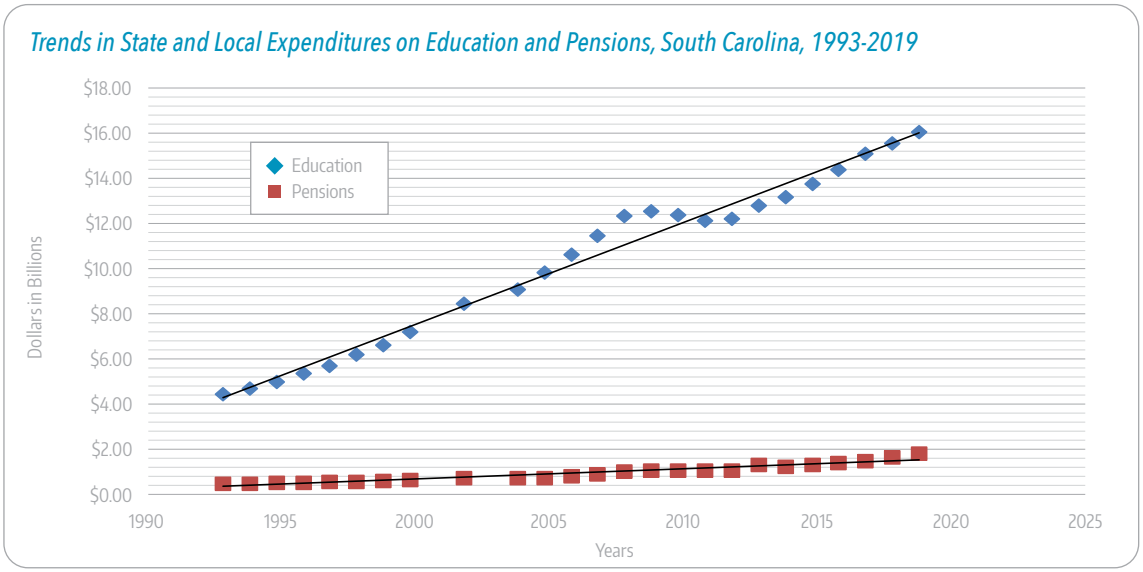
Trends in Economy and Tax Revenues, Rhode Island, 1977-2019



SOUTH CAROLINA

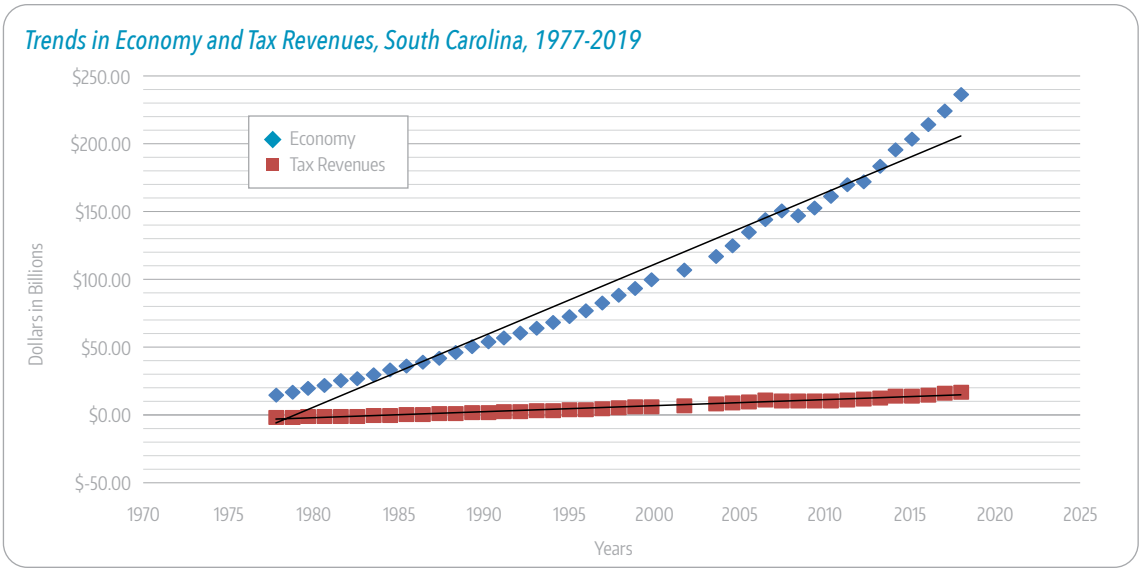
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

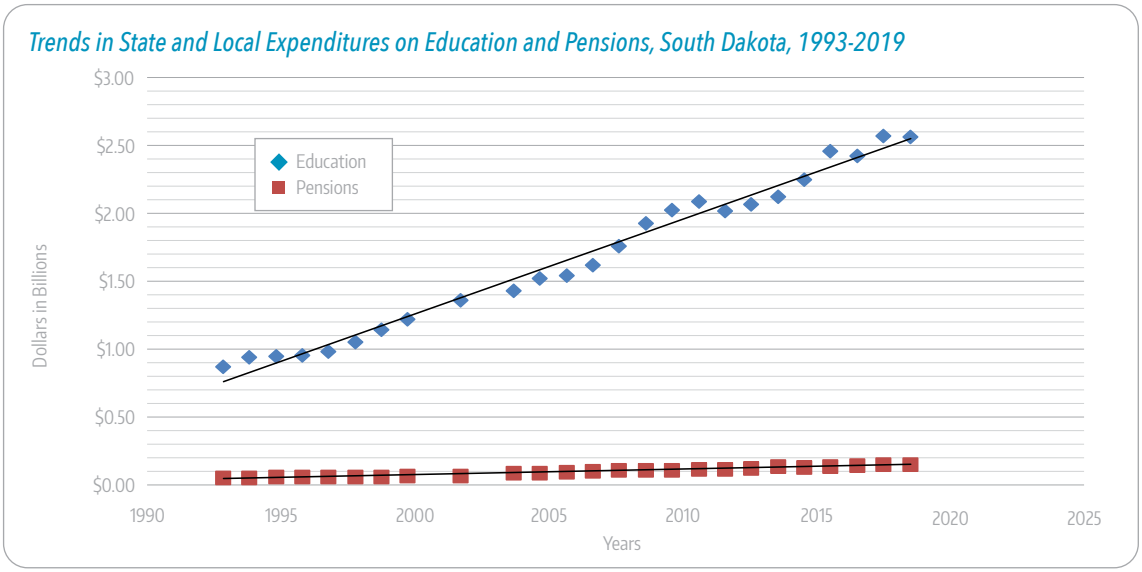
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



SOUTH DAKOTA

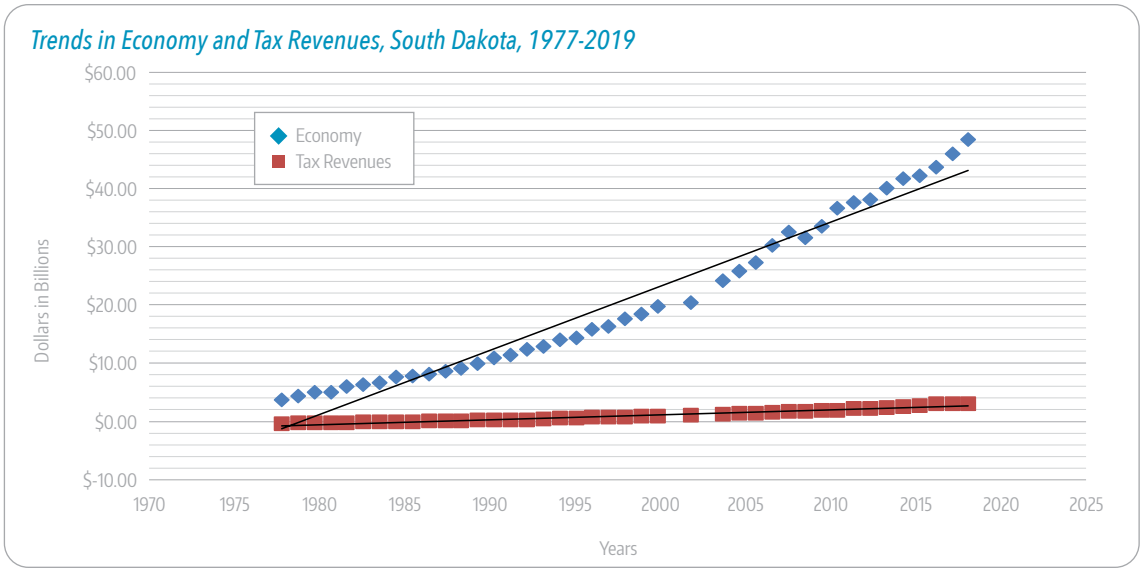
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

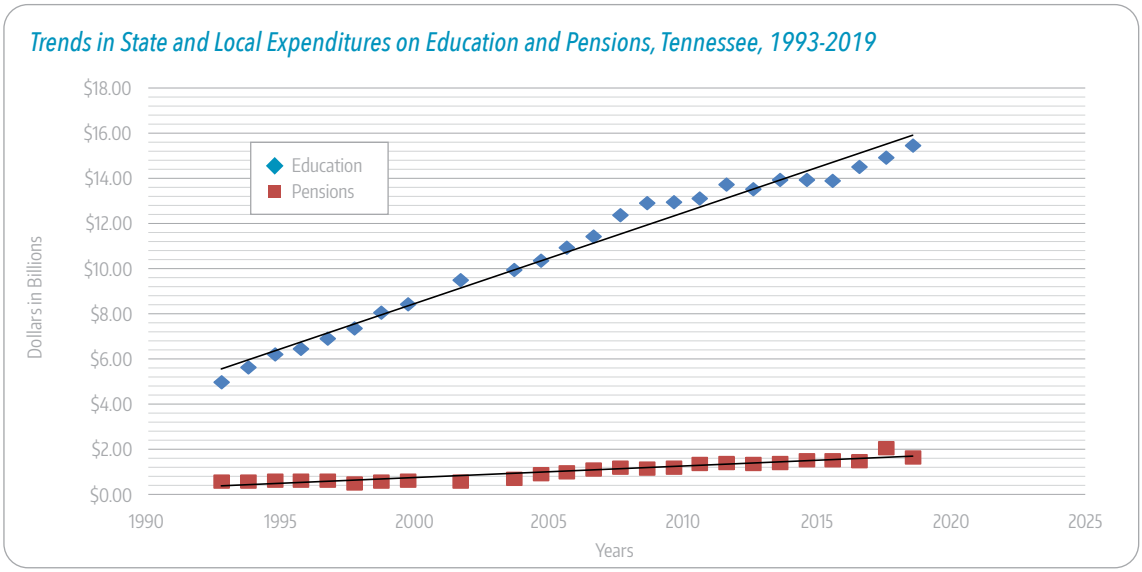
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



TENNESSEE

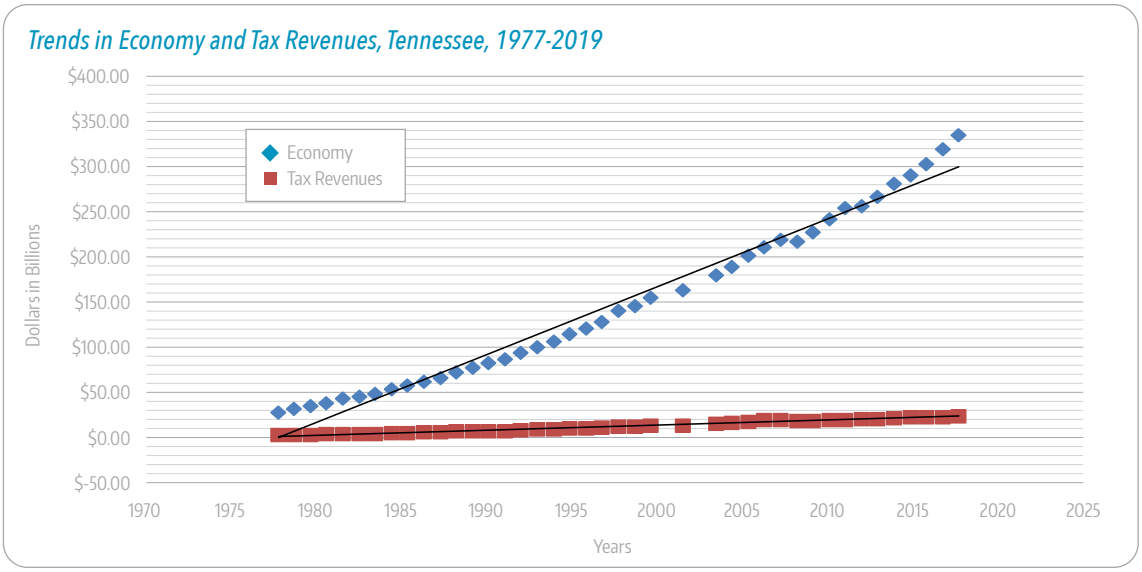
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

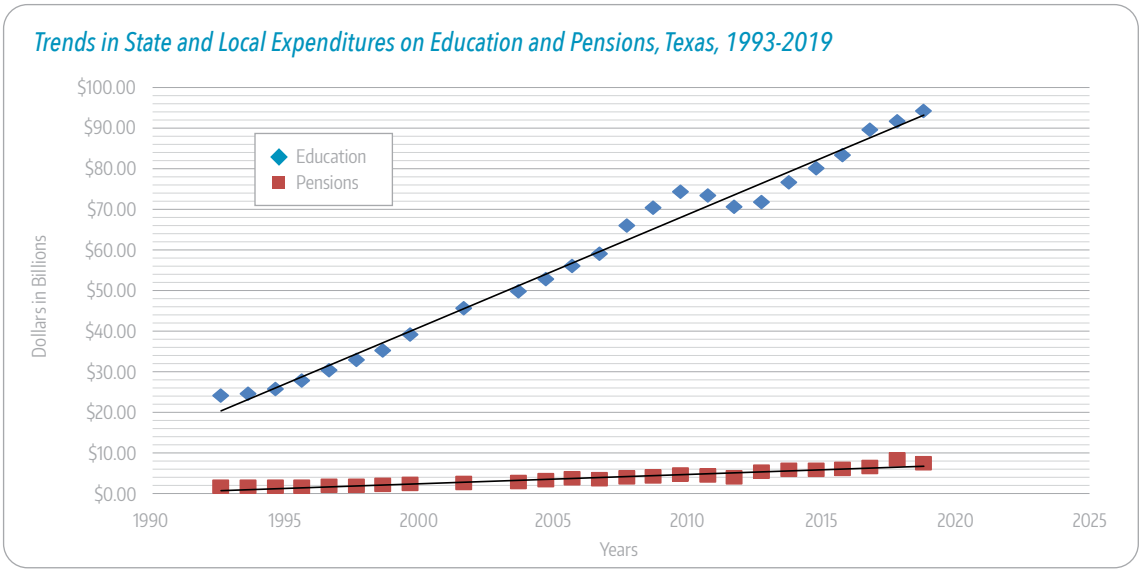
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



TEXAS

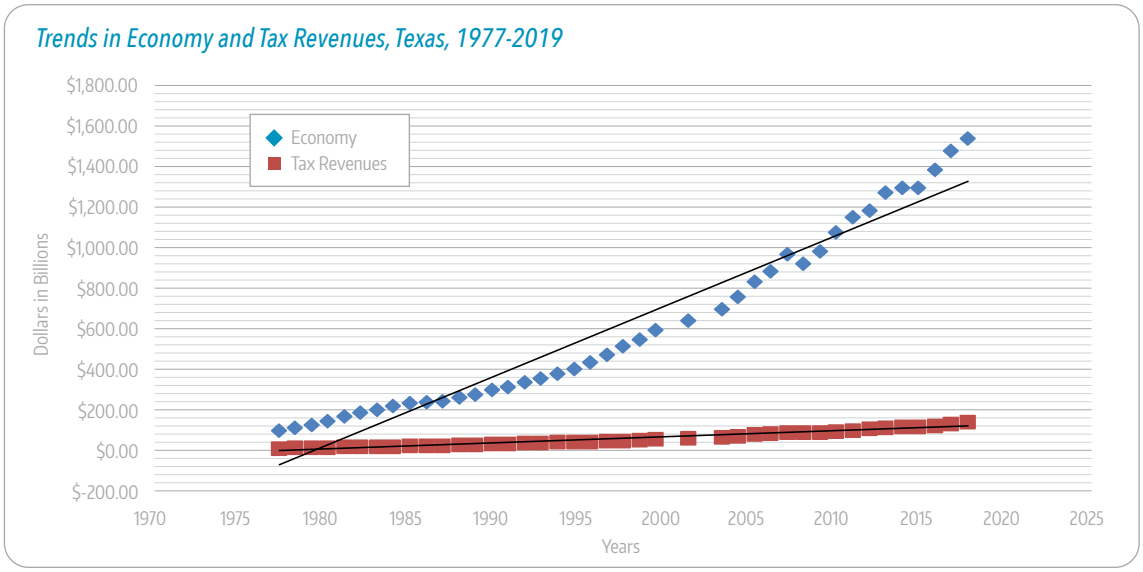
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

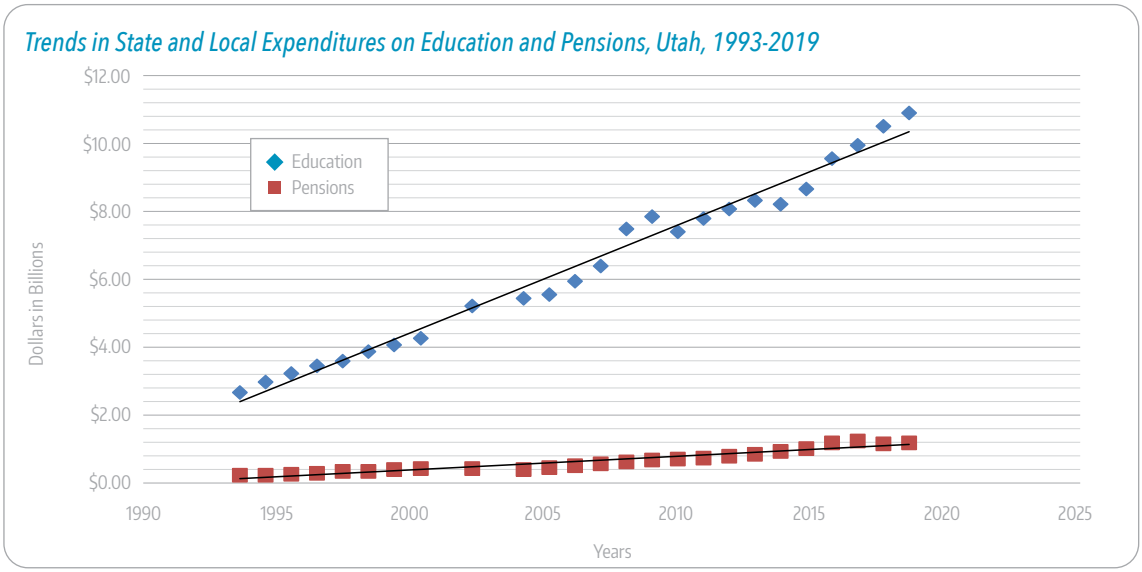
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



UTAH

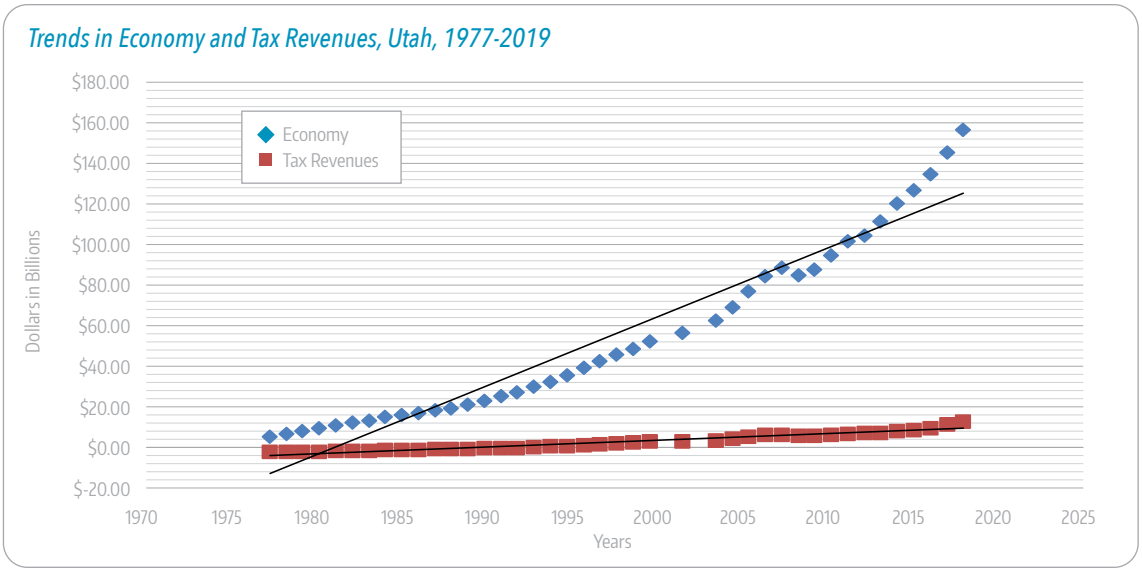
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

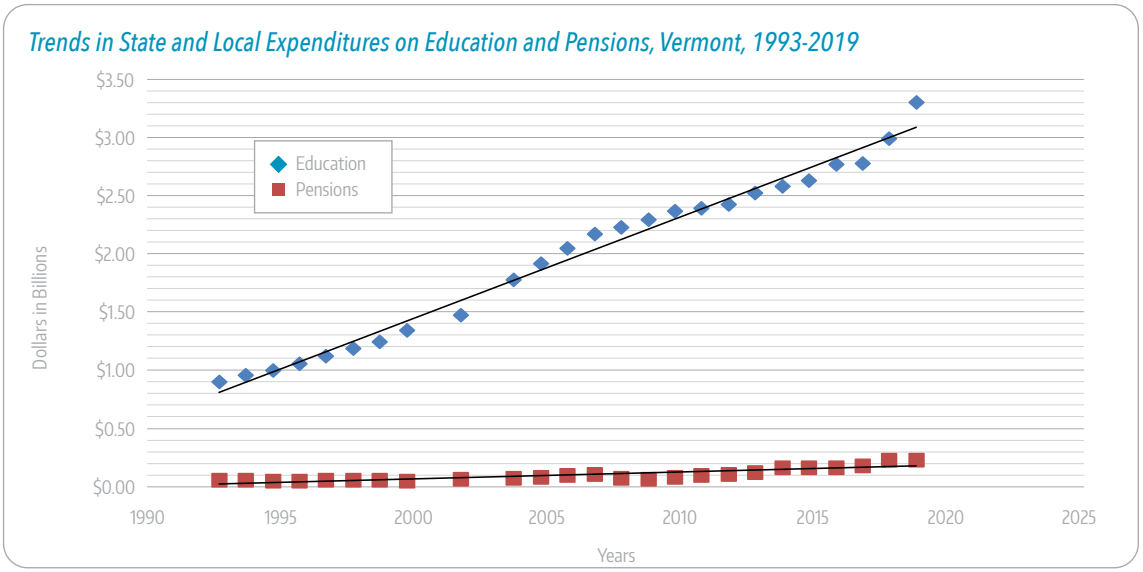
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



VERMONT

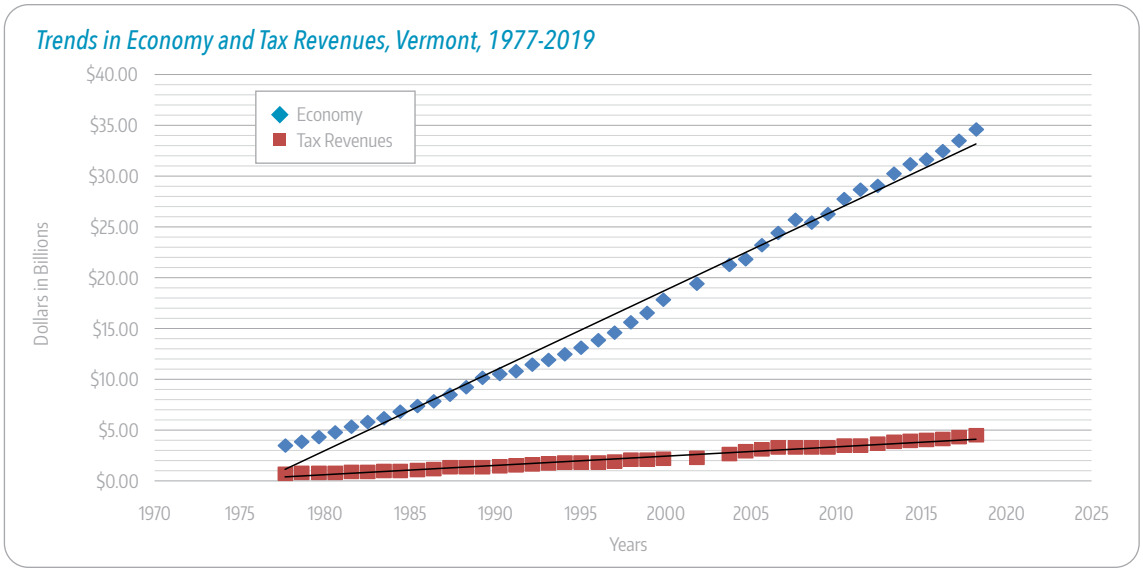
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

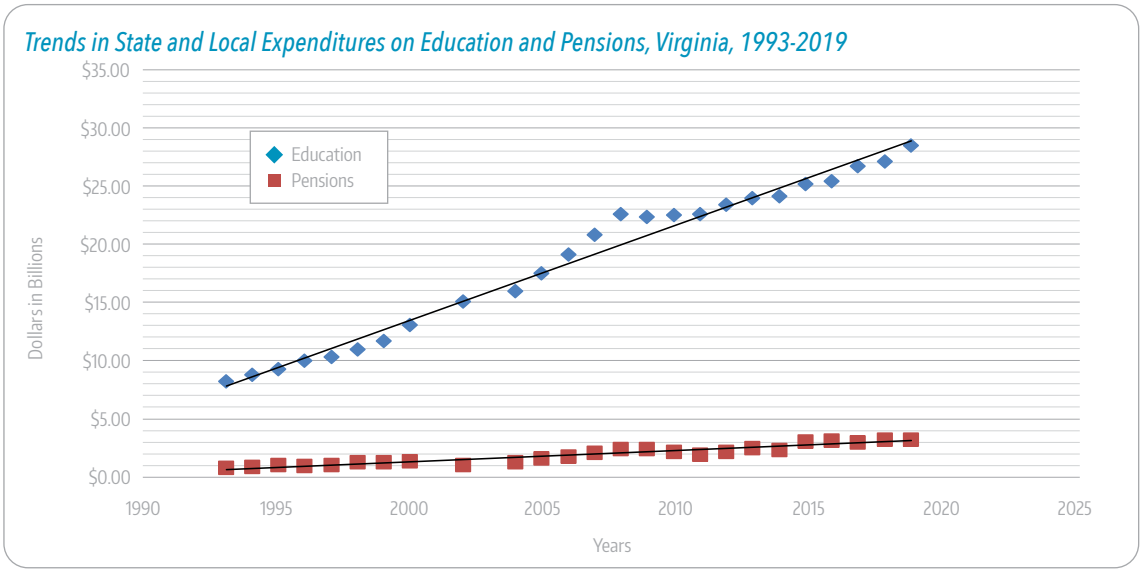
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



VIRGINIA

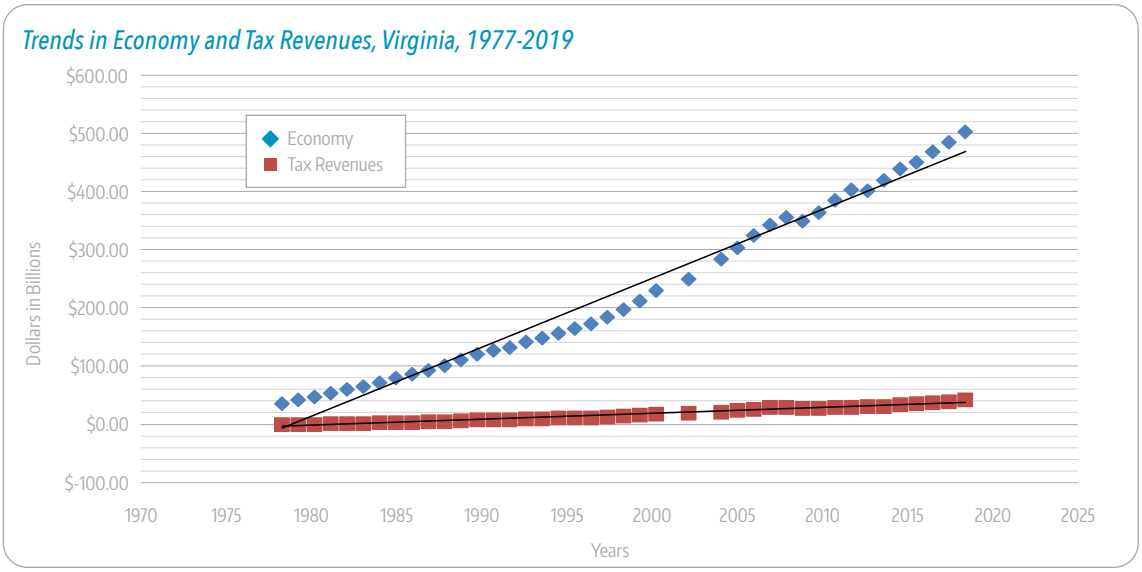
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

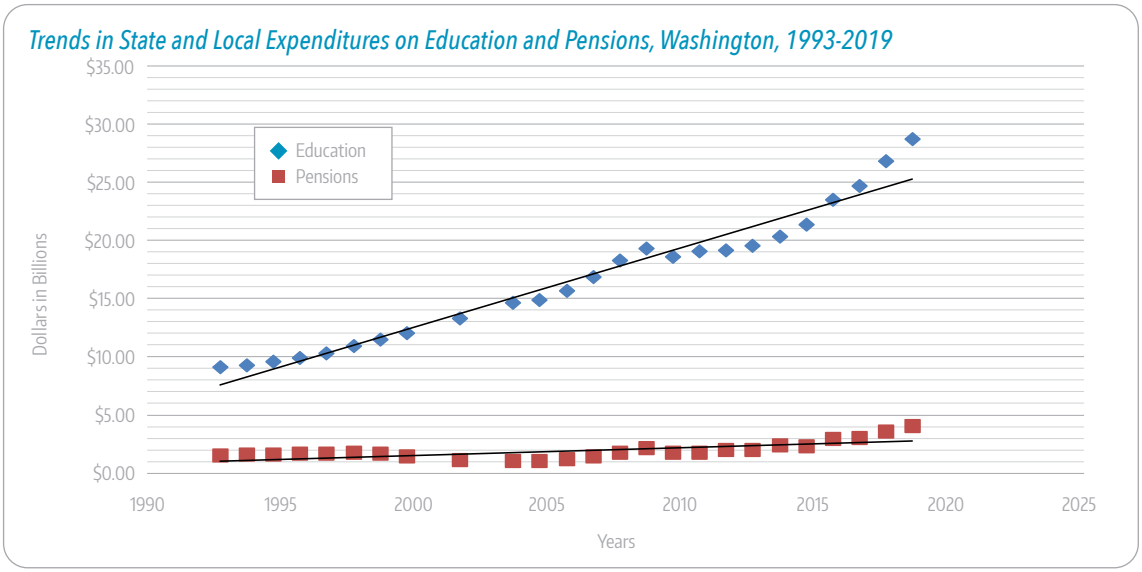
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



WASHINGTON

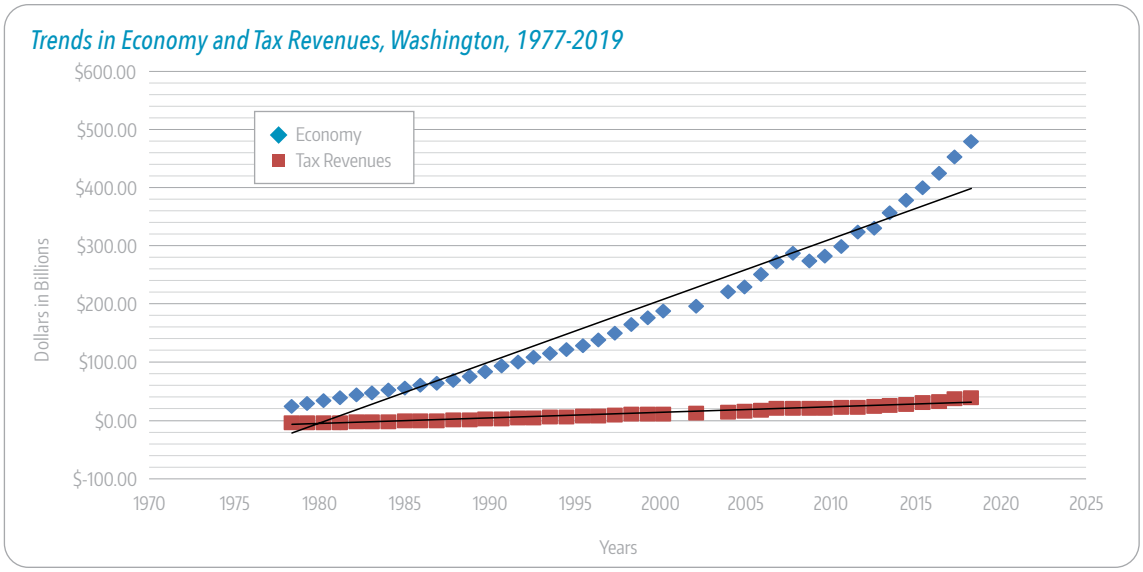
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

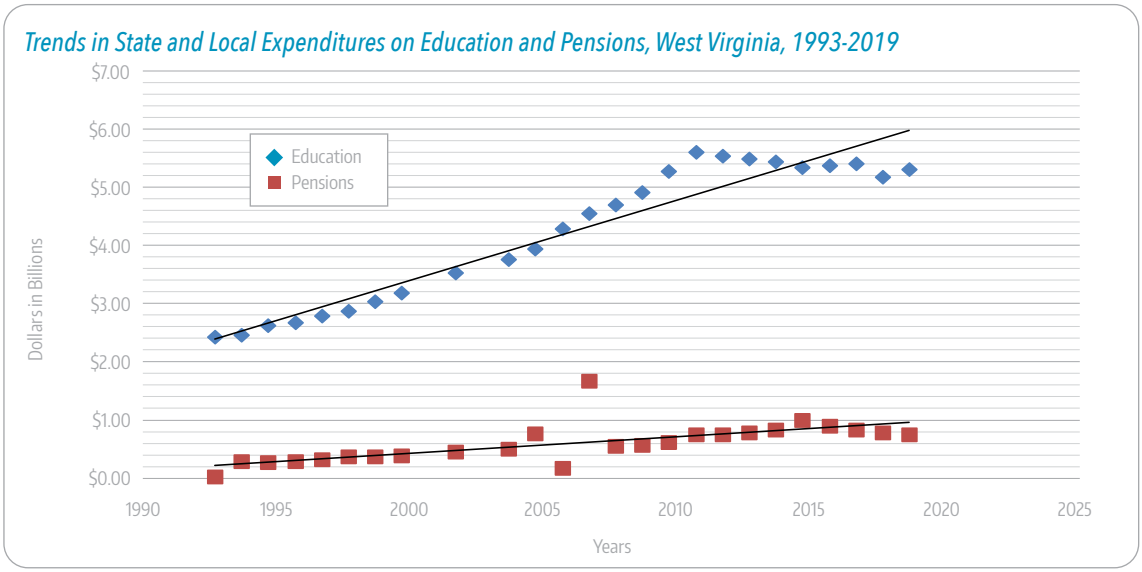
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



WEST VIRGINIA

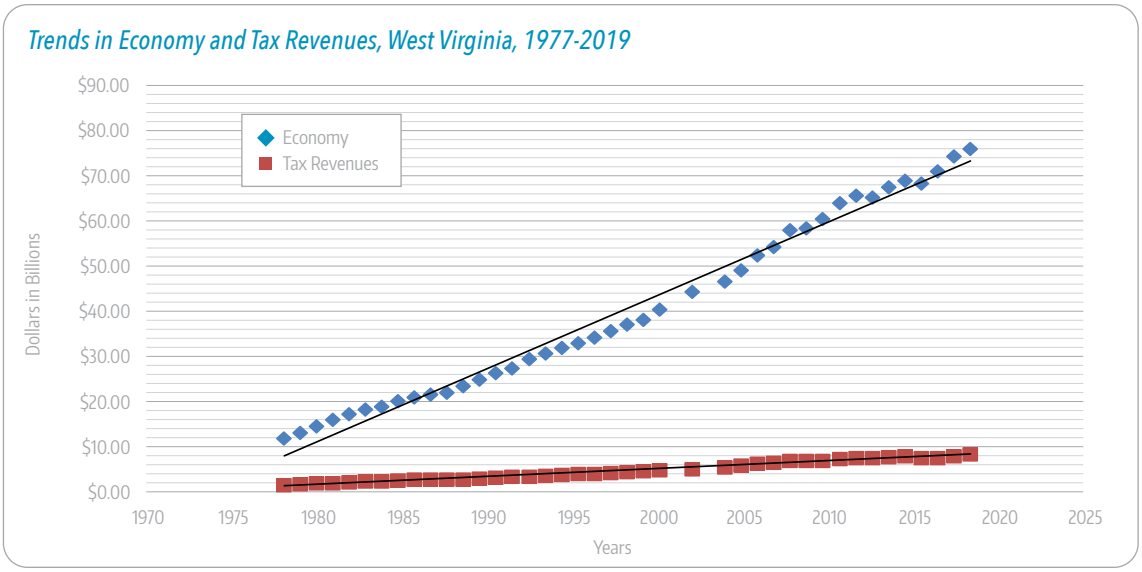
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

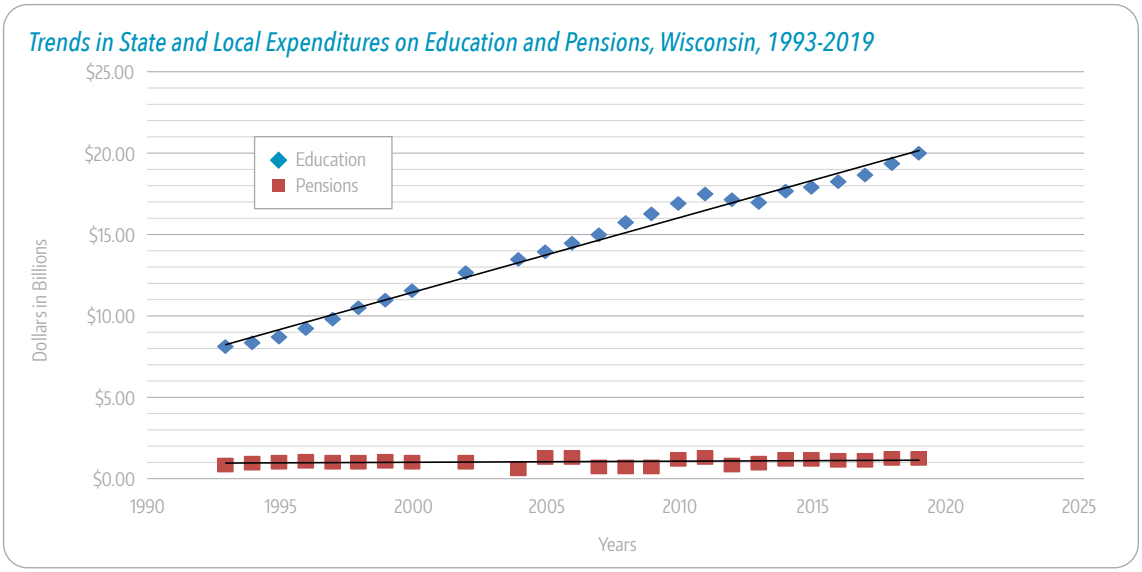
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



WISCONSIN

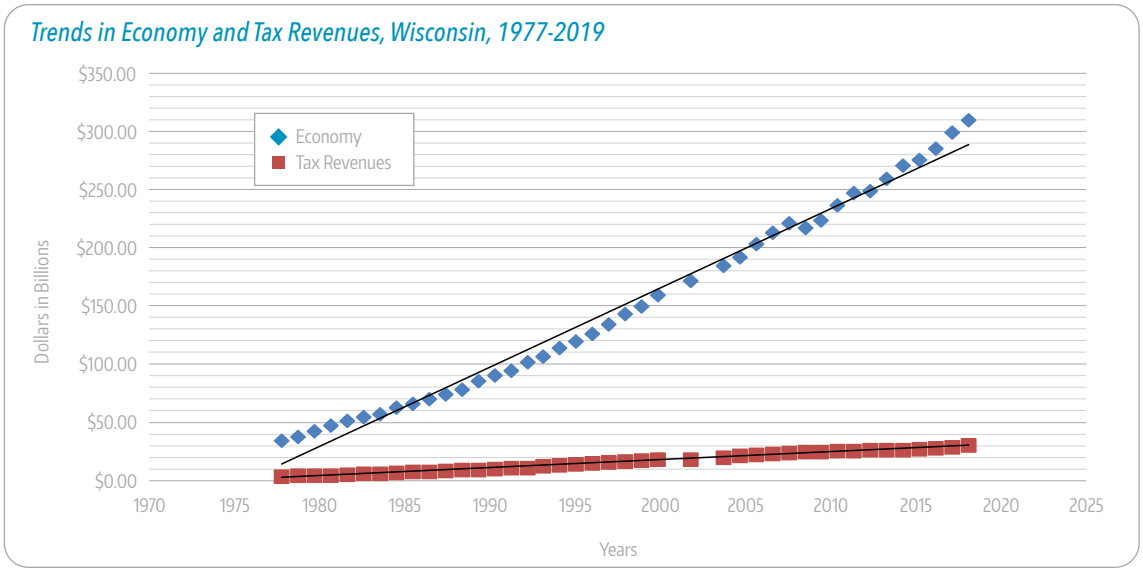
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

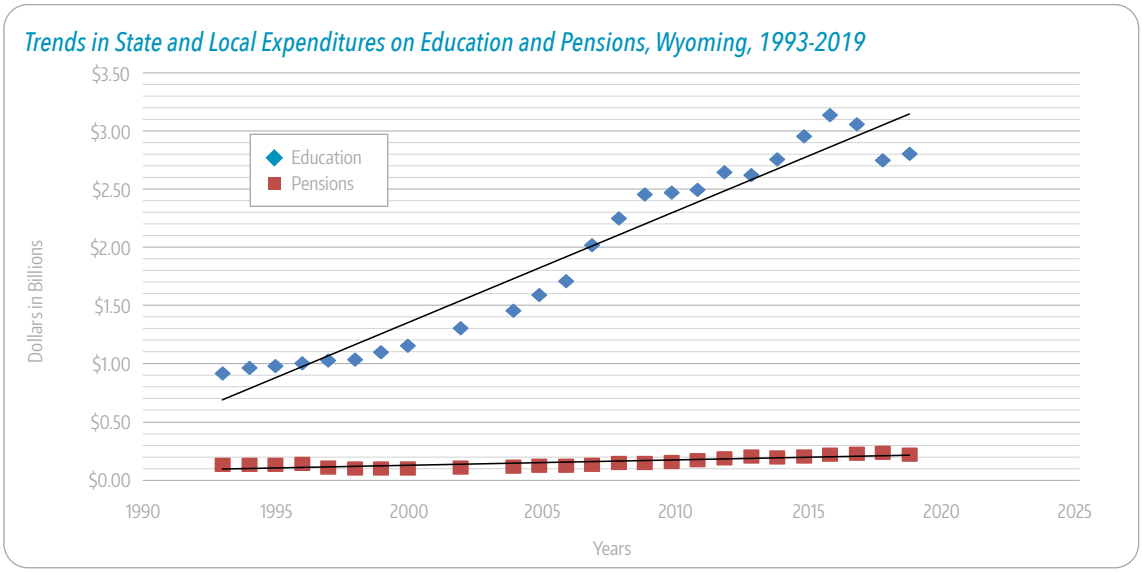
Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



WYOMING

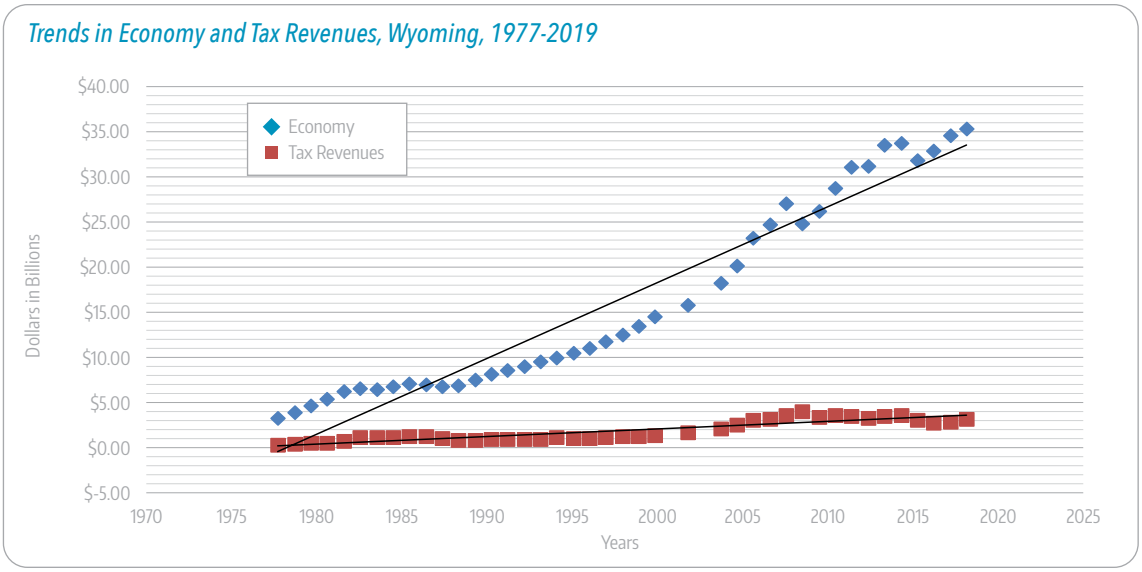
Do pension contributions crowd out education funding?

No. The slope of the education expenditure trend line is steeper than that of pension contributions. Crowding out would be likely only if the two lines were on a path to convergence.



Are state and local revenue systems out of sync with the economy?

Yes. The slope of the trend line for the economy is steeper than that for revenues. This means revenues cannot keep pace with the funding needs of a growing economy and will never be enough without reform.



National Conference on Public Employee Retirement Systems
1201 New York Avenue, NW, Suite 850
Washington, DC 20005
202-601-2445
202-688-2387
info@NCPERS.org